MEASURING INSTRUMENTS
BARGRAPHS
LARGE DISPLAYS
TRANSMITTERS TO DIN RAIL

Outstanding Measurement Value

PANEL MEASURING INSTRUMENTS

2023.1

INSTRUMENT OVERVIEW

	Type	Projection	Height [mm]	Input	Rate [measur./s]	Accuracy [% of FS]	Limits	Analog	Data	AO or Data	Excitation	Digital filters	Math. functions	Functions	Min/Max value	Teach-in	Linearization	Simulation	External inputs	RTC	OM Link	Power supply	Dimensions [mm]	Page
DC VA-meters *for more see „Process monitors"	OMM 323UNI	±1999	9,1	±30/±60 mV/±1/±20/±40/±80 V ±90/±180 mA	0,5…20	±0,15	☒	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	48 x 24 *72*	10
	OMM 350DC	±1999	9,1	±20/±40/±100/±200 V ±1/±5 A	0,5…10	±0,2	☐☐	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	72 x 24 *106*	26
	OMM 350UNI	±1999	9,1	±30/±60 mV/±1 V	0,5…10	±0,2	☐☐	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	72 x 24 *106*	28
	OML 343DC	±1999	14	±120 V/±240 V ±1/±5 A	0,5…20	±0,15	☐	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	96 x 48 *30*	30
	OML 343UNI	±1999	14	±30/±60 mV/±1/±20/±40/±80 V ±90/±180 mA	0,5…20	±0,15	☐	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	96 x 48 *30*	34
	OM 352DC	±1999	14	±20/±40/±80/±200 V ±1/±5 A	0,5…10	±0,2	☐☐	☒	☒	☐	☑	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	36
	OM 352UNI	±1999	14	±30/±60 mV/±1 V	0,5…10	±0,2	☐☐	☒	☒	☐	☑	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	40
	OM 45DC	±19999	14	±1,9999 V…±199,99 V ±199,99 µA…±199,99 mA	1,2…10	±0,15	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	230 VAC 12…24 VDC	96 x 24 *100*	50
	OM 402UNI	±9999	14	±60 mV…±500 V ±0,1 A…±5 A	0,1…40	±0,1	☐☐☐☐	☐	☐	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	46
	OM 502DC	±99999	14	±99,999 mV…±300 V ±999,99 µA…±5 A	0,1…100	±0,02	☐☐☐☐	☐	☐	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	54
AC VA-meters *for more see „Wattmeters"	OML 343AC	1999	14	0…0,06/0,3/24/50/120/ 250 V; 0…1 A/5 A	0,5…5	±0,3	☐	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	96 x 48 *30*	32
	OM 352AC	1999	14	0…0,06/0,3/24/50/90/120/ 250/450 V; 0…1 A/5 A	0,5…5	±0,3	☐☐	☒	☒	☐	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	38
	OM 402PWR	9999	14	0…10/120/250/450 V 0…60/150/300 mV, 1/2,5/5 A V_{RMS}, A_{RMS}, W, Hz, Q, S, cos fi	0,6…5	±0,2	☐☐☐☐	☐	☐	☒	☒	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	44
Process monitors	OMM 323UNI	±1999	9,1	±2/±5/±10 V ±5/±20/4…20 mA	0,5…20	±0,15	☒	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	48 x 24 *72*	10
	OMM 335PAS	±1999	14	4…20 mA	0,1…100	±0,15	☑☑	☒	☒	☒	☒	☑	☒	☒	☒	☒	☑	☒	☒	☒	☑	from the loop 4…20 mA	52 x 30 *78*	16
	OMM 335PM	±1999	14	±2/±5/±10 V ±5/±20/4…20 mA	0,1…100	±0,15	☒	☒	☒	☒	☒	☑	☒	☒	☒	☒	☑	☒	☒	☒	☑	10…30 V AC/DC	52 x 30 *78*	18
	OMM 350UNI	±1999	9,1	0…2/5/10 V 0…20/4…20 mA	0,5…10	±0,2	☐☐	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	72 x 24 *106*	28
	OML 343UNI	±1999	14	±2/±5/±10 V ±5/±20/4…20 mA	0,5…20	±0,15	☐	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	96 x 48 *30*	34
	OM 352UNI	±1999	14	±2/±5/±10 V ±5/±20/4…20 mA	0,5…10	±0,2	☐☐	☒	☒	☐	☑	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	38
	OM 45PM	±19999	14	±2 V; ±5 V, ±10 V ±5 mA; ±20 mA; 4…20 mA	1,2…10	±0,15	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	230 VAC 12…24 VDC	96 x 24 *100*	52
	OM 402UNI	±9999	14	1…4 inputs ±2 V/±5 V/±10 V/±40 V ±5 mA/±20 mA/4…20 mA	0,1…40	±0,1	☐☐☐☐	☐	☐	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	46
	OM 502PM	±99999	14	±2 V/±5 V/±10 V ±5 mA/±20 mA/4…20 mA	0,1…100	±0,02	☐☐☐☐	☐	☐	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	56
Integrator	OM 502I	999999	14	±2 V/±5 V/±10 V ±5 mA/±20 mA/4…20 mA	0,1…8	±0,05	☐☐☐☐	☐	☐	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	58
Ohmmeters	OMM 323UNI	1999	9,1	0,3/3/30 kΩ	0,5…20	±0,15	☒	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	48 x 24 *72*	10
	OMM 335RTD	9999	14	0,39/3,9 kΩ	0,1…100	±0,15	☒	☒	☒	☒	☒	☑	☒	☒	☒	☒	☑	☒	☒	☒	☑	10…30 V AC/DC	52 x 30 *78*	20
	OML 343UNI	1999	14	0,3/1,5/3/30 kΩ	0,5…20	±0,15	☐	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	96 x 48 *30*	34
	OM 352UNI	1999	14	0,3/1,5/3/30 kΩ	0,5…20	±0,2	☐☐	☒	☒	☐	☑	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	40
	OM 402UNI	9999	14	0,1/1/10/100 kΩ/Auto	0,1…40	±0,1	☐☐☐☐	☐	☐	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	46
Wattmeters AC VA-meters	OM 402PWR	9999	14	0…10/120/250/450 V 0…60/150/300 mV, 1/2,5/5 A V_{RMS}, A_{RMS}, W, Hz, Q, S, cos fi,	0,6…5	±0,2	☐☐☐☐	☐	☐	☒	☒	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	44
Linearization instruments	OM 502LX	±99999	14	±2 V; ±5 V, ±10 V ±5 mA; ±20 mA; 4…20 mA	1…100	±0,02	☐☐☐☐	☐	☑	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	60
Thermometers	OMM 323UNI	±1999	9,1	Pt 50/100/1000, Ni 1000/10000, Cu 50/100 J/K/T/E/B/S/R/N/L + CJC	0,5…20	±0,15	☒	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	48 x 24 *72*	10
	OMM 335RTD	±1999	14	Pt 100/1000, Ni 1000	0,1…100	±0,15	☒	☒	☒	☒	☒	☑	☒	☒	☒	☒	☑	☒		☒	☑	10…30 V AC/DC	52 x 30 *78*	20
	OMM 350UNI	±1999	9,1	Pt 50/100/500/1000, Ni 1000/10000, Cu 50/100 J/K/T/E/B/S/R/N/L + CJC	0,5…10	±0,2	☐☐	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒		☒	☑	10…30 V AC/DC	72 x 24 *106*	28
	OML 343UNI	±1999	14	Pt 50/100/500/1000, Ni 1000/10000, Cu 50/100 J/K/T/E/B/S/R/N/L + CJC	0,5…20	±0,15	☐	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	96 x 48 *30*	34
	OM 352UNI	±1999	14	Pt 50/100/500/1000, Ni 1000/10000, Cu 50/100 J/K/T/E/B/S/R/N/L + CJC	0,5…20	±0,2	☐☐	☒	☒	☐	☑	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	40
	OM 402UNI	±9999	14	Pt 50/100/500/1000, Ni 1000/10000, Cu 50/100 J/K/T/E/B/S/R/N/L + CJC	0,1…40	±0,15	☐☐☐☐	☐	☐	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	46

☐ on request ☑ standard ☒ cannot be ordered

Type	Projection	Height [mm]	Input	Rate [measur./s]	Accuracy [% of FS]	Limits	Analog	Data	AO or Data	Excitation	Digital filters	Math. functions	Functions	Min/Max value	Teach-in	Linearization	Simulation	External inputs	RTC	OM Link	Power supply	Dimensions [mm]	Page	
OMM 323UNI	±1999	9,1	Potentiometer > 500 Ω	0,5…20	±0,15	☒	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	48 x 24 *72*	10	Displays for potentiometers
OMM 350UNI	±1999	14	Potentiometer > 500 Ω	0,5…10	±0,2	□□	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	72 x 24 *106*	28	
OML 343UNI	±1999	14	Potentiometer > 500 Ω	0,5…20	±0,15	□	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	96 x 48 *30*	34	
OM 352UNI	±1999	14	Potentiometer > 500 Ω	0,5…10	±0,2	□□	☒	☒	☐	☑	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	40	
OM 402UNI	±9999	14	Potentiometer > 500 Ω	0,1…40	±0,2	□□□□	☐	☐	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	46	
OM 502DU	±99999	14	Potentiometer > 500 Ω	0,1…100	±0,05	□□□□	☐	☐	☒	☒	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	62	
OM 502LVDT	±99999	14	1 / 3 / 5 VAC with frequency 2.5 / 5 / 10 kHz	0,1…100	±0,05	□□□□	☐	☐	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	64	Display for LVDT
OM 402LC	±9999	14	1…4 / 2…8 / 4…16 mV/V	0,1…40	±0,1	□□□□	☐	☐	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	42	Displays for strain gauges
OM 502T	±99999	14	1…4 / 2…8 / 4…16 mV/V	0,1…100	±0,05	□□□□	☐	☐	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	66	
OMM 323UQC	9999	9,1	TTL, PNP/NPN, 0,1 Hz… 50 kHz, < 60 V counter/frequency	0,5…10 s	±0,05	☒	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	48 x 24 *72*	12	Universal counters
OMM 335UC	9999	14	TTL, PNP/NPN, 0,1 Hz… 10 kHz, < 30 V counter/frequency	0,1…50 s	±0,05	☒	☒	☒	☒	☒	☑	☒	☒	☒	☒	☑	☒	☒	☒	☑	10…30 V AC/DC	52 x 30 *78*	22	
OMM 650UC	999999	9,1	TTL, PNP/NPN, 0,1 Hz… 50 kHz, <30/300 V counter/frequency/timer	0,5…10 s	±0,05	□□	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	72 x 24 *106*	68	
OML 643UQC	999999	14	TTL, PNP/NPN, 0,1 Hz… 50 kHz, <30 V counter/frequency/timer	0,5…10 s	±0,05	□	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	96 x 48 *30*	70	
OM 653UQC	999999	14	TTL, PNP/NPN, 0,1 Hz… 50 kHz, <30/300 V counter/frequency/timer	0,5…10 s	±0,05	□□	☒	☒	☐	☑	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	74	
OM 602UQC	999999	14	TTL, PNP/NPN, line, 0,02 Hz…1 MHz, < 60 V (mV) 1…2 inputs, timer/clock , counter/frequency ,UP/DW, IRC	0,2…50 s 1…10 min.	±0,01	□□□□	☐	☐	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	76	
OMM 323RS	9999	9,1	/RS 485 ASCII/MESSBUS/Modbus RTU			☒	☒	☒	☒	☒	☒	☒	☑	☒	☒	☑	☒	☒	☒	☑	10…30 V AC/DC	48 x 24 *72*	14	Data displays
OMM 335RS	9999	14	RS 485 ASCII/Modbus RTU			☒	☒	☒	☒	☒	☑	☒	☒	☒	☒	☑	☒	☒	☒	☑	10…30 V AC/DC	52 x 30 *78*	24	
OML 643RS	999999	14	RS 232/RS 485 ASCII/MESSBUS/Modbus RTU			☐	☒	☒	☒	☒	☒	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	96 x 48 *30*	72	
OM 602RS	999999	14	RS 232/RS 485 ASCII/MESSBUS/Modbus RTU PROFIBUS			□□□□	☐	☒	☒	☐	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	80	
OM 621BCD	999999	14	BCD, transformer tapping leads BCD - serial BIN/BCD - parallel			□□□□	☒	☒	☐	☐	☑	☑	☒	☑	☒	☒	☒	☒	☒	☒	9…50 V AC/DC 80…250 V AC/DC	96 x 48 *142*	82	
OM 602AV	999999	14	Auxiliary inputs (UP/DW)		±0,2	□□□□	☑	☐	☒	☐	☒	☒	☑	☒	☒	☒	☒	☑	☒	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	78	Programmable AV
OM 402PID	±9999 + 2x 9999	14 + 9,1	±60 mV…500 V/ 0…5 A 0…20/4…20 mA/0…2/5/10 V 0…0,1/1/10/100 kΩ Pt 100/500/1 000 Ni1 000/10 000, Cu 50/100 J/K/T/E/B/S/R/N/L Potentiometer > 500 Ω Control: PID/PI or proportional	0,1…40	±0,2	□□□□	☐	☐	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	☑	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	48	PID regulator
OMU 408UNI	±9999	14	4x/8x ±60 mV…40 V ±5/±20/4…20 mA/±2/5/10 V 0…0,1/1/10/100 kΩ Pt 100/500/1 000, Cu 50/100 Ni1 000/10 000 J/K/T/E/B/S/R/N/L Potentiometer > 500 Ω	1,0…40	±0,2	□□□□ □□□□	☒	☒	☐	☒	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	84	Logger

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Bargraphs	OMB 402UNI	30 LED + ±9999	9,1	±60 mV…500 V/ 0…5 A 0…20/4…20 mA/0…2/5/10 V 0…0,1/1/10/100 kΩ Pt 100/500/1 000 Ni1 000/10 000, Cu 50/100 J/K/T/E/B/S/R/N/L Potentiometer > 500 Ω	0,1…40	±0,2	□□□□	□	□	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	□	☑	10…30 V AC/DC 80…250 V AC/DC	96 x 48 *120*	86
	OMB 412UNI	24 LED + -99/999	9,1	±60 mV…500 V/ 0…5 A 0…20/4…20 mA/0…2/5/10 V 0…0,1/1/10/100 kΩ Pt 100/500/1 000 Ni1 000/10 000, Cu 50/100 J/K/T/E/B/S/R/N/L Potentiometer > 500 Ω	0,1…40	±0,2	□□□□	□	□	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	□	☑	10…30 V AC/DC 80…250 V AC/DC	48 x 96 *120*	88
	OMB 451UNI	50 LED + 999999 +LCD	9,1	±60 mV…500 V/ 0…5 A 0…20/4…20 mA/0…2/5/10 V 0…0,1/1/10/100 kΩ Pt 100/500/1 000 Ni1 000/10 000, Cu 50/100 J/K/T/E/B/S/R/N/L Potentiometer > 500 Ω	0,1…40	±0,2	□□□□	□	□	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	□	☑	10…30 V AC/DC 80…250 V AC/DC	160 x 60 *80*	90
	OMB 452UNI	50 LED + 999999 +LCD	14	±60 mV…500 V/ 0…5 A 0…20/4…20 mA/0…2/5/10 V 0…0,1/1/10/100 kΩ Pt 100/500/1 000 Ni1 000/10 000, Cu 50/100 J/K/T/E/B/S/R/N/L Potentiometer > 500 Ω	0,1…40	±0,2	□□□□	□	□	☒	☑	☑	☑	☑	☑	☒	☑	☒	☑	□	☑	10…30 V AC/DC 80…250 V AC/DC	160 x 80 *80*	92
	OMB 200UNI	20 LED		0…2/5/10 V, 0…20/4…20 mA , Pt/Ni 1000, Poten., 0…100 kΩ	0,5…10	±0,5 segm.	□	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	72 x 24 *100*	94
	OMB 300UNI	30 LED		0…2/5/10 V, 0…20/4…20 mA , Pt/Ni 1000, Poten., 0…100 kΩ	0,5…10	±0,5 segm.	□□	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	96 x 24 *100*	96
	OMB 500UNI	50 LED		0…2/5/10 V, 0…20/4…20 mA , Pt/Ni 1000, Poten., 0…100 kΩ	0,5…10	±0,5 segm.	□□	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	144x48 *75*	98
	OMB 502UNI	2x 50 LED		0…2/5/10 V, 0…20/4…20 mA , Pt/Ni 1000, Poten. , 0…100 kΩ	0,5…10	±0,5 segm.	□□	☒	☒	☒	☒	☑	☒	☑	☒	☒	☑	☒	☑	☒	☑	10…30 V AC/DC	144x48 *75*	100
	OMB 200RS	20 LED		RS 232/RS 485 ASCII		±0,5 segm.	□	☒	☒	☒	☒	☑	☒	☑	☒	☒	☒	☒	☑	☒	☑	10…30 V AC/DC	72 x 24 *100*	102
	OMB 300RS	30 LED		RS 232/RS 485 ASCII		±0,5 segm.	□□	☒	☒	☒	☒	☑	☒	☑	☒	☒	☒	☒	☑	☒	☑	10…30 V AC/DC	96 x 24 *100*	104
	OMB 500RS	50 LED		RS 232/RS 485 ASCII		±0,5 segm.	□□	☒	☒	☒	☒	☑	☒	☑	☒	☒	☒	☒	☑	☒	☑	10…30 V AC/DC	144x48 *75*	106
Large displays	OMD 202UNI	999999	57 100 125	±60 mV…±500 V ±0,1 A…±5 A 1…4 inputs ±2 V/±5 V/±10 V/±40 V ±5 mA/±20 mA/4…20 mA 0,1/1/10/100 kΩΩ Pt 50/100/500/1000, Ni 1000/10000, Cu 50/100 J/K/T/E/B/S/R/N/L Potentiometer > 500 Ω	1,3…40	±0,15	□□□□	□	□	☒	□	☑	☑	☑	☑	☒	☑	☒	☑	☑	□	☑	10…30 V AC/DC 80…250 V AC/DC		108
	OMD 202UQC	999999	57 100 125	TTL, PNP/NPN < 100 kHz 2x counter/frequency , IRC, timer/clock, phase, duty cycle	0,2…50 s	±0,01	□□□□	□	□	☒	□	☑	☑	☑	☑	☒	☑	☒	☑	□	☑	10…30 V AC/DC 80…250 V AC/DC		110
	OMD 202RS	999999	57 100 125	RS 232/RS 485 ASCII/MESSBUS/Modbus/ PROFIBUS			□□□□	□	□	☒	□	☑	☑	☑	☑	☒	☑	☒	☑	□	☑	10…30 V AC/DC 80…250 V AC/DC		112

□ on request ☑ standard ☒ cannot be ordered

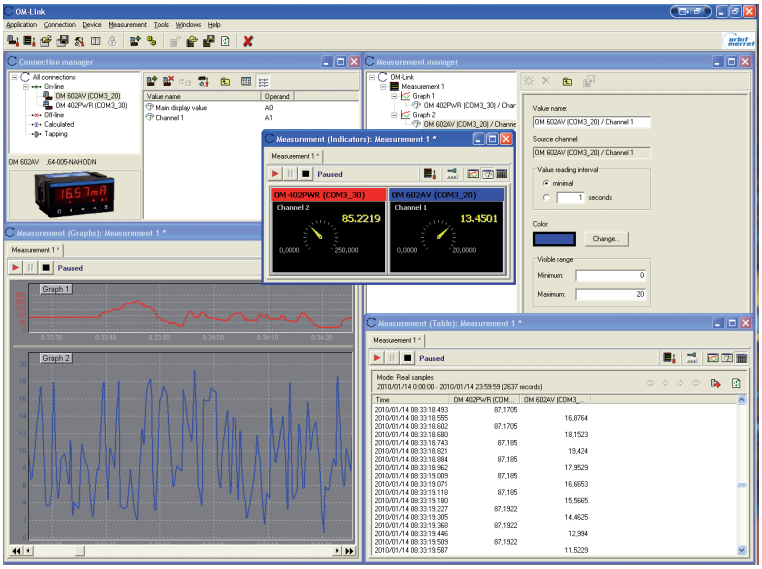
Type	Projection	Height [mm]	Input	Rate [measur./s]	Accuracy [% of FS]	Limits	Analog	Data	AO or Data	Excitation	Digital filters	Math. functions	Functions	Min/Max value	Teach-in	Linearization	Simulation	External inputs	RTC	OM Link	Power supply	Dimensions [mm]	Page	
OMX 39DC			60 mV...450 V 5 mA...5 A	continuous	±0,1	☒	☑	☒	☒	☐	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	10...30 V AC/DC 80...250 V AC/DC	22 x 98 *113*	114	Analog transmitters to DIN rail
OMX 39AC			60 mV...450 V 5 mA...5 A	continuous	±0,5	☒	☑	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	10...30 V AC/DC 80...250 V AC/DC	22 x 98 *113*	116	
OMX 39PM			0...2 V, 0...5, 0...10 V 0...20, 4...20 mA	continuous	±0,1	☒	☑	☒	☒	☐	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	10...30 V AC/DC 80...250 V AC/DC	22 x 98 *113*	118	
OMX 39W			0...5 A/0...450 V	continuous	±0,5	☒	☑	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	10...30 V AC/DC 80...250 V AC/DC	22 x 98 *113*	120	
OMX 39OHM			0,1...100 kΩ	continuous	±0,2	☒	☑	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	10...30 V AC/DC 80...250 V AC/DC	22 x 98 *113*	122	
OMX 39RTD			Pt 100/500/1000, Ni 1000 -50...850°C	continuous	±0,2	☒	☑	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	10...30 V AC/DC 80...250 V AC/DC	22 x 98 *113*	124	
OMX 39DU			0,5...100 kΩ	continuous	±0,1	☒	☑	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	10...30 V AC/DC 80...250 V AC/DC	22 x 98 *113*	126	
OMX 103UNI	3+3 LCD + descr.	3,5	2x ±30/60/1000 mV ±5/20/90/180 mA, 4...20 mA ±2/5/10/20/40/80 V 0,1/0,3/1,5/3/30 kΩ Pt 50/100/500/1 000 Ni1 000/10 000, Cu 50/100 J/K/T/E/B/S/R/N/L Potentiometer > 500 Ω	0,5...80	±0,15	☐☐ ☐☐ ☐☐	☐ ☐ ☐ ☐ ☐	☐ ☐	☒	☒	☑	☑	☑	☑	☑	☑	☒	☑	☐	☑	10...30 V AC/DC 80...250 V AC/DC	35 x 98 *113*	130	Digital transmitters to DIN rail
OMX 103PWR	3+3 LCD + descr.	3,5	0...120/250/450 V 0...1/5 A	5	0,3	☐☐ ☐☐ ☐☐	☐ ☐ ☐ ☐ ☐	☐ ☐	☒	☒	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10...30 V AC/DC 80...250 V AC/DC	35 x 98 *113*	132	
OMX 103UQC	3+3 LCD + descr.	3,5	contact, NPN/PNP, line, 5 V, 10 V, 12 V, 24 V, 30 V, counter/frequency,UP/DW, IRC, timer	0,05 s... 15 min	±0,05	☐☐ ☐☐ ☐☐	☐ ☐ ☐ ☐ ☐	☐ ☐ ☐	☒	☒	☑	☑	☑	☑	☒	☑	☒	☑	☐	☑	10...30 V AC/DC 80...250 V AC/DC	35 x 98 *113*	134	
OMX 211PM			0...20/4...20 mA 0...2/5/10 V	1...100	±0,1	☒	☑	☒	☒	☑	☑	☑	☑	☑	☑	☑	☑	☑	☒	☑	10...30 V AC/DC	12,5 x 99 *114,5*	136	
OMX 211PM			0...20/4...20 mA 0...2/5/10 V	1...100	±0,1	☒	☑ ☑	☒	☒	☑	☑	☑	☑	☑	☑	☑	☑	☑	☒	☑	10...30 V AC/DC	12,5 x 99 *114,5*	138	
OMX 311UNI			±60...1000 mV 0...20/4...20 mA/0...2/5/10 V 0...0,1/0,3/1/3/10/30/100/300 kΩ Pt 100/500/1 000 Ni1 000/10 000, Cu 50/100 NTC PTC J/K/T/E/B/S/R/N/L/XK + compensation Potenciometer > 500 Ω	1...100	±0,1	☒	☑	☒	☒	☑	☑	☑	☑	☑	☑	☑	☑	☑	☒	☑	10...30 V AC/DC	17,5 x 99 *114,5*	140	
OMX 312UNI			±60...1000 mV 0...20/4...20 mA/0...2/5/10 V 0...0,1/0,3/1/3/10/30/100/300 kΩ Pt 100/500/1 000 Ni1 000/10 000, Cu 50/100 NTC PTC J/K/T/E/B/S/R/N/L/XK + compensation Potenciometer > 500 Ω	1...100	±0,1	☒	☑ ☑	☒	☒	☑	☑	☑	☑	☑	☑	☑	☑	☑	☒	☑	10...30 V AC/DC	17,5 x 99 *114,5*	142	
OMX 333DC			±25/±50/±100/±200/±400 V ±0,5/±1/±5 A	0,5...100	±0,15	☐☐	☒	☒	☐	☐	☑	☑	☑	☑	☒	☑	☒	☑	☒	☑	10...30 V AC/DC	25 x 79 *90,5*	144	
OMX 333PWR			0...10/120/250/450 V 0...60/150/300 mV, 1/2,5/5 A	0,5...5	±0,3	☐☐	☒	☒	☐	☒	☑	☑	☑	☑	☒	☑	☒	☑	☒	☑	10...30 V AC/DC	25 x 79 *90,5*	146	
OMX 333iUNI			±60...1000 mV 0...20/4...20 mA/0...2/5/10 V 0...0,1/0,3/1/3/10/30/100/300 kΩ Pt 100/500/1 000 Ni1 000/10 000, Cu 50/100 NTC PTC J/K/T/E/B/S/R/N/L/WK + compensation Potenciometer > 500 Ω	0,5...100	±0,15	☐☐	☒	☒	☐	☑	☑	☑	☑	☑	☑	☑	☑	☑	☒	☑	10...30 V AC/DC	25 x 79 *90,5*	148	
OMX 333UQC			TTL, PNP/NPN, 0,1 Hz...50 kHz, < 30/150/300 V	0,1...50 s	±0,1	☐☐	☒	☒	☐	☐	☑	☑	☑	☑	☒	☑	☒	☑	☒	☑	10...30 V AC/DC	25 x 79 *90,5*	150	
OMX 380iPM			0...10 V 0...20/4...20 mA	100...7200	±0,01 ±0,03	☒	☒	☒	☐	☑	☑	☑	☑	☑	☑	☑	☑	☑	☒	☑	18...30 VDC 10...30 VDC	25 x 79 *90,5*	152	
OMX 380iDU			Potentiometer > 500 Ω	100...7200	±0,01	☒	☒	☒	☐	☒	☑	☑	☑	☑	☑	☑	☑	☑	☒	☑	18...30 VDC 10...30 VDC	25 x 79 *90,5*	154	
OMX 380iT			1...4/2...8/4...16 mV/V	100...7200	±0,02	☒	☒	☒	☐	☑	☑	☑	☑	☑	☑	☑	☑	☑	☒	☑	18...30 VDC 10...30 VDC	25 x 79 *90,5*	156	
OMX Profibus			PROFIBUS DP			☒	☒	☑	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☑	10...30 V AC/DC 80...250 V AC/DC	22 x 98 *113*	158	Transmitter PROFIBUS
OMP 38			Output 12/15/24 VDC		±0,2	☒	☒	☒	☑	☒	☒	☒	☑	☒	☒	☒	☒	☒	☒	☒	80...250 V AC/DC	22 x 98 *113*	160	Stabilized sources to DIN rail
OMP 100			Output 5/12/15 VDC, 96 W		±0,2	☒	☒	☒	☑	☒	☒	☒	☑	☒	☒	☒	☒	☒	☒	☒	230 VAC	35 x 98 *113*	162	
OMA 10S			4x 10 positions max. 30 VDC/100 mA			☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒		96 x 48 *120*	164	Measur. sites switch
OM Link-USB II			USB OM Link			☒	☒	☑	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	5 V from USB	50 x 24	166	Accessories
OM USB-RS II			USB > RS 232/485			☒	☒	☑	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	5 V from USB	50 x 24	168	
OM USB-ISOI			USB <> USB			☒	☒	☑	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	5 V from USB	50 x 24	170	
OMT 01			USB < Relay			☑	☒	☑	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☑	☒	5 V from USB	50 x 24	172	

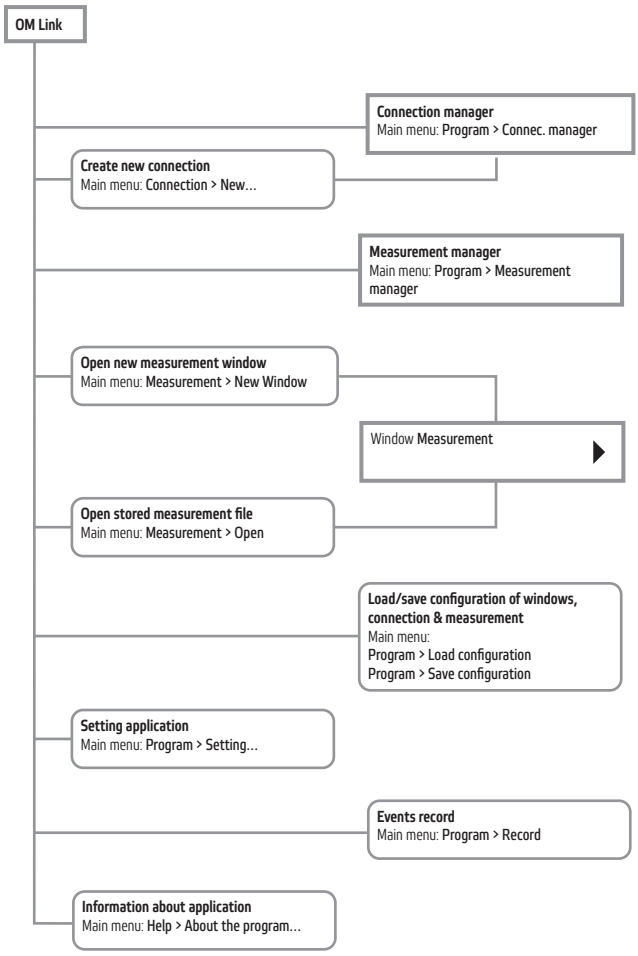
☐ on request ☑ standard ☒ cannot be ordered

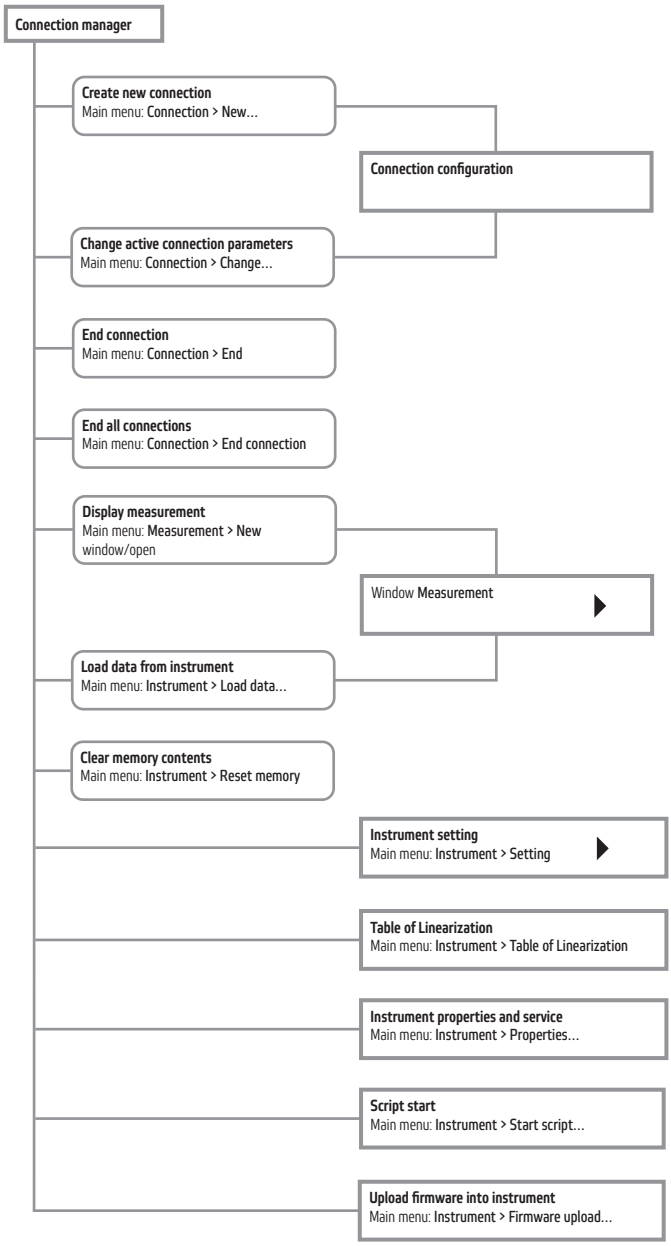
OM Link

The program OM Link is designed for easy configuration, operation, firm- ware upgrade of instruments and trasmitterss and for visualization of the measuring process. The new ORBIT MERRET instruments include the OM Link interface in their standard features. To connect to PC an OML cable is required (version USB or RS232).

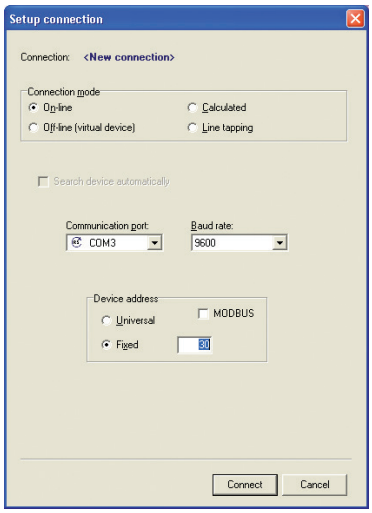
The program may be used for configuration (1 instrument) or data collection via RS 232 and RS 485 line, more suitable for on-line connection during operation.







CONNECTION MANAGER



Connection manager facilitates creating and cancelling connecti- ons, provides their list classified as per Type, noting the basic pa- rameters and measureable values (channels), and serves as home lo- cation for starting measurements, configuring the OM instruments, projecting their properties etc.

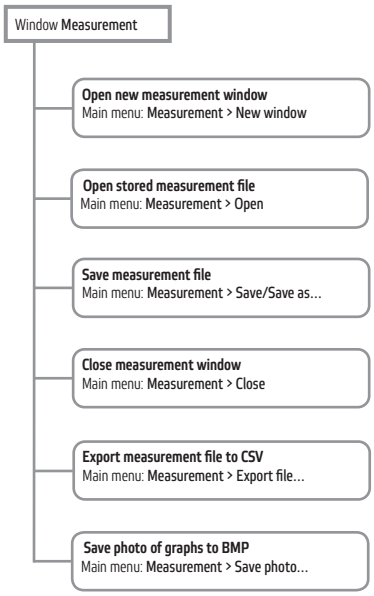
Connection is the key entity of the OM Link application - it represents physical or virtual connection with an OM device and is the basic sub- ject of many application functions.

Connection modes:

- On-line, represents a physical connection to an OM device.
- Off-line, serves for projection of instrument menu and its configuration for later use in the on-line mode.
- Mathematic, represents a mathematical operation with measured data acquired from other connections (on-line)
- Line tapping, serves to analyse communication in progress among autono- mous mesuring systems

MEASUREMENT MANAGER

Measurement manager facilitates creating and cancelling measurement files, graphs and individual data, provides their structured overview and enables modification of graph and value parameters.



WINDOW MEASUREMENT

Window Measurement provides view of historic and current process of measuring certain quantities and their groups. The window offers three possible modes of viewing the measured data:

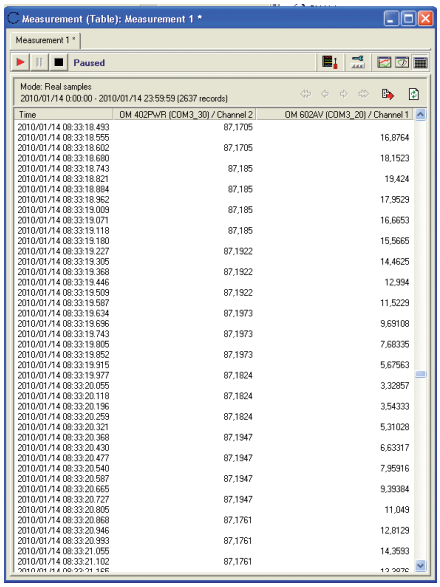
1) graphs — they reflect the historic course of measurement in selectable time Range.

   By means of the control panel in this mode it is possile to shift the displayed time period, modify the displayed time Range (from 1 sec up to 15 days) and set additional parameters of graph projection, (names, date on time axis).

2) Indicators — they show current values of the measured data

3) Table — depicts the history of the measuring process in table numeric format.

By means of the control panel in this mode it is possible to switch between the projection of interpolated values in particular time steps and the projection of truly taken sample values.



The graph and table modes also enable to discontinue the measurement in process and restart it again. At the same time it is also possible to specify whether upon restarting the process the measurement retains its former course (history) and the measurement is reassumed or whether it starts anew and the history is cancelled.

Values from the instrument may be added to the measurement e.g. from the Connection manager by selecting certain instrument channel from the on-line connection (or calculated connection or line tapping connection) and dragging it over to the Window Measurement. This way new values (quantities) may also be incorporated in already existing graphs (in case of graph mode), i.e. two quantities in one graph with common standard and time axis.

Structuring the quantities and graphs and changing their parameters (names, ranges, colors) may also be performed in Measurement Manager.

DEVICE SETUP

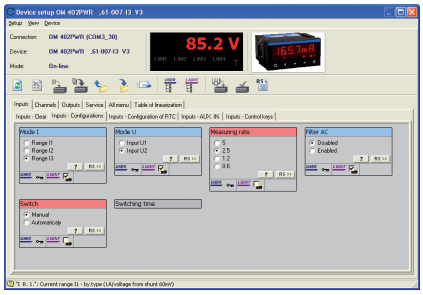
One of the main features of the OM Link program is the opportunity to set up the instruments comfortably from your computer.

- Setting the device values and parameters
- View of the complete setting menu (PROFI/LIGHT/USER)
- Individual configuration of the complete menu
- Device setup export and import

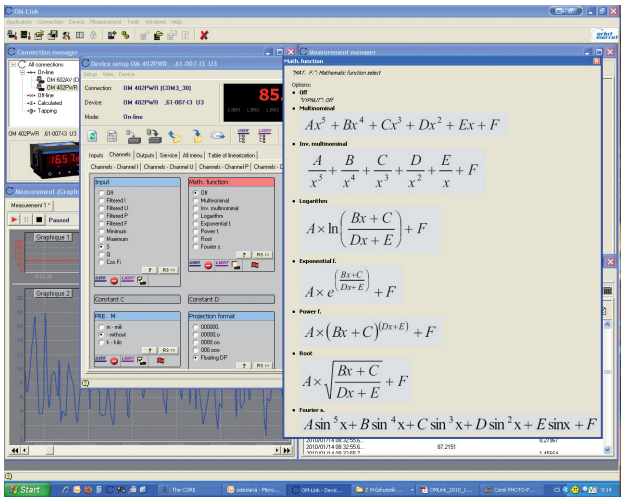
All existing items may be set, even those that are inaccessible or blocked in the instrument.

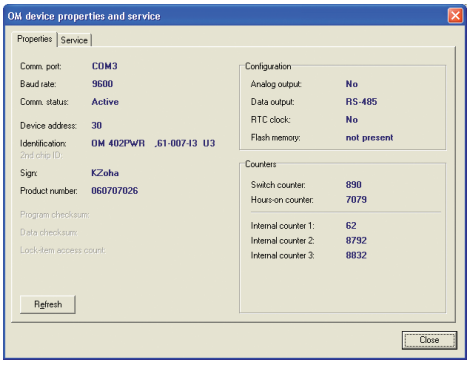
In majority of the items on the instrument menu their attribute may be set for the "User menu" (see/change/ hide) and in addition it is possible to remove or add any item from the "LIGHT menu". Client menu of the instrument may be compiled eventually this way for given application and level of service proficiency.

Each setting of the device-menu may be stored in a file and used for configuration of other instruments. An advantage is also the possibility of sending complete menu via e-mail directly to the technical support of the manufacturer.



In Properties and Service you will find complete information about the instrument





OMM 323UNI

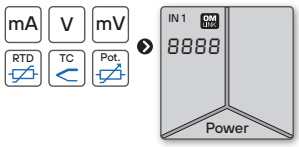
- 3.5-digit programmable projection
- Multifunction input UNI (DC, PM, RTD, T/C, DU)
- Digital filters, Tare, Linearization
- Size of DIN 48 x 24 mm
- Power supply 10...30 VDC / 24 VAC

The OMM 323 model range are inexpensive 3.5-digit panel programmable instruments designed for simple applications.

Type OMM 323UNI is a multifunction instrument with the possibility of configuration for 8 different input options, easily configurable in the instrument's menu.

The instrument is based on a single-chip microcontroller with ADC, which ensure good accuracy, stability and easy operation of the instrument.

UNIVERSAL INSTRUMENT



OPERATION

The instrument is controlled by four buttons situated under the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...19.99 V > 0...150.0
Projection: -999...9999

COMPENSATION
Wiring (RTD, OHM): automatic (3-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation
Tare: designed to reset display upon non-zero input signal

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Tare: designed to reset display upon non-zero input signal

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±30 mV	> 10 MΩ	Input 3
	±60 mV	> 10 MΩ	Input 3
	±1000 mV	> 10 MΩ	Input 3
	±20 V	1 MΩ	Input 1
	±40 V	1 MΩ	Input 1
	±80 V	1 MΩ	Input 1
	±90 mA	< 1 V	Input 4
	±180 mA	< 2 V	Input 4
PM Range	±5 mA	< 200 mV	Input 4
	±20 mA	< 200 mV	Input 4
	4...20 mA	< 200 mV	Input 4
	±2 V	1 MΩ	Input 1
	±5 V	1 MΩ	Input 1
	±10 V	1 MΩ	Input 1
OHM Range	0...100 / 300 Ω 0...1.5 / 3 / 24 / 30 kΩ		
Connection	2-, 3- and 4-wire with broken cable/sensor detection		
RTD Range	Pt 100/500/1 000, 3 850 ppm/°C		-50°...450°C
	Pt 100, 3 920 ppm/°C		-50°...450°C
	Pt 50, 3 910 ppm/°C		-200°...1100°C
	Pt 100, 3 910 ppm/°C		-200°...450°C
Connection	2-, 3- and 4-wire with broken cable/sensor detection		
Ni Range	Ni 1 000/10 000, 5 000 ppm/°C		-50°...250°C
	Ni 1 000/10 000, 6 180 ppm/°C		-200°...250°C
Connection	2-, 3- and 4-wire with broken cable/sensor detection		
Cu Range	Cu 50/100, 4 260 ppm/°C		-50°...200°C
	Cu 50/100, 4 280 ppm/°C		-200°...200°C
Connection	2-, 3- and 4-wire with broken cable/sensor detection		
T/C Range	J (Fe-CuNi)		-200°...900°C
	K (NiCr-Ni)		-200°...1 300°C
	T (Cu-CuNi)		-200°...400°C
	E (NiCr-CuNi)		-200°...690°C
	B (PtRh30-PtRh6)		300°...1 820°C
	S (PtRh10-Pt)		-50°...1 760°C
	R (Pt13Rh-Pt)		-50°...1 740°C
	N (Omegalloy)		-200°...1 300°C
	L (Fe-CuNi)		-200°...900°C
	with broken cable/sensor detection		
CJC	adjustable -20°...99°C or automatical		
DU Sensor power supply	2.5 VDC/6 mA, potentiometer resistance > 500 Ω		

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned TARE tare activation HOLD measurement paused

PROJECTION

Display	-999...9999, single color 7-segment LED
Digit height	9.1 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable or automatically controllable

INSTRUMENT SPECIFICATION

TC	50 ppm/°C	
Accuracy	±0.15 % of FS + 1 digit ±0.3 % of FS + 1 digit *the specified accuracy applies to 20 measurements/s*	T/C
Rate	0.5...20 measurement/s	
Overload	10x (t < 30 ms), 2x	
Compensation of conduct	< 30 Ω	RTD
Measurement accuracy CJC	±1.5°C	T/C
Resolution	0.1°C 1°C	RTD T/C
Functions	Tare	
Digital filters	exponential average, rounding	
Linearization	linear interpolation in 25 points *setup only via OM Link*	
OM Link	company communication interface for operation, setting and update of instruments	
Watch-dog	reset after 500 ms	
Calibration	at 25°C and 40 % r.h.	

POWER SUPPLY

Range	10...30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP} < 45 A / 1 ms, isolated
Consumption	< 1 W / 1.1 VA

MECHANIC PROPERTIES

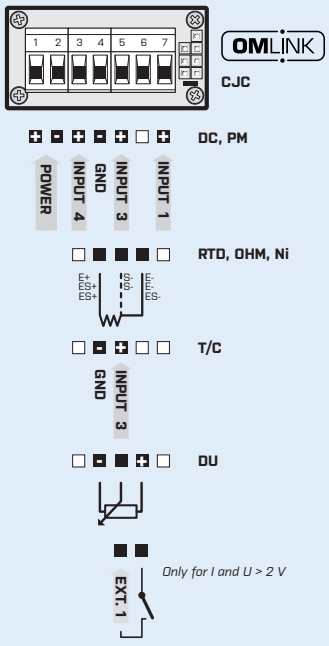
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	48 x 24 x 72 mm (w x h x d)
Panel cutout	43.5 x 21.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP42, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMM 323UNI - ☐ - ☐

Display color	red	**1**	
	green	**2**	
Specification	customized version, do not fill in		**00**
	input 1 > 0...199.9 V		**01**

Basic configuration of the instrument is indicated in bold.

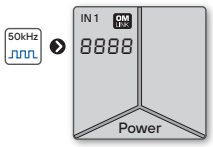
OMM 323UQC

- 4-digit programmable projection
- Counter/frequency/clock/timer
- 0.1 Hz...50 kHz; UP/DW counter, IRC
- Digital filters, Tare, Linearization, Sum
- Size of DIN 48 x 24 mm
- Power supply 10...30 VDC / 24 VAC

Type OM 323UQC is an inexpensive 4-digit universal panel counter/frequency meter/timer/clock, designed for maximum usefulness and user comfort while maintaining its fair price.

The instrument is based on a microcontroller, which ensure good accuracy, stability and easy operation of the instrument.

UNIVERSAL COUNTER



OPERATION

The instrument is controlled by four buttons situated under the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Input: NPN, PNP, on contact, IRC,
Setting: measuring mode counter/frequency/timer with adjustable calibration coefficient, time base and projection
Measuring modes: counter/frequency/UP-DW counter/frequency/counter for IRC
Measur. channels: A and B, from one measuring input two independent functions may be evaluated (counter/frequency)
Time base: 0.5/1/5/10 s
Projection: -999...9999 with fixed or floating DT format 10/24/60

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Preset: initial nonzero value that is always read after resetting the device
Current value: one-off setting of the initial value
Summation: registration of figures upon shift operation

DIGITAL FILTERS
Exponential average: from 2...100 measurements
1/Fr.: filter to convert frequency to time
Rounding: setting the projection step for display
Input filter: passes the input signal up to 5...1 000 Hz

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Resetting: counter resetting
Start/Stop: timer/clock control
Sum: projection/resetting
Projection: counter/frequency measurement

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu	
UQC Input	on contact, TTL, NPN/PNP 0...60 V, comparation levels are adjustable in the menu or automatic	
Input frequency	0.1 Hz...50 kHz 0.1 Hz...20 kHz 0.1 Hz...20 kHz 0.1 Hz...20 kHz 0.1 Hz...10 kHz	SINGLE UP/DW UP-DW QUADR., frequency QUADR., counter, duty cycle 50 %
Measuring mode	SINGLE QUADR UP/DW UP - DW TIME	counter/frequency counter/frequency for IRC sensors UP/DW counter/frequency - measures on inputs A, B (direction) and can display numbers/frequency UP - DW counter/frequency - measures on inputs A (UP), B (DW) and can display numbers/frequency Timer
Time base	0.5 / 1 / 5 / 10 s	
Multiplication constant	0.001...9999	
Dividing constant	0.001...9999	
Preset	0...9999	
Input filter	0 / 5 / 40 / 100 / 1000 Hz	
Functions	Preset Summation One time setting of the initial value	

EXTERNAL INPUT

No. of inputs	1, on contact	
Function	OFF TARE HOLD CLEAR SUMA CLR.ST. CL.SUM. COUNT.	no function assigned tare activation measurement paused display reseting sum showing counter/timer reset and preset sum reset switching counter/frequency display

PROJECTION

Display	-999...9999, single color 7-segment LED 99.59 hours / minutes 23.59 hours / minutes 59.59 minutes / seconds 99.59 minutes / seconds	 TIME TIME TIME TIME
Digit height	9.1 mm	
Display color	red or green	
Decimal point	adjustable - in menu	
Brightness	adjustable or automatically controllable	

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.05 % of value + 1 digit
Overload	2x
Functions	Tare, data backup, Preset, Summation
Digital filters	exponential average, rounding
Linearization	linear interpolation in 25 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

POWER SUPPLY

Range	10...30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP} < 45 A / 1 ms, isolated
Consumption	< 1 W / 1.1 VA

MECHANIC PROPERTIES

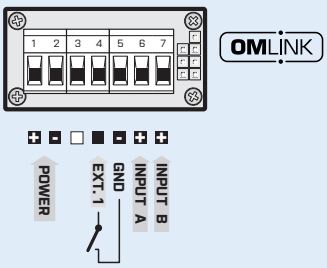
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	48 x 24 x 72 mm (w x h x d)
Panel cutout	43.5 x 21.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP42, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMM 323UQC - □□ - □

Power supply	10...30 VDC / 24 VAC	**0**		
	10...30 VDC / 24 VAC, isolated	**1**		
Display color	red		**1**	
	green		**2**	
Specification	customized version, do not fill in			**00**

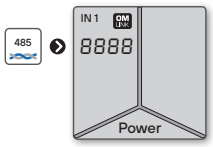
Basic configuration of the instrument is indicated in bold.

OMM 323RS

- 4-digit programmable projection
- Input RS 485
- Digital filter
- Size of DIN 48 x 24 mm
- Power supply 10...30 VDC / 24 VACC

OMM 323RS is a 4-digit data display from the serial line RS 485.
The instrument is based on a microcontroller, which ensures good accuracy, stability and easy operation of the instrument.

DATA DISPLAY RS 485



OPERATION

The instrument is controlled by four buttons situated under the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Input: RS 485
Protocol: ASCII - Master/Slave/Universal or Modbus RTU
Projection: 9999

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

TECHNICAL DATA

INPUT

No. of inputs		1
RS	Input	RS 485
	Protocol	**ASCII - Master** - the instrument controls data sending from the slave system - „COMM" can be used to select the received data - the instrument asks with the rate of 10 queries/s **ASCII - Slave** - Passive bus display where other devices or computers communicate in „MAST." mode. If the „COMM" and the requested data are correctly received, they will be displayed by the instrument **ASCII - Universal** - in dynamic menu items (Stat, Ad.Un, Sign, Data, Stop, Req.) you can build your own communication protocol format **Modbus RTU**
	Format	8 bit + no parity + 1 stop bit
	Adresse	ASCII 0...31 Modbus 1...247
	Rate	300...230 400 Baud
	Line termination	short-circuit jumper on the connector *resistance inside the instrument is 120 R*

PROJECTION

Display	-999...9999, single color 7-segment LED
Digit height	9.1 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable or automatically controllable

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 500 ms
Calibration	at 25ºC and 40 % r.h.

POWER SUPPLY

Range	10...30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP}< 45 A / 1 ms, isolated
Consumption	< 1 W / 1.1 VA

MECHANIC PROPERTIES

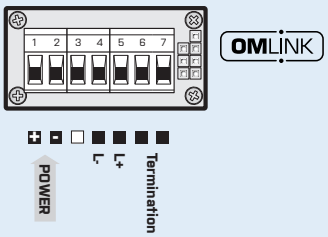
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	48 x 24 x 72 mm (w x h x d)
Panel cutout	43.5 x 21.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º...60ºC
Storage temperat.	-20º...85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP42, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMM 323RS - □□□ - □

Power supply	10...30 VDC / 24 VAC	**0**			
	10...30 VDC / 24 VAC, isolated	**1**			
Input	ASCII		**A**		
	Modbus RTU		**B**		
Display color	red			**1**	
	green			**2**	
Specification	customized version, do not fill in				**00**

Basic configuration of the instrument is indicated in bold.

OMM 335PAS

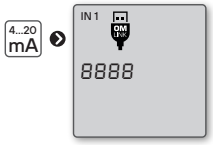
- 4-digit programmable projection
- Input 4...20 mA
- Linearization
- Size of 51.5 x 29.5 mm, Ø 22 mm
- Power supply from the loop

OMM 335PAS is a 4-digit pasive analog loop display 4...20 mA.

The instrument is based on a microcontroller with a very low power consumption with ADC, which ensures good accuracy and easy operation of the instrument.

The 22 mm cross-section of the circular instrument body allows its convenient mounting into mosaic and signalling panels.

PASSIVE LOOP DISPLAY 4...20 mA



OPERATION

The instrument is set and controlled by two buttons located on its the body.

Standard equipment is the OM Link USB interface, which, when using the control program, allows you to edit and archive all device settings and to update firmware.

All settings are stored in FLASH memory (they hold even after the power is turned off).

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION

Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 4...20mA > 0...250.0

Projection: -999...9999

FUNCTIONS

Linearization: non-linear signal is converted by a 50-point linear interpolation

TECHNICAL DATA

INPUT

No. of inputs	1
PAS Input	4...20 mA < 5.5 V

PROJECTION

Display	-999...9999, single color 7-segment LED
Digit height	14 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	fixed

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.15 % of FS + 1 digit *above accuracies apply for projection 1999*
Rate	0.1...100 measurement/s
Overload capacity	2x
Linearization	linear interpolation in 50 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

OC OUTPUT

No. of outputs	2
Type	digital, menu adjustable
Limits	-999...9999
Hysteresis	0...9999
Delay	0...99.9 s
Outputs	2x OC Power MOSFET (30 VDC/500 mA)

POWER SUPPLY

	from current loop 4...20 mA, voltage drop < 5.5 V

MECHANIC PROPERTIES

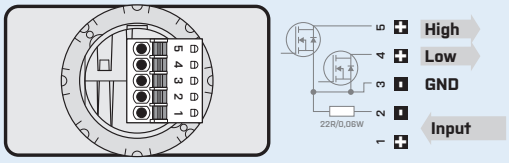
Material	PA66, incombustible UL 94 V-I, black
Dimensions	51.5 x 29.5 x 78 mm (w x h x d)
Panel cutout	Ø 22.5 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.3 mm^2
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP65, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMM 335PAS - □ - □

Display color	red	1	
	green	2	
Specification	customized version, do not fill in		00

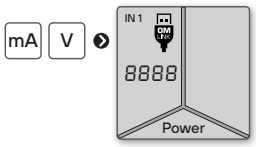
Basic configuration of the instrument is indicated in bold.

OMM 335PM

- 4-digit programmable projection
- Range ±5 / ±20 / 4...20 mA
  ±2 / ±5 / ±10 V
- Digital filters, Linearization
- Size of 51.5 x 29.5 mm, Ø 22 mm
- Power supply 10...30 VDC / 24 VAC

OMM 335PM is a 4-digit process monitor.
The instrument is based on a microcontroller with ADC, which ensures good accuracy and easy operation of the instrument.
The 22 mm cross-section of the circular instrument body allows its convenient mounting into mosaic and signalling panels.

PROCESS MONITOR



OPERATION

The instrument is set and controlled by two buttons located on its the body.

Standard equipment is the OM Link USB interface, which, when using the control program, allows you to edit and archive all device settings and to update firmware.

All settings are stored in FLASH memory (they hold even after the power is turned off).

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...10 V > 0...150.0
Projection: -999...9999

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
PAS Range	±5 mA	< 200 mV	Input I
	±20 mA	< 200 mV	Input I
	4...20 mA	< 200 mV	Input I
	±2 V	1 MΩ	Input U
	±5 V	1 MΩ	Input U
	±10 V	1 MΩ	Input U

PROJECTION

Display	-999...9999, single color 7-segment LED
Digit height	14 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.15 % of FS + 1 digit *above accuracies apply for projection 1999*
Rate	0.1...100 measurement/s
Overload capacity	10x (t < 30 ms), 2x
Linearization	linear interpolation in 50 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

POWER SUPPLY

Range	24 V DC/AC, ±10 %, PF ≥ 0,4, I_{STP} < 45 A / 1 ms, 10...30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP} < 45 A / 1 ms, isolated
Consumption	< 0.2 W / 0.2 VA

MECHANIC PROPERTIES

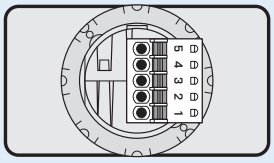
Material	PA66, incombustible UL 94 V-I, black
Dimensions	51.5 x 29.5 x 78 mm (w x h x d)
Panel cutout	Ø 22.5 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.3 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP65, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	700 VAC for 1 min. between power supply and input
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 250 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



5 GND
4 Input I
3 Input U
2
1 Power

ORDER CODE

OMM 335PM - □□ - □

Power supply	10...30 V AC/DC	**0**		
	24 V AC/DC	**2**		
Display color	red		**1**	
	green		**2**	
Specification	customized version, do not fill in			**00**

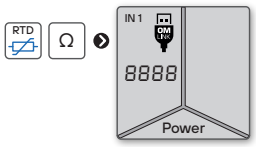
Basic configuration of the instrument is indicated in bold.

OMM 335RTD

- 4-digit projection
- Input Pt 100/500/1 000
  Ni 1 000/10 000
  0...3900 Ω
- Digital filters, Linearization
- Size of 51.5 x 29.5 mm, Ø 22 mm
- Power supply 10...30 VDC / 24 VAC

OMM 335RTD is a 4-digit thermometer for resistive Pt/Ni sensors.
The instrument is based on a microcontroller with ADC, which ensures good accuracy and easy operation of the instrument.
The 22 mm cross-section of the circular instrument body allows its convenient mounting into mosaic and signalling panels.

THERMOMETER FOR Pt/Ni SENSORS



OPERATION

The instrument is set and controlled by two buttons located on its the body.
Standard equipment is the OM Link USB interface, which, when using the control program, allows you to edit and archive all device settings and to update firmware.
All settings are stored in FLASH memory (they hold even after the power is turned off).

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Projection: -999...9999

COMPENSATION
Wiring (RTD, OHM): automatic (3-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation

TECHNICAL DATA

INPUT

No. of inputs		1 The range is adjustable in the instrument menu
OHM	Range	0...390 Ω 0...3.9 kΩ
	Connection	2- and 3-wire
RTD	Range	Pt 100/500/1 000, 3 850 ppm/°C -50°...450°C Pt 100, 3 920 ppm/°C -50°...450°C Pt 100, 3 910 ppm/°C -200°...450°C
	Connection	2- and 3-wire
Ni	Range	Ni 1 000, 5 000 ppm/°C -50°...250°C Ni 1 000, 6 180 ppm/°C -200°...250°C
	Connection	2- and 3-wire

PROJECTION

Display	-999...9999, single color 7-segment LED
Digit height	14 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.15 % of FS + 1 digit *above accuracies apply for projection 1999*
Rate	0.1...100 measurement/s
Overload capacity	10x (t < 30 ms), 2x
Compensation of conduct	< 30 Ω
Resolution	0.1°C
Linearization	linear interpolation in 50 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

POWER SUPPLY

Range	24 V DC/AC, ±10 %, PF ≥ 0,4, I_{STP} < 45 A / 1 ms, 10...30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP} < 45 A / 1 ms, isolated
Consumption	< 0.2 W / 0.2 VA

MECHANIC PROPERTIES

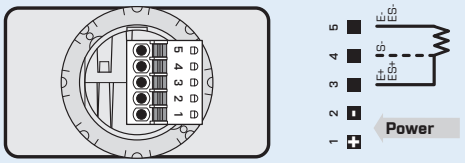
Material	PA66, incombustible UL 94 V-I, black
Dimensions	51.5 x 29.5 x 78 mm (w x h x d)
Panel cutout	Ø 22.5 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.3 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP65, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	700 VAC for 1 min. between power supply and input
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 250 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMM 335RTD - □□ - □

Power supply	10...30 V AC/DC	**0**		
	24 V AC/DC	**2**		
Display color	red		**1**	
	green		**2**	
Specification	customized version, do not fill in			**00**

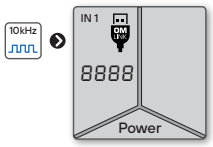
Basic configuration of the instrument is indicated in bold.

OMM 335UC

- 4-digit programmable projection
- Counter/frequency/clock/timer
- 0.1 Hz...10 kHz
- Digital filters, Linearization
- Size of 51.5 x 29.5 mm, Ø 22 mm
- Power supply 10...30 VDC / 24 VAC

Type OM 335UC is a universal 4-digit counter/frequency meter/timer/clock. The instrument is based on a microcontroller, which ensures good accuracy and easy operation of the instrument.
The 22 mm cross-section of the circular instrument body allows its convenient mounting into mosaic and signalling panels.

UNIVERSAL COUNTER



OPERATION

The instrument is set and controlled by two buttons located on its the body.

Standard equipment is the OM Link USB interface, which, when using the control program, allows you to edit and archive all device settings and to update firmware.

All settings are stored in FLASH memory (they hold even after the power is turned off).

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Input: NPN, PNP, on contact,
Setting: measuring mode counter/frequency/timer with adjustable calibration coefficient, time base and projection
Time base: 0.1...50 s
Projection: -999...9999 with fixed or floating DT format 10/24/60

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Preset: initial nonzero value that is always read after resetting the device

DIGITAL FILTERS
1/Fr.: filter to convert frequency to time
Input filter: passes the input signal up to 1...1 000 Hz

TECHNICAL DATA

INPUT

No. of inputs		1 The range is adjustable in the instrument menu
UQC	Input	on contact, TTL, NPN/PNP 0...30 V, comparation levels are adjustable in the menu
	Input frequency	0.1 Hz...10 kHz
	Measuring mode	COU. counter FREQ. frequency 1/Fr. period measurement TIME Timer
	Time base	0.1 / 0.5 / 1 / 5 / 10 / 50 s
	Multiplication constant	0.001...9999
	Dividing constant	0.001...9999
	Preset	0...9999
	Input filter	0 / 1 / 10 / 45 / 55 / 65 / 100 / 1000 Hz
	Functions	Preset

PROJECTION

Display	-999...9999, single color 7-segment LED 99.59 hours / minutes TIME 23.59 hours / minutes TIME 59.59 minutes / seconds TIME 59.99 seconds / hundredths TIME 99.59 days / hours TIME
Digit height	14 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.05 % of value + 1 digit
Linearization	linear interpolation in 50 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

POWER SUPPLY

Range	24 V DC/AC, ±10 %, PF ≥ 0,4, I_{STP} < 45 A / 1 ms, 10...30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP} < 45 A / 1 ms, isolated
Consumption	< 0.2 W / 0.2 VA

MECHANIC PROPERTIES

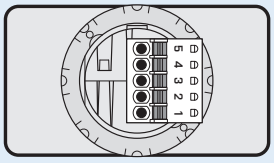
Material	PA66, incombustible UL 94 V-I, black
Dimensions	51.5 x 29.5 x 78 mm (w x h x d)
Panel cutout	Ø 22.5 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.3 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP65, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	700 VAC for 1 min. between power supply and input
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 250 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



5 GND
4 Input A
3 Reset
2
1 Power

ORDER CODE

OMM 335UC - □□ - □

Power supply	10...30 V AC/DC	**0**		
	24 V AC/DC	**2**		
Display color	red		**1**	
	green		**2**	
Specification	customized version, do not fill in			**00**

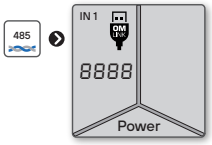
Basic configuration of the instrument is indicated in bold.

OMM 335RS

- 4-digit programmable projection
- Input RS 485
- ASCII, Modbus RTU
- Size of 51.5 x 29.5 mm, Ø 22 mm
- Power supply 10...30 VDC / 24 VAC

OMM 335RS is a 4-digit data display from the serial line RS 485.
The instrument is based on a microcontroller, which ensures good accuracy and easy operation of the instrument.
The 22 mm cross-section of the circular instrument body allows its convenient mounting into mosaic and signalling panels.

DATA DISPLAY RS 485



OPERATION

The instrument is set and controlled by two buttons located on its the body.

Standard equipment is the OM Link USB interface, which, when using the control program, allows you to edit and archive all device settings and to update firmware.

All settings are stored in FLASH memory (they hold even after the power is turned off).

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Input: RS 485
Protocol: ASCII - Master/Slave/Universal or Modbus RTU
Projection: 9999

TECHNICAL DATA

INPUT

No. of inputs		1
RS	Input	RS 485
	Protocol	**ASCII - Master** - the instrument controls data sending from the slave system - „COMM" can be used to select the received data - the instrument asks with the rate of 10 queries/s **ASCII - Slave** - Passive bus display where other devices or computers communicate in „MAST." mode. If the „COMM" and the requested data are correctly received, they will be displayed by the instrument **ASCII - Universal** - in dynamic menu items (Stat, Ad.Un, Sign, Data, Stop, Req.) you can build your own communication protocol format **Modbus RTU**
	Format	8 bit + no parity + 1 stop bit
	Adresse	ASCII 0...31 Modbus 1...247
	Rate	300...230 400 Baud
	Line termination	short-circuit jumper on the connector *resistance inside the instrument is 120 R*

PROJECTION

Display	-999...9999, single color 7-segment LED
Digit height	14 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

POWER SUPPLY

Range	24 V DC/AC, ±10 %, PF ≥ 0,4, I_{STP} < 45 A / 1 ms, 10...30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP} < 45 A / 1 ms, isolated
Consumption	< 0.2 W / 0.2 VA

MECHANIC PROPERTIES

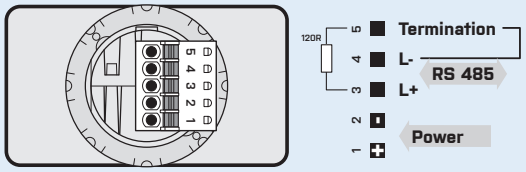
Material	PA66, incombustible UL 94 V-I, black
Dimensions	51.5 x 29.5 x 78 mm (w x h x d)
Panel cutout	Ø 22.5 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.3 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP65, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	700 VAC for 1 min. between power supply and input
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 250 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMM 335RS - ☐☐ - ☐

Power supply	10...30 V AC/DC	**0**		
	24 V AC/DC	**2**		
Display color	red		**1**	
	green		**2**	
Specification	customized version, do not fill in			**00**

Basic configuration of the instrument is indicated in bold.

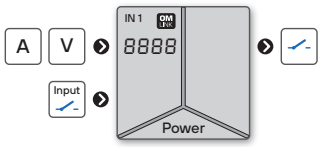
OMM 350DC

- 3.5-digit programmable projection
- Range ±1 A/±5 A
  ±20 V/±40 V/±100 V/±200 V
- Digital filters, Linearization
- Size of DIN 72 x 24 mm
- Power supply 10...30 VDC / 24 VAC

Option

Comparators

DC V-A METER



The OMM 350 model series are small 3.5-digit panel programmable instruments designed for maximum usefulness and user comfort while maintaining its fair price.

Type OMM 350DC is a multi-range DC-VA meter.

The instrument is based on a microcontroller with ADC which ensures good accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is controlled by four buttons situated on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable).

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...100 V > 0...250,0
Projection: -9999...9999

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation
Tare: designed to reset display upon non-zero input signal

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: designed to reset display upon non-zero input signal

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±1 A	> 12 mV	Input 5
	±5 A	> 60 mV	Input 5
	±20 V	> 2 MΩ	Input 4
	±40 V	> 2 MΩ	Input 3
	±100 V	> 10 MΩ	Input 1
	±200 V	> 10 MΩ	Input 1

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused TARE tare activation

PROJECTION

Display	-99999...999999, single color 7-segment LED
Digit height	9.1 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Accuracy	±0.2 % of FS + 1 digit *above accuracies apply for projection 1999*
Rate	0.5...10 measurement/s
Overload	10x (t < 30 ms), 2x *not valid for 200 V and 5 A ranges*
Functions	Tare
Digital filters	exponential average, rounding
Linearization	linear interpolation in 25 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 500 ms
Calibration	at 25ºC and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	2
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...9999
Delay	0...99.9 s
Outputs	1...2x relay with bistable contact (Form A) (48 VAC/30 VDC, 3 A)* 1...2x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Range	10...30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP}< 45 A / 1 ms, isolated
Consumption	< 2.1 W / 2.2 VA

MECHANIC PROPERTIES

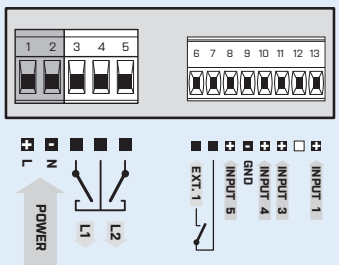
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	72 x 24 x 106 mm (w x h x d)
Panel cutout	68 x 21.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º...60ºC
Storage temperat.	-20º...85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP42, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMM 350DC - **0** [ ][ ] - [ ]

Power supply	10...30 VDC / 24 VAC, isolated	**0**			
Comparators	no		**0**		
	1x relay (Form A)		**1**		
	2x relay (Form A)		**2**		
	1x open collector		**3**		
	2x open collector		**4**		
Display color	red			**1**	
	green			**2**	
Specification	customized version, do not fill in				**00**

Basic configuration of the instrument is indicated in bold.

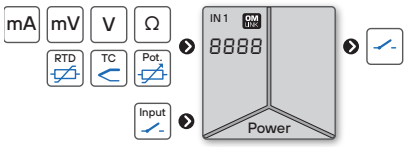
OMM 350UNI

- 3.5-digit programmable projection
- Multifunction input (DC, PM, RTD, T/C, DU)
- Digital filters, Linearization
- Size of DIN 72 x 24 mm
- Power supply 10...30 VDC / 24 VAC

Option

Comparators

UNIVERSAL INSTRUMENT



The OMM 350 model series are small 3.5-digit panel programmable instruments designed for maximum usefulness and user comfort while maintaining its fair price.

Type OMM 350UNI is a multifunction instrument with the option of configuration for 8 different input options, easily configurable in the instrument's menu.

The instrument is based on a microcontroller with ADC, which ensures good accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is controlled by four buttons situated on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable).

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...19.99 V > 0...150.0
Projection: -99999...9999

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation
Tare: designed to reset display upon non-zero input signal

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: designed to reset display upon non-zero input signal

TECHNICAL DATA

INPUT

No. of inputs		1 The range is adjustable in the instrument menu	
DC	Range	0...20 mV > 10 MΩ 0...60 mV > 10 MΩ 0...1000 mV > 10 MΩ	Input 4 Input 3 Input 1
PM	Range	0...20 mA < 200 mV 4...20 mA < 200 mV 0...2 V 10 MΩ 0...5 V 1.25 MΩ 0...10 V 1.25 MΩ	Input 5 Input 5 Input 4 Input 1 Input 1
OHM	Range	0...100 / 300 Ω 0...1.5 / 3 / 30 kΩ	
	Connection	2-, 3- and 4-wire	
RTD	Range	Pt 100/500/1 000, 3 850 ppm/°C Pt 100, 3 920 ppm/°C Pt 50, 3 910 ppm/°C Pt 100, 3 910 ppm/°C	-50°...450°C -50°...450°C -200°...1100°C -200°...450°C
	Connection	2-, 3- and 4-wire	
Ni	Range	Ni 1 000/10 000, 5 000 ppm/°C Ni 1 000/10 000, 6 180 ppm/°C	-50°...250°C -200°...250°C
	Connection	2-, 3- and 4-wire	
Cu	Range	Cu 50/100, 4 260 ppm/°C Cu 50/100, 4 280 ppm/°C	-50°...200°C -200°...200°C
	Connection	2-, 3- and 4-wire	
T/C	Range	J (Fe-CuNi) K (NiCr-Ni) T (Cu-CuNi) E (NiCr-CuNi) B (PtRh30-PtRh6) S (PtRh10-Pt) R (Pt13Rh-Pt) N (Omegalloy) L (Fe-CuNi)	-200°...900°C -200°...1 300°C -200°...400°C -200°...690°C 300°...1 820°C -50°...1 760°C -50°...1 740°C -200°...1 300°C -200°...900°C
	CJC	adjustable -20°...99°C or automatical	
DU	Sensor power supply	2.5 VDC/6 mA, potentiometer resistance > 500 Ω	

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused TARE tare activation

PROJECTION

Display	-99999...999999, single color 7-segment LED
Digit height	9.1 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C	
Accuracy	±0.2 % of FS + 1 digit ±0.3 % of FS + 1 digit ±0.6 % of FS + 1 digit *above accuracies apply for projection 1999*	T/C T/C - B
Rate	0.5...10 measurement/s	
Overload	10x (t < 30 ms), 2x	
Compensation of conduct	< 30 Ω	RTD
Measurement accuracy CJC	±1.5°C	T/C
Resolution	0.1°C 1°C	RTD T/C
Functions	Tare	
Digital filters	exponential average, rounding	
Linearization	linear interpolation in 25 points *setup only via OM Link*	
OM Link	company communication interface for operation, setting and update of instruments	
Watch-dog	reset after 500 ms	
Calibration	at 25°C and 40 % r.h.	

RELAYS / OC OUTPUT

No. of outputs	2
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...9999
Delay	0...99.9 s
Outputs	1...2x relay with bistable contact (Form A) (48 VAC/30 VDC, 3 A)* 1...2x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Range	10...30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP} < 45 A / 1 ms, isolated
Consumption	< 2.1 W / 2.2 VA

MECHANIC PROPERTIES

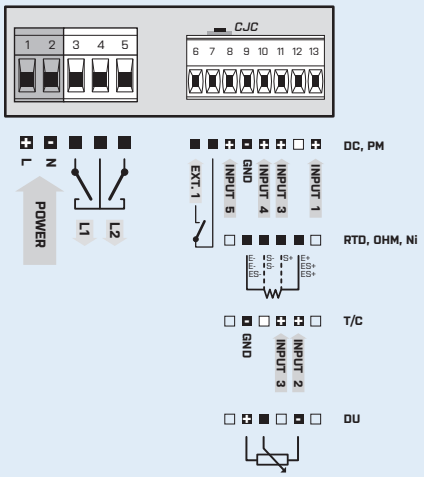
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	72 x 24 x 106 mm (w x h x d)
Panel cutout	68 x 21.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP42, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMM 350UNI - 0 [ ] [ ] [ ] - [ ]

Power supply	10...30 VDC / 24 VAC, isolated	**0**				
Measuring range	Pt 100/300 Ω		**A**			
	Pt 500/1,5 kΩ		**B**			
	Pt 1 000/Ni 1 000/3 kΩ		**C**			
	Ni 10 000/30 kΩ		**D**			
Ranges DC, PM, T/C, DU are always fitted	on request		**Z**			
Comparators	no			**0**		
	1x relay (Form A)			**1**		
	2x relay (Form A)			**2**		
	1x open collector			**3**		
	2x open collector			**4**		
Display color	red				**1**	
	green				**2**	
Specification	customized version, do not fill in					**00**

Basic configuration of the instrument is indicated in bold.

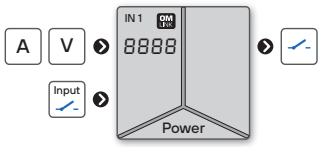
OML 343DC

- 3.5-digit programmable projection
- Range ±1 A/±5 A
  ±120 V/±240 V
- Digital filters, Tare
- Size of DIN 96 x 48 mm
- Power supply 10...30 VDC / 24 VAC

Option

Comparator

DC V-A METER



Type OML 343DC is an inexpensive programmable 3.5-digit panel direct current VA-meter designed for simple applications with an instrument box depth of only 30 mm.

The instrument is based on a microcontroller with ADC, which ensures good accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons accessible from the rear. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATOR is assigned to monitor two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: measuring range
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...1 A > 0...100.0
Projection: ±1999

FUNCTIONS
Tare: designed to reset display upon non-zero input signal

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Tare: tare activation

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±1 A ±5 A ±120 V ±240 V	> 12 mV > 60 mV > 10 MΩ > 10 MΩ	Input 5 Input 5 Input 1 Input 1

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused TARE tare activation

PROJECTION

Display	±1999, single color 7-segment LED
Digit height	14 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable or automatically controllable

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Accuracy	±0.15 % of FS + 1 digit
Rate	0.5…20 measurement/s
Overload	10x (t < 30 ms), 2x *not valid for 240 V and 5 A ranges*
Functions	Tare
Digital filters	exponential average, rounding
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 500 ms
Calibration	at 25ºC and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	1
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode READY output indicates error-free status ERROR output indicates an error condition
Limits	±1999
Hysteresis	±1999
Delay	0…99.9 s
Outputs	1x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Range	10…30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP}< 45 A / 1 ms, isolated
Consumption	< 1.8 W / 1.9 VA

MECHANIC PROPERTIES

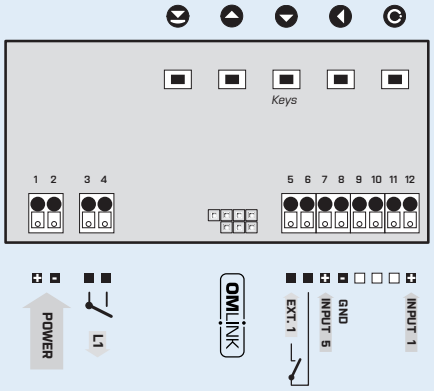
Material	PC, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 30 mm (w x h x d)
Panel cutout	92 x 44 mm (w x h)

OPERATING CONDITIONS

Connection	terminal blocks, section < 1.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º…60ºC
Storage temperat.	-20º…85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP65, front panel only with a gasket
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 300 V (PI) input, output > 300 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OML 343DC - ☐☐☐ - ☐

Comparator	no	**0**			
	1x relay (Form A)	**1**			
	1x open collector	**2**			
Display color	red		**1**		
	green		**2**		
Gasket	no			**0**	
Silicone gasket between instrument and panel	yes			**1**	
Specification	customized version, do not fill in				**00**

Basic configuration of the instrument is indicated in bold.

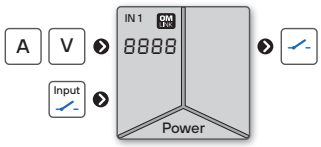
OML 343AC

- 3.5-digit programmable projection
- Range 0…1 A/5 A
  0…60 mV/300 mV
  0…24 V/50 V/120 V/250 V
- Digital filters, Tare
- Size of DIN 96 x 48 mm
- Power supply 10…30 VDC / 24 VAC

Option

Comparator

AC V-A METER



Type OML 343AC is an inexpensive programmable 3.5-digit panel alternative current VA-meter designed for simple applications with an instrument box depth of only 30 mm.

The instrument is based on a microcontroller and true RMS trasmitters, which ensures good accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons accessible from the rear. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATOR is assigned to monitor two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0…99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: measuring range
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0…60 mV > 0…100.0
Projection: ±1999

FUNCTIONS
Tare: designed to reset display upon non-zero input signal

DIGITAL FILTERS
Exponential average: from 2…100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: tare activation

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
AC Range	0...1 A 0...5 A	> 30 mV > 150 mV	Input 5 Input 5
	0...60 mV 0...300 mV	1.2 kΩ 1.2 kΩ	Input 4 Input 4
	0...24 V 0...50 V 0...120 V 0...250 V	500 kΩ 1 MΩ 500 kΩ 1 MΩ	Input 2 Input 1 Input 2 Input 1
Input frequency	0...400 Hz for amplitude up to 8 V		

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused TARE tare activation

PROJECTION

Display	±1999, single color 7-segment LED
Digit height	14 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable or automatically controllable

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.3 % of FS + 1 digit
Rate	0.5...5 measurement/s
Overload	10x (t < 30 ms), 2x *not valid for 250 V and 5 A ranges*
Functions	Tare
Digital filters	exponential average, rounding
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	1
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode READY output indicates error-free status ERROR output indicates an error condition
Limits	0...1999
Hysteresis	0...1999
Delay	0...99.9 s
Outputs	1x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Range	10...30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP}< 45 A / 1 ms, isolated
Consumption	< 1.8 W / 1.9 VA

MECHANIC PROPERTIES

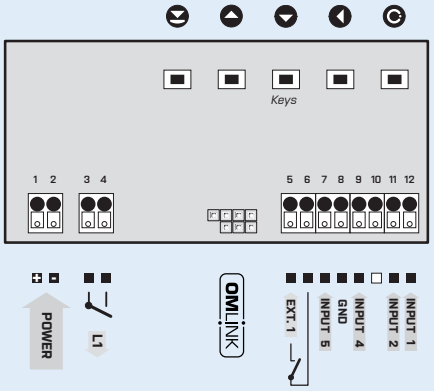
Material	PC, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 30 mm (w x h x d)
Panel cutout	92 x 44 mm (w x h)

OPERATING CONDITIONS

Connection	terminal blocks, section < 1.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP65, front panel only with a gasket
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 300 V (PI) input, output > 300 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OML 343AC - [ ][ ][ ] - [ ]

Comparator	no	**0**			
	1x relay (Form A)	**1**			
	1x open collector	**2**			
Display color	red		**1**		
	green		**2**		
Gasket	no			**0**	
Silicone gasket between instrument and panel	yes			**1**	
Specification	customized version, do not fill in				**00**

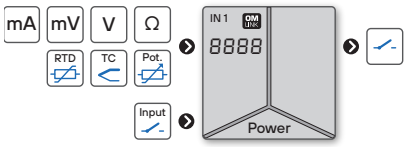
Basic configuration of the instrument is indicated in bold.

OML 343UNI

- 3.5-digit programmable projection
- Multifunction input (DC, PM, RTD, T/C, DU)
- Digital filters, Tare
- Size of DIN 96 x 48 mm
- Power supply 10...30 VDC / 24 VAC

Option
Comparator

UNIVERSAL INSTRUMENT



Type OML 343UNI is a multifunction instrument with the option of configuration for 8 different input options, easily configurable in the instrument menu. Depth of the instrument box only 30 mm.

The instrument is based on a microcontroller with ADC, which ensures good accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons accessible from the rear. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATOR is assigned to monitor two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...10 V > 0...150.0
Projection: ±1999

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Tare: designed to reset display upon non-zero input signal

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Tare: tare activation

TECHNICAL DATA

INPUT

No. of inputs		1 The range is adjustable in the instrument menu	
DC	Range	±90 mA ±180 mA ±30 mV ±60 mV ±1 000 mV ±20 V ±40 V ±80 V	< 1 V < 2 V > 10 MΩ > 10 MΩ > 10 MΩ 1 MΩ 1 MΩ 1 MΩ	Input 5 Input 5 Input 3 Input 3 Input 3 Input 1 Input 1 Input 1
PM	Range	0…20 mA 4…20 mA ±2 V ±5 V ±10 V	< 200 mV < 200 mV 1 MΩ 1 MΩ 1 MΩ	Input 5 Input 5 Input 1 Input 1 Input 1
OHM	Range	0…100 / 300 Ω 0…1.5 / 3 / 30 kΩ		
	Connection	2-, 3- and 4-wire		
RTD	Range	Pt 100/500/1 000, 3 850 ppm/°C Pt 100, 3 920 ppm/°C Pt 50, 3 910 ppm/°C Pt 100, 3 910 ppm/°C		-50°…450°C -50°…450°C -200°…1100°C -200°…450°C
	Connection	2-, 3- and 4-wire		
Ni	Range	Ni 1 000/10 000, 5 000 ppm/°C Ni 1 000/10 000, 6 180 ppm/°C		-50°…250°C -200°…250°C
	Connection	2-, 3- and 4-wire		
Cu	Range	Cu 50/100, 4 260 ppm/°C Cu 50/100, 4 280 ppm/°C		-50°…200°C -200°…200°C
	Connection	2-, 3- and 4-wire		
T/C	Range	J (Fe-CuNi) K (NiCr-Ni) T (Cu-CuNi) E (NiCr-CuNi) B (PtRh30-PtRh6) S (PtRh10-Pt) R (Pt13Rh-Pt) N (Omegalloy) L (Fe-CuNi)		-200°…900°C -200°…1 300°C -200°…400°C -200°…690°C 300°…1 820°C -50°…1 760°C -50°…1 740°C -200°…1 300°C -200°…900°C
	CJC	adjustable -20°…99°C or automatical		
DU	Sensor power supply	2.5 VDC/6 mA, potentiometer resistance > 500 Ω		

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused TARE tare activation

PROJECTION

Display	±1999, single color 7-segment LED
Digit height	14 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable or automatically controllable

INSTRUMENT SPECIFICATION

TC	50 ppm/°C	
Accuracy	±0.2 % of FS + 1 digit ±0.3 % of FS + 1 digit ±0.6 % of FS + 1 digit	 T/C T/C - B
Rate	0.5…20 measurement/s	
Overload	10x (t < 30 ms), 2x	
Compensation of conduct	< 30 Ω	RTD
Measurement accuracy CJC	±1.5°C	T/C
Resolution	0.1°C 1°C	RTD T/C
Functions	Tare	
Digital filters	exponential average, rounding	
OM Link	company communication interface for operation, setting and update of instruments	
Watch-dog	reset after 500 ms	
Calibration	at 25°C and 40 % r.h.	

RELAYS / OC OUTPUT

No. of outputs	1
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode READY output indicates error-free status ERROR output indicates an error condition
Limits	±1999
Hysteresis	±1999
Delay	0…99.9 s
Outputs	1x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Range	10…30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP}< 45 A / 1 ms, isolated
Consumption	< 1.8 W / 1.9 VA

MECHANIC PROPERTIES

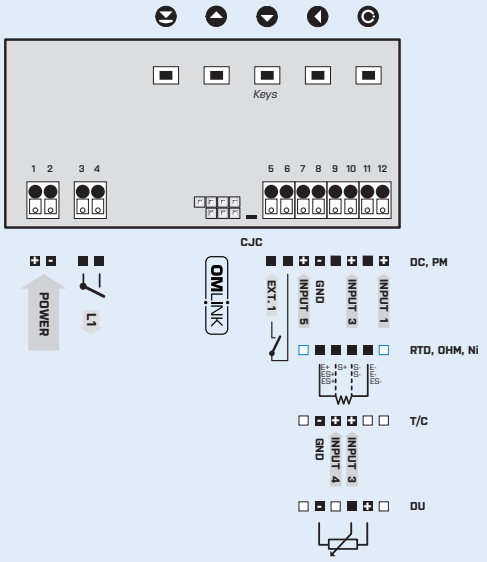
Material	PC, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 30 mm (w x h x d)
Panel cutout	92 x 44 mm (w x h)

OPERATING CONDITIONS

Connection	terminal blocks, section < 1.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°…60°C
Storage temperat.	-20°…85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP65, front panel only with a gasket
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 300 V (PI) input, output > 300 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OML 343UNI - [ ][ ][ ] - [ ]

Comparator	no	**0**			
	1x relay (Form A)	**1**			
	1x open collector	**2**			
Display color	red		**1**		
	green		**2**		
Gasket	no			**0**	
Silicone gasket between instrument and panel	yes			**1**	
Specification	customized version, do not fill in				**00**

Basic configuration of the instrument is indicated in bold.

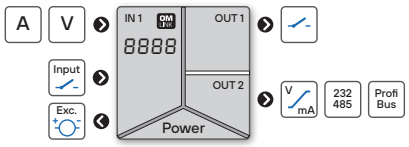
OM 352DC

- 3.5-digit programmable projection
- Range ±1 A/±5 A
  ±20 V/±40 V/±80 V/±200 V/±300 V
- Digital filters, Linearization
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Three-color display (20 mm)

DC V-A METER



The OMM 352 model series are small 3.5-digit panel programmable instruments designed for maximum usefulness and user comfort while maintaining its fair price.

Type OM 352DC is a multi-range direct current VA-meter.

The instrument is based on a microcontroller with ADC, which ensures good accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...1 A > 0...150.0
Projection: ±1999

EXCITATION
Range: 5...24 VDC/1.2 W, for feeding sensors and transmitters

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation
Tare: designed to reset display upon non-zero input signal

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: tare activation

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±1 A	> 12 mV	Input 5
	±5 A	> 60 mV	Input 5
	±20 V	2 MΩ	Input 2
	±40 V	2 MΩ	Input 2
	±100 V	10 MΩ	Input 1
	±200 V	10 MΩ	Input 1
	±300 V	10 MΩ	Input 1

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused TARE tare activation

PROJECTION

Display	±1999, single color 7-segment LED -999…9999, 3-color 7-segment LED
Digit height	14 mm 20 mm
Display color	red or green red / green / orange
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.2 % of FS + 1 digit *above accuracies apply for projection 1999*
Rate	0.5…10 measurement/s
Overload	10x (t < 30 ms), 2x *not valid for 200 / 300 V and 5 A ranges*
Functions	Tare
Digital filters	exponential average, rounding
Linearization	linear interpolation in 25 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 25 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	2
Type	digital, menu adjustable
Limits	±1999
Hysteresis	±1999
Delay	0…99.9 s
Outputs	1…2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1…2x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with resolution of max. 4 000 points, analog output corresponds with the displayed data, type and range are selectable in menu
TC	50 ppm/°C
Non-linearity	0,2 % from FS
Rate	response to change of value < 250 ms
Ranges	0…2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0…5 / 20 mA /4…20 mA, comp. < 600 Ω/12 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII)
Rate	300…230 400 Baud 9 600 Baud…12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5…24 VDC, < 1.2 W, isolated

POWER SUPPLY

Range	10…30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80…250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 6.8 W / 6.9 VA

MECHANIC PROPERTIES

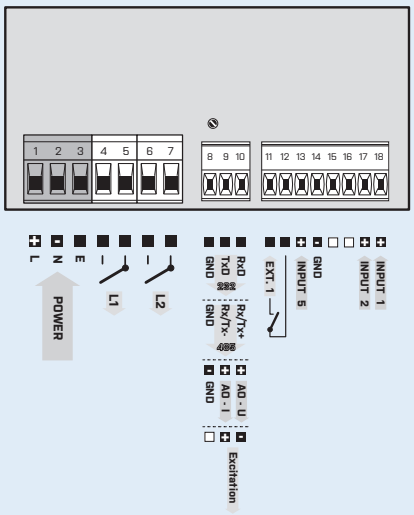
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°…60°C
Storage temperat.	-20°…85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 352DC - [ ][ ][ ][ ] - [ ]

Power supply	10…30 V AC/DC	**0**				
	80…250 V AC/DC	**1**				
Comparators	no		**0**			
	1x relay (Form A)		**1**			
	2x relay (Form A)		**2**			
	1x open collector		**3**			
	2x open collector		**4**			
Output	no			**0**		
	Excitation			**1**		
	Analog output			**2**		
	RS 232			**3**		
	RS 485			**4**		
	PROFIBUS			**6**		
Display color	red (14 mm)				**1**	
	green (14 mm)				**2**	
	red/green (20 mm)				**3**	
Specification	customized version, do not fill in					**00**
	measuring range 300 V					**01**

Basic configuration of the instrument is indicated in bold.

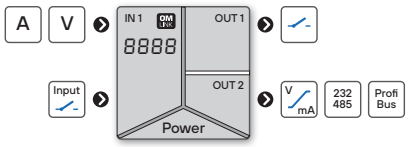
OM 352AC

- 3.5-digit programmable projection
- Range 0...1/5 A; 0...60/300 mV
  0...24/50/90/120/250/450 V
- Digital filters, Linearization, Tare
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Three-color display (20 mm)

AC V-A METER



The OMM 352 model series are small 3.5-digit panel programmable instruments designed for maximum usefulness and user comfort while maintaining its fair price.

Type OM 352AC is a multi-range alternating VA-meter.

The instrument is based on a microcontroller and true RMS trasmitters, which ensures good accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...5 A > 0...100.0
Projection: ±1999

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation
Tare: designed to reset display upon non-zero input signal

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: tare activation

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
AC Range	0...1 A 0...5 A	> 30 mV > 150 mV	Input 5 Input 5
	0...60 mV 0...300 mV	1.2 kΩ 1.2 kΩ	Input 4 Input 4
	0...24 V 0...50 V 0...90 V 0...120 V 0...250 V 0...450 V	500 kΩ 1 MΩ 1.8 MΩ 500 kΩ 1 MΩ 1.8 MΩ	Input 3 Input 2 Input 1 Input 3 Input 2 Input 1
Input frequency	0...400 Hz for amplitude up to 8 V		

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused TARE tare activation

PROJECTION

Display	±1999, single color 7-segment LED -999...9999, 3-color 7-segment LED
Digit height	14 mm 20 mm
Display color	red or green red / green / orange
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.3 % of FS + 1 digit *above accuracies apply for projection 1999*
Rate	0.5...10 measurement/s
Overload	10x (t < 30 ms), 2x *not valid for 250/450 V and 5 A ranges*
Functions	Tare
Digital filters	exponential average, rounding
Linearization	linear interpolation in 25 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 25 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	2
Type	digital, menu adjustable
Limits	0...1999
Hysteresis	0...1999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with resolution of max. 4 000 points, analog output corresponds with the displayed data, type and range are selectable in menu
TC	50 ppm/°C
Non-linearity	0,2 % from FS
Rate	response to change of value < 250 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, comp. < 600 Ω/12 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 6.8 W / 6.9 VA

MECHANIC PROPERTIES

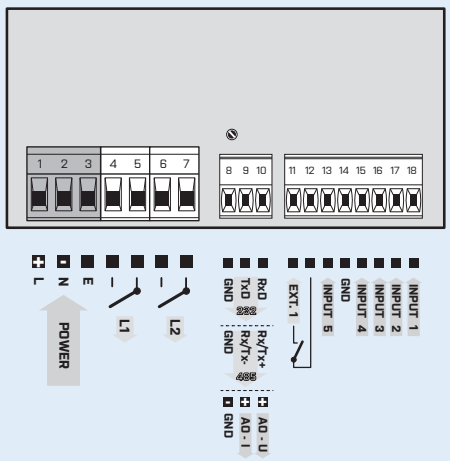
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 352AC - [ ][ ][ ][ ] - [ ]

Power supply	10...30 V AC/DC	**0**				
	80...250 V AC/DC	**1**				
Comparators	no		**0**			
	1x relay (Form A)		**1**			
	2x relay (Form A)		**2**			
	1x open collector		**3**			
	2x open collector		**4**			
Output	no			**0**		
	Analog output			**2**		
	RS 232			**3**		
	RS 485			**4**		
	PROFIBUS			**6**		
Display color	red (14 mm)				**1**	
	green (14 mm)				**2**	
	red/green (20 mm)				**3**	
Specification	customized version, do not fill in					**00**

Basic configuration of the instrument is indicated in bold.

OM 352UNI

- 3.5-digit programmable projection
- Multifunction input UNI (DC, PM, RTD, T/C, DU)
- Digital filters, Linearization
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

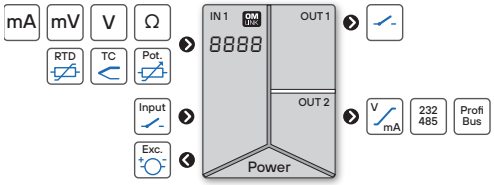
Option

Comparators ● Data output ● Analog output ● Three-color display (20 mm)

The OMM 352 model series are small 3.5-digit panel programmable instruments designed for maximum usefulness and user comfort while maintaining its fair price.

Type OML 352UNI is a multifunction instrument with the option of configuration for 8 different input options, easily configurable in the instrument menu. The instrument is based on a microcontroller with ADC, which ensures good accuracy, stability and easy operation of the instrument.

UNIVERSAL INSTRUMENT



OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...10 V > 0...150.0
Projection: ±1999

EXCITATION
Range: 5...24 VDC/1.2 W, for feeding sensors and transmitters

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation
Tare: designed to reset display upon non-zero input signal

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: tare activation

TECHNICAL DATA

INPUT

No. of inputs		1 The range is adjustable in the instrument menu	
DC	Range	0...20 mV > 10 MΩ 0...60 mV > 10 MΩ 0...1 000 mV 1.25 MΩ	Input 4 Input 3 Input 1
PM	Range	0...20 mA < 200 mV 4...20 mA < 200 mV 0...2 V 10 MΩ 0...5 V 1.25 MΩ 0...10 V 1.25 MΩ	Input 5 Input 5 Input 4 Input 1 Input 1
OHM	Range	0...100 / 300 Ω 0...1.5 / 3 / 30 kΩ	
	Connection	2-, 3- and 4-wire	
RTD	Range	Pt 100/500/1 000, 3 850 ppm/°C Pt 100, 3 920 ppm/°C Pt 50, 3 910 ppm/°C Pt 100, 3 910 ppm/°C	-50°...450°C -50°...450°C -200°...1100°C -200°...450°C
	Connection	2-, 3- and 4-wire	
Ni	Range	Ni 1 000/10 000, 5 000 ppm/°C Ni 1 000/10 000, 6 180 ppm/°C	-50°...250°C -200°...250°C
	Connection	2-, 3- and 4-wire	
Cu	Range	Cu 50/100, 4 260 ppm/°C Cu 50/100, 4 280 ppm/°C	-50°...200°C -200°...200°C
	Connection	2-, 3- and 4-wire	
T/C	Range	J (Fe-CuNi) K (NiCr-Ni) T (Cu-CuNi) E (NiCr-CuNi) B (PtRh30-PtRh6) S (PtRh10-Pt) R (Pt13Rh-Pt) N (Omegalloy) L (Fe-CuNi)	-200°...900°C -200°...1 300°C -200°...400°C -200°...690°C 300°...1 820°C -50°...1 760°C -50°...1 740°C -200°...1 300°C -200°...900°C
	CJC	adjustable -20°...99°C or automatical	
DU	Sensor power supply	2.5 VDC/6 mA, potentiometer resistance > 500 Ω	

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused TARE tare activation

PROJECTION

Display	±1999, single color 7-segment LED -999...9999, 3-color 7-segment LED
Digit height	14 mm 20 mm
Display color	red or green red / green / orange
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C	
Accuracy	±0.2 % of FS + 1 digit ±0,3 % of FS + 1 digit ±0,6 % of FS + 1 digit *above accuracies apply for projection 1999*	T/C T/C - B
Rate	0.5...10 measurement/s	
Overload	10x (t < 30 ms), 2x	
Compensation of conduct	< 30 Ω	RTD
Measurement accuracy CJC	±1.5°C	T/C
Resolution	0.1°C 1°C	RTD T/C
Functions	Tare	
Digital filters	exponential average, rounding	
Linearization	linear interpolation in 25 points *setup only via OM Link*	
OM Link	company communication interface for operation, setting and update of instruments	
Watch-dog	reset after 25 ms	
Calibration	at 25°C and 40 % r.h.	

RELAYS / OC OUTPUT

No. of outputs	2
Type	digital, menu adjustable
Limits	±1999
Hysteresis	±1999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with resolution of max. 4 000 points, analog output corresponds with the displayed data, type and range are selectable in menu
TC	50 ppm/°C
Non-linearity	0,2 % from FS
Rate	response to change of value < 250 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, comp. < 600 Ω/12 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5...24 VDC, < 1.2 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 6.8 W / 6.9 VA

MECHANIC PROPERTIES

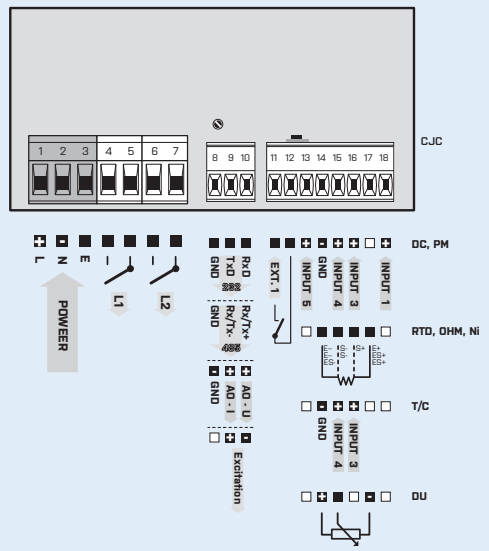
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 352UNI - [ ][ ][ ][ ][ ] - [ ]

Power supply	10...30 V AC/DC	**0**					
	80...250 V AC/DC	**1**					
Measuring range	Pt 100/300 Ω		**A**				
	Pt 500/1,5 kΩ		**B**				
	Pt 1 000/Ni 1 000/3 kΩ		**C**				
	Ni 10 000/30 kΩ		**D**				
Ranges DC, PM, T/C, DU are always fitted	on request		**Z**				
Comparators	no			**0**			
	1x relay (Form A)			**1**			
	2x relay (Form A)			**2**			
	1x open collector			**3**			
	2x open collector			**4**			
Output	Excitation				**1**		
	Analog output				**2**		
	RS 232				**3**		
	RS 485				**4**		
	PROFIBUS				**6**		
Display color	red (14 mm)					**1**	
	green (14 mm)					**2**	
	red/green (20 mm)					**3**	
Specification	customized version, do not fill in						**00**

Basic configuration of the instrument is indicated in bold.

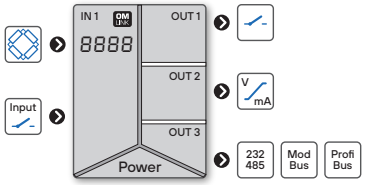
OM 402LC

- 4-digit programmable projection
- Range 1...4/2...8/4...16 mV/V
- Digital filters, Tare, Linearization
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Data record
Three-color display (20 mm)

DISPLAY FOR STRAIN GAUGES



The OM 402 model series are 4-digit panel programmable instruments designed for maximum efficiency and user comfort while maintaining their favourable price.

Type OM 402LC is an instrument for connection of strain gauge bridges.

The instrument is based on a microcontroller and multichannel 24-bit ΔΣ ADC, which secures high accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (40 records/s) of all measured values up to 8 000 records. Second mode is RTC, where Data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Measuring range: adjustable in menu
Calibration: manual - setting sensitivity and maximum measuring range of the sensor,
automatic - setting measuring range's limits and use of the reference load
Projection: -999...9999

EXCITATION
Fixed: 10 VDC, load ≥ 80 Ω

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Min./max. value: registration of min./max. value reached during measurement
Tare: designed to reset display upon non-zero input signal
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS
Floating/Exp./Arithm. average: from 2...30/100/100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min/max value

TECHNICAL DATA

INPUT

No. of inputs		1 The range is adjustable in the instrument menu
LC	Range	1...4 mV/V 2...8 mV/V 4...16 mV/V
	Connection	6-wire
	Power supply	10 VDC, load ≥ 80 Ω

EXTERNAL INPUT

No. of inputs		3, on contact
Function	OFF	no function assigned
	LOCK	control keys blocking
	HOLD	measurement paused
	PASS.	menu access blocking
	TARE	tare activation
	CL. TA.	tare resetting
	CL. M.M.	resetting min/max value
	SAVE	data recording start (FAST/RTC)
	CL. ME.	data recording reset (FAST/RTC)
	CHAN. A.	value display „Channel A"
	FIL. A.	value display „Channel A" + filter
	MAT. FN.	value display „Math. functions"

PROJECTION

Display	-99999...999999, single color 14-segment LED -999...9999, 3-color 7-segment LED
Digit height	14 mm 20 mm
Display color	red or green red / green / orange
Description	last two characters on the display may be used for description of measured quantities *only for display with LED height 14 mm*
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.2 % of FS + 1 digit *above accuracies apply for projection 9999 and 5 meas./s*
Rate	0.1...40 measurement/s
Overload	10x (t < 30 ms), 2x
Functions	offset, Min/max value, Tare, peak value, math. functions
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Linearization	linear interpolation in 50 points *setup only via OM Link*
Data record	RTC 15 ppm/°C, time-date-display value < 266k data FAST display value < 8k data
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 400 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 2...4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 9.4 W / 9.2 VA

MECHANIC PROPERTIES

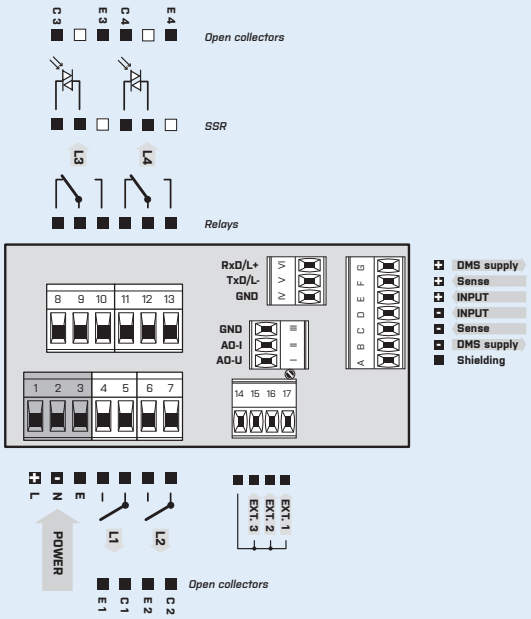
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 402LC - [ ][ ][ ][ ][ ][ ] - [ ]

Power supply	10...30 V AC/DC	**0**
	80...250 V AC/DC	**1**
Comparators	no	**0**
	1x relay (Form A)	**1**
	2x relay (Form A)	**2**
	3x relays (2x Form A + 1x Form C)	**3**
	4x relays (2x Form A + 2x Form C)	**4**
	2x open collector	**5**
	4x open collector	**6**
	2x open collector + 2x relays (Form C)	**7**
	2x relays (Form C)	**8**
	2x SSR	**9**
	2x relays, bistable	**A**
	1x relay (Form C)	**B**
Analog output	no	**0**
	yes (compensation < 600 Ω/12 V)	**1**
	yes (compensation < 1000 Ω/24 V)	**2**
Data output	no	**0**
	RS 232	**1**
	RS 485	**2**
	Modbus*	**3**
	PROFIBUS	**4**
Data record	no	**0**
	RTC	**1**
	FAST	**2**
Display color	red (14 mm)	**1**
	green (14 mm)	**2**
	red/green (20 mm)	**3**
Specification	customized version, do not fill in	**00**

Basic configuration of the instrument is indicated in bold.

* Unavailable in combination with RTC/FAST

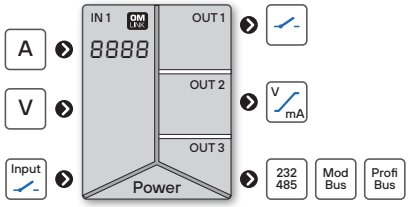
OM 402PWR

- 4-digit programmable projection
- Range 0…1/2.5/5 A; 0…60/150/300 mV
  0…10/120/250/450 V
- Digital filters, Tare, Linearization
- Size of DIN 96 x 48 mm
- Power supply 10…30 V AC/DC; 80…250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Data record
Three-color display (20 mm)

AC / DC V-A METER/NETWORK ANALYSER



The OM 402 model series are 4-digit panel programmable instruments designed for maximum efficiency and user comfort while maintaining their favourable price.

Type OM 402PWR is a universal alternating current V-A meter with the extention of functions for further network analysis. The instrument measures voltage, current, active power, frequency, and with calculation also reactive power, apparent power and cos fi.

The instrument is based on a microcontroller and true RMS trasmitters, which ensures good accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0…99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (40 records/s) of all measured values up to 8 000 records. Second mode is RTC, where Data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Measuring range: adjustable in menu
Measuring modes: voltage (V_{RMS}), current (A_{RMS}), power (W), frequency (Hz) and with calculation reactive power (Q), apparent power (S), power factor (cos fi)
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0…60 mV > 0…500.0
Projection: -999…9999

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Min./max. value: registration of min./max. value reached during measurement
Tare: designed to reset display upon non-zero input signal
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS
Floating/Exp./Arithm. average: from 2…30/100/100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: activation and tare resetting
Resetting Min/Max: resetting min/max value

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
PWR Range	0…60 mV	21 kΩ	Input 1 - I'
	0…150 mV	21 kΩ	Input 1 - I
	0…300 mV	1.2 kΩ	Input 1 - I
	0…1 A	< 150 mV	Input 1 - I
	0…2.5 A	< 150 mV	Input 1 - I
	0…5 A	< 150 mV	Input 1 - I
	0…10 V	150 kΩ	Input 2 - U
	0…120 V	930 kΩ	Input 3 - U
	0…250 V	730 kΩ	Input 2 - U
	0…450 V	930 kΩ	Input 3 - U
Input frequency	0…400 Hz for amplitude from 8 V		
Measured quantities	Voltage (V_{RMS}) Current (A_{RMS}) Active power (P) Frequency (Hz) **with calculation** Reactive power (Q) Apparent power (S) Power factor (cos fi) **DC Voltage, Current and Power can also be measured when the AC filter is disabled in the device menu**		

EXTERNAL INPUT

No. of inputs	3, on contact	
Function	OFF	no function assigned
	LOCK	control keys blocking
	HOLD	measurement paused
	PASS.	menu access blocking
	TARE I	tare activation for „Channel I"
	TARE U	tare activation for „Channel U"
	TARE P	tare activation for „Channel P"
	TARE F	tare activation for „Channel F"
	C.T. AL.	tare resetting on all channels
	C.T. ACT.	tare resetting on current channel
	CL. M.M.	resetting min/max value
	SAVE	data recording start (RTC)
	CL. ME.	data recording reset (RTC)

PROJECTION

Display	-99999…999999, single color 14-segment LED -999…9999, 3-color 7-segment LED
Digit height	14 mm 20 mm
Display color	red or green red / green / orange
Description	last two characters on the display may be used for description of measured quantities *only for display with LED height 14 mm*
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Accuracy	±0.3 % of FS + 1 digit ±0.6 % of FS + 1 digit S ±0.9 % of FS + 1 digit Q, Cos F *above accuracies apply for projection 9999 and 5 meas./s*
Rate	0.5…5 measurement/s
Overload	10x (t < 30 ms), 2x *not valid for 250 / 450 V and 5 A ranges*
Functions	offset, Min/max value, Tare, peak value, math. functions
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Linearization	linear interpolation in 50 points *setup only via OM Link*
Data record	RTC 15 ppm/ºC, time-date-display value < 266k data
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 400 ms
Calibration	at 25ºC and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999…999999
Hysteresis	0…999999
Delay	0…99.9 s
Outputs	1…2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1…2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 2…4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/ºC
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0…2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0…5 / 20 mA /4…20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300…230 400 Baud 9 600 Baud…12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5…24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10…30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80…250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 9.4 W / 9.2 VA

MECHANIC PROPERTIES

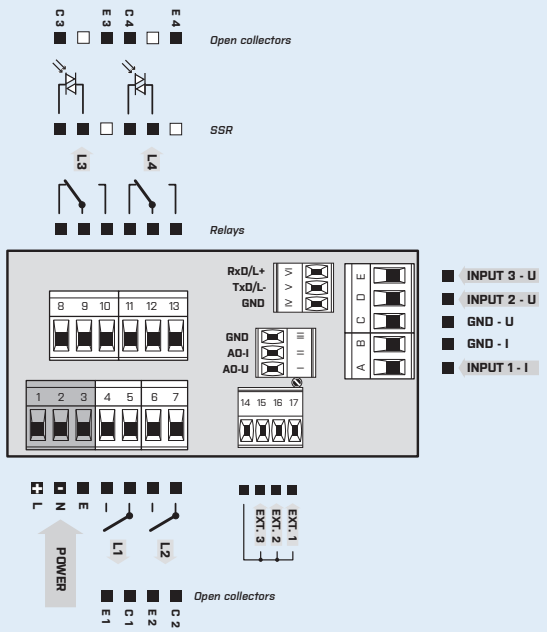
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º…60ºC
Storage temperat.	-20º…85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



* GND (input) is galvanically connected with inputs EXT. and the OM Link connector

ORDER CODE

OM 402PWR - [ ][ ][ ][ ][ ][ ][ ][ ][ ] - [ ]

Power supply	10…30 V AC/DC	**0**
	80…250 V AC/DC	**1**
Measuring range - U	0…10/120 V	**S**
	0…250/450 V	**U**
	on request	**Z**
Measuring range - I	0…60/150/300 mV	**K**
	0…1/2,5/5 A	**P**
	on request	**Z**
Comparators	no	**0**
	1x relay (Form A)	**1**
	2x relay (Form A)	**2**
	3x relays (2x Form A + 1x Form C)	**3**
	4x relays (2x Form A + 2x Form C)	**4**
	2x open collector	**5**
	4x open collector	**6**
	2x open collector + 2x relays (Form C)	**7**
	2x relays (Form C)	**8**
	2x SSR	**9**
	2x relays, bistable	**A**
	1x relay (Form C)	**B**
Analog output	no	**0**
	yes (compensation < 600 Ω/12 V)	**1**
	yes (compensation < 1000 Ω/24 V)	**2**
Data output	no	**0**
	RS 232	**1**
	RS 485	**2**
	Modbus*	**3**
	PROFIBUS	**4**
Excitation	no	**0**
	yes	**1**
Data record	no	**0**
	RTC	**1**
Display color	red (14 mm)	**1**
	green (14 mm)	**2**
	red/green (20 mm)	**3**
Specification	customized version, do not fill in	**00**

Basic configuration of the instrument is indicated in bold.

* Unavailable in combination with RTC/FAST

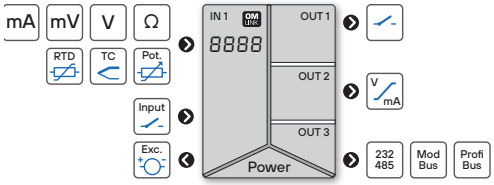
OM 402UNI

- 4-digit programmable projection
- Multifunction input (DC, PM, RTD, T/C, DU)
- Digital filters, Tare, Linearization
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Data record
Three-color display (20 mm)

UNIVERSAL INSTRUMENT



The OM 402 model series are 4-digit panel programmable instruments designed for maximum efficiency and user comfort while maintaining their favourable price.

Type OML 402UNI is a multifunction instrument with the option of configuration for 8 different input options, easily configurable in the instrument menu. By completing the input modules, larger ranges of DC voltage and current can be measured to extend the No. of inputs to 4 (applies to PM).

The instrument is based on a microcontroller and multichannel 24-bit ΔΣ ADC, which secures high accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (40 records/s) of all measured values up to 8 000 records. Second mode is RTC, where Data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Measuring range: adjustable, either fixed or with automatic change (OHM)
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...10 V > 0...850.0
Projection: -9999...9999

EXCITATION
Range: 5...24 VDC/1.2 W, for feeding sensors and transmitters

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Min./max. value: registration of min./max. value reached during measurement
Tare: designed to reset display upon non-zero input signal
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logaritmus, exponencial, root, and operations between inputs - sum, ratio

DIGITAL FILTERS
Floating/Exp./Arithm. average: from 2...30/100/100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min/max value

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±60 mV	> 100 MΩ	Input U
	±150 mV	> 100 MΩ	Input U
	±300 mV	> 100 MΩ	Input U
	±1 200 mV	> 100 MΩ	Input U
PM Range	0...20 mA	< 400 mV	Input I
	4...20 mA	< 400 mV	Input I
	±2 V	1 MΩ	Input U
	±5 V	1 MΩ	Input U
	±10 V	1 MΩ	Input U
	±40 V	1 MΩ	Input U
OHM Range	0...100 Ω 0...1 / 10 / 100 kΩ		
Connection	2-, 3- and 4-wire		
RTD Range	Pt 100/500/1 000, 3 850 ppm/ºC		-50º...450ºC
	Pt 100, 3 920 ppm/ºC		-50º...450ºC
	Pt 50, 3 910 ppm/ºC		-200º...1100ºC
	Pt 100, 3 910 ppm/ºC		-200º...450ºC
Connection	2-, 3- and 4-wire		
Ni Range	Ni 1 000/10 000, 5 000 ppm/ºC		-50º...250ºC
	Ni 1 000/10 000, 6 180 ppm/ºC		-200º...250ºC
Connection	2-, 3- and 4-wire		
Cu Range	Cu 50/100, 4 260 ppm/ºC		-50º...200ºC
	Cu 50/100, 4 280 ppm/ºC		-200º...200ºC
Connection	2-, 3- and 4-wire		
T/C Range	J (Fe-CuNi)		-200º...900ºC
	K (NiCr-Ni)		-200º...1 300ºC
	T (Cu-CuNi)		-200º...400ºC
	E (NiCr-CuNi)		-200º...690ºC
	B (PtRh30-PtRh6)		300º...1 820ºC
	S (PtRh10-Pt)		-50º...1 760ºC
	R (Pt13Rh-Pt)		-50º...1 740ºC
	N (Omegalloy)		-200º...1 300ºC
	L (Fe-CuNi)		-200º...900ºC
CJC	adjustable -20º...99ºC or automatical		
DU Sensor power supply	2 VDC/6 mA, potentiometer resistance > 500 Ω		

OPTION „A"

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±0,1 A	< 300 mV	Input I
	±0,25 A	< 300 mV	Input I
	±0,5 A	< 300 mV	Input I
	±1 A	< 30 mV	Input I
	±5 A	< 150 mV	Input I
	±100 V	20 MΩ	Input U
	±250 V	20 MΩ	Input U
	±500 V	20 MΩ	Input U

OPTION „B"

No. of inputs	3 The range is adjustable in the instrument menu		
3x PM Range	0...20 mA	< 400 mV	Input 2, 3, 4 - I
	4...20 mA	< 400 mV	Input 2, 3, 4 - I
	±2 V	1 MΩ	Input 2, 3, 4 - U
	±5 V	1 MΩ	Input 2, 3, 4 - U
	±10 V	1 MΩ	Input 2, 3, 4 - U
	±40 V	1 MΩ	Input 2, 3, 4 - U

EXTERNAL INPUT

No. of inputs	3, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused PASS. menu access blocking TARE tare activation CL. TA. tare resetting CL. M.M. resetting min/max value SAVE data recording start (FAST/RTC) CL. ME. data recording reset (FAST/RTC) CHAN. A. value display „Channel A" FIL. A. value display „Channel A" + filter MAT. FN. value display „Math. functions" SWIT. sequential or BCD channel switching

PROJECTION

Display	-99999...999999, single color 14-segment LED -999...9999, 3-color 7-segment LED
Digit height	14 mm 20 mm
Display color	red or green red / green / orange
Description	last two characters on the display may be used for description of measured quantities *only for display with LED height 14 mm*
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC	
Accuracy	±0.1 % of FS + 1 digit ±0.15% of FS + 1 digit *above accuracies apply for projection 9999 and 5 meas./s*	RTD / T/C
Rate	0.1...40 measurement/s	
Overload	10x (t < 30 ms), 2x *not valid for 250 / 450 V and 5 A ranges*	
Compensation of conduct	< 30 Ω	RTD
Measurement accuracy CJC	±1.5ºC	T/C
Resolution	0.1ºC / 1ºC	RTD / T/C
Functions	offset, Min/max value, Tare, peak value, math. functions	
Digital filters	exponential / floating / arithmetic average, rouding	
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root	
Linearization	linear interpolation in 50 points *setup only via OM Link*	
Data record	RTC 15 ppm/ºC, time-date-display value < 266k data FAST display value < 8k data	
OM Link	company communication interface for operation, setting and update of instruments	
Watch-dog	reset after 400 ms	
Calibration	at 25ºC and 40 % r.h.	

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 2...4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/ºC
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5...24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 9.4 W / 9.2 VA

MECHANIC PROPERTIES

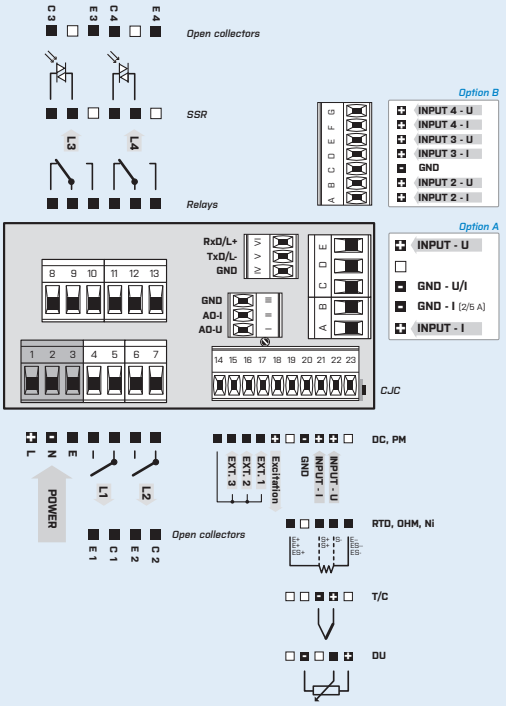
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º...60ºC
Storage temperat.	-20º...85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6
SW validation	Class B, C in compl. with IEC 62138, 61226

* PI - Primary insulation, DI - Double insulation

CONNECTION



*GND (Input + Option A) is galvanically connected with inputs EXT. and the OM Link connector
*In case of Option B we recommend to connect terminals GND (main board/addit. board) by ext. connection

ORDER CODE

OM 402UNI - [ ][ ][ ][ ][ ]1[ ][ ] - [ ]

Power supply	10...30 V AC/DC	**0**
	80...250 V AC/DC	**1**
Measuring range	standard	**0**
	option „A"	**A**
	option „B"	**B**
Comparators	no	**0**
	1x relay (Form A)	**1**
	2x relay (Form A)	**2**
	3x relays (2x Form A + 1x Form C)	**3**
	4x relays (2x Form A + 2x Form C)	**4**
	2x open collector	**5**
	4x open collector	**6**
	2x open collector + 2x relays (Form C)	**7**
	2x relays (Form C)	**8**
	2x SSR	**9**
	2x relays, bistable	**A**
	1x relay (Form C)	**B**
Analog output	no	**0**
	yes (compensation < 600 Ω/12 V)	**1**
	yes (compensation < 1000 Ω/24 V)	**2**
Data output	no	**0**
	RS 232	**1**
	RS 485	**2**
	Modbus*	**3**
	PROFIBUS	**4**
Excitation	yes	**1**
Data record	no	**0**
	RTC	**1**
	FAST	**2**
Display color	red (14 mm)	**1**
	green (14 mm)	**2**
	red/green (20 mm)	**3**
Specification	customized version, do not fill in	**00**
	SW validation - IEC 62138, IEC 61226	**VS**

Basic configuration of the instrument is indicated in bold.

* Unavailable in combination with RTC/FAST

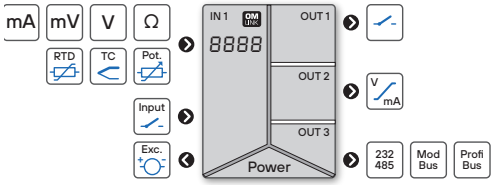
OM 402PID

- 4-digit programmable projection
- Multifunction input (DC, PM, RTD, T/C, DU)
- 4 Outputs
- RTC with measured values record
- Digital filters, Tare, Linearization
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Data output ● Analog output

UNIVERSAL PID REGULATOR



OM 402PID is a 4-digit universal panel PID regulator designed for maximum flexibility and user comfort while maintaining its favourable price. It is a multifunction instrument with the option of configuration for 8 various input options, easily configurable in the instrument menu.

In its basic configuration the OM 402PID has two regulatory relays and two relay alarm outputs. Desired value can either be constant or defined by one of 14 programmes.

The instrument is based on a microcontroller and multichannel 24-bit ΔΣ ADC, which secures high accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

option

INPUT OF DESIRED VALUE enables the regulator to be used for follow-up control. Both current and voltage inputs can be used.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...20 mA > 0...500.0
Projection: -999...9999

PID REGULATOR
Execution: parallel PID, PI or proportional
Relay output: double, two-state, PWM
Analog output: isolated, modes: heating, cooling, both
Required value: set, from analog output, from program
Number of programs/steps: 14/64
Launching: time - one-off/weekly, by external input, by buttons

RELAY OUTPUTS
Type: digital, adjustable in menu
Outputs: relays L1, L2 are alarm ones, relays L3, L4 are intended as regulatory but they can also be used as alarms

ANALOG OUTPUT
Usage: where this type of signal is requested by action devices, or it can be used for processing of the measured value by external devices
Type: isolated, programmable with a 12 bit D/A trasmitters, functions, type and range of the output are selectable in the instrument´s menu

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

DIGITAL FILTERS
Floating/Exp./Arithm. average: from 2...30/100/100 measurements
Rounding: setting the projection step for display

FUNCTIONS
Linearization: non-linear signals can be linearized by the means of a linearisat. table
Min./max. value: registration of min./max. value reached during measurement
Tare: designed to reset display upon non-zero input signal
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, root

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±60 mV	> 100 MΩ	Input U
	±150 mV	> 100 MΩ	Input U
	±300 mV	> 100 MΩ	Input U
	±1 200 mV	> 100 MΩ	Input U
PM Range	0...20 mA	< 400 mV	Input I
	4...20 mA	< 400 mV	Input I
	±2 V	1 MΩ	Input U
	±5 V	1 MΩ	Input U
	±10 V	1 MΩ	Input U
	±40 V	1 MΩ	Input U
Required value	optional extensions - by order range and setting is the same as option „PM" connection to inputs - Required value U/I"		
OHM Range	0...100 Ω 0...1 / 10 / 100 kΩ		
Connection	2-, 3- and 4-wire		
RTD Range	Pt 100/500/1 000, 3 850 ppm/°C		-50°...450°C
	Pt 100, 3 920 ppm/°C		-50°...450°C
	Pt 50, 3 910 ppm/°C		-200°...1100°C
	Pt 100, 3 910 ppm/°C		-200°...450°C
Connection	2-, 3- and 4-wire		
Ni Range	Ni 1 000/10 000, 5 000 ppm/°C		-50°...250°C
	Ni 1 000/10 000, 6 180 ppm/°C		-200°...250°C
Connection	2-, 3- and 4-wire		
Cu Range	Cu 50/100, 4 260 ppm/°C		-50°...200°C
	Cu 50/100, 4 280 ppm/°C		-200°...200°C
Connection	2-, 3- and 4-wire		
T/C Range	J (Fe-CuNi)		-200°...900°C
	K (NiCr-Ni)		-200°...1 300°C
	T (Cu-CuNi)		-200°...400°C
	E (NiCr-CuNi)		-200°...690°C
	B (PtRh30-PtRh6)		300°...1 820°C
	S (PtRh10-Pt)		-50°...1 760°C
	R (Pt13Rh-Pt)		-50°...1 740°C
	N (Omegalloy)		-200°...1 300°C
	L (Fe-CuNi)		-200°...900°C
CJC	adjustable -20°...99°C or automatical		
DU Sensor power supply	2 VDC/6 mA, potentiometer resistance > 500 Ω		

EXTERNAL INPUT

No. of inputs	3, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused PASS. menu access blocking TARE tare activation CL. TA. tare resetting CL. M.M. resetting min/max value SAVE data recording start (FAST/RTC) CL. ME. data recording reset (FAST/RTC) STOP R. regulation stop STAR. P. running regulation to the spec. value STAR. A running regulation to „Required value"

PROJECTION

Display	-999...9999, single color 14-segment LED
Digit height	14 mm
Display color	red or green
Description	2x -999...9999, green 7seg. LED, height 9 mm The upper display shows the number of the program/step, the lower display shows the desired value
Signalling LED	„*", „-", „3", „4" gelb (regulation) „1", „2", „3", „4" red (alarm) „1", „t" green (tare)
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C	
Accuracy	±0.1 % of FS + 1 digit ±0.15% of FS + 1 digit *above accuracies apply for projection 9999 and 5 meas./s*	RTD / T/C
Rate	0.1...40 measurement/s	
Overload	10x (t < 30 ms), 2x	
Compensation of conduct	< 30 Ω	RTD
Measurement accuracy CJC	±1.5°C	T/C
Resolution	0.1°C 1°C	RTD T/C
Functions	offset, Min/max value, Tare, peak value, math. functions	
Digital filters	exponential / floating / arithmetic average, rouding	
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root	
Linearization	linear interpolation in 50 points *setup only via OM Link*	
Data record	RTC 15 ppm/°C, time-date-display value < 266k data	
OM Link	company communication interface for operation, setting and update of instruments	
Watch-dog	reset after 400 ms	
Calibration	at 25°C and 40 % r.h.	

RELAYS / OC OUTPUT

No. of outputs	4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x SSR (250 VAC/ 1 A)*
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5...24 VDC, < 1.2 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 9.4 W / 9.2 VA

MECHANIC PROPERTIES

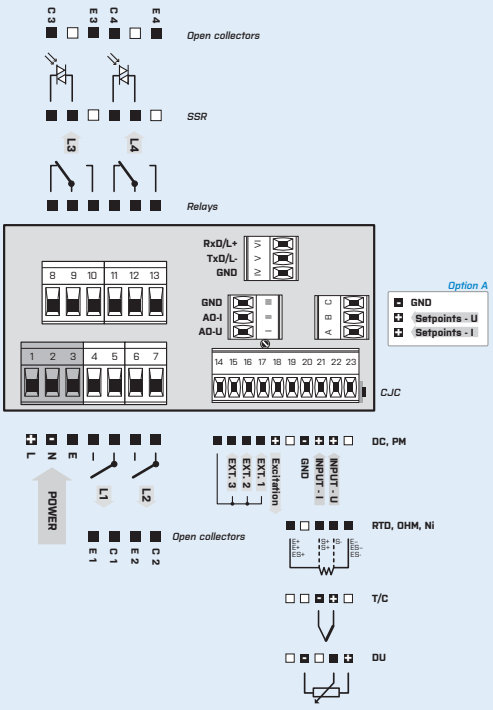
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6
SW validation	Class B, C in compl. with IEC 62138, 61226

* PI - Primary insulation, DI - Double insulation

CONNECTION



*For the „Requested value" we recommend to connect terminals GND (main board/additional board) by external connection.

ORDER CODE

OM 402PID - [ ][ ][ ][ ][ ][1] - [ ]

Power supply	10...30 V AC/DC	**0**
	80...250 V AC/DC	**1**
Input for the requested value	no	**0**
	yes	**A**
Alarm relays (outputs L3, L4)	relay	**0**
	SSR	**1**
Analog output	no	**0**
	yes (compensation < 600 Ω/12 V)	**1**
	yes (compensation < 1 000 Ω/24 V)	**2**
Data output	none	**0**
	RS 232	**1**
	RS 485	**2**
	Modbus	**3**
	PROFIBUS	**4**
Excitation	yes	**1**
Specification	customized version, do not fill in	**00**

Basic configuration of the instrument is indicated in bold.

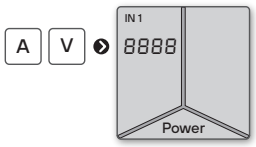
* Launch for sale has not been set.

OM 45DC

- 4.5-digit projection
- Range ±199.99 mV
  ±1,9999 V; ±19.999 V; ±199.99 V
  ±199.99 µA; ±1.9999; ±19.999; ±199.99 mA
- Size of DIN 96 x 24 mm
- Power supply 12...24 VDC; 230 VAC

Type OM 45DC is an inexpensive, low 4.5-digit direct current panel VA-meter. Thanks to its dimensions the instrument is suitable for installation into mosaic panels.

DC V-A METER



OPERATION

The instrument is designed for simple measurements without further control. Placement of the decimal point is selectable by a shorting link under the front panel.

CALIBRATION

Possible corrections of display projection for both limit values of input signal may be performed by trimmers situated under the front panel (±10 %).

TECHNICAL DATA

INPUT

No. of inputs	1 The range is fixed		
DC Range	±199.99 µA	< 500 mV	Input 1
	±1.9999 mA	< 500 mV	Input 1
	±19.999 mA	< 500 mV	Input 1
	±199.99 mA	< 200 mV	Input 1
	±1.9999 V	1 MΩ	Input 1
	±19.999 V	1 MΩ	Input 1
	±199.99 V	1 MΩ	Input 2

PROJECTION

Display	±19999, single color 7-segment LED
Digit height	14 mm
Display color	red or green
Decimal point	adjustable - by shorting link
Brightness	adjustable - by trimmers under the front panel

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.15 % of FS + 1 digit
Rate	1.2...10 measurement/s
Overload	10x (t < 30 ms), 2x *not valid for 200 V range*
Calibration	at 25°C and 40 % r.h.

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 100...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device*
Consumption	< 2.3 W / 2.5 VA

MECHANIC PROPERTIES

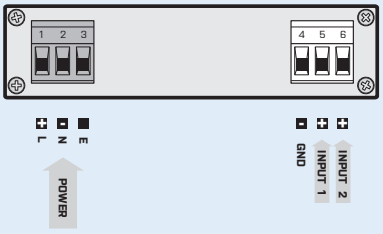
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 24 x 100 mm (w x h x d)
Panel cutout	90.5 x 21.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	0°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP40, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 600 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 45DC - ☐☐☐

Power supply	230 VAC/50 Hz	**1**		
	12...24 VDC, uninsulated	**2**		
Measuring range	±1.9999 V		**B**	
	±19.999 V		**C**	
	±199.99 V		**D**	
	±199.99 µA		**J**	
	±1.9999 mA		**K**	
	±19.999 mA		**L**	
	±199.99 mA		**M**	
	on request		**Z**	
Display color	red			**1**
	green			**2**

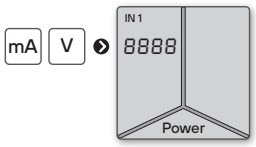
Basic configuration of the instrument is indicated in bold.

OM 45PM

- 4.5-digit projection
- Range 0...5 mA; 0...20 mA; 4...20 mA
  ±2 V; ±5 V; ± 10V
- Size of DIN 96 x 24 mm
- Power supply 12...24 VDC; 230 VAC

Type OM 45PM is an inexpensive, low 4.5-digit panel process monitor. Thanks to its dimensions the instrument is suitable for installation into mosaic panels.

PROCESS MONITOR



OPERATION

The instrument is designed for simple measurements without further control. Placement of the decimal point is selectable by a shorting link under the front panel.

CALIBRATION

Possible corrections of display projection for both limit values of input signal may be performed by trimmers situated under the front panel (±10 %).

TECHNICAL DATA

INPUT

No. of inputs	1 The range is fixed	
PM Range	0...5 mA 0...20 mA 4...20 mA ±2 V ±5 V ±10 V	< 500 mV < 500 mV < 500 mV 1 MΩ 1 MΩ 1 MΩ

PROJECTION

Display	±19999, single color 7-segment LED
Digit height	14 mm
Display color	red or green
Decimal point	adjustable - by shorting link
Brightness	adjustable - by trimmers under the front panel

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.15 % of FS + 1 digit
Rate	1.2...10 measurement/s
Overload	10x (t < 30 ms), 2x
Calibration	at 25°C and 40 % r.h.

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 100...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 2.3 W / 2.5 VA

MECHANIC PROPERTIES

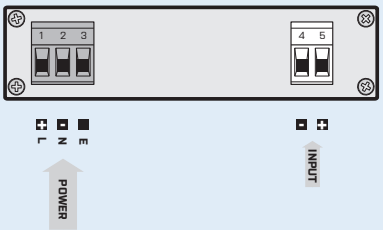
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 24 x 100 mm (w x h x d)
Panel cutout	90.5 x 21.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	0°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP40, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 600 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 45PM -

Power supply	230 VAC/50 Hz	**1**		
	12...24 VDC, uninsulated	**2**		
Measuring range	0...5 mA		**A**	
	0...20 mA		**B**	
	4...20 mA		**C**	
	±2 V		**D**	
	±5 V		**E**	
	±10 V		**F**	
	on request		**Z**	
Display color	**red**			**1**
	green			**2**

In your order kindly state the requested projection for the selected input range (e.g. input 0...20 mA > projection 0.00...100.00)!

Basic configuration of the instrument is indicated in bold.

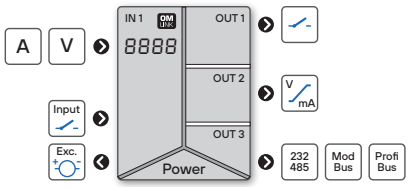
OM 502DC

- 5-digit programmable projection
- Range ±99,999 mV...±300,00 V
  ±999,99 µA... ±5,0000 A
- Mathematic functions, Digital filters, Tare
- Accuracy 0.02 %
- Rate 100 meas./s
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Data record

DC V-A METER



Type OM 502DC is a precision 5-digit programmable panel V-A meter.
The instrument is based on a microcontroller and fast 24-bit ΔΣ ADC, which secures high accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off). The measured units may be projected on the display.

OPTION

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (80 records/s) of all measured values up to 8 000 records. Second mode is RTC, where Data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...300,0 V > 0...450.0
Projection: -99999...99999

EXCITATION
Range: 5...24 VDC/1.2 W, for feeding sensors and transmitters

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Min./max. value: registration of min./max. value reached during measurement
Tare: designed to reset display upon non-zero input signal
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min./max. value

TECHNICAL DATA

INPUT

No. of inputs	1 The range is fixed		
DC Range	±999.99 µA	< 300 mV	Input I
	±9.9999 mA	< 300 mV	Input I
	±99.999 mA	< 300 mV	Input I
	±999.99 mA	< 50 mV	Input I
	±5.0000 A	< 10 mV	Input I
	±99.999 mV	1.8 MΩ	Input U
	±999.99 mV	1.8 MΩ	Input U
	±9.9999 V	1.8 MΩ	Input U
	±99.999 V	1.8 MΩ	Input U
	±300.00 V	1.8 MΩ	Input U

EXTERNAL INPUT

No. of inputs	3, on contact	
Function	OFF	no function assigned
	LOCK	control keys blocking
	HOLD	measurement paused
	PASS.	menu access blocking
	TARE	tare activation
	CL. TA.	tare resetting
	CL. M.M.	resetting min/max value
	SAVE	data recording start (FAST/RTC)
	CL. ME.	data recording reset (FAST/RTC)
	CHAN. A.	value display „Channel A"
	FIL. A.	value display „Channel A" + filter
	MAT. FN.	value display „Math. functions"

PROJECTION

Display	-99999...999999, single color 14-segment LED
Digit height	14 mm
Display color	red or green
Description	last two characters on the display may be used for description of measured quantities
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.02 % of FS + 1 digit ±0.05 % of FS + 1 digit 1 A ±0.1 % of FS + 1 digit 5 A *above accuracies apply for projection 99999 and 10 meas./s*
Rate	1...100 measurement/s
Overload	10x (t < 30 ms), 2x *not valid for 300 V and 5 A ranges*
Functions	offset, Min/max value, Tare, peak value, math. functions
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Linearization	linear interpolation in 50 points *setup only via OM Link*
Data record	RTC 15 ppm/°C, time-date-display value < 266k data FAST display value < 8k data
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 400 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 2...4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5...24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 8.0 W / 7.8 VA

MECHANIC PROPERTIES

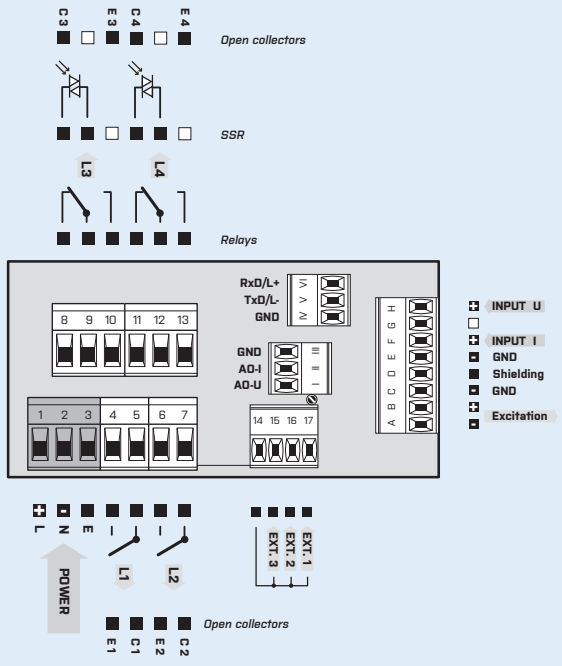
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 502DC - [ ][ ][ ][ ][ ]**1**[ ][ ] - [ ]

Power supply	10...30 V AC/DC	**0**								
	80...250 V AC/DC	**1**								
Measuring range	±99.999 mV		**A**							
	±999.99 mV		**B**							
	±9.9999 V		**C**							
	±99.999 V		**D**							
	±300.00 V		**E**							
	±999.99 µA		**K**							
	±9.9999 mA		**L**							
	±99.999 mA		**M**							
	±999.99 mA		**N**							
	±5.0000 A		**P**							
Comparators	none			**0**						
	1x relay (Form A)			**1**						
	2x relay (Form A)			**2**						
	3x relays (2x Form A + 1x Form C)			**3**						
	4x relays (2x Form A + 2x Form C)			**4**						
	2x open collector			**5**						
	4x open collector			**6**						
	2x open collector + 2x relays (Form C)			**7**						
	2x relays (Form C)			**8**						
	2x SSR			**9**						
	2x bistable relays			**A**						
	1x relay (Form C)			**B**						
Data output	none				**0**					
	RS 232				**1**					
	RS 485				**2**					
	Modbus*				**3**					
	PROFIBUS				**4**					
Analog output	no					**0**				
	yes (compensation < 600 Ω/12 V)					**1**				
	yes (compensation < 1 000 Ω/24 V)					**2**				
Excitation	yes						**1**			
Data record	no							**0**		
	RTC							**1**		
	FAST							**2**		
Display color	red								**1**	
	green								**2**	
Specification	customized version, do not fill in									**00**

Basic configuration of the instrument is indicated in bold.

* Unavailable in combination with RTC/FAST

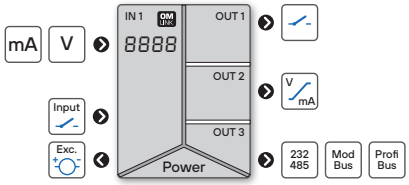
OM 502PM

- 5-digit programmable projection
- Range 0...5 mA; 0...20 mA; 4...20 mA
  ±2 V; ±5 V; ± 10V
- Mathematic functions, Digital filters, Tare
- Accuracy 0.02 %
- Rate 100 meas./s
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Data record

PROCESS MONITOR



Type OM 502PM is a precision 5-digit programmable panel process monitor. The instrument is based on a microcontroller and fast 24-bit ΔΣ ADC, which secures high accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off). The measured units may be projected on the display.

OPTION

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (40 records/s) of all measured values up to 8 000 records. Second mode is RTC, where Data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 4...20 mA > 0...8500.0
Projection: -99999...99999

EXCITATION
Range: 5...24 VDC/1.2 W, for feeding sensors and transmitters

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Min./max. value: registration of min./max. value reached during measurement
Tare: designed to reset display upon non-zero input signal
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min./max. value

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
PM Range	0…5 mA	< 300 mV	Input I
	0…20 mA	< 300 mV	Input I
	4…20 mA	< 300 mV	Input I
	±2 V	1.8 MΩ	Input U
	±5 V	1.8 MΩ	Input U
	±10 V	1.8 MΩ	Input U

EXTERNAL INPUT

No. of inputs	3, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused PASS. menu access blocking TARE tare activation CL. TA. tare resetting CL. M.M. resetting min/max value SAVE data recording start (FAST/RTC) CL. ME. data recording reset (FAST/RTC) CHAN. A. value display „Channel A" FIL. A. value display „Channel A" + filter MAT. FN. value display „Math. functions"

PROJECTION

Display	-99999…999999, single color 14-segment LED
Digit height	14 mm
Display color	red or green
Description	last two characters on the display may be used for description of measured quantities
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Accuracy	±0.02 % of FS + 1 digit *above accuracies apply for projection 99999 and 10 meas./s*
Rate	1…100 measurement/s
Overload	10x (t < 30 ms), 2x
Functions	offset, Min/max value, Tare, peak value, math. functions
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Linearization	linear interpolation in 50 points *setup only via OM Link*
Data record	RTC 15 ppm/ºC, time-date-display value < 266k data FAST display value < 8k data
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 400 ms
Calibration	at 25ºC and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999…999999
Hysteresis	0…999999
Delay	0…99.9 s
Outputs	1…2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1…2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 2…4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/ºC
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0…2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0…5 / 20 mA /4…20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300…230 400 Baud 9 600 Baud…12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5…24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10…30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80…250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 8.0 W / 7.8 VA

MECHANIC PROPERTIES

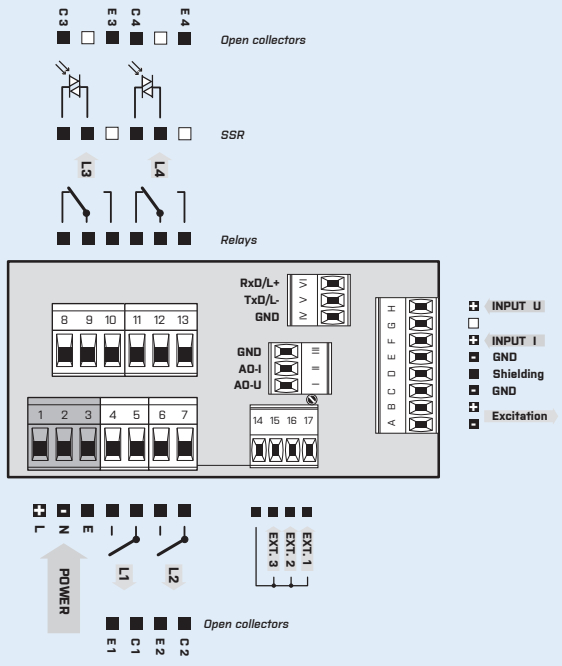
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º…60ºC
Storage temperat.	-20º…85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 502PM - [ ][ ][ ][ ]**1**[ ][ ] - [ ]

Power supply	10…30 V AC/DC	**0**							
	80…250 V AC/DC	**1**							
Comparators	none		**0**						
	1x relay (Form A)		**1**						
	2x relay (Form A)		**2**						
	3x relays (2x Form A + 1x Form C)		**3**						
	4x relays (2x Form A + 2x Form C)		**4**						
	2x open collector		**5**						
	4x open collector		**6**						
	2x open collector + 2x relays (Form C)		**7**						
	2x relays (Form C)		**8**						
	2x SSR		**9**						
	2x bistable relays		**A**						
	1x relay (Form C)		**B**						
Data output	none			**0**					
	RS 232			**1**					
	RS 485			**2**					
	Modbus*			**3**					
	PROFIBUS			**4**					
Analog output	no				**0**				
	yes (compensation < 600 Ω/12 V)				**1**				
	yes (compensation < 1 000 Ω/24 V)				**2**				
Excitation	yes					**1**			
Data record	no						**0**		
	RTC						**1**		
	FAST						**2**		
Display color	red							**1**	
	green							**2**	
Specification	customized version, do not fill in								**00**

Basic configuration of the instrument is in bold.

* Unavailable in with RTC/FAST

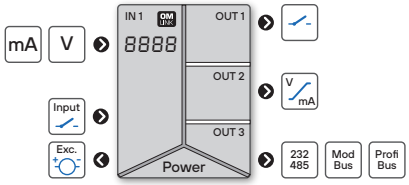
OM 502I

- 5-digit programmable projection
- Range 0...5 mA; 0...20 mA; 4...20 mA
  ±2 V; ±5 V; ± 10V
- Mathematic functions, digital filters, Tare
- Accuracy 0.02 %, Rate: 100 meas./s
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Data record

INTEGRATOR



Type OM 502I is a precision 5-digit programmable panel integrator with projection of both integrated and instantaneous values.
The instrument is based on a microcontroller and fast 24-bit ΔΣ ADC, which secures high accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off). The measured units may be projected on the display.

OPTION

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (80 records/s) of all measured values up to 8 000 records. Second mode is RTC, where Data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Setting: manual, in menu optional projection on the display can be set for both limit values of the input signal (e.g. input 4...20 mA > 0...500.0), dividing and multiplying constant, deadband or suppression of negative value
Time base: 1 s, projection of both integrated and instantaneous values
Projection: -99999...99999

EXCITATION
Range: 5...24 VDC/1.2 W, for feeding sensors and transmitters

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Min./max. value: registration of min./max. value reached during measurement
Tare: designed to reset display upon non-zero input signal
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min./max. value

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
I Range	0…5 mA	< 300 mV	Input I
	0…20 mA	< 300 mV	Input I
	4…20 mA	< 300 mV	Input I
	±2 V	1.8 MΩ	Input U
	±5 V	1.8 MΩ	Input U
	±10 V	1.8 MΩ	Input U
Time base	1 s		
Multiplication constant	1…100 000		
Dividing constant	1/10/60/100/1 000/3 600		
Deadband	signal integration up from the set value 1…100 000		
Negative value	option allows to suppress negative signal value, the device integrates only in positive values (adds)		
Automic resetting	setting of an automatic reset on display overflow		

EXTERNAL INPUT

No. of inputs	3, on contact	
Function	OFF	no function assigned
	LOCK	control keys blocking
	HOLD	measurement paused
	PASS.	menu access blocking
	TARE	tare activation
	CL. TA.	tare resetting
	CL. M.M.	resetting min/max value
	SAVE	data recording start (FAST/RTC)
	CL. ME.	data recording reset (FAST/RTC)
	CL. I.	integrated value reset
	CL.SUM.	sum reset
	CHAN. A.	value display „Channel A"
	FIL. A.	value display „Channel A" + filter
	MAT. FN.	value display „Math. functions"

PROJECTION

Display	-99999…999999, single color 14-segment LED
Digit height	14 mm
Display color	red or green
Description	last two characters on the display may be used for description of measured quantities
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Accuracy	±0.02 % of FS + 1 digit *above accuracies apply for projection 99999 and 10 meas./s*
Rate	1…100 measurement/s
Overload	10x (t < 30 ms), 2x
Functions	offset, Min/max value, Tare, peak value, math. functions
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Linearization	linear interpolation in 50 points *setup only via OM Link*
Data record	RTC 15 ppm/ºC, time-date-display value < 266k data FAST display value < 8k data
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 400 ms
Calibration	at 25ºC and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999…999999
Hysteresis	0…999999
Delay	0…99.9 s
Outputs	1…2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1…2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 2…4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/ºC
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0…2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0…5 / 20 mA /4…20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300…230 400 Baud 9 600 Baud…12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5…24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10…30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80…250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 8.0 W / 7.8 VA

MECHANIC PROPERTIES

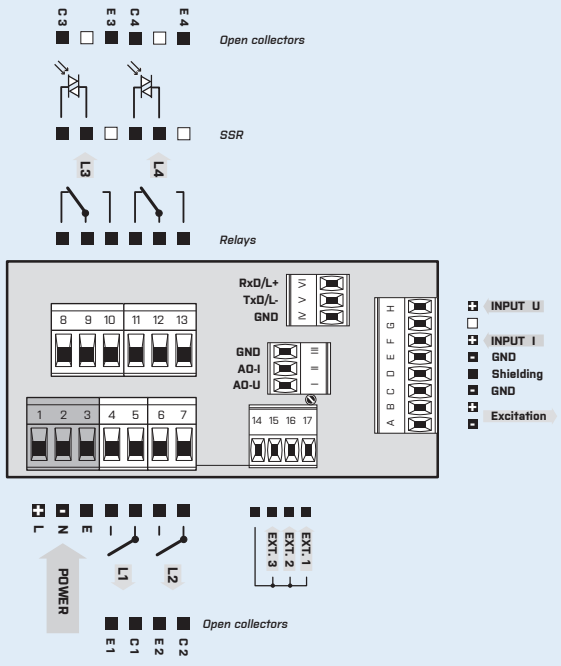
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º…60ºC
Storage temperat.	-20º…85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 502I - [ ][ ][ ][ ][1][ ][ ] - [ ]

Power supply	10…30 V AC/DC	**0**							
	80…250 V AC/DC	**1**							
Comparators	none		**0**						
	1x relay (Form A)		**1**						
	2x relay (Form A)		**2**						
	3x relays (2x Form A + 1x Form C)		**3**						
	4x relays (2x Form A + 2x Form C)		**4**						
	2x open collector		**5**						
	4x open collector		**6**						
	2x open collector + 2x relays (Form C)		**7**						
	2x relays (Form C)		**8**						
	2x SSR		**9**						
	2x bistable relays		**A**						
	1x relay (Form C)		**B**						
Data output	none			**0**					
	RS 232			**1**					
	RS 485			**2**					
	Modbus*			**3**					
	PROFIBUS			**4**					
Analog output	no				**0**				
	yes (compensation < 600 Ω/12 V)				**1**				
	yes (compensation < 1 000 Ω/24 V)				**2**				
Excitation	yes					**1**			
Data record	no						**0**		
	RTC						**1**		
	FAST						**2**		
Display color	red							**1**	
	green							**2**	
Specification	customized version, do not fill in								**00**

Basic configuration of the instrument is indicated in bold.

* Unavailable in combination with RTC/FAST

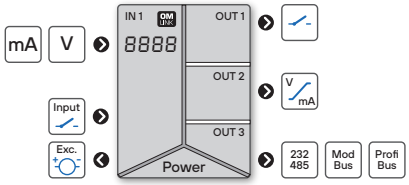
OM 502LX

- 5-digit programmable projection
- Range 0...5 mA; 0...20 mA; 4...20 mA
  ±2 V; ±5 V; ± 10V
- Linearization in 256 points/16 tables
- Mathematic functions, Digital filters, Tare
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Data record

LINEARIZER



Type OM 502LX is a precision 5-digit panel programmable display for nonlinear input signals. With the OM Link program, linear interpolation can be performed in up to 256 points and 16 tables.

The instrument is based on a microcontroller and fast 24-bit ΔΣ ADC, which secures high accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off). The measured units may be projected on the display.

OPTION

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (80 records/s) of all measured values up to 8 000 records. Second mode is RTC, where Data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...5 V > 0...250.0
Linearization: tnon-linear signals can be linearized by the means of a linearization table (up to 256 points and up to 16 tables)
Projection: -99999...99999

EXCITATION
Range: 5...24 VDC/1.2 W, for feeding sensors and transmitters

MATHEMATIC FUNCTIONS
Min./max. value: registration of min./max. value reached during measurement
Tare: designed to reset display upon non-zero input signal
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min./max. value

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
LX Range	0…5 mA	< 300 mV	Input I
	0…20 mA	< 300 mV	Input I
	4…20 mA	< 300 mV	Input I
	±2 V	1.8 MΩ	Input U
	±5 V	1.8 MΩ	Input U
	±10 V	1.8 MΩ	Input U
Automic resetting	by linear approximation in 256 points and up to 16 tables setup only via OM Link		

EXTERNAL INPUT

No. of inputs	3, on contact	
Function	OFF	no function assigned
	LOCK	control keys blocking
	HOLD	measurement paused
	PASS.	menu access blocking
	TARE	tare activation
	CL. TA.	tare resetting
	CL. M.M.	resetting min/max value
	SAVE	data recording start (FAST/RTC)
	CL. ME.	data recording reset (FAST/RTC)
	CHAN. A.	value display „Channel A"
	FIL. A.	value display „Channel A" + filter
	MAT. FN.	value display „Math. functions"

PROJECTION

Display	-99999…999999, single color 14-segment LED
Digit height	14 mm
Display color	red or green
Description	last two characters on the display may be used for description of measured quantities
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Accuracy	±0.02 % of FS + 1 digit *above accuracies apply for projection 99999 and 10 meas./s*
Rate	1…100 measurement/s
Overload	10x (t < 30 ms), 2x
Functions	offset, Min/max value, Tare, peak value, math. functions
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Data record	RTC 15 ppm/ºC, time-date-display value < 266k data FAST display value < 8k data
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 400 ms
Calibration	at 25ºC and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999…999999
Hysteresis	0…999999
Delay	0…99.9 s
Outputs	1…2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1…2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 2…4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/ºC
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0…2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0…5 / 20 mA /4…20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300…230 400 Baud 9 600 Baud…12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5…24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10…30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80…250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 8.0 W / 7.8 VA

MECHANIC PROPERTIES

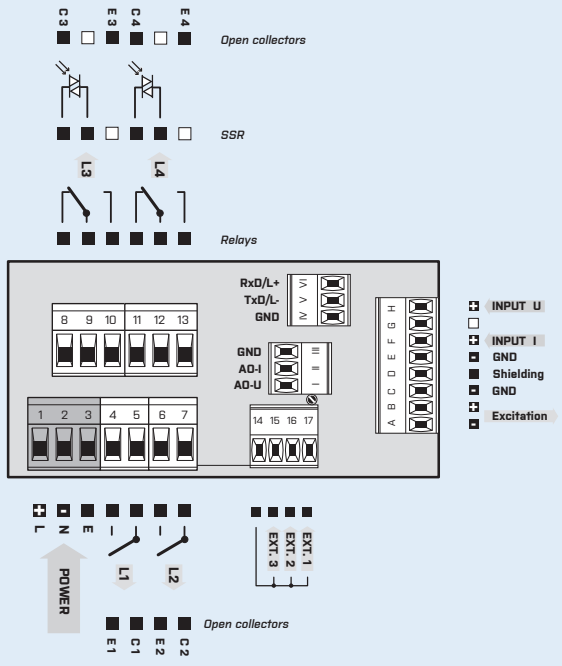
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º…60ºC
Storage temperat.	-20º…85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 502LX - [ ][ ][ ][ ]**1**[ ][ ] - [ ]

Power supply	10…30 V AC/DC	**0**							
	80…250 V AC/DC	**1**							
Comparators	none		**0**						
	1x relay (Form A)		**1**						
	2x relay (Form A)		**2**						
	3x relays (2x Form A + 1x Form C)		**3**						
	4x relays (2x Form A + 2x Form C)		**4**						
	2x open collector		**5**						
	4x open collector		**6**						
	2x open collector + 2x relays (Form C)		**7**						
	2x relays (Form C)		**8**						
	2x SSR		**9**						
	2x bistable relays		**A**						
	1x relay (Form C)		**B**						
Data output	RS 232			**1**					
	RS 485			**2**					
Analog output	no				**0**				
	yes (compensation < 600 Ω/12 V)				**1**				
	yes (compensation < 1 000 Ω/24 V)				**2**				
Excitation	yes					**1**			
Data record	no						**0**		
	RTC						**1**		
	FAST						**2**		
Display color	red							**1**	
	green							**2**	
Specification	customized version, do not fill in								**00**

Basic configuration of the instrument is indicated in bold.

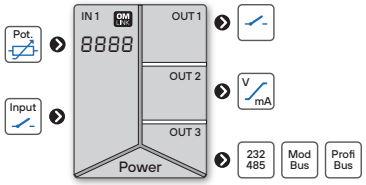
OM 502DU

- 5-digit programmable projection
- Input for potentiometer
- Mathematic functions, Digital filters, Tare
- Accuracy 0.02 %
- Rate: 100 meas./s
- Size of DIN 96 x 48 mm
- Power supply 10…30 V AC/DC; 80…250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Data record

DISPLAY UNIT FOR POTENTIOMETERS



Type OM 502DU is a precision 5-digit programmable panel display unit for linear potentiometers.

The instrument is based on a microcontroller and fast 24-bit ΔΣ ADC, which secures high accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off). The measured units may be projected on the display.

OPTION

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0…99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (80 records/s) of all measured values up to 8 000 records. Second mode is RTC, where Data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Setting: manual, in menu optional projection on the display can be set for both limit values of the potentiometer, e.g. start/end of the range > 0…500.00
Projection: -99999…99999

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Min./max. value: registration of min./max. value reached during measurement
Tare: designed to reset display upon non-zero input signal
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS
Floating average: from 2…30 measurements
Exponential average: from 2…100 measurements
Arithmetic average: from 2…100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min./max. value

TECHNICAL DATA

INPUT

No. of inputs		1 The range is adjustable in the instrument menu
DU	Range	**Setting in two steps** 1. setting numeric value for start and end of the potentiometer range 2. calibration of the start and end position of the potentiometer
	Sensor power supply	2.5 VDC/6 mA Potentiometer resistance > 500 Ω

EXTERNAL INPUT

No. of inputs		3, on contact
Function	OFF	no function assigned
	LOCK	control keys blocking
	HOLD	measurement paused
	PASS.	menu access blocking
	TARE	tare activation
	CL. TA.	tare resetting
	CL. M.M.	resetting min/max value
	SAVE	data recording start (FAST/RTC)
	CL. ME.	data recording reset (FAST/RTC)
	CHAN. A.	value display „Channel A"
	FIL. A.	value display „Channel A" + filter
	MAT. FN.	value display „Math. functions"

PROJECTION

Display	-99999...999999, single color 14-segment LED
Digit height	14 mm
Display color	red or green
Description	last two characters on the display may be used for description of measured quantities
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.02 % of FS + 1 digit *above accuracies apply for projection 99999 and 10 meas./s*
Rate	1...100 measurement/s
Overload	10x (t < 30 ms), 2x
Functions	offset, Min/max value, Tare, peak value, math. functions
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Data record	RTC 15 ppm/°C, time-date-display value < 266k data FAST display value < 8k data
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 400 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 2...4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5...24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 8.0 W / 7.8 VA

MECHANIC PROPERTIES

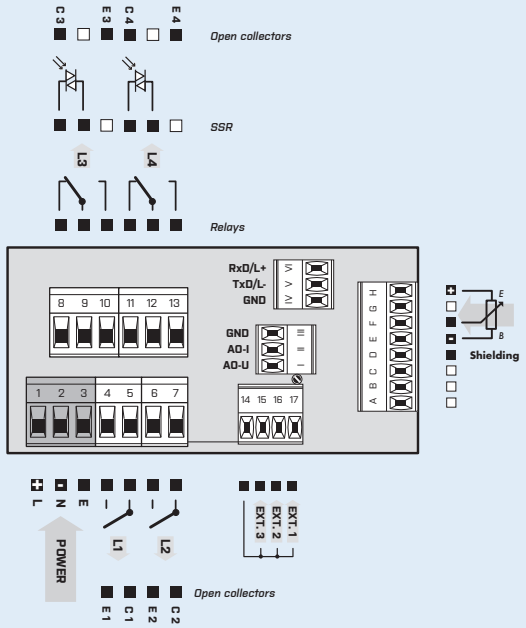
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 502DU - [ ][ ][ ][ ][ ][ ] - [ ]

Power supply	10...30 V AC/DC	**0**						
	80...250 V AC/DC	**1**						
Comparators	none		**0**					
	1x relay (Form A)		**1**					
	2x relay (Form A)		**2**					
	3x relays (2x Form A + 1x Form C)		**3**					
	4x relays (2x Form A + 2x Form C)		**4**					
	2x open collector		**5**					
	4x open collector		**6**					
	2x open collector + 2x relays (Form C)		**7**					
	2x relays (Form C)		**8**					
	2x SSR		**9**					
	2x bistable relays		**A**					
	1x relay (Form C)		**B**					
Data output	none			**0**				
	RS 232			**1**				
	RS 485			**2**				
	Modbus*			**3**				
	PROFIBUS			**4**				
Analog output	no				**0**			
	yes (compensation < 600 Ω/12 V)				**1**			
	yes (compensation < 1 000 Ω/24 V)				**2**			
Data record	no					**0**		
	RTC					**1**		
	FAST					**2**		
Display color	red						**1**	
	green						**2**	
Specification	customized version, do not fill in							**00**

Basic configuration of the instrument is indicated in bold.

* Unavailable in combination with RTC/FAST

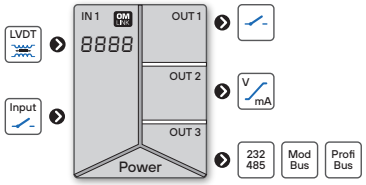
OM 502LVDT

- 5-digit programmable projection
- Input for LVDT sensor
- Mathematic functions, Digital filters, Tare
- Accuracy 0.02 %
- Rate: 100 meas./s
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Data record

DISPLAY FOR LVDT SENSORS



Type OM 502LVDT is a precision 5-digit programmable panel display for LVDT sensors.

The instrument is based on a microcontroller and LVDT sensor signal conditioner, which secures high accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off). The measured units may be projected on the display.

OPTION

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (80 records/s) of all measured values up to 8 000 records. Second mode is RTC, where Data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Setting: manual, in menu optional projection on the display can be set for both limit values of the sensor, e.g. start/end of the range > 0...500.00
Projection: -99999...99999

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Min./max. value: registration of min./max. value reached during measurement
Tare: designed to reset display upon non-zero input signal
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min./max. value

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu	
LVDT Range	**Setting in two steps** 1. setting the numerical value for the start and end of the sensor range 2. calibrating the position of the start and end of the sensor	
Sensor power supply	1 / 3 / 5 VAC with frequency 2.5 / 5 / 10 kHz	
Connection	2-, 4- or 6-wire	

EXTERNAL INPUT

No. of inputs	3, on contact	
Function	OFF	no function assigned
	LOCK	control keys blocking
	HOLD	measurement paused
	PASS.	menu access blocking
	TARE	tare activation
	CL. TA.	tare resetting
	CL. M.M.	resetting min/max value
	SAVE	data recording start (FAST/RTC)
	CL. ME.	data recording reset (FAST/RTC)
	CHAN. A.	value display „Channel A"
	FIL. A.	value display „Channel A" + filter
	MAT. FN.	value display „Math. functions"

PROJECTION

Display	-99999...999999, single color 14-segment LED
Digit height	14 mm
Display color	red or green
Description	last two characters on the display may be used for description of measured quantities
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.02 % of FS + 1 digit *above accuracies apply for projection 99999 and 10 meas./s*
Rate	1...100 measurement/s
Overload	10x (t < 30 ms), 2x
Functions	offset, Min/max value, Tare, peak value, math. functions
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Data record	RTC 15 ppm/°C, time-date-display value < 266k data FAST display value < 8k data
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 400 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 2...4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 8.0 W / 7.8 VA

MECHANIC PROPERTIES

Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

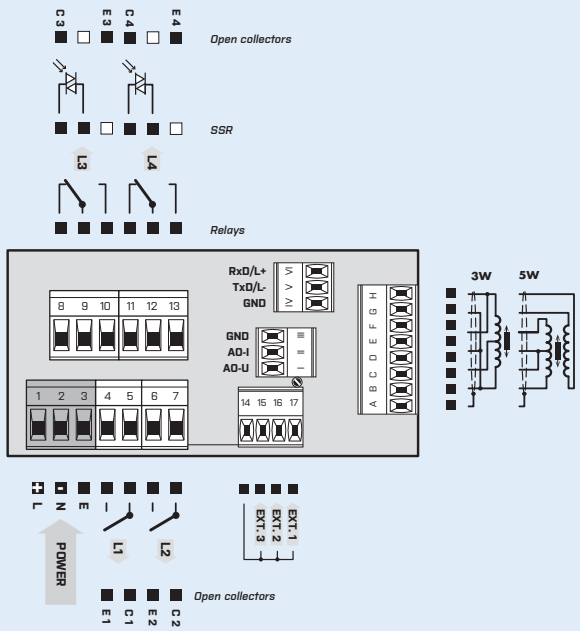
OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 502LVDT - [ ][ ][ ][ ][ ][ ] - [ ]

Power supply	10...30 V AC/DC	**0**						
	80...250 V AC/DC	**1**						
Comparators	none		**0**					
	1x relay (Form A)		**1**					
	2x relay (Form A)		**2**					
	3x relays (2x Form A + 1x Form C)		**3**					
	4x relays (2x Form A + 2x Form C)		**4**					
	2x open collector		**5**					
	4x open collector		**6**					
	2x open collector + 2x relays (Form C)		**7**					
	2x relays (Form C)		**8**					
	2x SSR		**9**					
	2x bistable relays		**A**					
	1x relay (Form C)		**B**					
Data output	none			**0**				
	RS 232			**1**				
	RS 485			**2**				
	Modbus*			**3**				
	PROFIBUS			**4**				
Analog output	no				**0**			
	yes (compensation < 600 Ω/12 V)				**1**			
	yes (compensation < 1 000 Ω/24 V)				**2**			
Data record	no					**0**		
	RTC					**1**		
	FAST					**2**		
Display color	red						**1**	
	green						**2**	
Specification	customized version, do not fill in							**00**

Basic configuration of the instrument is indicated in bold.

* Unavailable in combination with RTC/FAST

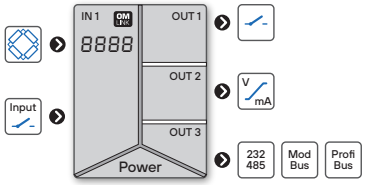
OM 502T

- 5-digit programmable projection
- Range 1...4/2...8/4...16 mV/V
- Weighing function, Digital filters, Tare
- Accuracy 0,05 %
- Rate 100 meas./s
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Data record

DISPLAY FOR STRAIN GAUGES



Type OM 502T is a precision programmable panel display for strain gauges supplemented by weighing functions.

The instrument is based on a microcontroller and fast 24-bit ΔΣ ADC, which secures high accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off). The measured units may be projected on the display.

OPTION

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (80 records/s) of all measured values up to 8 000 records. Second mode is RTC, where Data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Calibration: manual - setting sensitivity and maximum measuring range of the sensor automatic - setting limit values of the measuring range using reference load
Weighing function: signalization of stabilized equilibrium, zero stabilization, automatic zero monitoring, defined number of segments on the scale
Selection of segment size: 0.001/.../0.1/0.2/0.5/1/2/5/10/20/50/100 (Mode - WEIGHT)
Projection: ±99999 (Mode - Standard)

EXCITATION
Fixed: 10 VDC, load ≥ 80 Ω

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Min./max. value: registration of min./max. value reached during measurement
Tare: designed to reset display upon non-zero input signal
Fixed tare: fixed preset tare
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min./max. value

TECHNICAL DATA

INPUT

No. of inputs		1 The range is adjustable in the instrument menu
T	Range	1...4 mV/V 2...8 mV/V 4...16 mV/V
	Sensor power supply	10 VDC, load ≥ 80 Ω *on request 5 V*
	Connection	6-wire
	Segment size	0.001 / 0.002 / 0.005 / 0.01 / 0.02 / 0.05 / 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 / 20 / 50 / 100
	Follow zeros	in 4% of the measuring range zero equals automatically, however on condition that the correction may not be greater than 0.5 segmeas./second
	Auto-zeroing scales	if for the period of > 5 s there is a stabilized negative value on the display (when function Tare is active), tare is automatically cleared

EXTERNAL INPUT

No. of inputs		3, on contact
Function	OFF	no function assigned
	LOCK	control keys blocking
	HOLD	measurement paused
	PASS.	menu access blocking
	TARE	tare activation
	CL. TA.	tare resetting
	CL. M.M.	resetting min/max value
	SAVE	data recording start (FAST/RTC)
	CL. ME.	data recording reset (FAST/RTC)
	CHAN. A.	value display „Channel A"
	FIL. A.	value display „Channel A" + filter
	MAT. FN.	value display „Math. functions"

PROJECTION

Display	-99999...999999, single color 14-segment LED
Digit height	14 mm
Display color	red or green
Description	last two characters on the display may be used for description of measured quantities
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.02 % of FS + 1 digit *above accuracies apply for projection 99999 and 10 meas./s*
Rate	1...100 measurement/s
Overload	10x (t < 30 ms), 2x
Functions	offset, Min/max value, Tare, peak value, math. functions
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Data record	RTC 15 ppm/°C, time-date-display value < 266k data FAST display value < 8k data
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 400 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 2...4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 8.0 W / 7.8 VA

MECHANIC PROPERTIES

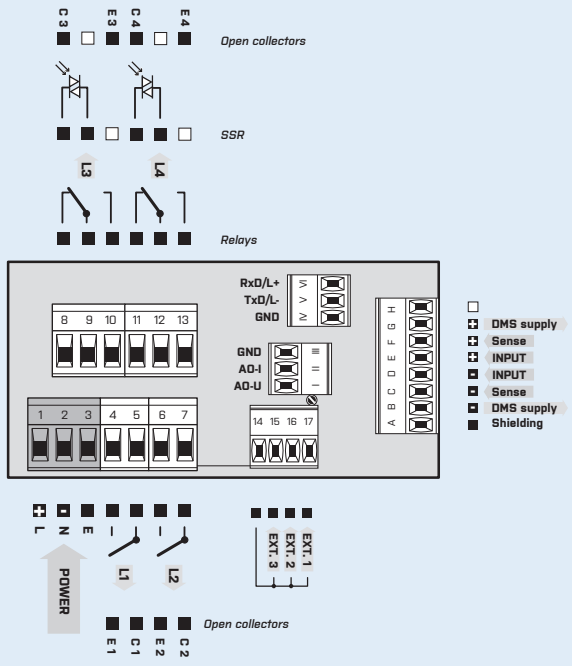
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, from panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 502T - [ ][ ][ ][ ][ ][ ] - [ ]

Power supply	10...30 V AC/DC	**0**						
	80...250 V AC/DC	**1**						
Comparators	none		**0**					
	1x relay (Form A)		**1**					
	2x relay (Form A)		**2**					
	3x relays (2x Form A + 1x Form C)		**3**					
	4x relays (2x Form A + 2x Form C)		**4**					
	2x open collector		**5**					
	4x open collector		**6**					
	2x open collector + 2x relays (Form C)		**7**					
	2x relays (Form C)		**8**					
	2x SSR		**9**					
	2x bistable relays		**A**					
	1x relay (Form C)		**B**					
Data output	none			**0**				
	RS 232			**1**				
	RS 485			**2**				
	Modbus*			**3**				
	PROFIBUS			**4**				
Analog output	no				**0**			
	yes (compensation < 600 Ω/12 V)				**1**			
	yes (compensation < 1 000 Ω/24 V)				**2**			
Data record	no					**0**		
	RTC					**1**		
	FAST					**2**		
Display color	red						**1**	
	green						**2**	
Specification	customized version, do not fill in							**00**

Basic configuration of the instrument is indicated in bold.

* Unavailable in combination with RTC/FAST

OMM 650UC

- 6-digit programmable projection
- Counter/Frequency/Clock/Timer
- 0.1 Hz...50 kHz; UP/DW counter
- Digital filters
- Size of DIN 72 x 24 mm
- Power supply 10...30 VDC / 24 VAC

Option

Comparators ● Time backup

UNIVERSAL COUNTER

Type OMM 650UC is an inexpensive universal counter/frequency meter/timer/clock.

The instrument is based on a single-chip microcontroller, which secures good accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is controlled by four buttons situated on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable).

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

TIME BACKUP is suitable where time needs to be measured even in case of supply voltage outage (upon power supply outage the instrument does not display).

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Input: NPN, PNP, on contact
Setting: measuring mode counter/frequency/timer/clock with adjustable calibration coefficient, time base and display
Measuring modes: counter/frequency meter/UP-DW counter/timer/clock
Measur. channels: A and B, two independent functions (number/frequency) can be evaluated from one measuring input
Projection: -99999...999999 with stabile or floating DT in format 10/24/60

FUNCTIONS
Preset: initial nonzero value that is always read after resetting the device

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display
Input filter: passes the input signal up to 5...1 000 Hz

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Resetting: counter resetting
Start/Stop: timer/clock control

TECHNICAL DATA

IINPUT

No. of inputs	1 The range is adjustable in the instrument menu	
UC Input	on contact, TTL, NPN/PNP 0...30 / 300 V, comparation levels are adjustable in the menu	
Input frequency	0.1 Hz...50 kHz 0.1 Hz...20 kHz	SINGLE UP/DW
Measuring mode	SINGLE counter/frequency UP/DW UP/DW counter/frequency - measures on inputs A, B (direction) and can display numbers/frequency TIME Timer RTC Clock	
Time base	0.5 / 1 / 5 / 10 s	
Multiplication constant	0.00001...999999	
Dividing constant	0.00001...999999	
Preset	-99999...999999	
Input filter	0 / 5 / 40 / 100 / 1000 Hz	
Functions	Tare Preset Time backup (TIME / RTC)	

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned LOCK control keys blocking TARE tare activation HOLD measurement paused CLEAR display reseting CLR.ST. counter/timer reset and preset

PROJECTION

Display	-99999...999999, single color 7-segment LED 99.59.59 hours/minutes/seconds 23.59.59 hours/minutes/seconds 99.59 hours/minutes 9999.59 hours/minute 9999.59 minuty/seconds 59.59.99 minuty/seconds/hundredths 99.59.99 minuty/seconds/hundredths 9.59.59.9 hours/min./seconds/hundredths	TIME TIME TIME TIME TIME TIME TIME TIME
Digit height	9.1 mm	
Display color	red or green	
Decimal point	adjustable - in menu	
Brightness	adjustable - in menu	

INSTRUMENT SPECIFICATION

TC	50 ppm/°C	
Accuracy	±0.05 % of value + 1 digit ±0.01 % of value ±2 ms ±0.01 % of value ±130 ms	 TIME RTC
Overload	10x (t < 30 ms), 2x *not valid for 300 V range*	
Digital filters	exponential average, rounding	
Time backup	Lithium cell CR 2032, 3V/220 mAh	
OM Link	company communication interface for operation, setting and update of instruments	
Watch-dog	reset after 500 ms	
Calibration	at 25°C and 40 % r.h.	

RELAYS / OC OUTPUT

No. of outputs	2
Type	digital, menu adjustable
Mode	HYSTER. active above set value C-PULS. automatic counter resetting at the set value (L1) ON RUN output is active when the timer is running (L2)
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...99999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with bistable contact (Form A) (48 VAC/30 VDC, 3 A)* 1...2x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Range	10...30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP}< 45 A / 1 ms, isolated
Consumption	< 2.1 W / 2.2 VA

MECHANIC PROPERTIES

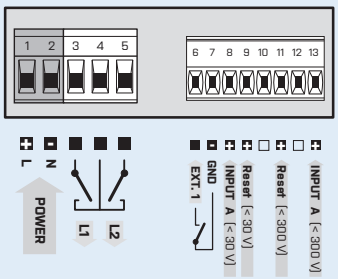
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	72 x 24 x 106 mm (w x h x d)
Panel cutout	68 x 21.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP42, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMM 650UC - 0 -

Power supply	10...30 VDC / 24 VAC, isolated	**0**				
Comparators	no		**0**			
	1x relay (Form A)		**1**			
	2x relay (Form A)		**2**			
	1x open collector		**3**			
	2x open collector		**4**			
Time backup	no			**0**		
Only for Measuring mode „Timer/clock"	yes			**1**		
Display color	red				**1**	
	green				**2**	
Specification	customized version, do not fill in					**00**

Basic configuration of the instrument is indicated in bold.

OML 643UQC

- 6-digit programmable projection
- Counter/Frequency/Clock/Timer
- 0.1 Hz...50 kHz; UP/DW counter, IRC
- Digital filters, Tare, Linearization, Sum
- Size of DIN 96 x 48 mm
- Power supply 10...30 VDC / 24 VAC

Option

Comparators ● Time backup

UNIVERSAL COUNTER

Type OML 643UQC is an inexpensive 6-digit universal panel counter/frequency meter/timer/clock with a box depth of only 30 mm.

The instrument is based on a single-chip microcontroller, which secures good accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons accessible from the rear. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATOR is assigned to monitor one limit value with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

TIME BACKUP is suitable where time needs to be measured even in case of voltage supply outage (upon power supply outage the instrument does not display).

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: measuring mode
Setting: Measuring mode counter/frequency/timer/clock with adjustable calibration coefficient, time base and projection
Measuring modes: counter/frequency meter/UP-DW counter/frequency/counter for IRC
Measur. channels: A and B, two independent functions (number/frequency) can be evaluated from one measuring input
Projection: -99999...999999 with stabile or floating DT in format 10/24/60

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Preset: initial nonzero value that is always read after resetting the device
Current value: one-off setting of the initial value
Summation: registration of figures upon shift operation
Time backup: time is running even when the power supply is turned off (the display is off)

DIGITAL FILTERS
Exponential average: from 2...100 measurements
1/Fr.: filter to convert frequency to time
Rounding: setting the projection step for display
Input filter: passes the input signal up to 5...1 000 Hz

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Resetting: counter resetting
Start/Stop: timer/clock control
Magnet: operation of preselected functions

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu	
UQC Input	on contact, TTL, NPN/PNP 0...30 / 300 V, comparation levels are adjustable in the menu or automatic	
Input frequency	0.1 Hz...50 kHz 0.1 Hz...20 kHz 0.1 Hz...20 kHz 0.1 Hz...20 kHz 0.1 Hz...10 kHz	SINGLE UP/DW UP-DW QUADR., frequency QUADR., counter, duty cycle 50 %
Measuring mode	SINGLE QUADR UP/DW TIME RTC	counter/frequency counter/frequency for IRC sensors UP/DW counter/frequency - measures on inputs A, B (direction) and can display numbers/frequency Timer Clock
Time base	0.5 / 1 / 5 / 10 s	
Multiplication constant	0.00001...999999	
Dividing constant	0.00001...999999	
Preset	0...999999	
Input filter	0 / 5 / 40 / 100 / 1000 Hz	
Functions	Preset Summation One time setting of the initial value Time backup (TIME / RTC)	

EXTERNAL INPUT

No. of inputs	1, on contact	
Function	OFF HOLD TARE CL. TA. CLEAR SUMA CLR.ST. CL.SUM. COUNT.	no function assigned measurement paused tare activation tare resetting display reseting sum showing counter/timer reset and preset sum reset switching counter/frequency display

PROJECTION

Display	-99999...999999, single color 7-segment LED 99.59.59 23.59.59 99.59 9999.59 9999.59 59.59.99 99.59.99 9.59.59.9	 hours/minutes/seconds hours/minutes/seconds hours/minutes hours/minute minuty/seconds minuty/seconds/hundredths minuty/seconds/hundredths hours/min./seconds/hundredths
Digit height	9.1 mm	
Display color	red or green	
Decimal point	adjustable - in menu	
Brightness	adjustable or automatically controllable	

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.05 % of value + 1 digit ±0.01 % of value ±2 ms TIME ±0.01 % of value ±130 ms RTC
Overload	10x (t < 30 ms), 2x
Digital filters	exponential average, rouding
Linearization	linear interpolation in 25 points *setup only via OM Link*
Time backup	Lithium cell CR 2032, 3V/220 mAh
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	1	
Type	digital, menu adjustable	
Mode	HYSTER. C-PULS. ON RUN	active above set value automatic counter resetting at the set value output is active when the timer is running
Function Relays/OC	CLOSE OPEN	is closed in active mode is open in active mode
Limits	-99999...999999	
Hysteresis	0...999999	
Delay	0...99.9 s	
Outputs	1x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1x open collector (30 VDC/100 mA)	
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300	

* values apply for resistance load

POWER SUPPLY

Range	10...30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP}< 45 A / 1 ms, isolated
Consumption	< 1.8 W / 1.9 VA

MECHANIC PROPERTIES

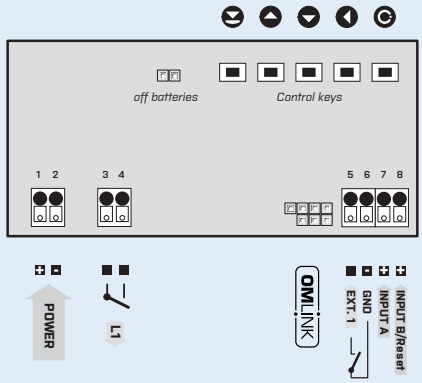
Material	PC, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 30 mm (w x h x d)
Panel cutout	92 x 44 mm (w x h)

OPERATING CONDITIONS

Connection	terminal blocks, section < 1.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP65, front panel only with a gasket
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 300 V (PI) input, output > 300 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OML 643UQC - [ ][ ][ ][ ][ ][ ] - [ ]

Power supply	10...30 VDC / 24 VAC	**0**						
	10...30 VDC / 24 VAC, isolated	**1**						
Comparator	no		**0**					
	1x relay (Form A)		**1**					
	1x open collector		**2**					
Time backup	no			**0**				
Only for Measuring mode „Timer/clock"	yes			**1**				
Display color	red				**1**			
	green				**2**			
Gasket	no					**0**		
Silicone gasket between instrument and panel	yes					**1**		
Magnet	no						**0**	
For operation of external functions	yes						**1**	
Specification	customized version, do not fill in							**00**

Basic configuration of the instrument is indicated in bold.

OML 643RS

- 6-digit programmable projection
- Input RS 485
- Digital filters
- Size of DIN 96 x 48 mm
- Power supply 10...30 VDC / 24 VAC

Option
Comparator

DATA DISPLAY RS 485

Type OML 643RS is a 6-digit data display from the serial line RS 485 with a box depth of only 30 mm.

The instrument is based on a single-chip microcontroller, which secures good accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons accessible from the rear. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATOR is assigned to monitor one limit value with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Input: RS 485
Protocol: ASCII - Master/Slave/Universal or Modbus RTU
Projection: -99999...999999

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

TECHNICAL DATA

INPUT

No. of inputs		1
RS	Input	RS 485
	Protocol	**ASCII - Master** - the instrument controls data sending from the slave system - „COMM" can be used to select the received data - the instrument asks with the rate of 10 queries/s **ASCII - Slave** - Passive bus display where other devices or computers communicate in „MAST." mode. If the „COMM" and the requested data are correctly received, they will be displayed by the instrument **ASCII - Universal** - in dynamic menu items (Stat, Ad.Un, Sign, Data, Stop, Req.) you can build your own communication protocol format **Modbus RTU**
	Format	8 bit + no parity + 1 stop bit
	Adresse	ASCII 0...31 Modbus 1...247
	Rate	300...230 400 Baud
	Line termination	short-circuit jumper on the connector *resistance inside the instrument is 120 R*

PROJECTION

Display	-99999...999999, single color 7-segment LED 99.59.59 hours/minutes/seconds TIME 23.59.59 hours/minutes/seconds TIME 99.59 hours/minutes TIME 9999.59 hours/minute TIME 9999.59 minuty/seconds TIME 59.59.99 minuty/seconds/hundredths TIME 99.59.99 minuty/seconds/hundredths TIME 9.59.59.9 hours/min./seconds/hundredths TIME
Digit height	9.1 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable or automatically controllable

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Accuracy	±0.05 % of value + 1 digit ±0.01 % of value ±2 ms TIME ±0.01 % of value ±130 ms RTC
Overload	10x (t < 30 ms), 2x
Digital filters	exponential average, rouding
Linearization	linear interpolation in 25 points *setup only via OM Link*
Time backup	Lithium cell CR 2032, 3V/220 mAh
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 500 ms
Calibration	at 25ºC and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	1
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode READY output indicates error-free status ERROR output indicates an error condition
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Range	10...30 VDC / 24 VAC, ±10 %, PF ≥ 0.4, I_{STP}< 45 A / 1 ms, isolated
Consumption	< 1.8 W / 1.9 VA

MECHANIC PROPERTIES

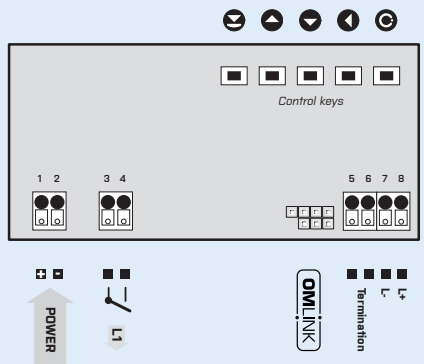
Material	PC, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 30 mm (w x h x d)
Panel cutout	92 x 44 mm (w x h)

OPERATING CONDITIONS

Connection	terminal blocks, section < 1.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º...60ºC
Storage temperat.	-20º...85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP65, front panel only with a gasket
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 300 V (PI) input, output > 300 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OML 643RS - [ ][ ][ ][ ][ ] - [ ]

Power supply	10...30 VDC / 24 VAC	**0**					
	10...30 VDC / 24 VAC, isolated	1					
Protocol	ASCII		**A**				
	Modbus RTU		**B**				
Comparator	no			**0**			
	1x relay (Form A)			1			
	1x open collector			2			
Display color	red				**1**		
	green				2		
Gasket	no					**0**	
Silicone gasket between instrument and panel	yes					1	
Specification	customized version, do not fill in						**00**

Basic configuration of the instrument is indicated in bold.

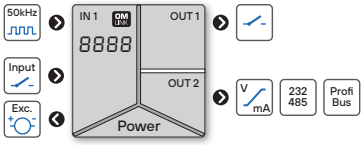
OM 653UQC

- 6-digit programmable projection
- Counter/Frequency/Clock/Timer
- 0.1 Hz...50 kHz; UP/DW counter, IRC
- Digital filters, Tare, Linearization, Sum
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Three-color display (20 mm)

UNIVERSAL COUNTER



Type OM 653UQC is an inexpensive universal 6-digit panel counter/frequency meter/timer/clock designed for maximum efficiency and user comfort.

The instrument is based on a single-chip microcontroller, which secures good accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons situated on the front panel.All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

TIME BACKUP is suitable where time needs to be measured even in case of supply voltage outage (upon power supply outage the instrument does not display).

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: measuring mode
Setting: Measuring mode counter/frequency/timer/clock with adjustable calibration coefficient, time base and projection
Measuring modes: counter/frequency meter/UP-DW counter/frequency/counter for IRC
Measur. channels: A and B, two independent functions (number/frequency) can be evaluated from one measuring input)
Projection: -99999...999999 with stabile or floating DT in format 10/24/60

EXCITATION
Range: 5/12/17/24 VDC/100 mA, for feeding sensors and transmitters

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Preset: initial nonzero value that is always read after resetting the device
Current value: one-off setting of the initial value
Summation: registration of figures upon shift operation
Time backup: time is running even when the power supply is turned off (the display is off)

DIGITAL FILTERS
Exponential average: from 2...100 measurements
1/Fr.: filter to convert frequency to time
Rounding: setting the projection step for display
Input filter: passes the input signal up to 5...1 000 Hz

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Resetting: counter resetting
Start/Stop: timer/clock control

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu	
UQC Input	on contact, TTL, NPN/PNP 0...30 / 300 V, comparation levels are adjustable in the menu or automatic	
Input frequency	0.1 Hz...50 kHz 0.1 Hz...20 kHz 0.1 Hz...20 kHz 0.1 Hz...20 kHz 0.1 Hz...10 kHz	SINGLE UP/DW UP-DW QUADR., frequency QUADR., counter, duty cycle 50 %
Measuring mode	SINGLE QUADR UP/DW UP-DW TIME RTC	counter/frequency counter/frequency for IRC sensors UP/DW counter/frequency - measures on inputs A, B (direction) and can display numbers/frequenc UP - DW counter/frequency - measures on inputs A (UP), B (DW) and can display numbers/frequency Timer Clock
Time base	0.5 / 1 / 5 / 10 s	
Multiplication constant	0.00001...999999	
Dividing constant	0.00001...999999	
Preset	0...999999	
Input filter	0 / 5 / 40 / 100 / 1000 Hz	
Functions	Tare Preset Summation One time setting of the initial value Time backup (TIME / RTC)	

EXTERNAL INPUT

No. of inputs	1, on contact	
Function	OFF HOLD LOCK TARE CL. TA. CLEAR SUMA CLR.ST. CL.SUM. COUNT.	no function assigned measurement paused control keys blocking tare activation tare resetting display reseting sum showing counter/timer reset and preset sum reset switching counter/frequency display

PROJECTION

Display	-99999...999999, single color 7-segment LED -999...9999, 3-color 7-segment LED 99.59.59 23.59.59 99.59 9999.59 9999.59 59.59.99 99.59.99 9.59.59.9	 hours/minutes/seconds hours/minutes/seconds hours/minutes hours/minute minuty/seconds minuty/seconds/hundredths minuty/seconds/hundredths hours/min./seconds/hundredths
Digit height	14 mm 20 mm	
Display color	red or green red / green / orange	
Decimal point	adjustable - in menu	
Brightness	adjustable - in menu	

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC	
Accuracy	±0.05 % of value + 1 digit ±0.01 % of value ±2 ms ±0.01 % of value ±130 ms	 TIME RTC
Overload	10x (t < 30 ms), 2x *not valid for 300 V range*	
Digital filters	exponential average, rouding	
Linearization	linear interpolation in 25 points *setup only via OM Link*	
Time backup	Lithium cell CR 2032, 3V/220 mAh	
OM Link	company communication interface for operation, setting and update of instruments	
Watch-dog	reset after 500 ms	
Calibration	at 25ºC and 40 % r.h.	

RELAYS / OC OUTPUT

No. of outputs	2	
Type	digital, menu adjustable	
Mode	HYSTER. C-PULS ONCE ON RUN	active above set value automatic counter resetting at the set value (L1) switching limit, which will switch off only after the counter has been reset (L1) output is active when the timer is running (L2)
Function Relays/OC	CLOSE OPEN	is closed in active mode is open in active mode
Limits	-99999...999999	
Hysteresis	0...999999	
Delay	0...99.9 s	
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x open collector (30 VDC/100 mA)	
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300	

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/ºC
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, comp. < 600 Ω/12 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5 / 12 /17 / 17 / 24 VDC, <2,5 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 6.9 W / 7.3 VA

MECHANIC PROPERTIES

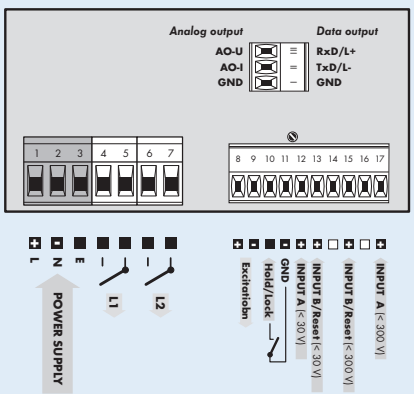
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º...60ºC
Storage temperat.	-20º...85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 653UQC - [ ][ ][ ][1][ ][ ] - [ ]

Power supply	10...30 V AC/AC	**0**	
	80...250 V AC/DC	**1**	
Comparators	no	**0**	
	1x relay (Form A)	**1**	
	2x relay (Form A)	**2**	
	1x open collector	**3**	
	2x open collector	**4**	
Output	none	**0**	
	Analog output	**2**	
	RS 232	**3**	
	RS 485	**4**	
	PROFIBUS	**6**	
Excitation	yes	**1**	
Time backup	no	**0**	
Only for Measuring mode „Timer/clock"	yes	**1**	
Display color	red (14 mm)	**1**	
	green (14 mm)	**2**	
	red/green (20 mm)	**3**	
Specification	customized version, do not fill in		**00**

Basic configuration of the instrument is indicated in bold.

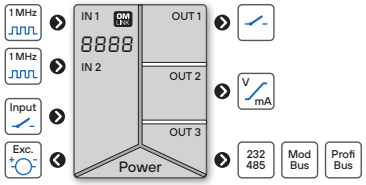
OM 602UQC

- 6-digit programmable projection
- Counter/Frequency/Clock/Timer
- 0.002 Hz...1 MHz; UP/DW counter, IRC
- Mat. functions, Digit. filter, Tare, Preset, Sum
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Measuring data record

UNIVERSAL TWO-CHANNEL COUNTER



OM 602UQC is a universal 6-digit panel programmable two-channel impulse counter/frequency meter/evaluation of signals from IRC sensors and timer/clock.

The instrument is based on a single-chip microprocessor and a powerful programmable gate array, which guarantees high accuracy, stability and easy control.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off). The measured units may be projected on the display.

OPTION

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

MEASURING DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Data record is governed via RTC with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Input: NPN, PNP, on contact, IRC, line
Measuring modes: counter/frequency meter/UP-DW counter + frequency/counter for IRC + frequency
Calibration: calibration coef. for each channel may be set in menu independently
Projection: -99999...999999 with stabile or floating DT in format 10/24/60
Measur. channels: A and B, from one or more measuring inputs two independent functions may be evaluated
Time base: 0.05/0.5/1/2/5/10/20 s /1/2/5/10/15 min

EXCITATION
Range: 5...24 VDC/1.2 W, for feeding sensors and transmitters

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Min./max. value: registration of min./max. value reached during measurement
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom at the same time between inputs - sum, difference, product, quotient, absolute value
Preset: initial nonzero value that is always read after resetting the device
Current value: one-off setting of the initial value
Summation: registration of figures upon shift operation
Time backup: time is running even when the power supply is turned off (the display is off)

DIGITAL FILTERS
Input filter: transmits input signal up to 1 MHz...10 min
Floating/Exp./Arithm. average: from 2...30/100/100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min./max. value, counter resetting
Start/Stop: timer/clock control

TECHNICAL DATA

INPUT

No. of inputs	2 The range is adjustable in the instrument menu	
UQC Input	on contact, TTL, NPN/PNP, Line 0...30 V, comparation levels are adjustable in the menu	
Input frequency	0.002 Hz...1 MHz 0.002 Hz...100 kHz DUTY 0.002 Hz...500 kHz QUADR., UP/DW	
Measuring mode	SINGLE counter/frequency A * B counter/frequency with function AND xNOR counter/frequency with function NOR DUTY duty cycle measurement QUADR counter/frequency for IRC sensors UP/DW UP/DW counter/frequency - measures on inputs A, B (direction) and can display numbers/frequenc UP-DW UP - DW counter/frequency - measures on inputs A (UP), B (DW) and can display numbers/frequency TIME Timer RTC Clock	
Time base	0.05 / 1 / 2 / 3 / 5 / 10 / 20 s 1 / 2 / 5 / 10 min	
Multiplication constant	0.00001...999999	
Dividing constant	0.00001...999999	
Preset	-99999...999999	
Input filter	off 1 / 10 / 100 / 250 / 500 / 1 000 kHz 1 / 10 / 45 / 55 / 65 / 100 Hz 2 / 5 / 10 s 1 / 10 min	
Functions	Offset Tare Preset Summation Min/Max value Peak value One time setting of the initial value Time backup (TIME / RTC) Mathematic functions between channels	

EXTERNAL INPUT

No. of inputs	3, on contact
Function	OFF no function assigned HOLD measurement paused LOCK control keys blocking TARE tare activation CLEAR display reseting CL. ST. resetting and preset of counter/clock TAR. x tare activation - 1, 2, All, Actual SUMA x sum showing - Channel 1, 2 C.SUM. x sum reset - Channel 1, 2, both CL. M.M. resetting min/max value CL. T.x tare resetting - 1, 2, All, Actual SAVE data recording start (FAST/RTC) SWIT. sequential or BCD channel switching

PROJECTION

Display	-99999...999999, single color 14-segment LED 99.59.59 hours/minutes/seconds TIME 23.59.59 hours/minutes/seconds TIME 9999.59 hours/minutes TIME 9999.59 minuty/seconds TIME 59.59.99 minuty/seconds/hundredths TIME 99.59.99 minuty/seconds/hundredths TIME 9.59.59.9 hours/min./seconds/hundredths TIME 9.99.59.9 days/hours/minutes/seconds TIME 99.23.59 days/hours/minutes TIME	
Digit height	14 mm	
Display color	red or green	
Description	last two characters on the display may be used for description of measured quantities	
Decimal point	adjustable - in menu	
Brightness	adjustable - in menu	

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC	
Accuracy	±0.05 % of value + 1 digit ±0.01 % of value ±2 ms TIME ±0.01 % of value ±130 ms RTC	
Overload	10x (t < 30 ms), 2x	
Digital filters	exponential / floating / arithmetic average, rouding	
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root	
Linearization	linear interpolation in 180 points *setup only via OM Link*	
Data record	RTC 15 ppm/ºC, time-date-display value < 266k data	
Time backup	Lithium cell CR 2032, 3V/220 mAh	
OM Link	company communication interface for operation, setting and update of instruments	
Watch-dog	reset after 500 ms	
Calibration	at 25ºC and 40 % r.h.	

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period C-PULS automatic counter resetting at the set value ON RUN output is active when the timer is running
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 2...4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/ºC
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5 / 12 /17 / 17 / 24 VDC, <2,5 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 8.0 W / 7.8 VA

MECHANIC PROPERTIES

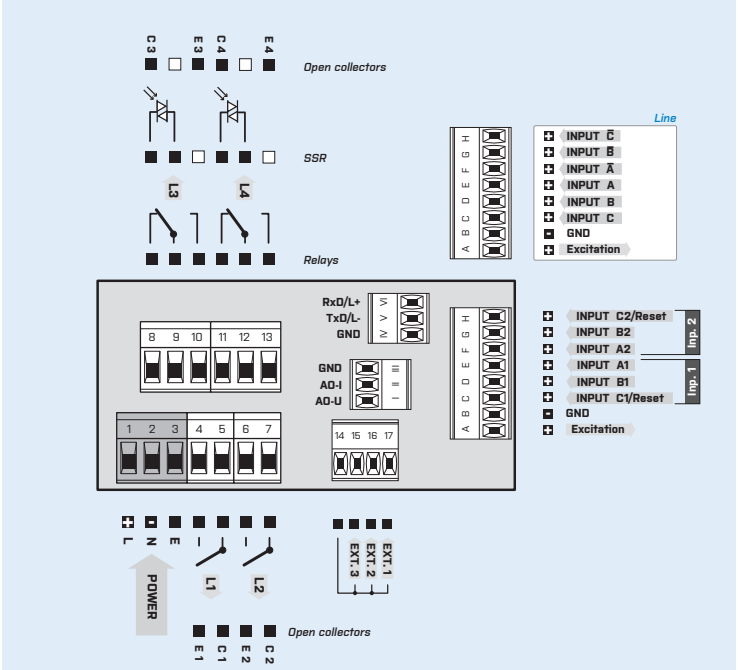
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º...60ºC
Storage temperat.	-20º...85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 602UQC - _ _ _ _ _ 1 1 _ _ - _

Power supply	10...30 V AC/DC	**0**									
	80...250 V AC/DC	**1**									
Input	2x standard (10 mV...60 V)		**A**								
	line		**C**								
Comparators	none			**0**							
	1x relay (Form A)			**1**							
	2x relay (Form A)			**2**							
	3x relays (2x Form A + 1x Form C)			**3**							
	4x relays (2x Form A + 2x Form C)			**4**							
	2x open collector			**5**							
	4x open collector			**6**							
	2x open collector + 2x relays (Form C)			**7**							
	2x relays (Form C)			**8**							
	2x SSR			**9**							
	2x bistable relays			**A**							
	1x relay (Form C)			**B**							
Data output	none				**0**						
	RS 232				**1**						
	RS 485				**2**						
	Modbus*				**3**						
	PROFIBUS				**4**						
Analog output	no					**0**					
	yes (compensation < 600 Ω/12 V)					**1**					
	yes (compensation < 1 000 Ω/24 V)					**2**					
Time backup	Only for Measuring mode „Timer/clock" yes						**1**				
Excitation	yes							**1**			
Data record	no								**0**		
	RTC								**1**		
Display color	red									**1**	
	green									**2**	
Specification	customized version, do not fill in										**00**

Basic configuration of the instrument is indicated in bold.

* Unavailable in combination with RTC

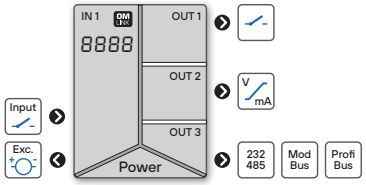
OM 602AV

- 6-digit programmable projection
- Output 0...5/20 mA/4...20 mA
  0...2/5/10 V; ±10 V
- Sinus/Saw/Triangle/Rectangle/Random function
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Excitation ● Comparators ● Data output ● Three-color display

PROGRAMMABLE ANALOG OUTPUT



OM 602AV is a panel programmable analog output.

The instrument is based on a single-chip microprocessor and precision D/A trasmitters, which guarantees accuracy, stability and easy control.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off). The measured units may be projected on the display.

OPTION

EXCITATION is suitable for feeding sensors and transmitters. It is continuously adjustable within the range of 5...24 VDC.

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Setting: optional projection may be set for both limit values of the AV range
Projection: -99999...999999

ANALOG OUTPUT
Type: isolated, programmable with a resolution of 16 bit, rate < 1 ms
Output signal: sinus/ramp/triangle/square/random function
Range: 0...2/5/10 V, ±10 V, 0...5 mA, 0/4...20 mA

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Functions: control of optional functions from instrument menu

TECHNICAL DATA

OUTPUT

No. of outputs	1 isolated, adjustable with 16-bit DAC, output type and range is selectable	
AV Range	0…2 V	resistive load ≥ 1 kΩ
	0…5 V	resistive load ≥ 1 kΩ
	0…10 V	resistive load ≥ 1 kΩ
	±10 V	resistive load ≥ 1 kΩ
	0…5 mA	compesation < 1 000 Ω/24 V
	0…20 mA	compesation < 1 000 Ω/24 V
	4…20 mA	compesation < 1 000 Ω/24 V
TC	15 ppm/°C	
Non-linearity	0.1 % from FS	
Accuracy	±0.02 % of FS	
Rate	response to change of value < 1 ms	
Functions	the instrument generates signal within the set range and frequency; in addition you can set the min. and max. signal change times as well as number of generated pulses	
	MANUAL	manual setting of the output value
	SINUS	sinus output signal
	RAMP	saw output signal
	TRIANGL.	triangle output signal
	SQUARE	rectangle output signal
	RANDOM	random generated signal

EXTERNAL INPUT

No. of inputs	3, on contact	
Function	OFF	no function assigned
	LOCK	control keys blocking
	HOLD	display stop
	PASS.	menu access blocking
	CL. M.M.	resetting min/max value
	CH1. UP.	long step - up
	CH1. DW.	long step - down
	CH2. UP.	fine step - up
	CH2. DW.	fine step - down
	MIN. V.	min. range
	MAX. V.	max. range
	UP	increases every 10 ms by „Step“
	DOWN	decreases every 10 ms by „Step“
	START	start of the set cycle
	STOP	stop of the set cycle
	ST.-ST.	start/stop of the set cycle

PROJECTION

Display	-99999…999999, single color 14-segment LED -999…9999, 3-color 7-segment LED
Digit height	14 mm 20 mm
Display color	red or green red / green / orange
Description	last two characters on the display may be used for description of measured quantities *only for display with LED height 14 mm*
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 4	
Type	digital, menu adjustable	
Mode	HYSTER.	active above set value
	WINDOW	active in the set window / band
	BATCH	active in set period
	ER.FR.TO.	switching on and switching off intervals, which represent the measuring range. Above and under the set intervals the instrument displays an error message, underflow/overflow
Function Relays/OC	CLOSE	is closed in active mode
	OPEN	is open in active mode
Limits	-99999…999999	
Hysteresis	0…999999	
Delay	0…99.9 s	
Outputs	1…2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)*	
	1…2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)*	
	2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A)	
	2…4x open collector (30 VDC/100 mA)	
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300	

* values apply for resistance load

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300…230 400 Baud 9 600 Baud…12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5…24 VDC, < 1.2 W, isolated

POWER SUPPLY

Range	10…30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80…250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 8.0 W / 7.8 VA

MECHANIC PROPERTIES

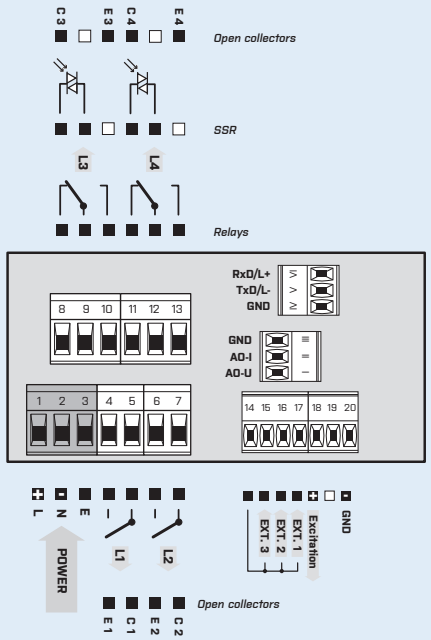
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°…60°C
Storage temperat.	-20°…85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 602AV - [ ][ ][ ][ ][ ] - [ ]

Power supply	10…30 V AC/DC	**0**					
	80…250 V AC/DC	**1**					
Comparators	none		**0**				
	1x relay (Form A)		**1**				
	2x relay (Form A)		**2**				
	3x relays (2x Form A + 1x Form C)		**3**				
	4x relays (2x Form A + 2x Form C)		**4**				
	2x open collector		**5**				
	4x open collector		**6**				
	2x open collector + 2x relays (Form C)		**7**				
	2x relays (Form C)		**8**				
	2x SSR		**9**				
	2x bistable relays		**A**				
	1x relay (Form C)		**B**				
Data output	none			**0**			
	RS 232			**1**			
	RS 485			**2**			
	Modbus			**3**			
	PROFIBUS			**4**			
Excitation	no				**0**		
	yes				**1**		
Display color	red (14 mm)					**1**	
	green (14 mm)					**2**	
	red/green (20 mm)					**3**	
Specification	customized version, do not fill in						**00**
	SW validation - IEC 62138, IEC 61226						**VS**

Basic configuration of the instrument is indicated in bold.

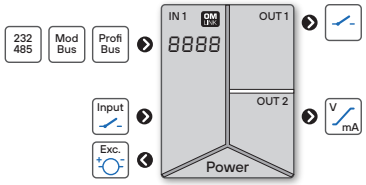
OM 602RS

- 6-digit programmable projection
- Input RS 232/485
- ASCII, MESSBUS, PROFIBUS DP, Modbus RTU
- Digital filter
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Excitation ● Comparators ● Analog output ● Three-color display (20 mm)

DATA DISPLAY RS 232/485



Type OM 602RS is a 6-digit panel data display from serial lines RS 232/485 with protocol ASCII, MESSBUS, PROFIBUS DP and Modbus RTU.

The instrument is based on a single-chip microprocessor, which guarantees accuracy, stability and easy control.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off). The measured units may be projected on the display.

OPTION

EXCITATION is suitable for feeding sensors and transmitters. It is continuously adjustable within the range of 5...24 VDC.

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Input: both RS 232 and RS 485
Protocol: ASCII - Master/Slave/Universal, MESSBUS, PROFIBUS DP, Modbus RTU
Projection: -99999...999999

FUNCTIONS
Min./max. value: registration of min/max value reached during measurement
Mathemat. operations: polynom, 1/x, log., exponential, power, root, sin x

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Resetting Min/Max: resetting min./max. value
Functions: control of optional functions from instrument menu

TECHNICAL DATA

INPUT

No. of inputs		1
RS	Input	RS 232/RS 485 PROFIBUS
	Protocol	**ASCII - Master** - the instrument controls data sending from the slave system - „COMM" can be used to select the received data - the instrument asks with the rate of 10 queries/s **ASCII - Slave** - Passive bus display where other devices or computers communicate in „MAST." mode. If the „COMM" and the requested data are correctly received, they will be displayed by the instrument **ASCII - Universal** - in dynamic menu items (Stat, Ad.Un, Sign, Data, Stop, Req.) you can build your own communication protocol format **MESSBUS** **Modbus RTU** **PROFIBUS DP** **PROFINET**
	Format	8 bit + no parity + 1 stop bit 7 bit + even parity + 1 stop bit
	Adresse	ASCII 0…31 Modbus 1…247 Profibus 1…127
	Rate	300…230 400 Baud 9 600 Baud…12 Mbaud (PROFIBUS)
	Line termination	short-circuit jumper on the connector *resistance inside the instrument is 120 R*

EXTERNAL INPUT

No. of inputs	3, on contact
Function	OFF no function assigned HOLD measurement paused LOCK control keys blocking TARE tare activation CL. M.M. resetting min/max value CL. T. tare resetting

PROJECTION

Display	-99999…999999, single color 14-segment LED 99.59.59 hours/minutes/seconds TIME 23.59.59 hours/minutes/seconds TIME 9999.59 hours/minutes TIME 9999.59 minuty/seconds TIME 59.59.99 minuty/seconds/hundredths TIME 99.59.99 minuty/seconds/hundredths TIME 9.59.59.9 hours/min./seconds/hundredths TIME 9.99.59.9 days/hours/minutes/seconds TIME 99.23.59 days/hours/minutes TIME
Digit height	14 mm
Display color	red or green
Description	last two characters on the display may be used for description of measured quantities
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Functions	Min/max value, math. functions
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 500 ms
Calibration	at 25ºC and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999…999999
Hysteresis	0…999999
Delay	0…99.9 s
Outputs	1…2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1…2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 2…4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/ºC
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0…2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0…5 / 20 mA /4…20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

EXCITATION

Adjustable	2…24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	9…50 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80…250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 6.5 W /6 VA

MECHANIC PROPERTIES

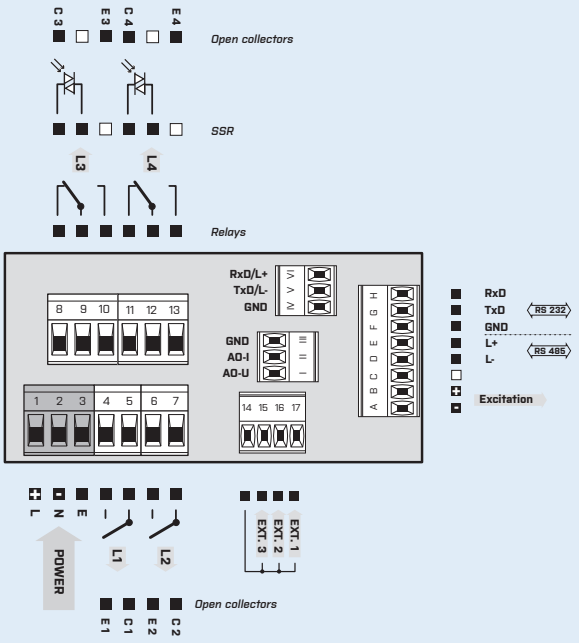
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 142 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º…60ºC
Storage temperat.	-20º…85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 602RS - [ ][ ][ ][ ][ ][ ] - [ ]

Power supply	10…30 V AC/DC	**0**
	80…250 V AC/DC	**1**
Protocol	ASCII/MESSBUS	**A**
	Modbus RTU	**B**
	PROFIBUS DP	**C**
Comparators	none	**0**
	1x relay (Form A)	**1**
	2x relay (Form A)	**2**
	3x relays (2x Form A + 1x Form C)	**3**
	4x relays (2x Form A + 2x Form C)	**4**
	2x open collector	**5**
	4x open collector	**6**
	2x open collector + 2x relays (Form C)	**7**
	2x relays (Form C)	**8**
	2x SSR	**9**
	2x bistable relays	**A**
	1x relay (Form C)	**B**
Analog output	no	**0**
	yes (compensation < 600 Ω/12 V)	**1**
	yes (compensation < 1 000 Ω/24 V)	**2**
Excitation	no	**0**
	yes	**1**
Display color	red (14 mm)	**1**
	green (14 mm)	**2**
	red/green (20 mm)	**3**
Specification	customized version, do not fill in	**00**

Basic configuration of the instrument is indicated in bold.

OM 621BCD

- 6-digit programmable projection
- Input BCD/transformer tapping leads
- Mathematic functions, Digital filters
- Size of DIN 96 x 48 mm
- Power supply 9...50 V AC/DC; 80...250 V AC/DC

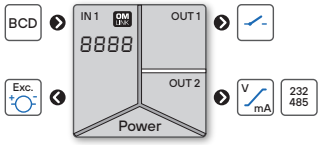
Option

Excitation ● Comparators ● Data output ● Analog output

Model OM 621BCD is a 6-digit panel monitor of serial or parallel BCD/BIN signal and monitor of active transformer tapping leads, allowing for projection of transitional status and servomotor running.

The instrument is based on a single-chip microprocessor, which guarantees accuracy, stability and easy control.

BCD MONITOR



OPERATION

The instrument is set and controlled by five buttons located on the front panel.

CONFIGURATION MENU is protected by an optional number code and contains complete instrument setting.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

EXCITATION is suitable for feeding sensors and transmitters. It is continuously adjustable within the range of 5...24 VDC.

COMPARATORS are assigned to monitor one, two, three or four limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Calibration: the type of BCD/transformer lead input may be set in menu
Projection: -99999...999999

OUTPUT
Relays´ functions: for the tapping leads display device it is possible to set the regime of relay switching (10=10000)/BIN (10=01010)

FUNCTIONS
Min./max. value: registration of min./max. value reached during measurement
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

TECHNICAL DATA

INPUT

BCD - monitor	
Range	5...24 VDC 10...60 VDC
Serial BCD	4 data + 6 strobe 8 data + 3 strobe 12 data + 2 strob 4 data + 3 pozice + 1 strobe
Paralel BIN/BCD	20 data/24 data
Adressing	up to 8 monitors
BCD - transformer tapping leads monitor	
Range	5...24 VDC 10...60 VDC 90...130 VDC 190...250 VDC
Tap. leads number	24 + 1 signalling *on request 27*
Input resistance	5.5 kΩ/V
Outputs	relay BIN/BCD 5 relay (250 VAC/50 VDC, 3 A) Mode: BIN 10 ≈ 01010 / BCD 10 ≈ 10000

PROJECTION

Display	-99999...999999, single color 14-segment LED
Digit height	14 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Watch-dog	reset after 400 ms
Calibration	at 25ºC and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 5
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...3x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)*
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with resolution of max. 10 000 points, analog output corresponds with the displayed data, type and range are selectable in menu
TC	50 ppm/ºC
Non-linearity	0.2 % from FS
Rate	response to change of value < 40 ms
Ranges	0...2 / 5 / 10 V, resistive load ≥ 1 kΩ 0...20 mA /4...20 mA, compensation < 600 Ω/12 V

EXCITATION

Adjustable	5 / 12 /17 / 17 / 24 VDC, < 2,5 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 8.0 W / 7.8 VA

MECHANIC PROPERTIES

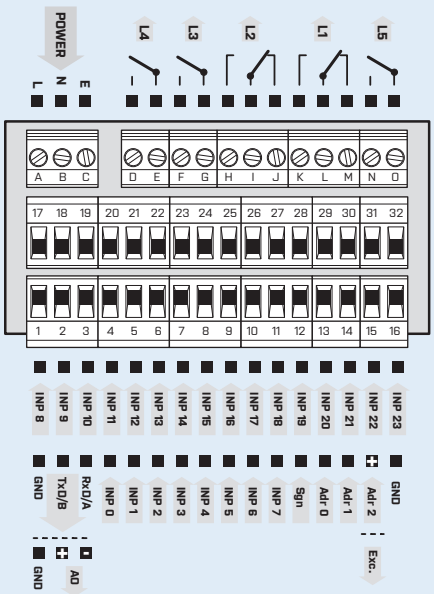
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º...60ºC
Storage temperat.	-20º...85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OM 621BCD -

Power supply	9...50 V AC/DC	**0**					
	80...250 V AC/DC	**1**					
Input	5...25 VDC		**A**				
	10...60 VDC		**B**				
	90...130 VDC (110 VDC)		**C**				
	190...250 VDC (230 VDC)		**D**				
Comparators	**none**			**0**			
	1 relays			**1**			
	2 relays			**2**			
	3 relays			**3**			
	4 relays			**3**			
	5 relays BCD/BIN (monitor of tapping leads)			**5**			
Output	**none**				**0**		
	Analog output				**1**		
	RS 232				**2**		
	RS 485				**3**		
Excitation	**no**					**0**	
	yes					**1**	
Display color	**red**						**1**
	green						**2**

Basic configuration of the instrument is indicated in bold.

OMU 408UNI

- 4-digit programmable projection
- Multifunction input (DC, PM, RTD, T/C, DU)
- Digital filters, Tare, Linearization
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

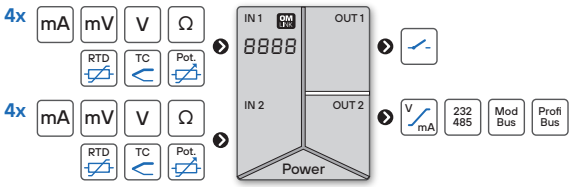
Comparators ● Data output ● Analog output ● Measured data record

OMU 408UNI is an 8-channel measuring instrument designed for maximum efficiency and user comfort while maintaining its favourable price. It is a multifunction instrument with the option of configuration for 8 various input options, easily configurable in the instrument menu.

The instrument is based on a microcontroller and multichannel 24-bit ΔΣ ADC, that secure high accuracy, stability and easy operation of the instrument.

Great merit of the instrument, owing to the high rate of sampling on individual channels, is the chance to evaluate all measuring inputs at the same time.

8-CHANNEL MEASURING INSTRUMENT



OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off). The measured units may be projected on the display.

OPTION

COMPARATORS are assigned to monitor four or eight limit values with relay output. For each input the user may select an arbitrary number of relays with the regime: LIMIT/FROM-TO. The limits have adjustable hysteresis within full range of the display and selectable delay of the switch-on. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/MESSBUS/Modbus/PROFIBUS protocol.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current and the option of assigning it to arbitrary input. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (40 records/s) of all measured values up to 8 000 records. Second mode is RTC, where data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 532 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Setting: manual, in menu optional projection on the display may be set for both limit values of the input signal
Projection: -999...9999

SWITCHING OF INPUTS
Manual: by control key on the front panel or from the outside (inputs EXT.)
Automatic: by a set time interval

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signals can be linearized by the means of a linearization table (up to 256 points/8 channels)
Tare: designed to reset display upon non-zero input signal
Min./max. value: registration of min./max. value reached during measurement
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x, and operations between inputs - sum, difference, product and quotient

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Resetting Min/Max: resetting min./max. value
Functions: control of optional functions from instrument menu

TECHNICAL DATA

INPUT

No. of inputs	4 or 8 The range is adjustable in the instrument menu		
DC Range	±60 mV	> 100 MΩ	Input U
	±150 mV	> 100 MΩ	Input U
	±300 mV	> 100 MΩ	Input U
	±1 200 mV	> 100 MΩ	Input U
PM Range	0...20 mA	< 400 mV	Input I
	4...20 mA	< 400 mV	Input I
	±2 V	1 MΩ	Input U
	±5 V	1 MΩ	Input U
	±10 V	1 MΩ	Input U
	±40 V	1 MΩ	Input U
OHM Range	0...100 Ω 0...1 / 10 / 100 kΩ		
Connection	2-, 3- and 4-wire		
RTD Range	Pt 100/500/1 000, 3 850 ppm/°C	-50°...450°C	
	Pt 100, 3 920 ppm/°C	-50°...450°C	
	Pt 50, 3 910 ppm/°C	-200°...1100°C	
	Pt 100, 3 910 ppm/°C	-200°...450°C	
Connection	2-, 3- and 4-wire		
Ni Range	Ni 1 000/10 000, 5 000 ppm/°C	-50°...250°C	
	Ni 1 000/10 000, 6 180 ppm/°C	-200°...250°C	
Connection	2-, 3- and 4-wire		
Cu Range	Cu 50/100, 4 260 ppm/°C	-50°...200°C	
	Cu 50/100, 4 280 ppm/°C	-200°...200°C	
Connection	2-, 3- and 4-wire		
T/C Range	J (Fe-CuNi)	-200°...900°C	
	K (NiCr-Ni)	-200°...1 300°C	
	T (Cu-CuNi)	-200°...400°C	
	E (NiCr-CuNi)	-200°...690°C	
	B (PtRh30-PtRh6)	300°...1 820°C	
	S (PtRh10-Pt)	-50°...1 760°C	
	R (Pt13Rh-Pt)	-50°...1 740°C	
	N (Omegalloy)	-200°...1 300°C	
	L (Fe-CuNi)	-200°...900°C	
CJC	adjustable -20°...99°C or automatical		
DU Sensor power supply	2 VDC/6 mA, potentiometer resistance > 500 Ω		

EXTERNAL INPUT

No. of inputs	3, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused PASS. menu access blocking TARE x tare activation CL. Tx tare resetting CL. M.M. resetting min/max value SAVE data recording start (FAST/RTC) CL. ME. data recording reset (FAST/RTC) MAT. FN. value display „Math. functions" SWIT. sequential or BCD channel switching

PROJECTION

Display	-999...9999, single color 14-segment LED
Digit height	14 mm
Display color	red or green
Decimal point	adjustable - in menu
Channel marking	9, single color 7-segment LED, height 10 mm *The LED is in the opposite colour to the display*
Description	two characters on the display may be used for description of measured quantities
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.1 % of FS + 1 digit ±0.15% of FS + 1 digit RTD / T/C *above accuracies apply for projection 9999 and 5 meas./s*
Rate	0.1...40 measurement/s
Overload	10x (t < 30 ms), 2x *not valid for 250 / 450 V and 5 A ranges*
Compensation of conduct	< 30 Ω RTD
Measurement accuracy CJC	±1.5°C T/C
Resolution	0.1°C / 1°C RTD / T/C
Functions	offset, Min/max value, Tare, peak value, math. functions
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Linearization	linear interpolation in 250 points/8 channels *setup only via OM Link*
Data record	RTC 15 ppm/°C, time-date-display value < 266k data FAST display value < 8k data
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 400 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	4 or 8
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-999...9999
Hysteresis	0...9999
Delay	0...99.9 s
Outputs	4 / 8x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)*
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 9.4 W / 9.2 VA

MECHANIC PROPERTIES

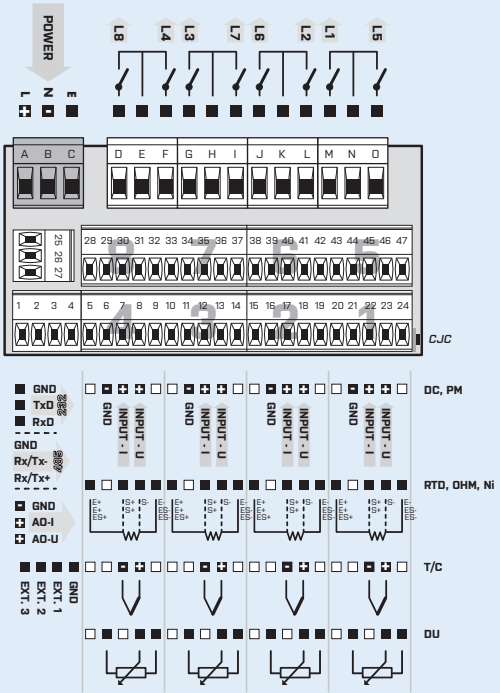
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6
SW validation	Class B, C in compl. with IEC 62138, 61226

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMU 408UNI - [ ][ ][ ][ ][ ][ ] - [ ]

Power supply	10...30 V AC/DC	**0**						
	80...250 V AC/DC	**1**						
Number inputs	4 inputs		**0**					
	8 inputs		**1**					
Comparators	none			**0**				
	4 relays			**1**				
	8 relays			**2**				
Output	none				**0**			
	Analog				**1**			
	RS 232				**2**			
	RS 485**				**3**			
	PROFIBUS				**4**			
Data record	no					**0**		
	RTC					**1**		
	FAST*					**2**		
Display color	red						**1**	
Channel marking has the opposite color	green						**2**	
Specification	customized version, do not fill in							**00**
	SW validation - IEC 62138, IEC 61226							**VS**

*Data record in FAST mode is only available from odd channels, i.e. 1, 3, 5 and 7.

Basic configuration of the instrument is indicated in bold.

** Unavailable with Modbus protocol in combination with RTC/FAST

OMB 402UNI

- Horizontal bargraf - 30 LED with display
- Multifunction input (DC, PM, RTD, T/C, DU)
- Digital filters, Tare, Linearization
- Size of DIN 96 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

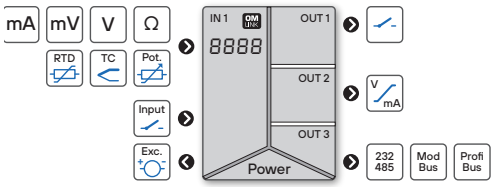
Comparators ● Data output ● Analog output ● Measured data record

The OMB 402 model series are panel programmable three-color bargraphs with auxiliary display designed for maximum efficiency and user comfort while maintaining its favourable price.

The OMB 402UNI is a multifunction instrument with the option of configuration for 8 various input options, easily configurable in the instrument menu.

The instrument is based on a microcontroller and multichannel 24-bit ΔΣ ADC, which secures high accuracy, stability and easy operation of the instrument.

UNIVERSAL BARGRAPH



OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

The measured units may be projected on the display.

OPTION

COMPARATORS are assigned to monitor four or eight limit values with relay output. For each input the user may select an arbitrary number of relays with the regime: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within full range of the display and selectable delay of the switch-on within the range of 0...99 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/MESSBUS/Modbus/PROFIBUS protocol.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current and the option of assigning it to arbitrary input. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (40 records/s) of all measured values up to 8 000 records. Second mode is RTC, where data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Measuring range: adjustable, either fixed or with automatic change (OHM)
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...10 V > 0...850.0
Projection: 30 LED + 6-digit auxiliary display

EXCITATION
Range: 5...24 VDC/1.2 W, for feeding sensors and transmitters

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Min./max. value: registration of min./max. value reached during measurement
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min/max value

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±60 mV	> 100 MΩ	Input U
	±150 mV	> 100 MΩ	Input U
	±300 mV	> 100 MΩ	Input U
	±1 200 mV	> 100 MΩ	Input U
PM Range	0...20 mA	< 400 mV	Input I
	4...20 mA	< 400 mV	Input I
	±2 V	1 MΩ	Input U
	±5 V	1 MΩ	Input U
	±10 V	1 MΩ	Input U
	±40 V	1 MΩ	Input U
OHM Range	0...100 Ω 0...1 / 10 / 100 kΩ		
Connection	2-, 3- and 4-wire		
RTD Range	Pt 100/500/1 000, 3 850 ppm/°C		-50°...450°C
	Pt 100, 3 920 ppm/°C		-50°...450°C
	Pt 50, 3 910 ppm/°C		-200°...1100°C
	Pt 100, 3 910 ppm/°C		-200°...450°C
Connection	2-, 3- and 4-wire		
Ni Range	Ni 1 000/10 000, 5 000 ppm/°C		-50°...250°C
	Ni 1 000/10 000, 6 180 ppm/°C		-200°...250°C
Connection	2-, 3- and 4-wire		
Cu Range	Cu 50/100, 4 260 ppm/°C		-50°...200°C
	Cu 50/100, 4 280 ppm/°C		-200°...200°C
Connection	2-, 3- and 4-wire		
T/C Range	J (Fe-CuNi)		-200°...900°C
	K (NiCr-Ni)		-200°...1 300°C
	T (Cu-CuNi)		-200°...400°C
	E (NiCr-CuNi)		-200°...690°C
	B (PtRh30-PtRh6)		300°...1 820°C
	S (PtRh10-Pt)		-50°...1 760°C
	R (Pt13Rh-Pt)		-50°...1 740°C
	N (Omegalloy)		-200°...1 300°C
	L (Fe-CuNi)		-200°...900°C
CJC	adjustable -20°...99°C or automatical		
DU Sensor power supply	2 VDC/6 mA, potentiometer resistance > 500 Ω		

OPTION „A"

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±0,1 A	< 300 mV	Input I
	±0,25 A	< 300 mV	Input I
	±0,5 A	< 300 mV	Input I
	±1 A	< 30 mV	Input I
	±5 A	< 150 mV	Input I
	±100 V	20 MΩ	Input U
	±250 V	20 MΩ	Input U
	±500 V	20 MΩ	Input U

EXTERNAL INPUT

No. of inputs	3, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused PASS. menu access blocking TARE tare activation CL. TA. tare resetting CL. M.M. resetting min/max value SAVE data recording start (FAST/RTC) CL. ME. data recording reset (FAST/RTC) CHAN. A. value display „Channel A" FIL. A. value display „Channel A" + filter MAT. FN. value display „Math. functions" SWIT. sequential or BCD channel switching

PROJECTION

Bargraph display	30 LED
Bar color	red / green / orange
Display	-99999...999999, single color 7-segment LED
Digit height	9.1 mm
Display color	red or green
Description	last two characters on the display may be used for description of measured quantities
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C	
Accuracy	±0.1% of FS + 1 digit ±0.15% of FS + 1 digit *above accuracies apply for projection 9999 and 5 meas./s*	RTD / T/C
Rate	0.1...40 measurement/s	
Overload	10x (t < 30 ms), 2x *not valid for 250 / 450 V and 5 A ranges*	
Compensation of conduct	< 30 Ω	RTD
Measurement accuracy CJC	±1.5°C	T/C
Resolution	0.1°C / 1°C	RTD / T/C
Functions	offset, Min/max value, Tare, peak value, math. functions	
Digital filters	exponential / floating / arithmetic average, rouding	
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root	
Linearization	linear interpolation in 50 points *setup only via OM Link*	
Data record	RTC 15 ppm/°C, time-date-display value < 266k data FAST display value < 8k data	
OM Link	company communication interface for operation, setting and update of instruments	
Watch-dog	reset after 400 ms	
Calibration	at 25°C and 40 % r.h.	

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 2...4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5...24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 10.3 W / 10.1 VA

MECHANIC PROPERTIES

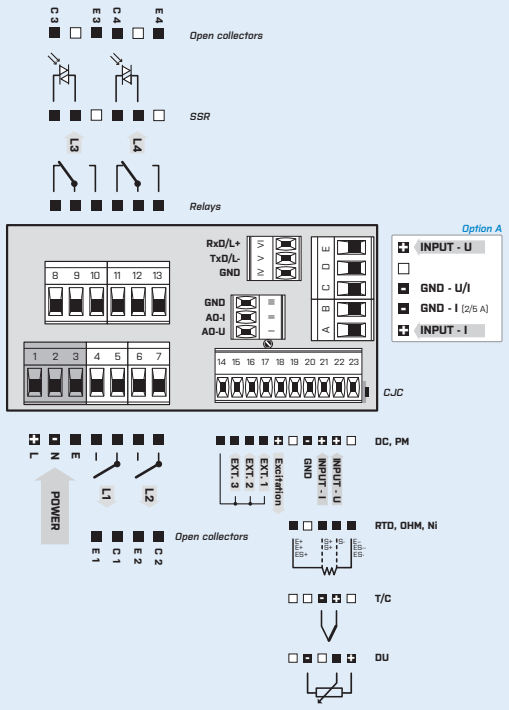
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6
SW validation	Class B, C in compl. with IEC 62138, 61226

* PI - Primary insulation, DI - Double insulation

CONNECTION



*GND (Input + Option A) is galvanically connected with inputs EXT. and the OM Link connector

ORDER CODE

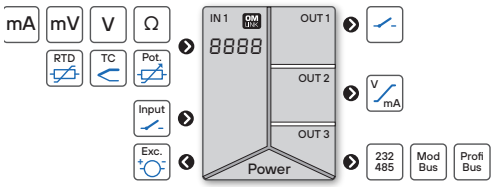
OMB 402UNI - [ ][ ][ ][ ][ ]1[ ][ ] - [ ]

Power supply	10...30 V AC/DC	0
	80...250 V AC/DC	1
Measuring range	standard	0
	option „A"	A
Comparators	no	0
	1x relay (Form A)	1
	2x relay (Form A)	2
	3x relays (2x Form A + 1x Form C)	3
	4x relays (2x Form A + 2x Form C)	4
	2x open collector	5
	4x open collector	6
	2x open collector + 2x relays (Form C)	7
	2x relays (Form C)	8
	2x SSR	9
	2x relays, bistable	A
	1x relay (Form C)	B
Analog output	no	0
	yes (compensation < 600 Ω/12 V)	1
	yes (compensation < 1000 Ω/24 V)	2
Data output	no	0
	RS 232	1
	RS 485	2
	Modbus*	3
	PROFIBUS	4
Excitation	yes	1
Data record	no	0
	RTC	1
	FAST	2
Display color	red (14 mm)	1
	green (14 mm)	2
Specification	customized version, do not fill in	00
	SW validation - IEC 62138, IEC 61226	VS

Basic configuration of the instrument is indicated in bold.

* Unavailable in combination with RTC/FAST

UNIVERSAL BARGRAPH



OMB 412UNI

- Vertical bargraf - 24 LED with display
- Multifunction input (DC, PM, RTD, T/C, DU)
- Digital filters, Tare, Linearization
- Size of DIN 48 x 96 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Measured data record

The OMB 412 model series are panel programmable three-color bargraphs with auxiliary display designed for maximum efficiency and user comfort while maintaining its favourable price.

The OMB 412UNI is a multifunction instrument with the option of configuration for 8 various input options, easily configurable in the instrument menu.

The instrument is based on a microcontroller and multichannel 24-bit ΔΣ ADC, which secures high accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by five buttons located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

OPTION

COMPARATORS are assigned to monitor four or eight limit values with relay output. For each input the user may select an arbitrary number of relays with the regime: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within full range of the display and selectable delay of the switch-on within the range of 0...99 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/MESSBUS/Modbus/PROFIBUS protocol.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current and the option of assigning it to arbitrary input. The value of analog output corresp. with the displayed data and its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (40 records/s) of all measured values up to 8 000 records. Second mode is RTC, where data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Measuring range: adjustable, either fixed or with automatic change (OHM)
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...10 V > 0...850.0
Projection: 24 LED + 3-digit auxiliary display

EXCITATION
Range: 5...24 VDC/1.2 W for feeding sensors and transmitters

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Min./max. value: registration of min./max. value reached during measurement
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min/max value

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±60 mV	> 100 MΩ	Input U
	±150 mV	> 100 MΩ	Input U
	±300 mV	> 100 MΩ	Input U
	±1 200 mV	> 100 MΩ	Input U
PM Range	0...20 mA	< 400 mV	Input I
	4...20 mA	< 400 mV	Input I
	±2 V	1 MΩ	Input U
	±5 V	1 MΩ	Input U
	±10 V	1 MΩ	Input U
	±40 V	1 MΩ	Input U
OHM Range	0...100 Ω 0...1 / 10 / 100 kΩ		
Connection	2-, 3- and 4-wire		
RTD Range	Pt 100/500/1 000, 3 850 ppm/°C		-50°...450°C
	Pt 100, 3 920 ppm/°C		-50°...450°C
	Pt 50, 3 910 ppm/°C		-200°...1100°C
	Pt 100, 3 910 ppm/°C		-200°...450°C
Connection	2-, 3- and 4-wire		
Ni Range	Ni 1 000/10 000, 5 000 ppm/°C		-50°...250°C
	Ni 1 000/10 000, 6 180 ppm/°C		-200°...250°C
Connection	2-, 3- and 4-wire		
Cu Range	Cu 50/100, 4 260 ppm/°C		-50°...200°C
	Cu 50/100, 4 280 ppm/°C		-200°...200°C
Connection	2-, 3- and 4-wire		
T/C Range	J (Fe-CuNi)		-200°...900°C
	K (NiCr-Ni)		-200°...1 300°C
	T (Cu-CuNi)		-200°...400°C
	E (NiCr-CuNi)		-200°...690°C
	B (PtRh30-PtRh6)		300°...1 820°C
	S (PtRh10-Pt)		-50°...1 760°C
	R (Pt13Rh-Pt)		-50°...1 740°C
	N (Omegalloy)		-200°...1 300°C
	L (Fe-CuNi)		-200°...900°C
CJC	adjustable -20°...99°C or automatical		
DU Sensor power supply	2 VDC/6 mA, potentiometer resistance > 500 Ω		

OPTION „A"

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±0,1 A	< 300 mV	Input I
	±0,25 A	< 300 mV	Input I
	±0,5 A	< 300 mV	Input I
	±1 A	< 30 mV	Input I
	±5 A	< 150 mV	Input I
	±100 V	20 MΩ	Input U
	±250 V	20 MΩ	Input U
	±500 V	20 MΩ	Input U

EXTERNAL INPUT

No. of inputs	3, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused PASS. menu access blocking TARE tare activation CL. TA. tare resetting CL. M.M. resetting min/max value SAVE data recording start (FAST/RTC) CL. ME. data recording reset (FAST/RTC) CHAN. A. value display „Channel A" FIL. A. value display „Channel A" + filter MAT. FN. value display „Math. functions" SWIT. sequential or BCD channel switching

PROJECTION

Bargraph display	24 LED
Bar color	red / green / orange
Display	-99...999, single color 7-segment LED
Digit height	9.1 mm
Display color	red or green
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C	
Accuracy	±0.1% of FS + 1 digit ±0.15% of FS + 1 digit *above accuracies apply for projection 9999 and 5 meas./s*	RTD / T/C
Rate	0.1...40 measurement/s	
Overload	10x (t < 30 ms), 2x *not valid for 250 / 450 V and 5 A ranges*	
Compensation of conduct	< 30 Ω	RTD
Measurement accuracy CJC	±1.5°C	T/C
Resolution	0.1°C / 1°C	RTD / T/C
Functions	offset, Min/max value, Tare, peak value, math. functions	
Digital filters	exponential / floating / arithmetic average, rouding	
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root	
Linearization	linear interpolation in 50 points *setup only via OM Link*	
Data record	RTC 15 ppm/°C, time-date-display value < 266k data FAST display value < 8k data	
OM Link	company communication interface for operation, setting and update of instruments	
Watch-dog	reset after 400 ms	
Calibration	at 25°C and 40 % r.h.	

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 2x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 2...4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5...24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 10.3 W / 10.1 VA

MECHANIC PROPERTIES

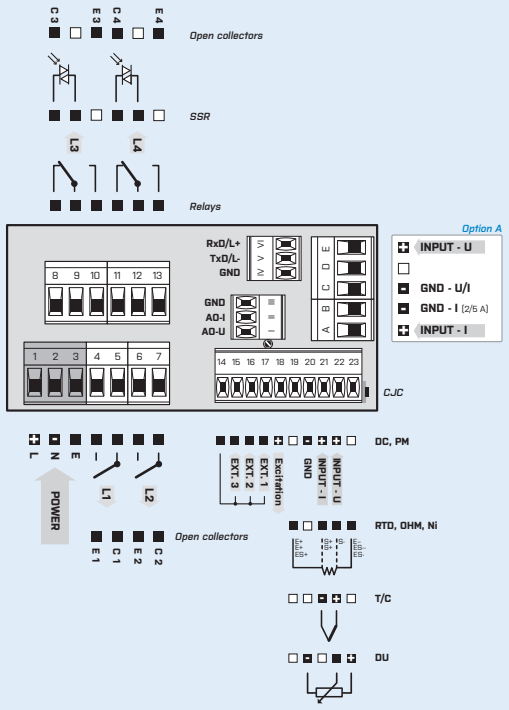
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	48 x 96 x 120 mm (w x h x d)
Panel cutout	45 x 90.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008
SW validation	Class B, C in compl. with IEC 62138, 61226

* PI - Primary insulation, DI - Double insulation

CONNECTION



*GND (Input + Option A) is galvanically connected with inputs EXT. and the OM Link connector

ORDER CODE

OMB 412UNI - [ ][ ][ ][ ][ ]1[ ][ ] - [ ]

Power supply	10...30 VDC / 24 VAC	**0**								
	80...250 V AC/DC	**1**								
Measuring range	standard		**0**							
	option „A"		**A**							
Comparators	no			**0**						
	1x relay (Form A)			**1**						
	2x relay (Form A)			**2**						
	3x relays (2x Form A + 1x Form C)			**3**						
	4x relays (2x Form A + 2x Form C)			**4**						
	2x open collector			**5**						
	4x open collector			**6**						
	2x open collector + 2x relays (Form C)			**7**						
	2x relays (Form C)			**8**						
	2x SSR			**9**						
	2x relays, bistable			**A**						
	1x relay (Form C)			**B**						
Analog output	no				**0**					
	yes (compensation < 600 Ω/12 V)				**1**					
	yes (compensation < 1000 Ω/24 V)				**2**					
Data output	no					**0**				
	RS 232					**1**				
	RS 485					**2**				
	Modbus*					**3**				
	PROFIBUS					**4**				
Excitation	yes						**1**			
Data record	no							**0**		
	RTC							**1**		
	FAST							**2**		
Display color	red (14 mm)								**1**	
	green (14 mm)								**2**	
Specification	customized version, do not fill in									**00**
	SW validation - IEC 62138, IEC 61226									**VS**

Basic configuration of the instrument is indicated in bold.

* Unavailable in combination with RTC/FAST

OMB 451UNI

- Bargraf - 50 LED with display and LCD scale
- Multifunction input (DC, PM, RTD, T/C, DU)
- Digital filters, Tare, Linearization
- Size of DIN 160 x 60 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

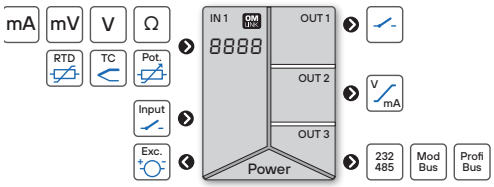
Comparators ● Data output ● Analog output ● Measured data record

The OMB 451 model series are panel programmable three-color bargraphs with auxiliary display and adjustable LCD scale.

Type OMB 451UNI is a multifunction instrument with the option of configuration for 8 various input options, easily configurable in the instrument menu.

The instrument is based on a microcontroller and multichannel 24-bit ΔΣ ADC, which secures high accuracy, stability and easy operation of the instrument.

UNIVERSAL BARGRAPH



OPERATION

The instrument is set and controlled by two control keys and a turn knob located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

OPTION

COMPARATORS are assigned to monitor four or eight limit values with relay output. For each input the user may select an arbitrary number of relays with the regime: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within full range of the display and selectable delay of the switch-on within the range of 0...99 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/MESSBUS/Modbus/PROFIBUS protocol.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current and the option of assigning it to arbitrary input. The value of analog output corresp. with the displayed data and its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (40 records/s) of all measured values up to 8 000 records. Second mode is RTC, where data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS 232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Measuring range: adjustable, either fixed or with automatic change (OHM)
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...10 V > 0...850.0
Projection: 50 LED + 6-digit auxiliary display
Scale: LCD, freely programmable

EXCITATION
Range: 5...24 VDC/1.2 W, for feeding sensors and transmitters

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Min./max. value: registration of min./max. value reached during measurement
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x, and operations between inputs - sum, difference

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min/max value

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±60 mV	> 100 MΩ	Input U
	±150 mV	> 100 MΩ	Input U
	±300 mV	> 100 MΩ	Input U
	±1 200 mV	> 100 MΩ	Input U
PM Range	0...20 mA	< 400 mV	Input I
	4...20 mA	< 400 mV	Input I
	±2 V	1 MΩ	Input U
	±5 V	1 MΩ	Input U
	±10 V	1 MΩ	Input U
	±40 V	1 MΩ	Input U
OHM Range	0...100 Ω 0...1 / 10 / 100 kΩ		
Connection	2-, 3- and 4-wire		
RTD Range	Pt 100/500/1 000, 3 850 ppm/°C	-50°...450°C	
	Pt 100, 3 920 ppm/°C	-50°...450°C	
	Pt 50, 3 910 ppm/°C	-200°...1100°C	
	Pt 100, 3 910 ppm/°C	-200°...450°C	
Connection	2-, 3- and 4-wire		
Ni Range	Ni 1 000/10 000, 5 000 ppm/°C	-50°...250°C	
	Ni 1 000/10 000, 6 180 ppm/°C	-200°...250°C	
Connection	2-, 3- and 4-wire		
Cu Range	Cu 50/100, 4 260 ppm/°C	-50°...200°C	
	Cu 50/100, 4 280 ppm/°C	-200°...200°C	
Connection	2-, 3- and 4-wire		
T/C Range	J (Fe-CuNi)	-200°...900°C	
	K (NiCr-Ni)	-200°...1 300°C	
	T (Cu-CuNi)	-200°...400°C	
	E (NiCr-CuNi)	-200°...690°C	
	B (PtRh30-PtRh6)	300°...1 820°C	
	S (PtRh10-Pt)	-50°...1 760°C	
	R (Pt13Rh-Pt)	-50°...1 740°C	
	N (Omegalloy)	-200°...1 300°C	
	L (Fe-CuNi)	-200°...900°C	
CJC	adjustable -20°...99°C or automatical		
DU Sensor power supply	2 VDC/6 mA, potentiometer resistance > 500 Ω		

OPTION „A"

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±0,1 A	< 300 mV	Input I
	±0,25 A	< 300 mV	Input I
	±0,5 A	< 300 mV	Input I
	±1 A	< 30 mV	Input I
	±5 A	< 150 mV	Input I
	±100 V	20 MΩ	Input U
	±250 V	20 MΩ	Input U
	±500 V	20 MΩ	Input U

OPTION „B"

No. of inputs	3 The range is adjustable in the instrument menu		
3x PM Range	0...20 mA	< 400 mV	Input 2, 3, 4 - I
	4...20 mA	< 400 mV	Input 2, 3, 4 - I
	±2 V	1 MΩ	Input 2, 3, 4 - U
	±5 V	1 MΩ	Input 2, 3, 4 - U
	±10 V	1 MΩ	Input 2, 3, 4 - U
	±40 V	1 MΩ	Input 2, 3, 4 - U

EXTERNAL INPUT

No. of inputs	3, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused PASS. menu access blocking TARE tare activation CL. TA. tare resetting CL. M.M. resetting min/max value SAVE data recording start (FAST/RTC) CL. ME. data recording reset (FAST/RTC) CHAN. A. value display „Channel A" FIL. A. value display „Channel A" + filter MAT. FN. value display „Math. functions" SWIT. sequential or BCD channel switching

PROJECTION

Bargraph display	50 + 50 LED, upper row displays the input value, the lower indicates the set limits
Bar color	red / green / orange
Scale	LCD backlit and freely programmable
Display	-99999...999999, single color 7-segment LED
Digit height	9.1 mm
Display color	red or green
Description	last two characters on the display may be used for description of measured quantities
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.1 % of FS + 1 digit ±0.15% of FS + 1 digit RTD / T/C *above accur. apply for projection 9999 and 5 meas./s*
Rate	0.1...40 measurement/s
Overload	10x (t < 30 ms), 2x *not valid for 250 / 450 V and 5 A ranges*
Compensation of conduct	< 30 Ω RTD
Measurement accuracy CJC	±1.5°C T/C
Resolution	0.1°C / °C RTD / T/C
Functions	offset, Min/max value, Tare, peak value, math. functions
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Linearization	linear interpolation in 50 points *setup only via OM Link*
Data record	RTC 15 ppm/°C, time-date-display value < 266k data FAST display value < 8k data
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 400 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...4x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 2...4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5...24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 15.5 W / 15.5 VA

MECHANIC PROPERTIES

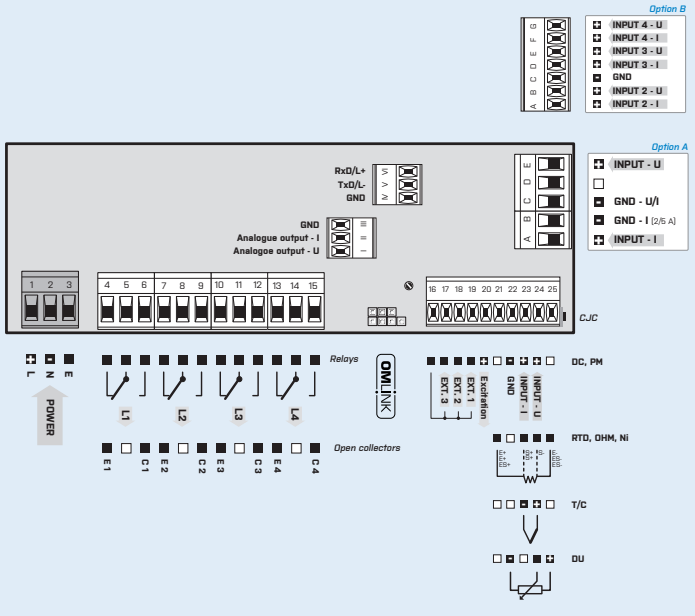
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	160 x 60 x 80 mm (w x h x d)
Panel cutout	150 x 50 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6
SW validation	Class B, C in compl. with IEC 62138, 61226

* PI - Primary insulation, DI - Double insulation

CONNECTION



*GND (Input + Option A) is galvanically connected with inputs EXT. and the OM Link connector
*In case of Option B we recommend to connect terminals GND (main board/addit. board) by ext. connection

ORDER CODE

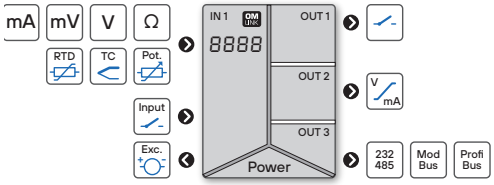
OMB 451UNI - [ ][ ][ ][ ][ ]1[ ][ ] - [ ]

Power supply	10...30 V AC/DC	0
	80...250 V AC/DC	1
Measuring range	standard	0
	option „A"	A
	option „B"	B
Comparators	no	0
	1x relay (Form C)	1
	2x relays (Form C)	2
	3x relays (Form C)	3
	4x relays (Form C)	4
	2x open collector	5
	4x open collector	6
Analog output	no	0
	yes (compensation < 600 Ω/12 V)	1
	yes (compensation < 1000 Ω/24 V)	2
Data output	no	0
	RS 232	1
	RS 485	2
	Modbus*	3
	PROFIBUS	4
Excitation	yes	1
Data record	no	0
	RTC	1
	FAST	2
Display color	red (14 mm)	1
	green (14 mm)	2
Specification	customized version, do not fill in	00
	SW validation - IEC 62138, IEC 61226	VS

Basic configuration of the instrument is indicated in bold.

* Unavailable in combination with RTC/FAST

UNIVERSAL BARGRAPH



OMB 452UNI

- Bargraf - 50 LED with display and LCD scale
- Multifunction input (DC, PM, RTD, T/C, DU)
- Digital filters, Tare, Linearization
- Size of DIN 160 x 80 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Analog output ● Measured data record

The OMB 452 model series are panel programmable three-color bargraphs with auxiliary display and adjustable LCD scale.

Type OMB 452UNI is a multifunction instrument with the option of configuration for 8 various input options, easily configurable in the instrument menu.

The instrument is based on a microcontroller and multichannel 24-bit ΔΣ ADC, which secures high accuracy, stability and easy operation of the instrument.

OPERATION

The instrument is set and controlled by two control keys and a turn knob located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

OPTION

COMPARATORS are assigned to monitor four or eight limit values with relay output. For each input the user may select an arbitrary number of relays with the regime: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within full range of the display and selectable delay of the switch-on within the range of 0...99 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/MESSBUS/Modbus/PROFIBUS protocol.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current and the option of assigning it to arbitrary input. The value of analog output corresp. with the displayed data and its type and range are selectable in menu.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (40 records/s) of all measured values up to 8 000 records. Second mode is RTC, where data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS 232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Measuring range: adjustable, either fixed or with automatic change (OHM)
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...10 V > 0...850.0
Projection: 50 LED + 6-digit auxiliary display
Scale: LCD, freely programmable

EXCITATION
Range: 5...24 VDC/1.2 W, for feeding sensors and transmitters

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Min./max. value: registration of min./max. value reached during measurement
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x, and operations between inputs - sum, quotient

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min/max value

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±60 mV	> 100 MΩ	Input U
	±150 mV	> 100 MΩ	Input U
	±300 mV	> 100 MΩ	Input U
	±1 200 mV	> 100 MΩ	Input U
PM Range	0...20 mA	< 400 mV	Input I
	4...20 mA	< 400 mV	Input I
	±2 V	1 MΩ	Input U
	±5 V	1 MΩ	Input U
	±10 V	1 MΩ	Input U
	±40 V	1 MΩ	Input U
OHM Range	0...100 Ω 0...1 / 10 / 100 kΩ		
Connection	2-, 3- and 4-wire		
RTD Range	Pt 100/500/1 000, 3 850 ppm/°C		-50°...450°C
	Pt 100, 3 920 ppm/°C		-50°...450°C
	Pt 50, 3 910 ppm/°C		-200°...1100°C
	Pt 100, 3 910 ppm/°C		-200°...450°C
Connection	2-, 3- and 4-wire		
Ni Range	Ni 1 000/10 000, 5 000 ppm/°C		-50°...250°C
	Ni 1 000/10 000, 6 180 ppm/°C		-200°...250°C
Connection	2-, 3- and 4-wire		
Cu Range	Cu 50/100, 4 260 ppm/°C		-50°...200°C
	Cu 50/100, 4 280 ppm/°C		-200°...200°C
Connection	2-, 3- and 4-wire		
T/C Range	J (Fe-CuNi)		-200°...900°C
	K (NiCr-Ni)		-200°...1 300°C
	T (Cu-CuNi)		-200°...400°C
	E (NiCr-CuNi)		-200°...690°C
	B (PtRh30-PtRh6)		300°...1 820°C
	S (PtRh10-Pt)		-50°...1 760°C
	R (Pt13Rh-Pt)		-50°...1 740°C
	N (Omegalloy)		-200°...1 300°C
	L (Fe-CuNi)		-200°...900°C
CJC	adjustable -20°...99°C or automatical		
DU Sensor power supply	2 VDC/6 mA, potentiometer resistance > 500 Ω		

OPTION „A"

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±0,1 A	< 300 mV	Input I
	±0,25 A	< 300 mV	Input I
	±0,5 A	< 300 mV	Input I
	±1 A	< 30 mV	Input I
	±5 A	< 150 mV	Input I
	±100 V	20 MΩ	Input U
	±250 V	20 MΩ	Input U
	±500 V	20 MΩ	Input U

OPTION „B"

No. of inputs	3 The range is adjustable in the instrument menu		
3x PM Range	0...20 mA	< 400 mV	Input 2, 3, 4 - I
	4...20 mA	< 400 mV	Input 2, 3, 4 - I
	±2 V	1 MΩ	Input 2, 3, 4 - U
	±5 V	1 MΩ	Input 2, 3, 4 - U
	±10 V	1 MΩ	Input 2, 3, 4 - U
	±40 V	1 MΩ	Input 2, 3, 4 - U

EXTERNAL INPUT

No. of inputs	3, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused PASS. menu access blocking TARE tare activation CL. TA. tare resetting CL. M.M. resetting min/max value SAVE data recording start (FAST/RTC) CL. ME. data recording reset (FAST/RTC) CHAN. A. value display „Channel A" FIL. A. value display „Channel A" + filter MAT. FN. value display „Math. functions" SWIT. sequential or BCD channel switching

PROJECTION

Bargraph display	50 + 50 LED, upper row displays the input value, the lower indicates the set limits
Bar color	red / green / orange
Scale	LCD backlit and freely programmable
Display	-999...9999 + 99, single color 14-segment LED
Digit height	14 mm + 9.1 mm
Display color	red or green
Description	last two characters on the display may be used for description of measured quantities
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C	
Accuracy	±0.1 % of FS + 1 digit ±0.15% of FS + 1 digit *above accur. apply for projection 9999 and 5 meas./s*	RTD / T/C
Rate	0.1...40 measurement/s	
Overload	10x (t < 30 ms), 2x *not valid for 250 / 450 V and 5 A ranges*	
Compensation of conduct	< 30 Ω	RTD
Measurement accuracy CJC	±1.5°C	T/C
Resolution	0.1°C / °C	RTD / T/C
Functions	offset, Min/max value, Tare, peak value, math. functions	
Digital filters	exponential / floating / arithmetic average, rouding	
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root	
Linearization	linear interpolation in 50 points *setup only via OM Link*	
Data record	RTC 15 ppm/°C, time-date-display value < 266k data FAST display value < 8k data	
OM Link	company communication interface for operation, setting and update of instruments	
Watch-dog	reset after 400 ms	
Calibration	at 25°C and 40 % r.h.	

RELAYS / OC OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...4x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 2...4x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5...24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 15.5 W / 15.5 VA

MECHANIC PROPERTIES

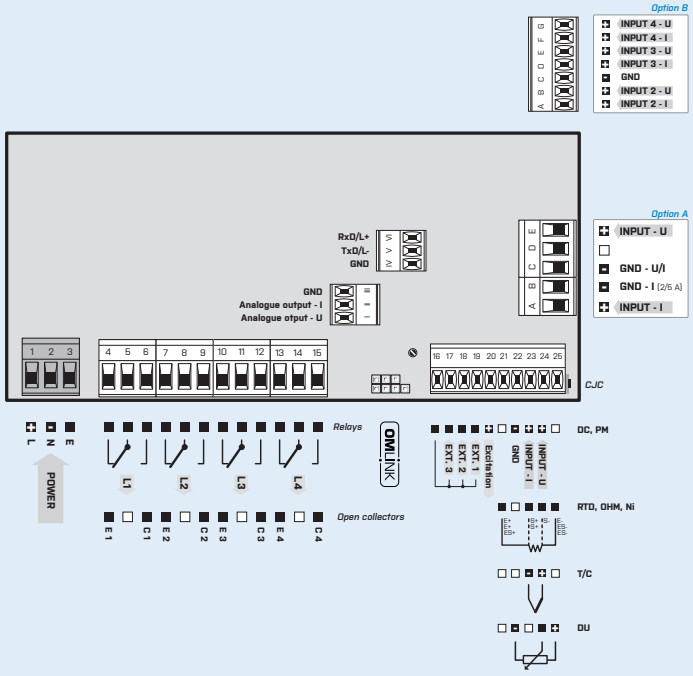
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	160 x 80 x 80 mm (w x h x d)
Panel cutout	150 x 70 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6
SW validation	Class B, C in compl. with IEC 62138, 61226

* PI - Primary insulation, DI - Double insulation

CONNECTION



*GND (Input + Option A) is galvanically connected with inputs EXT. and the OM Link connector
*In case of Option B we recommend to connect terminals GND (main board/addit. board) by ext. connection

ORDER CODE

OMB 452UNI - [ ][ ][ ][ ][ ]**1**[ ][ ] - [ ]

Power supply	10...30 V AC/DC	**0**
	80...250 V AC/DC	**1**
Measuring range	standard	**0**
	option „A"	**A**
	option „B"	**B**
Comparators	no	**0**
	1x relay (Form C)	**1**
	2x relays (Form C)	**2**
	3x relays (Form C)	**3**
	4x relays (Form C)	**4**
	2x open collector	**5**
	4x open collector	**6**
Analog output	no	**0**
	yes (compensation < 600 Ω/12 V)	**1**
	yes (compensation < 1000 Ω/24 V)	**2**
Data output	no	**0**
	RS 232	**1**
	RS 485	**2**
	Modbus*	**3**
	PROFIBUS	**4**
Excitation	yes	**1**
Data record	no	**0**
	RTC	**1**
	FAST	**2**
Display color	red (14 mm)	**1**
	green (14 mm)	**2**
Specification	customized version, do not fill in	**00**
	SW validation - IEC 62138, IEC 61226	**VS**

Basic configuration of the instrument is indicated in bold.

* Unavailable in combination with RTC/FAST

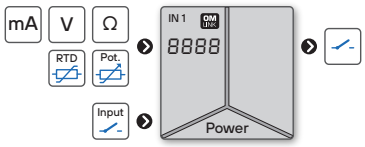
OMB 200UNI

- Three-color bargraph - 20 LED
- Multifunction input (PM, OHM, RTD, DU)
- Digital filters, Linearization
- Size of DIN 72 x 24 mm
- Power supply 10...30 VDC / 24 VAC

Option

Comparator

UNIVERSAL BARGRAPH



The OMB 200/300/500UNI model series are simple bargraphs designed for maximum efficiency and user comfort while maintaining their favourable price.

Type OMB 200UNI is a multifunction instrument with the option of configuration

for 5 various input options, easily configurable in the instrument menu.

The instrument is based on a microcontroller with ADC which secures good accuracy, stability and easy operation of the instrument.

By selecting the insertion mode of the front plexiglass (reverse/face) you may choose the required scale printing for vertical or horizontal design of the instrument.

OPERATION

The instrument is set and controlled by five buttons located under the front panel. All programmable settings of the instrument may be performed in two adjusting modes.

LIGHT MENU contains solely items necessary for instrument setting.

PROFI MENU contains complete instrument setting, which is accessible only via OM Link.

Standard equipment is the OM Link interface, which together with the operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable).

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATOR is assigned to monitor one limit value with relay output. The limit has adjustable hysteresis within full range of the display and selectable delay of the switch-on within the range of 0...99 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Setting: manual, in menu optional projection on the display may be set for both limit values of the input signal
Projection: 20 LED

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
PM Range	0...20 mA 4...20 mA 0...2 V 0...5 V 0...10 V	< 1.2 V < 1.2 V 182 kΩ 182 kΩ 182 kΩ	Input 1 Input 1 Input 2 Input 2 Input 2
OHM Range	0...100 kΩ		
Connection	2-wire		
RTD Range	Pt 1 000, 3 850 ppm/°C		-50°...450°C
Connection	2-wire		
Ni Range	Ni 1 000, 5 000 ppm/°C		-50°...250°C
Connection	2-wire		
DU Sensor power supply	2.5 VDC/6 mA, potentiometer resistance > 500 Ω		

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused

PROJECTION

Bargraph display	20 LED
Bar color	red / green / orange
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±1% of FS + 1 digit
Rate	0.5...50 measurement/s
Overload	10x (t < 30 ms), 2x
Compensation of conduct	< 30 Ω RTD
Digital filters	exponential average, rounding
Linearization	linear interpolation in 25 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 25 ms
Calibration	at 25°C and 40 % r.h.

RELAYS OUTPUT

No. of outputs	1
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1x bistable relays (250 VAC/250 VDC, 3 A/0,3 A)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Range	10...30 V DC / AC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated
Consumption	< 1.8 W / 1.9 VA

MECHANIC PROPERTIES

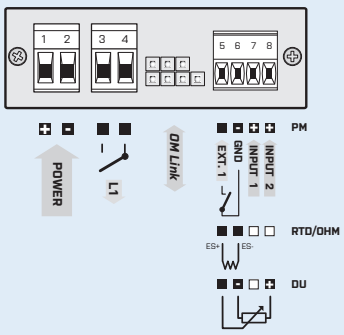
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	72 x 24 x 100 mm (w x h x d)
Panel cutout	68 x 21.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP40, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI) input, output > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMB 200UNI - ☐ - ☐

Comparator	no	**0**
	1x relay (Form A)	**1**
Specification	customized version, do not fill in	**00**

Basic configuration of the instrument is indicated in bold.

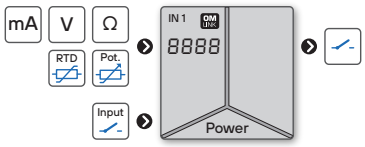
OMB 300UNI

- Three-color bargraph - 30 LED
- Multifunction input (PM, OHM, RTD, DU)
- Digital filters, Linearization
- Size of DIN 96 x 24 mm
- Power supply 10...30 VDC / 24 VAC

Option

Comparators

UNIVERSAL BARGRAPH



The OMB 200/300/500UNI model series are simple bargraphs designed for maximum efficiency and user comfort while maintaining their favourable price.

Type OMB 300UNI is a multifunction instrument with the option of configuration

for 5 various input options, easily configurable in the instrument menu.

The instrument is based on a microcontroller with ADC which secures good accuracy, stability and easy operation of the instrument.

By selecting the insertion mode of the front plexiglass (reverse/face) you may choose the required scale printing for vertical or horizontal design of the instrument.

OPERATION

The instrument is set and controlled by five buttons located under the front panel. All programmable settings of the instrument may be performed in two adjusting modes.

LIGHT MENU contains solely items necessary for instrument setting.

PROFI MENU contains complete instrument setting, which is accessible only via OM Link.

Standard equipment is the OM Link interface, which together with the operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable).

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor one, two or three limit values with relay output. The limit has adjustable hysteresis within full range of the display and selectable delay of the switch-on within the range of 0...99 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Setting: manual, in menu optional projection on the display may be set for both limit values of the input signal
Projection: 30 LED

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
PM Range	0...20 mA 4...20 mA 0...2 V 0...5 V 0...10 V	< 1.2 V < 1.2 V 182 kΩ 182 kΩ 182 kΩ	Input 1 Input 1 Input 2 Input 2 Input 2
OHM Range	0...100 kΩ		
Connection	2-wire		
RTD Range	Pt 1 000, 3 850 ppm/°C		-50°...450°C
Connection	2-wire		
Ni Range	Ni 1 000, 5 000 ppm/°C		-50°...250°C
Connection	2-wire		
DU Sensor power supply	2.5 VDC/6 mA, potentiometer resistance > 500 Ω		

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused

PROJECTION

Bargraph display	30 LED
Bar color	red / green / orange
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C	
Accuracy	±1% of FS + 1 digit	
Rate	0.5...50 measurement/s	
Overload	10x (t < 30 ms), 2x	
Compensation of conduct	< 30 Ω	RTD
Digital filters	exponential average, rounding	
Linearization	linear interpolation in 25 points *setup only via OM Link*	
OM Link	company communication interface for operation, setting and update of instruments	
Watch-dog	reset after 25 ms	
Calibration	at 25°C and 40 % r.h.	

RELAYS OUTPUT

No. of outputs	up to 3
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...3x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 1x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)*
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Range	10...30 V DC / AC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated
Consumption	< 2.3 W / 2.4 VA

MECHANIC PROPERTIES

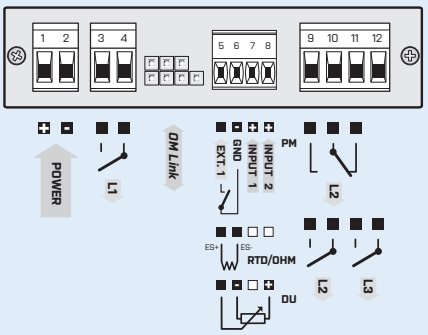
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 24 x 100 mm (w x h x d)
Panel cutout	92 x 21.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP40, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI) input, output > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



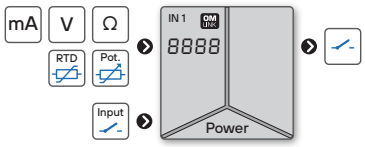
ORDER CODE

OMB 300UNI - ☐ - ☐

Comparators	no	**0**
	1x relay (Form A)	**1**
	2x relays (Form A/Form C)	**2**
	3x relay (Form A)	**3**
Specification	customized version, do not fill in	**00**

Basic configuration of the instrument is indicated in bold.

UNIVERSAL BARGRAPH



OMB 500UNI

- Three-color bargraph - 50 LED
- Multifunction input (PM, OHM, RTD, DU)
- Digital filters, Linearization
- Size of DIN 144 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators

The OMB 200/300/500UNI model series are simple bargraphs designed for maximum efficiency and user comfort while maintaining their favourable price.

Type OMB 500UNI is a multifunction instrument with the option of configuration for 5 various input options, easily configurable in the instrument menu.

The instrument is based on a microcontroller with ADC which secures good accuracy, stability and easy operation of the instrument.

By selecting the insertion mode of the front plexiglass (reverse/face) you may choose the required scale printing for vertical or horizontal design of the instrument.

OPERATION

The instrument is set and controlled by five buttons located under the front panel. All programmable settings of the instrument may be performed in two adjusting modes.

LIGHT MENU contains solely items necessary for instrument setting.

PROFI MENU contains complete instrument setting, which is accessible only via OM Link.

Standard equipment is the OM Link interface, which together with the operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable).

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor one or two limit values with relay output. The limit has adjustable hysteresis within full range of the display and selectable delay of the switch-on within the range of 0...99 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Setting: manual, in menu optional projection on the display may be set for both limit values of the input signal
Projection: 50 LED

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
PM Range	0...20 mA 4...20 mA 0...2 V 0...5 V 0...10 V	< 1.2 V < 1.2 V 182 kΩ 182 kΩ 182 kΩ	Input 1 Input 1 Input 2 Input 2 Input 2
OHM Range	0...100 kΩ		
Connection	2-wire		
RTD Range	Pt 1 000, 3 850 ppm/°C		-50°...450°C
Connection	2-wire		
Ni Range	Ni 1 000, 5 000 ppm/°C		-50°...250°C
Connection	2-wire		
DU Sensor power supply	2.5 VDC/6 mA, potentiometer resistance > 500 Ω		

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused

PROJECTION

Bargraph display	50 LED
Bar color	red / green / orange
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±1% of FS + 1 digit
Rate	0.5...50 measurement/s
Overload	10x (t < 30 ms), 2x
Compensation of conduct	< 30 Ω RTD
Digital filters	exponential average, rounding
Linearization	linear interpolation in 25 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 25 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 2
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 3.5 W / 3.9 VA

MECHANIC PROPERTIES

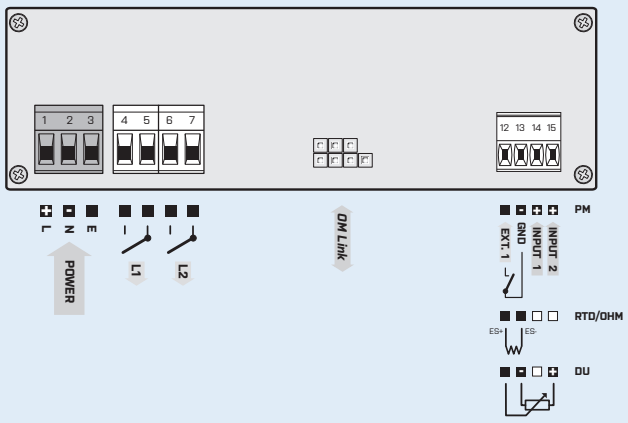
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	144 x 48 x 75 mm (w x h x d)
Panel cutout	138 x 43.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP40, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI) input, output > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMB 500UNI - □□ - □

Power supply	10...30 V AC/DC	**0**		
	80...250 V AC/DC	**1**		
Comparators	no		**0**	
	1x relay (Form A)		**1**	
	2x relay (Form A)		**2**	
	1x open collector		**3**	
	2x open collector		**4**	
Specification	customized version, do not fill in			**00**

Basic configuration of the instrument is indicated in bold.

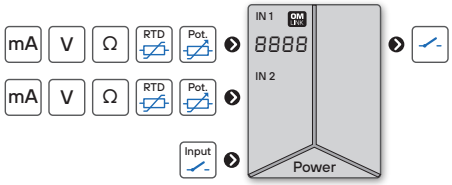
OMB 502UNI

- Three-color bargraph - 2x 50 LED
- Two-channel design
- Multifunction input (PM, OHM, RTD, DU)
- Digital filters, Linearization
- Size of DIN 144 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators

UNIVERSAL DUAL BARGRAPH



The OMB 200/300/500UNI model series are simple bargraphs designed for maximum efficiency and user comfort while maintaining their favourable price.

Type OMB 502UNI is a multifunction instrument with the option of configuration for 5 various input options, easily configurable in the instrument menu.

The instrument is based on a microcontroller with ADC which secures good accuracy, stability and easy operation of the instrument.

By selecting the insertion mode of the front plexiglass (reverse/face) you may choose the required scale printing for vertical or horizontal design of the instrument.

OPERATION

The instrument is set and controlled by five buttons located under the front panel. All programmable settings of the instrument may be performed in two adjusting modes.

LIGHT MENU contains solely items necessary for instrument setting.

PROFI MENU contains complete instrument setting, which is accessible only via OM Link.

Standard equipment is the OM Link interface, which together with the operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable).

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor one or two limit values with relay output. The limit has adjustable hysteresis within full range of the display and selectable delay of the switch-on within the range of 0...99 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Setting: manual, in menu optional projection on the display may be set for both limit values of the input signal
Projection: 50 LED

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking

TECHNICAL DATA

INPUT

No. of inputs		2 The range is adjustable in the instrument menu	
PM	Range	0...20 mA < 1.2 V Input 1 4...20 mA < 1.2 V Input 1 0...2 V 182 kΩ Input 2 0...5 V 182 kΩ Input 2 0...10 V 182 kΩ Input 2	
OHM	Range	0...100 kΩ	
	Connection	2-wire	
RTD	Range	Pt 1 000, 3 850 ppm/°C	-50°...450°C
	Connection	2-wire	
Ni	Range	Ni 1 000, 5 000 ppm/°C	-50°...250°C
	Connection	2-wire	
DU	Sensor power supply	2.5 VDC/6 mA, potentiometer resistance > 500 Ω	

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused

PROJECTION

Bargraph display	2x 50 LED
Bar color	red / green / orange
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±1% of FS + 1 digit
Rate	0.5...50 measurement/s
Overload	10x (t < 30 ms), 2x
Compensation of conduct	< 30 Ω RTD
Digital filters	exponential average, rounding
Linearization	linear interpolation in 25 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 25 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 2
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 5.0 W / 5.4 VA

MECHANIC PROPERTIES

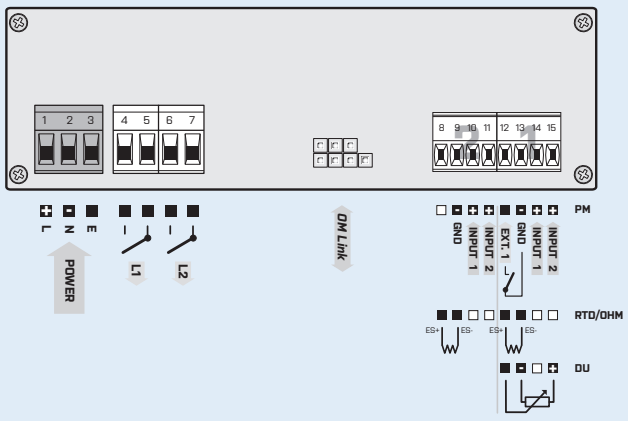
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	144 x 48 x 75 mm (w x h x d)
Panel cutout	138 x 43.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP40, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI) input, output > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMB 502UNI - □□ - □

Power supply	10...30 V AC/DC	**0**		
	80...250 V AC/DC	**1**		
Comparators	no		**0**	
	1x relay (Form A)		**1**	
	2x relay (Form A)		**2**	
	1x open collector		**3**	
	2x open collector		**4**	
Specification	customized version, do not fill in			**00**

Basic configuration of the instrument is indicated in bold.

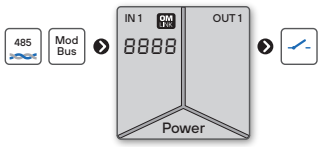
OMB 200RS

- Three-color bargraph - 20 LED
- Input RS 485
- ASCII, Modbus RTU
- Digital filters, Linearization
- Size of DIN 72 x 24 mm
- Power supply 10...30 VDC / 24 VAC

Option

Comparator

BARGRAPH FOR DATA LINES



The OMB 200/300/500UNI model series are simple bargraphs.
Type OMB 200RS is a bargraph for data lines RS 485.
The instrument is based on a single-chip microcontroller, which secures an easy operation of the instrument.
By selecting the insertion mode of the front plexiglass (reverse/face) you may choose the required scale printing for vertical or horizontal design of the instrument.

OPERATION

The instrument is set and controlled by five buttons located under the front panel. All programmable settings of the instrument may be performed in two adjusting modes.

LIGHT MENU contains solely items necessary for instrument setting.

PROFI MENU contains complete instrument setting, which is accessible only via OM Link.

Standard equipment is the OM Link interface, which together with the operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable).

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATOR is assigned to monitor one limit value with relay output. The limit has adjustable hysteresis within full range of the display and selectable delay of the switch-on within the range of 0...99 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Input: RS 485
Protocol: ASCII - Master/Slave/Universal or Modbus RTU
Projection: -99999...999999
Projection: 20 LED

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

TECHNICAL DATA

INPUT

No. of inputs		1
RS	Input	RS 485
	Protocol	**ASCII - Master** - the instrument controls data sending from the slave system - „COMM" can be used to select the received data - the instrument asks with the rate of 10 queries/s **ASCII - Slave** - Passive bus display where other devices or computers communicate in „MAST." mode. If the „COMM" and the requested data are correctly received, they will be displayed by the instrument **ASCII - Universal** - in dynamic menu items (Stat, Ad.Un, Sign, Data, Stop, Req.) you can build your own communication protocol format **Modbus RTU**
	Format	8 bit + no parity + 1 stop bit
	Adresse	ASCII 0...31 Modbus 1...247
	Rate	300...230 400 Baud
	Line termination	short-circuit jumper on the connector *resistance inside the instrument is 120 R*

PROJECTION

Bargraph display	20 LED
Bar color	red / green / orange
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Digital filters	exponential average, rounding
Linearization	linear interpolation in 25 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 25 ms
Calibration	at 25°C and 40 % r.h.

RELAYS OUTPUT

No. of outputs	1
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1x bistable relays (250 VAC/250 VDC, 3 A/0,3 A)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Range	10...30 V DC / AC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated
Consumption	< 1.8 W / 1.9 VA

MECHANIC PROPERTIES

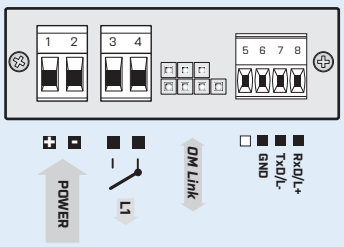
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	72 x 24 x 100 mm (w x h x d)
Panel cutout	68 x 21.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP40, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI) input, output > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMB 200RS - ☐ - ☐

Comparator	no	**0**	
	1x relay (Form A)	**1**	
Specification	customized version, do not fill in		**00**

Basic configuration of the instrument is indicated in bold.

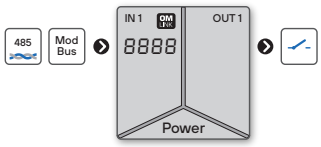
OMB 300RS

- Three-color bargraph - 30 LED
- Input RS 485
- ASCII, Modbus RTU
- Digital filters, Linearization
- Size of DIN 96 x 24 mm
- Power supply 10...30 VDC / 24 VAC

Option

Comparators

BARGRAPH FOR DATA LINES



The OMB 200/300/500UNI model series are simple bargraphs.
Type OMB 300RS is a bargraph for data lines RS 485.
The instrument is based on a single-chip microcontroller, which secures an easy operation of the instrument.
By selecting the insertion mode of the front plexiglass (reverse/face) you may choose the required scale printing for vertical or horizontal design of the instrument.

OPERATION

The instrument is set and controlled by five buttons located under the front panel. All programmable settings of the instrument may be performed in two adjusting modes.

LIGHT MENU contains solely items necessary for instrument setting.

PROFI MENU contains complete instrument setting, which is accessible only via OM Link.

Standard equipment is the OM Link interface, which together with the operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable).

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor one, two or three limit values with relay output. The limit has adjustable hysteresis within full range of the display and selectable delay of the switch-on within the range of 0...99 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Input: RS 485
Protocol: ASCII - Master/Slave/Universal or Modbus RTU
Projection: -99999...999999
Projection: 30 LED

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

TECHNICAL DATA

INPUT

No. of inputs		1
RS	Input	RS 485
	Protocol	**ASCII - Master** - the instrument controls data sending from the slave system - „COMM" can be used to select the received data - the instrument asks with the rate of 10 queries/s **ASCII - Slave** - Passive bus display where other devices or computers communicate in „MAST." mode. If the „COMM" and the requested data are correctly received, they will be displayed by the instrument **ASCII - Universal** - in dynamic menu items (Stat, Ad.Un, Sign, Data, Stop, Req.) you can build your own communication protocol format **Modbus RTU**
	Format	8 bit + no parity + 1 stop bit
	Adresse	ASCII 0...31 Modbus 1...247
	Rate	300...230 400 Baud
	Line termination	short-circuit jumper on the connector *resistance inside the instrument is 120 R*

PROJECTION

Bargraph display	30 LED
Bar color	red / green / orange
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Digital filters	exponential average, rounding
Linearization	linear interpolation in 25 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 25 ms
Calibration	at 25°C and 40 % r.h.

RELAYS OUTPUT

No. of outputs	up to 3
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...3x bistable relays (250 VAC/250 VDC, 3 A/0,3 A) 1x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)*
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Range	10...30 V DC / AC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated
Consumption	< 2.3 W / 2.4 VA

MECHANIC PROPERTIES

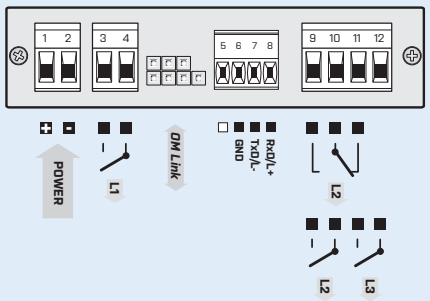
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 24 x 100 mm (w x h x d)
Panel cutout	92 x 21.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP40, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI) input, output > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMB 300RS - ☐ - ☐

Comparators	no	**0**
	1x relay (Form A)	**1**
	2x relays (Form A/Form C)	**2**
	3x relay (Form A)	**3**
Specification	customized version, do not fill in	**00**

Basic configuration of the instrument is indicated in bold.

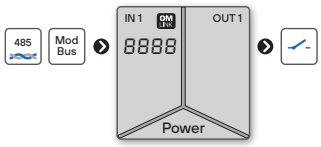
OMB 500RS

- Three-color bargraph - 50 LED
- Input RS 485
- ASCII, Modbus RTU
- Digital filters, Linearization
- Size of DIN 144 x 48 mm
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators

BARGRAPH FOR DATA LINES



The OMB 200/300/500UNI model series are simple bargraphs.
Type OMB 500RS is a bargraph for data lines RS 485.
The instrument is based on a single-chip microcontroller, which secures an easy operation of the instrument.
By selecting the insertion mode of the front plexiglass (reverse/face) you may choose the required scale printing for vertical or horizontal design of the instrument.

OPERATION

The instrument is set and controlled by five buttons located under the front panel. All programmable settings of the instrument may be performed in two adjusting modes.

LIGHT MENU contains solely items necessary for instrument setting.

PROFI MENU contains complete instrument setting, which is accessible only via OM Link.

Standard equipment is the OM Link interface, which together with the operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable).

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor one or two limit values with relay output. The limit has adjustable hysteresis within full range of the display and selectable delay of the switch-on within the range of 0...99 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Input: RS 485
Protocol: ASCII - Master/Slave/Universal or Modbus RTU
Projection: -99999...999999
Projection: 50 LED

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display

TECHNICAL DATA

IINPUT

No. of inputs		1
RS	Input	RS 485
	Protocol	**ASCII - Master** - the instrument controls data sending from the slave system - „COMM" can be used to select the received data - the instrument asks with the rate of 10 queries/s **ASCII - Slave** - Passive bus display where other devices or computers communicate in „MAST." mode. If the „COMM" and the requested data are correctly received, they will be displayed by the instrument **ASCII - Universal** - in dynamic menu items (Stat, Ad.Un, Sign, Data, Stop, Req.) you can build your own communication protocol format **Modbus RTU**
	Format	8 bit + no parity + 1 stop bit
	Adresse	ASCII 0...31 Modbus 1...247
	Rate	300...230 400 Baud
	Line termination	short-circuit jumper on the connector *resistance inside the instrument is 120 R*

PROJECTION

Bargraph display	50 LED
Bar color	red / green / orange
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Digital filters	exponential average, rounding
Linearization	linear interpolation in 25 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 25 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 2
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 3.5 W / 3.9 VA

MECHANIC PROPERTIES

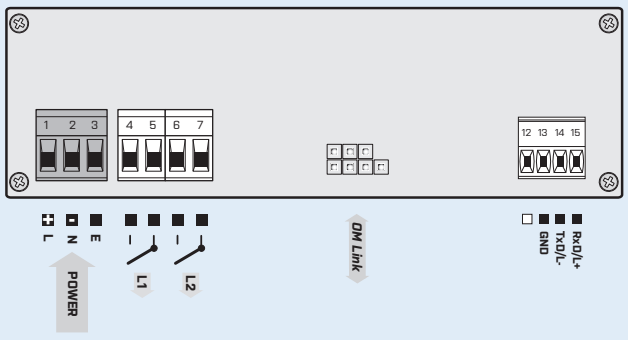
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	144 x 48 x 75 mm (w x h x d)
Panel cutout	138 x 43.5 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP40, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and input 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI) input, output > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMB 500RS - ☐☐ - ☐

Power supply	10...30 V AC/DC	**0**		
	80...250 V AC/DC	**1**		
Comparators	no		**0**	
	1x relay (Form A)		**1**	
	2x relay (Form A)		**2**	
	1x open collector		**3**	
	2x open collector		**4**	
Specification	customized version, do not fill in			**00**

Basic configuration of the instrument is indicated in bold.

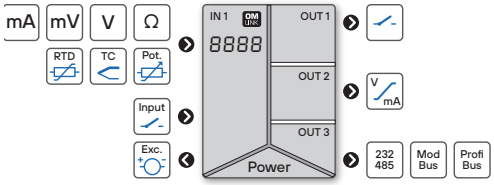
OMD 202UNI

- 4/6-digit programmable projection
- Multifunction input (DC, PM, RTD, T/C, DU)
- Three-color or higly luminous LED
- Digit height 57; 100; 125 mm, IR operation
- Digital filters, Tare, Linearization
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Excitation ● Comparators ● Data output ● Analog output

UNIVERSAL LARGE DISPLAY



The OMD 202 model series are large programmable displays for indoor and outdoor use with IP64 protection.

Type OMD 202UNI is a multifunction instrument with the option of configuration of 8 various input options, easily configurable in the instrument menu. Through another extension of input modules the No. of inputs can be extended up to 4 (applicable for PM).

The instrument is based on a microcontroller and multichannel 24-bit ΔΣ ADC, which secures high accuracy, stability and easy operation of the instrument.

Displays are suitable for projection of measured data in production lines and manufacture with good legibility up to 80 m.

OPERATION

The instrument is set and controlled by an IR remote control. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

The measured units can be displayed on the 6-digit display.

OPTION

EXCITATION for feeding sensors and transmitters. It is continuously adjustable in the range of 5...24 VDC.

COMPARATORS are assigned to monitor 1 - 4 limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range
Measuring range: adjustable, either fixed or with automatic change (OHM)
Setting: manual, optional projection on the display may be set in menu for both limit values of the input signal, e.g. input 0...10 V > 0...850.0
Projection: -999...9999/-99999...999999

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Min./max. value: registration of min./max. value reached during measurement
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x and operations between inputs

DIGITAL FILTERS
Floating/Exp./Arithm. average: from 2...30/100/100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min./max. value

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±60 mV	> 100 MΩ	Input U
	±150 mV	> 100 MΩ	Input U
	±300 mV	> 100 MΩ	Input U
	±1 200 mV	> 100 MΩ	Input U
PM Range	0...20 mA	< 400 mV	Input I
	4...20 mA	< 400 mV	Input I
	±2 V	1 MΩ	Input U
	±5 V	1 MΩ	Input U
	±10 V	1 MΩ	Input U
	±40 V	1 MΩ	Input U
OHM Range	0...100 Ω 0...1 / 10 / 100 kΩ		
Connection	2-, 3- and 4-wire		
RTD Range	Pt 100/500/1 000, 3 850 ppm/°C		-50°...450°C
	Pt 100, 3 920 ppm/°C		-50°...450°C
	Pt 50, 3 910 ppm/°C		-200°...1100°C
	Pt 100, 3 910 ppm/°C		-200°...450°C
Connection	2-, 3- and 4-wire		
Ni Range	Ni 1 000/10 000, 5 000 ppm/°C		-50°...250°C
	Ni 1 000/10 000, 6 180 ppm/°C		-200°...250°C
Connection	2-, 3- and 4-wire		
Cu Range	Cu 50/100, 4 260 ppm/°C		-50°...200°C
	Cu 50/100, 4 280 ppm/°C		-200°...200°C
Connection	2-, 3- and 4-wire		
T/C Range	J (Fe-CuNi)		-200°...900°C
	K (NiCr-Ni)		-200°...1 300°C
	T (Cu-CuNi)		-200°...400°C
	E (NiCr-CuNi)		-200°...690°C
	B (PtRh30-PtRh6)		300°...1 820°C
	S (PtRh10-Pt)		-50°...1 760°C
	R (Pt13Rh-Pt)		-50°...1 740°C
	N (Omegalloy)		-200°...1 300°C
	L (Fe-CuNi)		-200°...900°C
CJC	adjustable -20°...99°C or automatical		
DU Sensor power supply	2 VDC/6 mA, potentiometer resistance > 500 Ω		

OPTION „A"

No. of inputs	1 The range is adjustable in the instrument menu		
DC Range	±0,1 A	< 300 mV	Input I
	±0,25 A	< 300 mV	Input I
	±0,5 A	< 300 mV	Input I
	±1 A	< 30 mV	Input I
	±5 A	< 150 mV	Input I
	±100 V	20 MΩ	Input U
	±250 V	20 MΩ	Input U
	±500 V	20 MΩ	Input U

OPTION „B"

No. of inputs	3 The range is adjustable in the instrument menu		
3x PM Range	0...20 mA	< 400 mV	Input 2, 3, 4 - I
	4...20 mA	< 400 mV	Input 2, 3, 4 - I
	±2 V	1 MΩ	Input 2, 3, 4 - U
	±5 V	1 MΩ	Input 2, 3, 4 - U
	±10 V	1 MΩ	Input 2, 3, 4 - U
	±40 V	1 MΩ	Input 2, 3, 4 - U

EXTERNAL INPUT

No. of inputs	3, on contact
Function	OFF no function assigned LOCK control keys blocking HOLD measurement paused PASS. menu access blocking TARE tare activation CL. TA. tare resetting CL. M.M. resetting min/max value CHAN. A. value display „Channel A" FIL. A. value display „Channel A" + filter MAT. FN. value display „Math. functions" SWIT. sequential or BCD channel switching

PROJECTION

Display	-999...9999 -99999...999999
Digit height	57 mm 100 mm 125 mm
Display color	red or green with high brightness 1200 mcd red / green / orange
Description	last two characters on the display may be used for description of measured quantities *only for 6-digit display*
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C	
Accuracy	±0.1 % of FS + 1 digit ±0.15% of FS + 1 digit *above accuracies apply for projection 9999 and 5 meas./s*	RTD / T/C
Rate	0.1...40 measurement/s	
Overload	10x (t < 30 ms), 2x *not valid for 250 / 450 V and 5 A ranges*	
Compensation of conduct	< 30 Ω	RTD
Measurement accuracy CJC	±1.5°C	T/C
Resolution	0.1°C / 1°C	RTD / T/C
Functions	offset, Min/max value, Tare, peak value, math. functions	
Digital filters	exponential / floating / arithmetic average, rouding	
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root	
Linearization	linear interpolation in 50 points *setup only via OM Link*	
OM Link	company communication interface for operation, setting and update of instruments	
Watch-dog	reset after 400 ms	
Calibration	at 25°C and 40 % r.h.	

RELAYS OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...4x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)*
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5...24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 22 W / 22 VA

MECHANIC PROPERTIES

Material	anodized aluminium, black
Dimensions	see picture
Installation	in panel or on wall *wall/ceiling bracket included*

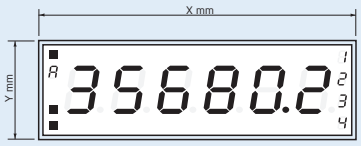
OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

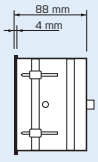
* PI - Primary insulation, DI - Double insulation

DIMENSIONS

Front view

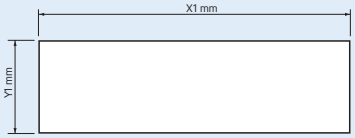


Side view



Panel thickness: 0,5...50 mm

Panel cut



Height	X	Y	X1	Y1
57-6	375	119	367	111
100-4	465	181	457	173
100-6	651	181	643	173
125-4	539	237	531	228
125-6	754	237	746	228

*In case of Option B we recommend to connect terminals GND (main board/addit. board) by ext. connection

ORDER CODE

OMD 202UNI - [ ][ ][ ][ ][ ][ ][ ][ ][ ] - [ ]

Power supply	10...30 V AC/DC	**0**
	80...250 V AC/DC	**1**
Measuring range	standard	**0**
	option „A"	**A**
	option „B"	**B**
Comparators	none	**0**
	1x relay	**1**
	2x relays	**2**
	3x relays	**3**
	4x relays	**4**
Analog output	no	**0**
	yes (compensation < 600 Ω/12 V)	**1**
	yes (compensation < 1 000 Ω/24 V)	**2**
Data output	none	**0**
	RS 232	**1**
	RS 485	**2**
	Modbus	**3**
	PROFIBUS	**4**
Excitation	no	**0**
	yes	**1**
Digit height	57 mm	**1**
	100 mm	**2**
	125 mm	**3**
Number of digits	4 digits (100/125 mm)	**1**
	6 digits	**3**
Color/Display type	red (highly luminuous LED)	**1**
	green (highly luminuous LED)	**2**
	red/green/orange (7-segment LED)	**3**
Specification	customized version, do not fill in	**00**

Basic configuration of the instrument is indicated in bold.

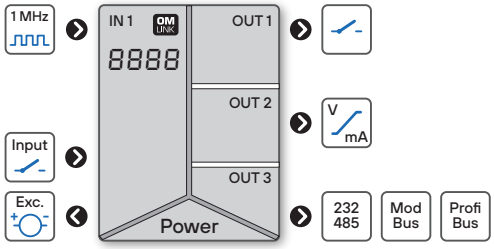
OMD 202UQC

- 4/6-digit programmable projection
- Counter/Frequency/Clock/Timer
- Three-color or higly luminous LED
- Digit height 57; 100; 125 mm, IR operation
- Digital filters, Tare, Linearization
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Excitation ● Comparators ● Data output ● Analog output

UNIVERSAL LARGE COUNTER



The OMD 202 model series are large programmable displays for indoor and outdoor use with IP64 protection.

Type OMD 202UQC is universal 6-digit two-channel programmable panel impulse counter/frequency meter/signal evaluation from IRC sensors and timer/clock.

The instrument is based on a single-chip microcontroller and a powerful programmable gate array, which secures high accuracy, stability and easy operation of the instrument.

Displays are suitable for projection of measured data in production lines and manufacture with good legibility up to 80 m.

OPERATION

The instrument is set and controlled by an IR remote control. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

The measured units can be displayed on the 6-digit display.

OPTION

EXCITATION for feeding sensors and transmitters. It is continuously adjustable in the range of 5...24 VDC.

COMPARATORS are assigned to monitor 1 - 4 limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION

Input: NPN, PNP, on contact, IRC, line
Measuring modes: counter/frequency meter/UP-DW counter + frequency/counter for IRC + frequency
Calibration: in menu you can set calibration coefficient, time base and projection
Measur. channels: A and B, two independent functions can be evaluated
Time base: 0.05/0.5/1/2/5/10/20 s /1/2/5/10/15 min
Projection: -999...9999/-99999...999999 with stabile or floating DT in format 10/24/60

FUNCTIONS

Linearization: non-linear signal is converted by a 50-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Min./max. value: registration of min./max. value reached during measurement
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x and operations between inputs
Preset: initial nonzero value that is always read after resetting the device
Current value: one-off setting of the initial value
Summation: registration of figures upon shift operation
Time backup: time is running even when the power supply is turned off (the display is off)

DIGITAL FILTERS

Input filter: transmits input signal up to 1 MHz...10 min
Floating/Exp./Arithm. average: from 2...30/100/100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL

Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min./max. value
Resetting: counter resetting
Start/Stop: timer/clock control

TECHNICAL DATA

INPUT

No. of inputs		1 The range is adjustable in the instrument menu
UQC	Input	on contact, TTL, NPN/PNP, Line 0...30 V, comparation levels are adjustable in the menu
	Input frequency	0.002 Hz...1 MHz 0.002 Hz...100 kHz DUTY 0.002 Hz...500 kHz QUADR., UP/DW
	Measuring mode	SINGLE counter/frequency A * B counter/frequency with function AND xNOR counter/frequency with function NOR DUTY duty cycle measurement QUADR counter/frequency for IRC sensors UP/DW UP/DW counter/frequency - measures on inputs A, B (direction) and can display numbers/frequenc UP-DW UP - DW counter/frequency - measures on inputs A (UP), B (DW) and can display numbers/frequency TIME Timer RTC Clock
	Time base	0.05 / 1 / 2 / 3 / 5 / 10 / 20 s 1 / 2 / 5 / 10 min
	Multiplication constant	0.00001...999999
	Dividing constant	0.00001...999999
	Preset	-99999...999999
	Input filter	off 1 / 10 / 100 / 250 / 500 / 1 000 kHz 1 / 10 / 45 / 55 / 65 / 100 Hz 2 / 5 / 10 s 1 / 10 min
	Functions	Offset Tare Preset Summation Min/Max value Peak value One time setting of the initial value Time backup (TIME / RTC) Mathematic functions between channels

EXTERNAL INPUT

No. of inputs	3, on contact
Function	OFF no function assigned HOLD measurement paused LOCK control keys blocking TARE tare activation CL. TA tare resetting! CLEAR display reseting CL. ST. resetting and preset of counter/clock SUMA sum showing CL.SUM. sum reset CL. M.M. resetting min/max value

PROJECTION

Display	-999...9999 -99999...999999 99.59.59 hours/minutes/seconds TIME 23.59.59 hours/minutes/seconds TIME 9999.59 hours/minutes TIME 9999.59 minuty/seconds TIME 59.59.99 minuty/seconds/hundredths TIME 99.59.99 minuty/seconds/hundredths TIME 9.59.59.9 hours/min./seconds/hundredths TIME 9.99.59.9 days/hours/minutes/seconds TIME 99.23.59 days/hours/minutes TIME
Digit height	57 mm 100 mm 125 mm
Display color	red or green with high brightness 1200 mcd red / green / orange
Description	last two characters on the display may be used for description of measured quantities *only for 6-digit display*
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Accuracy	±0.05 % of value + 1 digit ±0.01 % of value ±2 ms TIME ±0.01 % of value ±130 ms RTC
Overload	10x (t < 30 ms), 2x
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Linearization	linear interpolation in 180 points *setup only via OM Link*
Time backup	Lithium cell CR 2032, 3V/220 mAh
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 500 ms
Calibration	at 25ºC and 40 % r.h.

RELAYS OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period C-PULS automatic counter resetting at the set value ON RUN output is active when the timer is running
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...4x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)*
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/ºC
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5...24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 22 W / 22 VA

MECHANIC PROPERTIES

Material	anodized aluminium, black
Dimensions	see picture
Installation	in panel or on wall *wall/ceiling bracket included*

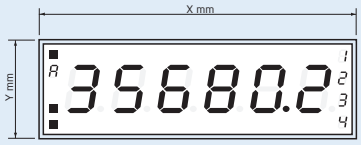
OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º...60ºC
Storage temperat.	-20º...85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

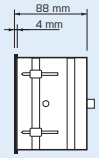
* PI - Primary insulation, DI - Double insulation

DIMENSIONS

Front view

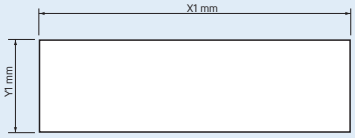


Side view



Panel thickness: 0,5...50 mm

Panel cut



Height	X	Y	X1	Y1
57-6	375	119	367	111
100-4	465	181	457	173
100-6	651	181	643	173
125-4	539	237	531	228
125-6	754	237	746	228

ORDER CODE

OMD 202UQC - [ ][ ][ ][ ][ ][ ][ ][ ][ ] - [ ]

Power supply	10...30 VDC / 24 VAC	**0**
	80...250 V AC/DC	**1**
Input	standard	**A**
	Line	**C**
Comparators	none	**0**
	1x relay	**1**
	2x relays	**2**
	3x relays	**3**
	4x relays	**4**
Analog output	no	**0**
	yes (compensation < 600 Ω/12 V)	**1**
	yes (compensation < 1 000 Ω/24 V)	**2**
Data output	none	**0**
	RS 232	**1**
	RS 485	**2**
	Modbus	**3**
	PROFIBUS	**4**
Excitation	no	**0**
	yes	**1**
Digit height	57 mm	**1**
	100 mm	**2**
	125 mm	**3**
Number of digits	4 digits (100/125 mm)	**1**
	6 digits	**3**
Color/Display type	red (highly luminuous LED)	**1**
	green (highly luminuous LED)	**2**
	red/green/orange (7-segment LED)	**3**
Specification	customized version, do not fill in	**00**

Basic configuration of the instrument is indicated in bold.

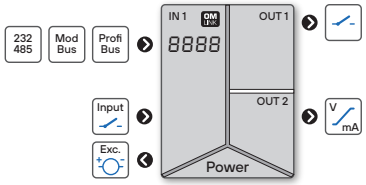
OMD 202RS

- 4/6-digit programmable projection
- Input RS 232/485
- ASCII, PROFIBUS DP, PROFINET, Modbus RTU
- Three-color or higly luminous LED
- Digit height 57; 100; 125 mm, IR operation
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Excitation ● Comparators ● Data output ● Analog output

DATA LARGE DISPLAY



The OMD 202 model series are large programmable displays for indoor and outdoor use with IP64 protection.

Type OMD 202UQC is a data display from serial lines RS 232/485 with protocol ASCII, MESSBUS, Modbus RTU, PROFIBUS DP and PROFINET.

The instrument is based on a single-chip microcontroller, which secures accuracy, stability and easy operation of the instrument.

Displays are suitable for projection of measured data in production lines and manufacture with good legibility up to 80 m.

OPERATION

The instrument is set and controlled by an IR remote control. All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the right (see, change). Access w/o password.

Standard equipment is the OM Link interface, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings hold even after the instrument is switched off).

The measured units can be displayed on the 6-digit display.

OPTION

EXCITATION for feeding sensors and transmitters. It is continuously adjustable in the range of 5...24 VDC.

COMPARATORS are assigned to monitor 1 - 4 limit values with relay output. As a user you can select the mode limit: LIMIT/BATCH/FROM-TO. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Input: both RS 232 and RS 485
Protocol: ASCII - Master/Slave/Universal, MESSBUS, PROFIBUS DP, Modbus RTU
Projection: -999...9999/-99999...999999

MATHEMATIC FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Min./max. value: registration of min./max. value reached during measurement
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS
Floating/Exp./Arithm. average: from 2...30/100/100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting Min/Max: resetting min./max. value

TECHNICAL DATA

INPUT

No. of inputs		1
RS	Input	RS 232/RS 485 PROFIBUS
	Protocol	**ASCII - Master** - the instrument controls data sending from the slave system - „COMM" can be used to select the received data - the instrument asks with the rate of 10 queries/s **ASCII - Slave** - Passive bus display where other devices or computers communicate in „MAST." mode. If the „COMM" and the requested data are correctly received, they will be displayed by the instrument **ASCII - Universal** - in dynamic menu items (Stat, Ad.Un, Sign, Data, Stop, Req.) you can build your own communication protocol format **MESSBUS** **Modbus RTU** **PROFIBUS DP** **PROFINET**
	Format	8 bit + no parity + 1 stop bit 7 bit + even parity + 1 stop bit
	Adresse	ASCII 0...31 Modbus 1...247 Profibus 1...127
	Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
	Line termination	short-circuit jumper on the connector *resistance inside the instrument is 120 R*

EXTERNAL INPUT

No. of inputs	3, on contact
Function	OFF no function assigned HOLD measurement paused LOCK control keys blocking TARE tare activation CL. M.M. resetting min/max value CL. T. tare resetting

PROJECTION

Display	-999...9999 -99999...999999
Digit height	57 mm 100 mm 125 mm
Display color	red or green with high brightness 1200 mcd red / green / orange
Description	last two characters on the display may be used for description of measured quantities *only for 6-digit display*
Decimal point	adjustable - in menu
Brightness	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Functions	Min/max value, math. functions
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 500 ms
Calibration	at 25ºC and 40 % r.h.

RELAYS OUTPUT

No. of outputs	up to 4
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...4x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)*
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/ºC
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, compensation < 600 Ω/12 V or 1000 Ω / 24 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Adjustable	5...24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 22 W / 22 VA

MECHANIC PROPERTIES

Material	anodized aluminium, black
Dimensions	see picture
Installation	in panel or on wall *wall/ceiling bracket included*

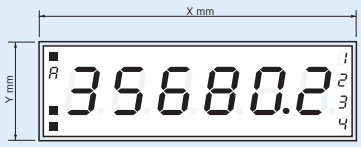
OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º...60ºC
Storage temperat.	-20º...85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and data/ analog output 4 kVAC per 1 min test between input and relay output 2.5 kVAC per 1 min test between input and data/ analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 670 V (PI), 300 (DI) input, output, excitation > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6
Mechanical resistance	EN 60068-2-6 ed. 2:2008

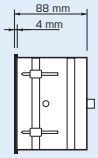
* PI - Primary insulation, DI - Double insulation

DIMENSIONS

Front view

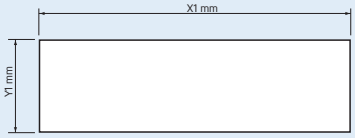


Side view



Panel thickness: 0,5...50 mm

Panel cut



Height	X	Y	X1	Y1
57-6	375	119	367	111
100-4	465	181	457	173
100-6	651	181	643	173
125-4	539	237	531	228
125-6	754	237	746	228

ORDER CODE

OMD 202RS - [ ][ ][ ][ ][ ][ ][ ][ ] - [ ]

Power supply	10...30 VDC / 24 VAC	**0**								
	80...250 V AC/DC	**1**								
Data protocol	**ASCII**		**A**							
	Modbus RTU		**B**							
	PROFIBUS DP		**C**							
	PRPFINET		**D**							
Comparators	**none**			**0**						
	1x relay			**1**						
	2x relays			**2**						
	3x relays			**3**						
	4x relays			**4**						
Analog output	**no**				**0**					
	yes (compensation < 600 Ω/12 V)				**1**					
	yes (compensation < 1 000 Ω/24 V)				**2**					
Excitation	**no**					**0**				
	yes					**1**				
Digit height	**57 mm**						**1**			
	100 mm						**2**			
	125 mm						**3**			
Number of digits	4 digits (100/125 mm)							**1**		
	6 digits							**3**		
Color/Display type	red (highly luminuous LED)								**1**	
	green (highly luminuous LED)								**2**	
	red/green/orange (7-segment LED)								**3**	
Specification	customized version, do not fill in									**00**

Basic configuration of the instrument is indicated in bold.

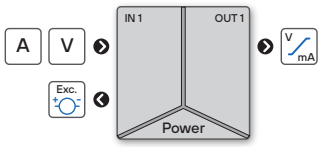
OMX 39DC

- Input 0...10 mV ~ 450 V
  0...5 mA ~ 5 A
- Output 0...5 mA, 0...20 mA, 4...20 mA, ±20 mA
  0...2 V, 0...5 V, 0...10 V, ±10 V
- Galvanic separation 3.75 kVAC
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Excitation

ISOLATED TRANSMITTER DC V-A > U/I



The OMX 39 model series are low-price and simple analog transmitters with mounting on a 35 mm wide DIN rail.
Type OMX 39DC is a transmitter for galvanic separation of DC voltage or current.
The transmitters have galvanic separation with isolation voltage of 600 V and thus they are suitable as primary isolation for majority of industrial applications.

OPERATION

The transmitter is designed for simple measurements without further control.

CALIBRATION

By trimmers accessible from the face of the transmitter you may adjust the range of the output signal within the range of ±10 %.

OPTION

EXCITATION with continuously adjustable value is suitable for feeding sensors and transmitters.

TECHNICAL DATA

INPUT

No. of inputs	1 The range is fixed		
DC Range	0...10 mV ~ 10 V 0...10 V ~ 450 V 0...5 mA ~ 5 A	0.5 MΩ 1 MΩ < 260 mV	Input U Input U Input I

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.1 % of FS
Rate	continuous measurement
Overload	10x (t < 30 ms), 2x *not valid for > 250 V and 5 A ranges*
Calibration	at 25°C and 40 % r.h.

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, fixed setting
TC	25 ppm/°C
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, ±20 mA, compensation < 600 Ω/12 V

EXCITATION

Adjustable	5...24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 75 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device*
Consumption	< 2.4 W / 2.6 VA

MECHANIC PROPERTIES

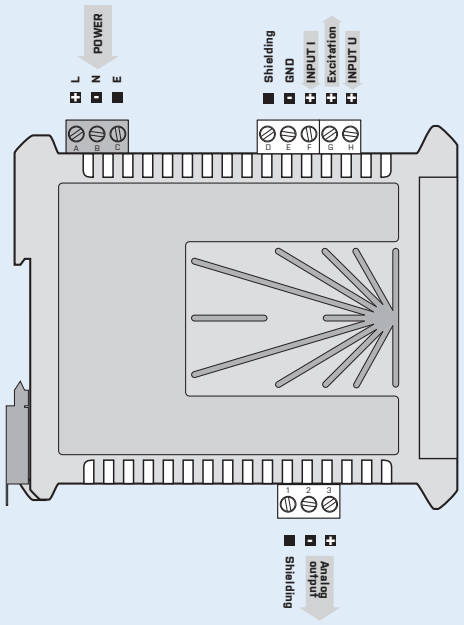
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	22 x 98 x 113 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and analog output 3.75 kVAC per 1 min test between input and analog output
Insulation resist.*	for pollution degree II, measuring cat. II power supply > 600 V (PI), 300 V (DI) input, output > 500 V (PI), 250 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 39DC -

Power supply	10...30 V AC/DC	**0**			
	80...250 V AC/DC	**1**			
Measuring range*	voltage		**A**		
	current		**B**		
Excitation	no			**0**	
	yes			**1**	
Analog output	0...2 V				**1**
	0...5 V				**2**
	0...10 V				**3**
	0...20 mA				**4**
	4...20 mA				**5**
	±10 V				**6**
	±20 mA				**7**
	0...5 mA				**8**

* Kindly specify the required input range in the order!

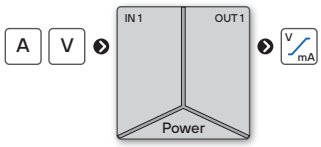
Basic configuration of the instrument is indicated in bold.

OMX 39AC

- Input 0...60 mV ~ 450 V
  0...5 mA ~ 5 A
- Output 0...5 mA, 0...20 mA, 4...20 mA, ±20 mA
  0...2 V, 0...5 V, 0...10 V, ±10 V
- Galvanic separation 3.75 kVAC
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

The OMX 39 model series are low-price and simple analog transmitters with mounting on a 35 mm wide DIN rail.
Type OMX 39AC is a transmitter for galvanic separation of AC voltage or current.
The transmitters have galvanic separation with isolation voltage of 600 V and thus they are suitable as primary isolation for majority of industrial applications.

ISOLATED TRANSMITTER AC V-A > U/I



OPERATION

The transmitter is designed for simple measurements without further control.

CALIBRATION

By trimmers accessible from the face of the transmitter you may adjust the range of the output signal within the range of ±10 %.

TECHNICAL DATA

INPUT

No. of inputs	1 The range is fixed		
AC Range	0...60 mV ~ 450 V 0...5 mA ~ 5 A	0.5 MΩ < 260 mV	Input U Input I
Input frequency	40...2 500 Hz		

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.3 % of FS
Rate	continuous measurement
Overload	10x (t < 30 ms), 2x *not valid for > 250 V and 5 A ranges*
Calibration	at 25°C and 40 % r.h.

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, fixed setting
TC	25 ppm/°C
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, ±20 mA compensation < 600 Ω/12 V

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 75 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device*
Consumption	< 2.4 W / 2.6 VA

MECHANIC PROPERTIES

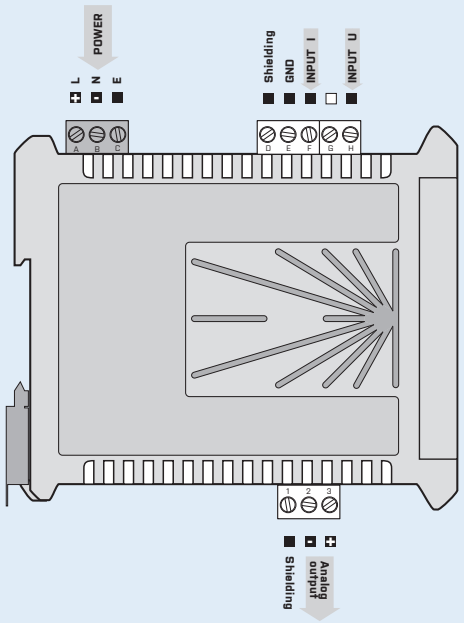
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	22 x 98 x 113 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and analog output 3.75 kVAC per 1 min test between input and analog output
Insulation resist.*	for pollution degree II, measuring cat. II power supply > 600 V (PI), 300 V (DI) input, output > 500 V (PI), 250 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 39AC - ☐☐☐

Power supply	10...30 V AC/DC	**0**		
	80...250 V AC/DC	**1**		
Measuring range*	voltage		**A**	
	current		**B**	
Analog output	0...2 V			**1**
	0...5 V			**2**
	0...10 V			**3**
	0...20 mA			**4**
	4...20 mA			**5**
	±10 V			**6**
	±20 mA			**7**
	0...5 mA			**8**

* Kindly specify the required input range in the order!

Basic configuration of the instrument is indicated in bold.

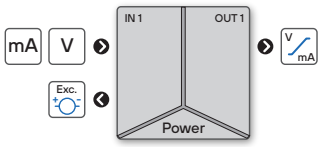
OMX 39PM

- Input 0...5 mA; 0...20 mA; 4...20 mA
  0...2 V; 0...5 V; 0...10 V
- Output 0...5 mA, 0...20 mA, 4...20 mA, ±20 mA
  0...2 V, 0...5 V, 0...10 V, ±10 V
- Galvanic separation 3.75 kVAC
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Excitation

ISOLATED TRANSMITTER - SEPARATOR



The OMX 39 model series are low-price and simple analog transmitters with mounting on a 35 mm wide DIN rail.
Type OMX 39PM is a galvanic separator.
The transmitters have galvanic separation with isolation voltage of 600 V and thus they are suitable as primary isolation for majority of industrial applications.

OPERATION

The transmitter is designed for simple measurements without further control.

CALIBRATION

By trimmers accessible from the face of the transmitter you may adjust the range of the output signal within the range of ±10 %.

OPTION

EXCITATION with continuously adjustable value is suitable for feeding sensors and transmitters.

TECHNICAL DATA

INPUT

No. of inputs	1 The range is fixed		
PM Range	0...5 mA	< 400 mV	Input I
	0...20 mA	< 400 mV	Input I
	4...20 mA	< 400 mV	Input I
	0...2 V	0.5 MΩ	Input U
	0...5 V	0.5 MΩ	Input U
	0...10 V	0.5 MΩ	Input U

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.1 % of FS
Rate	continuous measurement
Overload	10x (t < 30 ms), 2x *not valid for > 250 V and 5 A ranges*
Calibration	at 25°C and 40 % r.h.

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, fixed setting
TC	25 ppm/°C
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, ±20 mA compensation < 600 Ω/12 V

EXCITATION

Adjustable	5...24 VDC, <1.2 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 75 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device*
Consumption	< 2.4 W / 2.6 VA

MECHANIC PROPERTIES

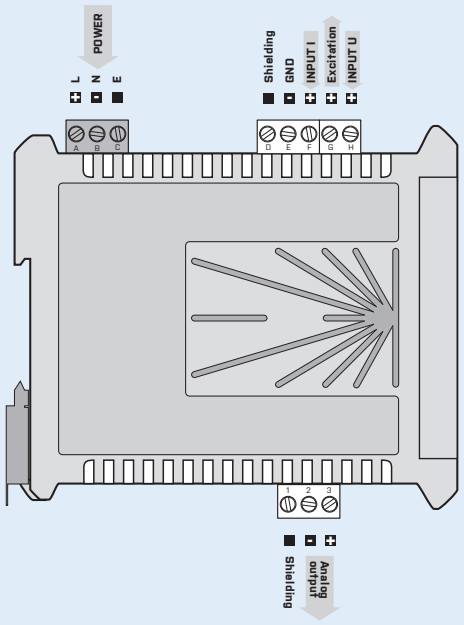
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	22 x 98 x 113 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and analog output 3.75 kVAC per 1 min test between input and analog output
Insulation resist.*	for pollution degree II, measuring cat. II power supply > 600 V (PI), 300 V (DI) input, output > 500 V (PI), 250 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 39PM - ☐☐☐☐

Power supply	10...30 V AC/DC	**0**			
	80...250 V AC/DC	**1**			
Measuring range	0...5 mA		**A**		
	0...20 mA		**B**		
	4...20 mA		**C**		
	0...2 V		**D**		
	0...5 V		**E**		
	0...10 V		**F**		
Excitation	no			**0**	
	yes			**1**	
Analog output	0...2 V				**1**
	0...5 V				**2**
	0...10 V				**3**
	0...20 mA				**4**
	4...20 mA				**5**
	±10 V				**6**
	±20 mA				**7**
	0...5 mA				**8**

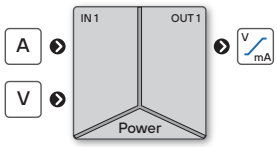
Basic configuration of the instrument is indicated in bold.

OMX 39W

- Input 0...60 mV ~ 300 mV
  0...120 V ~ 450 V
  0...5 mA ~ 5 A
- Output 0...5 mA, 0...20 mA, 4...20 mA, ±20 mA
  0...2 V, 0...5 V, 0...10 V, ±10 V
- Galvanic separation 3.75 kVAC
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

The OMX 39 model series are low-price and simple analog transmitters with mounting on a 35 mm wide DIN rail.
Type OMX 39W is a transmitter for galvanic separation and power measurement.
The transmitters have galvanic separation with isolation voltage of 600 V and thus they are suitable as primary isolation for majority of industrial applications.

ISOLATED POWER TRANSMITTER > U/I



OPERATION

The transmitter is designed for simple measurements without further control.

CALIBRATION

By trimmers accessible from the face of the transmitter you may adjust the range of the output signal within the range of ±10 %.

TECHNICAL DATA

INPUT

No. of inputs		1 The range is fixed		
W	Range	0…120 V 0…150 V 0…250 V 0…450 V 0…60 mV 0…150 mV 0…300 mV 0…1 A 0…5 A	1 MΩ 1 MΩ 1 MΩ 1 MΩ < 400 mV < 400 mV < 400 mV < 400 mV < 400 mV	Input U Input U Input U Input U Input I Input I Input I Input I Input I
	Input frequency	40…2 500 Hz		

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.5 % of FS
Rate	continuous measurement
Overload	10x (t < 30 ms), 2x *not valid for > 250 V and 5 A ranges*
Calibration	at 25°C and 40 % r.h.

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, fixed setting
TC	25 ppm/°C
Rate	response to change of value < 1 ms
Ranges	0…2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0…5 / 20 mA /4…20 mA, ±20 mA compensation < 600 Ω/12 V

POWER SUPPLY

Range	10…30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 75 A / 1 ms, isolated 80…250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device*
Consumption	< 2.4 W / 2.6 VA

MECHANIC PROPERTIES

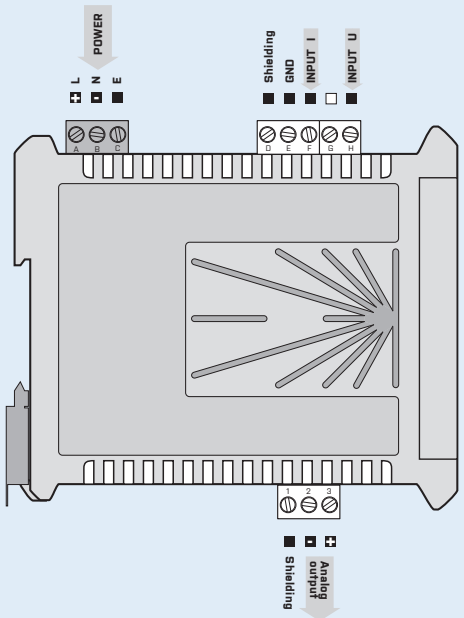
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	22 x 98 x 113 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°…60°C
Storage temperat.	-20°…85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and analog output 3.75 kVAC per 1 min test between input and analog output
Insulation resist.*	for pollution degree II, measuring cat. II power supply > 600 V (PI), 300 V (DI) input, output > 500 V (PI), 250 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 39W - ☐☐☐☐

Power supply	10…30 V AC/DC	**0**			
	80…250 V AC/DC	**1**			
Measuring range - U	0…120 V		**R**		
	0…150 V		**S**		
	0…250 V		**T**		
	0…450 V		**U**		
	on request		**Z**		
Measuring range - I	0…60 mV			**H**	
	0…150 mV			**J**	
	0…300 mV			**K**	
	0…1 A			**N**	
	0…5 A			**P**	
	on request			**Z**	
Analog output	0…2 V				**1**
	0…5 V				**2**
	0…10 V				**3**
	0…20 mA				**4**
	4…20 mA				**5**
	±10 V				**6**
	±20 mA				**7**
	0…5 mA				**8**

Basic configuration of the instrument is indicated in bold.

OMX 39OHM

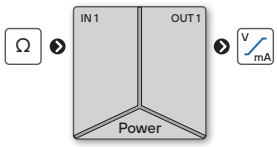
- Input 0...0.1 ~ 100 kΩ
- Output 0...5 mA, 0...20 mA, 4...20 mA, ±20 mA
  0...2 V, 0...5 V, 0...10 V, ±10 V
- Galvanic separation 3.75 kVAC
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

The OMX 39 model series are low-price and simple analog transmitters with mounting on a 35 mm wide DIN rail.

Type OMX 39OHM is a transmitter for galvanic resistance separation.

The transmitters have galvanic separation with isolation voltage of 600 V and thus they are suitable as primary isolation for majority of industrial applications.

ISOLATED RESISTANCE TRANSMITTER > U/I



OPERATION

The transmitter is designed for simple measurements without further control.

CALIBRATION

By trimmers accessible from the face of the transmitter you may adjust the range of the output signal within the range of ±10 %.

TECHNICAL DATA

INPUT

No. of inputs		1 The range is fixed
OHM	Range	0...0.1 ~ 100 kΩ
	Connection	2-, 3- or 4-wire

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.2 % of FS
Rate	continuous measurement
Overload	10x (t < 30 ms), 2x
Calibration	at 25°C and 40 % r.h.

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, fixed setting
TC	25 ppm/°C
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, ±20 mA compensation < 600 Ω/12 V

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 75 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device*
Consumption	< 2.4 W / 2.6 VA

MECHANIC PROPERTIES

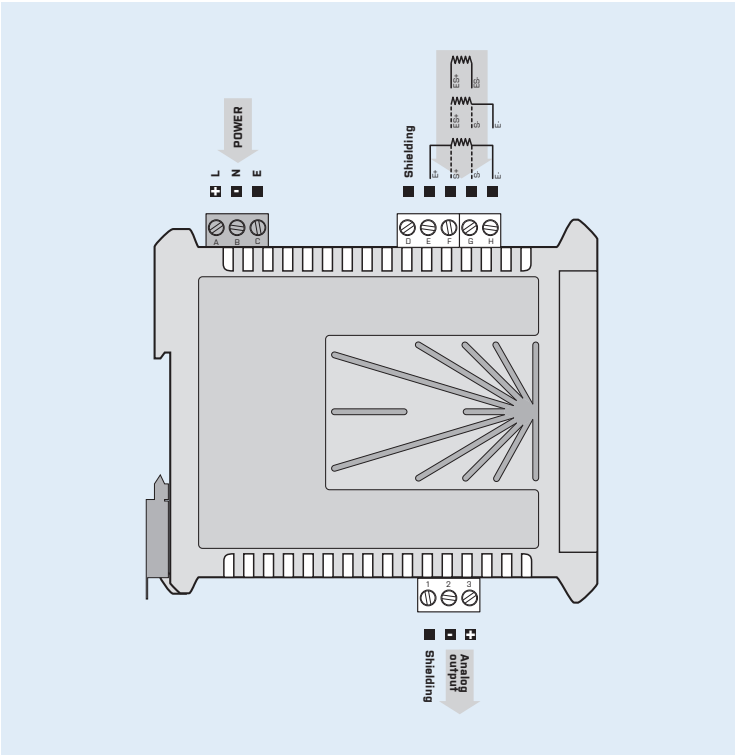
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	22 x 98 x 113 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and analog output 3.75 kVAC per 1 min test between input and analog output
Insulation resist.*	for pollution degree II, measuring cat. II power supply > 600 V (PI), 300 V (DI) input, output > 500 V (PI), 250 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 39OHM -

Power supply	10...30 V AC/DC	**0**		
	80...250 V AC/DC	**1**		
Connection	2-wire		**1**	
	3-wire		**2**	
	4-wire		**3**	
Analog output	0...2 V			**1**
	0...5 V			**2**
	0...10 V			**3**
	0...20 mA			**4**
	4...20 mA			**5**
	±10 V			**6**
	±20 mA			**7**
	0...5 mA			**8**

Kindly specify the required input range in the order!

Basic configuration of the instrument is indicated in bold.

OMX 39RTD

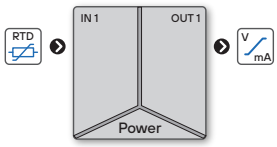
- Input Pt 100/500/1 000
- Output 0...5 mA, 0...20 mA, 4...20 mA, ±20 mA
  0...2 V, 0...5 V, 0...10 V, ±10 V
- Galvanic separation 3.75 kVAC
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

The OMX 39 model series are low-price and simple analog transmitters with mounting on a 35 mm wide DIN rail.

Type OMX 39RTD is a transmitter for galvanic separation of temperature resistance sensors Pt 100/500/1 000.

The transmitters have galvanic separation with isolation voltage of 600 V and thus they are suitable as primary isolation for majority of industrial applications.

ISOLATED TRANSMITTER Pt > U/I



OPERATION

The transmitter is designed for simple measurements without further control.

CALIBRATION

By trimmers accessible from the face of the transmitter you may adjust the range of the output signal within the range of ±10 %.

TECHNICAL DATA

INPUT

No. of inputs	1 The range is fixed	
RTD Range	Pt 100, 3 850 ppm/ºC Pt 500, 3 850 ppm/ºC Pt 1 000, 3 850 ppm/ºC	-50º...850ºC -50º...850ºC -50º...850ºC
Connection	2-, 3- or 4-wire	

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Accuracy	±0.2 % of FS
Rate	continuous measurement
Overload	10x (t < 30 ms), 2x
Calibration	at 25ºC and 40 % r.h.

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, fixed setting
TC	25 ppm/ºC
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, ±20 mA compensation < 600 Ω/12 V

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 75 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device*
Consumption	< 2.4 W / 2.6 VA

MECHANIC PROPERTIES

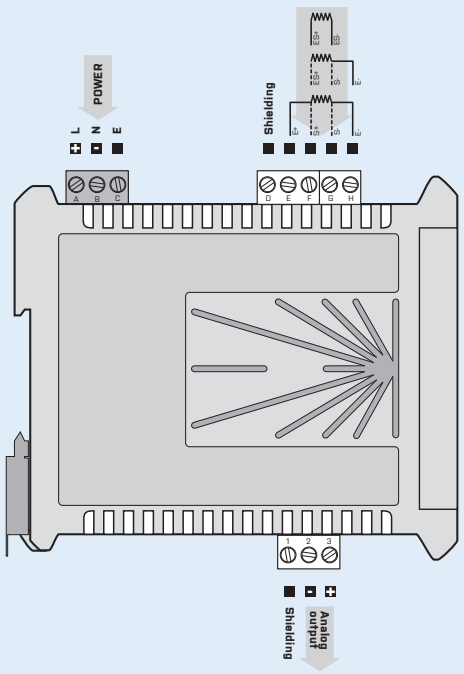
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	22 x 98 x 113 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º...60ºC
Storage temperat.	-20º...85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and analog output 3.75 kVAC per 1 min test between input and analog output
Insulation resist.*	for pollution degree II, measuring cat. II power supply > 600 V (PI), 300 V (DI) input, output > 500 V (PI), 250 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 39RTD - ☐☐☐☐

Power supply	10...30 V AC/DC	**0**			
	80...250 V AC/DC	**1**			
Measuring range*	**Pt 100**		**A**		
	Pt 500		**B**		
	Pt 1 000		**C**		
Connection	2-wire			**1**	
	3-wire			**2**	
	4-wire			**3**	
Analog output	0...2 V				**1**
	0...5 V				**2**
	0...10 V				**3**
	0...20 mA				**4**
	4...20 mA				**5**
	±10 V				**6**
	±20 mA				**7**
	0...5 mA				**8**

* Please specify the required input temperature range in the order!

Basic configuration of the instrument is indicated in bold.

OMX 39DU

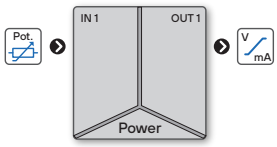
- Input for potentiometer
- Output 0...5 mA, 0...20 mA, 4...20 mA, ±20 mA
  0...2 V, 0...5 V, 0...10 V, ±10 V
- Galvanic separation 3.75 kVAC
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

The OMX 39 model series are low-price and simple analog transmitters with mounting on a 35 mm wide DIN rail.

Type OMX 39DU is a transmitter for galvanic separation of linear potentiometers.

The transmitters have galvanic separation with isolation voltage of 600 V and thus they are suitable as primary isolation for majority of industrial applications.

ISOL. TRANSMITTER FOR POTENTIOMETERS



OPERATION

The transmitter is designed for simple measurements without further control.

CALIBRATION

By trimmers accessible from the face of the transmitter you may adjust the range of the output signal within the range of ±10 %.

TECHNICAL DATA

INPUT

No. of inputs		1 The range is fixed
DU	Range	0...100 kΩ
	Power sensors	10 VDC/20 mA, potentiometer resistance > 500 Ω

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.2 % of FS
Rate	continuous measurement
Overload	10x (t < 30 ms), 2x
Calibration	at 25°C and 40 % r.h.

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, fixed setting
TC	25 ppm/°C
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, ±20 mA compensation < 600 Ω/12 V

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 75 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device*
Consumption	< 2.4 W / 2.6 VA

MECHANIC PROPERTIES

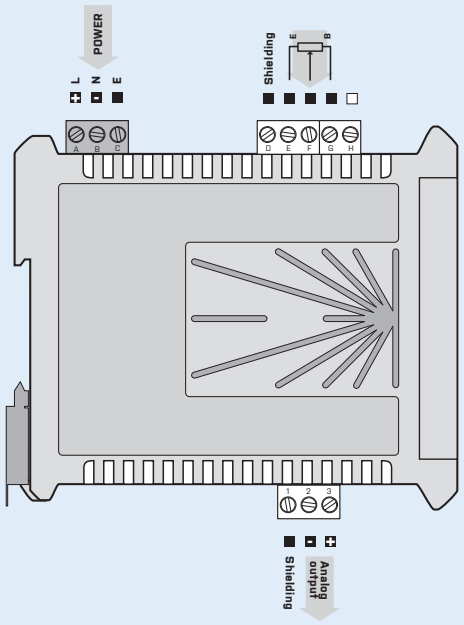
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	22 x 98 x 113 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 4 kVAC per 1 min test between supply and analog output 3.75 kVAC per 1 min test between input and analog output
Insulation resist.*	for pollution degree II, measuring cat. II power supply > 600 V (PI), 300 V (DI) input, output > 500 V (PI), 250 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 39DU -

Power supply	10...30 V AC/DC	**0**	
	80...250 V AC/DC	**1**	
Analog output	0...2 V		**1**
	0...5 V		**2**
	0...10 V		**3**
	0...20 mA		**4**
	4...20 mA		**5**
	±10 V		**6**
	±20 mA		**7**
	0...5 mA		**8**

Basic configuration of the instrument is indicated in bold.

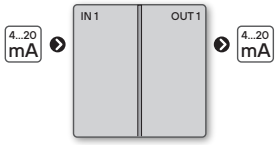
OMX 40PAS

- Input 4...20 mA
- Output 4...20 mA
- Accuracy 01 %
- Galvanic separation 3.75 kVAC

Type OMX 40PAS is a passive isolator for galvanic isolation of 4...20 mA / 4...20 mA current loops.

The converters are galvanically isolated with an isolation voltage of 500 V and are thus suitable as primary isolators for most industrial applications

PASSIVE ISOLATOR 4...20/4...20 mA



OPERATION

The transmitter is designed for simple measurements without further control.

TECHNICAL DATA

INPUT

No. of inputs	1	
PAS Range	4...20 mA	< 5.5 V

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.1% of FS
Rate	continuous measurement
Overload	10x (t < 30 ms), 2x
Calibration	at 25°C and 40 % r.h.

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, fixed setting
TC	50 ppm/°C
Rate	response to change of value < 1 ms
Ranges	4...20 mA, compensation < 600 Ω/12 V

POWER SUPPLY

Range	from current loop 4...20 mA, dropout < 5.5 V
Consumption	< 0.1 W

MECHANIC PROPERTIES

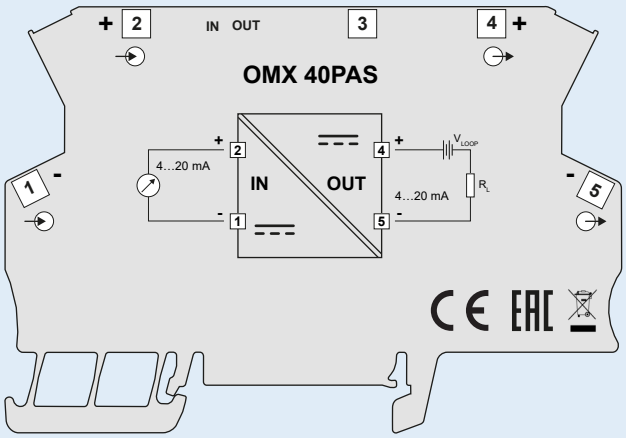
Material	PA 66, incombustible UL 94 V-I, grey
Dimensions	6 x63 x 91 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	3 kVAC per 1 min test between input and output
Insulation resist.*	for pollution degree II, measuring cat. II input, output > 500 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

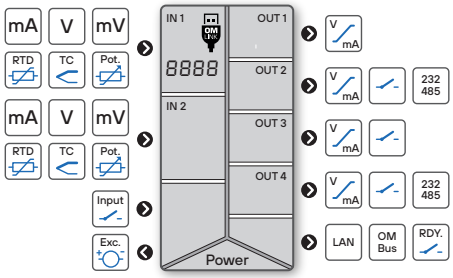
CONNECTION



ORDER CODE

OMX 40PAS

PROGRAMMABLE ISOLATED TRANSMITTER



OMX 103UNI

- 2x multifunction input (DC, PM, RTD, T/C, DU)
- LCD display, Digit. filters, Tare, Linearization
- 3x Card slots
- Galvanic separation 2.5 kVAC
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Data record

The OMX 103 model series are DIN rail mountable adjustable trasmitters designed with the utmost versatility and user comfort whilst keeping the cost at a favourable level.

Type OMX 103UNI is a multifunction two-input instrument with 8 possible input configurations easily adjustable in the instrument´s menu.

Modular concept of the device allows any card to be fitted in 3 slots. This can be performed on the end-user level. The trasmitters can be used, for example, as a splitter with up to 4 analogue outputs.

The instrument is based on a 32-bit processor and multichannel 24-bit ΔΣ ADC, which ensures good accuracy, stability and easy operation of the instrument.

For displaying measured data, easier setup and clear function arrangement, the instrument is delivered with a backlit LCD display.

OPERATION

The instrument is set and controlled by two buttons located on the front panel.All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by an optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by an optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/ PROFI), which determine the access rights (see, change). Access w/o password.

Standard equipment is the OM Link and USB interfaces, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates. The program is also designed for visualization and filing of measured values from more instruments.

The measured units can be projected on the display.

OPTIONS

COMPARATORS are assigned to monitor six limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/ current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/Modbus/PROFIBUS protocols and LAN.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (80 records/s) of all measured values up to 8 000 records. Second mode is RTC, where data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS 232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE INPUT
Selection: of input type and measuring range
Standard setting: any display values can be assigned to Min and Max values of a defined standard input signal
Teach-in: any display values can be assigned to Min and Max values of actual (unknown) input signal
Manual setting: known Min and Max input signal values can be entered manually and any display values can be assigned to each signal

EXCITATION
Range: 24 VDC/1 W, isolated

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signal is converted by a 177-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Min./max. value: registration of min./max. value reached during measurement
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x and operations between inputs

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: activation and tare resetting
Resetting Min/Max: resetting min/max value

TECHNICAL DATA

INPUT

No. of inputs	1 or 2 The range is adjustable in the instrument menu		
DC Range	±90/180 mA	< 200 mV	Input 1
	±30 / 60 mV	> 10 MΩ	Input 3
	±1000 mV	> 10 MΩ	Input 3
	±20 / 40 / 80 V	1,25 MΩ	Input 2
PM Range	±5 / ±20 mA	< 400 mV	Input 1
	4...20 mA	< 400 mV	Input 1
	±2 / 5 / 10 V	1 MΩ	Input 2
OHM Range	0...15/30/150/300 Ω 0...1/3/15 kΩ 0...30 kΩ (only for 2- or 4-wire connection)		
Connection	2-, 3- and 4-wire		
RTD Range	Pt 100/500/1 000, 3 850 ppm/°C	-50°...450°C	
	Pt 100, 3 920 ppm/°C	-50°...450°C	
	Pt 50, 3 910 ppm/°C	-200°...1100°C	
	Pt 100, 3 910 ppm/°C	-200°...450°C	
Connection	2-, 3- and 4-wire		
Ni Range	Ni 1 000/10 000, 5 000 ppm/°C	-50°...250°C	
	Ni 1 000/10 000, 6 180 ppm/°C	-200°...250°C	
Connection	2-, 3- and 4-wire		
Cu Range	Cu 50/100, 4 260 ppm/°C	-50°...200°C	
	Cu 50/100, 4 280 ppm/°C	-200°...200°C	
Connection	2-, 3- and 4-wire		
T/C Range	J (Fe-CuNi)	-200°...900°C	
	K (NiCr-Ni)	-200°...1 300°C	
	T (Cu-CuNi)	-200°...400°C	
	E (NiCr-CuNi)	-200°...690°C	
	B (PtRh30-PtRh6)	300°...1 820°C	
	S (PtRh10-Pt)	-50°...1 760°C	
	R (Pt13Rh-Pt)	-50°...1 740°C	
	N (Omegalloy)	-200°...1 300°C	
	L (Fe-CuNi)	-200°...900°C	
CJC	adjustable -20°...99°C or automatical		
DU Sensor power supply	2 VDC/6 mA, potentiometer resistance > 500 Ω		

EXTERNAL INPUT

No. of inputs	2, on contact or 24 V
Function	OFF no function assigned LCK. control keys blocking HLD. measurement paused PAS. menu access blocking TA.A tare activation, input 1 TA.B tare activation, input 2 C.TA tare resetting, input 1 C.TB tare resetting, input 2 C.M.M. resetting min/max value SAV. data recording start (FAST/RTC) C.ME. data recording reset (FAST/RTC) M. FN. value display „Math. functions"

PROJECTION

Display	2x -99...999 LCD with backlighting
Description	2x 3 characters on the display may be used for description of measured quantities
Decimal point	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C	
Accuracy	±0.15 % of FS + 1 digit	
	±0.25% of FS + 1 digit	Ni 1000TD
	±0.3% of FS + 1 digit	T/C
	above accuracies apply for projection 9999 and 10 meas./s	
Rate	0.5...80 measurement/s	
Overload	10x (t < 30 ms), 2x	
Compensation of conduct	< 30 Ω	RTD
Measurement accuracy CJC	±1.5°C	T/C
Resolution	0.1°C	RTD
	1°C	T/C
Functions	offset, Min/max value, Tare, peak value, math. functions	
Digital filters	exponential / floating / arithmetic average, rouding	
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root	
Linearization	linear interpolation in 177 points and 3 tables *setup only via OM Link*	
Data record	RTC 15 ppm/°C, time-date-display value < 266k data	
	FAST display value < 8k data	
OM Link	company communication interface for operation, setting and update of instruments (microUSB)	
Watch-dog	reset after 400 ms	
Calibration	at 25°C and 40 % r.h.	

RELAYS / OC OUTPUT

No. of outputs	up to 6
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...6x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 1...6x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	up to 4
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, comp. < 600 Ω/12 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	up to 2
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)
Ethernet	10/100BaseT, TCP/IP Modbus (Slave)

EXCITATION

Fixed	24 VDC, <1 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 9.4 W / 9.2 VA

MECHANIC PROPERTIES

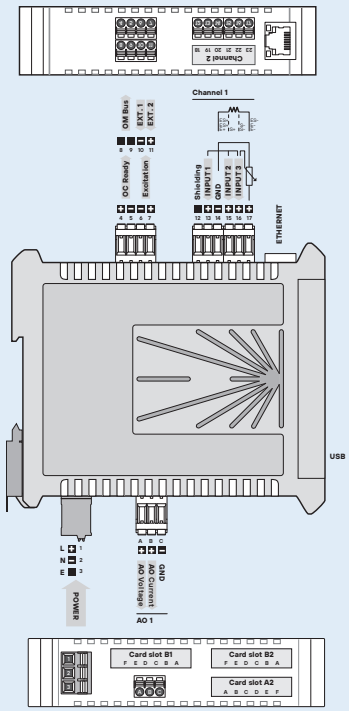
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	35 x 98 x 113 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 2.5 kVAC per 1 min test between supply and data/ analog output 2.5 kVAC per 1 min test between input and data/ analog output 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 600 V (PI), 300 (DI) input, output, excitation > 600 V (PI), 300 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 103UNI - [ ][ ][ ] - [ ][ ][ ] - [ ][ ] - [ ]

Power supply	10...30 VDC / 24 VAC	**0**
	80...250 V AC/DC	**1**
Number inputs	1 input	**A**
	2 inputs	**B**
Analogue output	no	**0**
	yes	**1**
Card A2	no	**0**
	Comparator - 2x relays	**1**
	Comparator - 2x open collectors	**2**
	Analogue output	**3**
	RS 232	**4**
	RS 485	**5**
	Profibus	**6**
Card B1	no	**0**
	Comparator - 2x relays	**1**
	Comparator - 2x open collectors	**2**
	Analogue output	**3**
Card B2	no	**0**
	Comparator - 2x relays	**1**
	Comparator - 2x open collectors	**2**
	Analogue output	**3**
	RS 232	**4**
	RS 485	**5**
Ethernet - TCP/IP Modbus	no	**0**
	yes	**1**
Data record	no	**0**
	yes	**1**
Specification	customized version, do not fill in	**00**

Basic configuration of the instrument is indicated in bold.

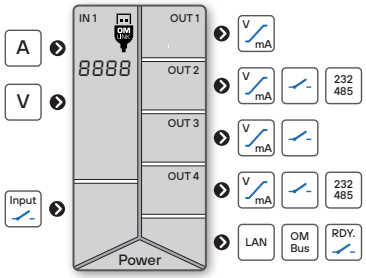
OMX 103PWR

- Range 0...1/5A; 0...120/250/450V
- LCD display, Digit. filters, Tare, Linearization
- 3x Card slots
- Galvanic separation 2.5 kVAC
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Measured data record

PROGRAMMABLE ISOLATED AC TRANSMITTER



The OMX 103 model series are DIN rail mountable adjustable trasmitters designed with the utmost versatility and user comfort whilst keeping the cost at a favourable level.

Type OMX 103PWR is a universal alternating current V-A meter with the extention of functions for further network analysis. The instrument measures voltage, current, active power, frequency, reactive power, apparent power and cos fi.

Modular concept of the device allows any output cards to be fitted in 3 slots.

The instrument is based on a 32-bit processor and true RMS trasmitters, which ensures good accuracy, stability and easy operation of the instrument.

For displaying measured data, easier setup and clear function arrangement, the instrument is delivered with a backlit LCD display.

OPERATION

The instrument is set and controlled by two buttons located on the front panel.All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by an optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by an optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the access rights (see, change). Access w/o password.

Standard equipment is the OM Link and USB interfaces, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates. The program is also designed for visualization and filing of measured values from more instruments.

The measured units can be projected on the display.

OPTIONS

COMPARATORS are assigned to monitor six limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

ANALOG OUTPUTS will find their place in applications where further evaluating or processing of measured data is required in external devices. We offer universal analog output with the option of selection of the type of output - voltage/current. The value of analog output corresponds with the displayed data. Its type and range are selectable in menu.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/Modbus/PROFIBUS protocols and LAN.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Mode is RTC, where data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS 232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE INPUT
Measuring range: adjustable in menu
Measuring modes: voltage (V_{RMS}), current (A_{RMS}), power (W), frequency (Hz), reactive power (Q), apparent power (S), power factor (cos fi)
Standard setting: any display values can be assigned to Min and Max values of a defined standard input signal
Analog output
Type: isolated, programmable with a resolution of 16 bit, rate < 1 ms
Range: 0...2/5/10 V, ±10 V, 0...5 mA, 0/4...20 mA

FUNCTIONS
Linearization: non-linear signal is converted by a 177-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Min./max. value: registration of min./max. value reached during measurement
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: activation and tare resetting
Resetting Min/Max: resetting min/max value

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
PWR Range	0...1 A	< 150 mV	Input 1
	0...5 A	< 150 mV	Input 1
	0...120 V	> 2 MΩ	Input 2
	0...250 V	> 2 MΩ	Input 2
	0...450 V	> 2 MΩ	Input 3
Input frequency	40...400 Hz		
Measured quantities	Voltage (V_{RMS}) Current (A_{RMS}) Active power (P) Frequency (Hz) Reactive powen (Q) Apparent power Power factor (cos fi)		

EXTERNAL INPUT

No. of inputs	2, on contact or 24 V	
Function	OFF	no function assigned
	LCK.	control keys blocking
	HLD.	measurement paused
	PAS.	menu access blocking
	TA.A	tare activation, input 1
	C.TA	tare resetting, input 1
	C.M.M.	resetting min/max value
	SAV.	data recording start (RTC)
	C.ME.	data recording reset (RTC)
	M. FN.	value display „Math. functions"

PROJECTION

Display	2x -99...999 LCD with backlighting
Description	2x 3 characters on the display may be used for description of measured quantities
Decimal point	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C	
Accuracy	±0.3 % of FS + 1 digit	
	±0.6% of FS + 1 digit	S
	±0.9% of FS + 1 digit	Q, Cos F
Rate	0.5...5 measurement/s	
Overload	10x (t < 30 ms), 2x *not valid for > 200 V and 5 A ranges*	
Functions	offset, Min/max value, Tare, peak value, math. functions	
Digital filters	exponential / floating / arithmetic average, rouding	
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root	
Linearization	linear interpolation in 177 points and 3 tables *setup only via OM Link*	
Data record	RTC 15 ppm/°C, time-date-display value < 266k data	
OM Link	company communication interface for operation, setting and update of instruments (microUSB)	
Watch-dog	reset after 400 ms	
Calibration	at 25°C and 40 % r.h.	

RELAYS / OC OUTPUT

No. of outputs	up to 6	
Type	digital, menu adjustable	
Mode	HYSTER.	active above set value
	WINDOW	active in the set window / band
	BATCH	active in set period
Function Relays/OC	CLOSE	is closed in active mode
	OPEN	is open in active mode
Limits	-99999...999999	
Hysteresis	0...999999	
Delay	0...99.9 s	
Outputs	1...6x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)*	
	1...6x open collector (30 VDC/100 mA)	
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300	

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	up to 4
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, comp. < 600 Ω/12 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	up to 2
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)
Ethernet	10/100BaseT, TCP/IP Modbus (Slave)

EXCITATION

Fixed	24 VDC, <1 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 9.4 W / 9.2 VA

MECHANIC PROPERTIES

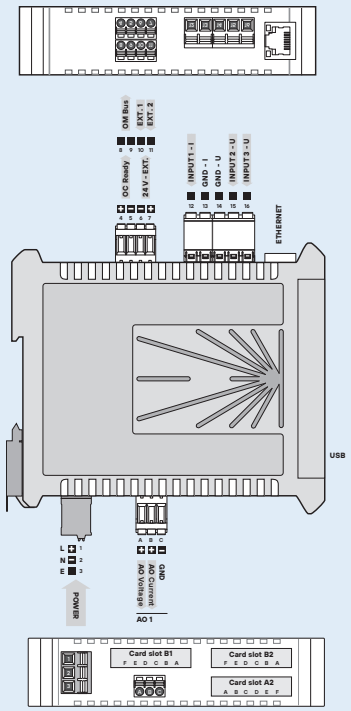
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	35 x 98 x 113 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 2.5 kVAC per 1 min test between supply and data/ analog output 2.5 kVAC per 1 min test between input and data/ analog output 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 600 V (PI), 300 (DI) input, output, excitation > 600 V (PI), 300 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 103PWR - [ ][ ] - [ ][ ][ ] - [ ][ ] - [ ]

Power supply	10...30 VDC / 24 VAC	**0**							
	80...250 V AC/DC	**1**							
Analogue output	no		**0**						
	yes		**1**						
Card A2	no			**0**					
	Comparator - 2x relays			**1**					
	Comparator - 2x open collectors			**2**					
	Analogue output			**3**					
	RS 232			**4**					
	RS 485			**5**					
	Profibus			**6**					
Card B1	no				**0**				
	Comparator - 2x relays				**1**				
	Comparator - 2x open collectors				**2**				
	Analogue output				**3**				
Card B2	no					**0**			
	Comparator - 2x relays					**1**			
	Comparator - 2x open collectors					**2**			
	Analogue output					**3**			
	RS 232					**4**			
	RS 485					**5**			
Ethernet - TCP/IP Modbus	no						**0**		
	yes						**1**		
Data record	no							**0**	
	yes							**1**	
Specification	customized version, do not fill in								**00**

Basic configuration of the instrument is indicated in bold.

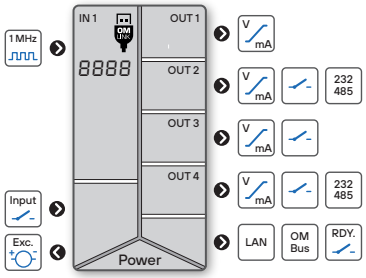
OMX 103UQC

- Counter/Frequency/Clock/Timer
- 0.1 Hz...1 MHz; UP/DW counter, IRC
- LCD display, Digit. filters, Tare, Linearization, Suma
- 3x Card slots
- Galvanic separation 2.5 kVAC
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

Option

Comparators ● Data output ● Measured data record

PROGRAMMABLE ISOLATED TRANSMITTER



The OMX 103 model series are DIN rail mountable adjustable trasmitters designed with the utmost versatility and user comfort whilst keeping the cost at a favourable level.

Type OMX 103UQC is a universal transmitter - impulse counter/frequency meter/evaluation of signals from IRC sensors and timer/clock.

Modular concept of the device allows any output cards to be fitted in 3 slots.

The instrument is based on a 32-bit processor which ensures good accuracy, stability and easy operation of the instrument.

For displaying measured data, easier setup and clear function arrangement, the instrument is delivered with a backlit LCD display.

OPERATION

The instrument is set and controlled by two buttons located on the front panel.All programmable settings of the instrument may be performed in three adjusting modes:

LIGHT MENU is protected by an optional number code and contains solely items necessary for instrument setting.

PROFI MENU is protected by an optional number code and contains complete instrument setting.

USER MENU may contain arbitrary items from the programming menu (LIGHT/PROFI), which determine the access rights (see, change). Access w/o password.

Standard equipment is the OM Link and USB interfaces, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates. The program is also designed for visualization and filing of measured values from more instruments.

All settings are stored in the EEPROM memory (settings preserved even after the instrument is switched off).

The measured units can be projected on the display.

OPTIONS

COMPARATORS are assigned to monitor six limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/Modbus/PROFIBUS protocols and LAN.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage of all measured values up to 8 000 records. Second mode is RTC, where data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS 232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE INPUT
Input: NPN, PNP, on contact, IRC, line
Measuring modes: counter/frequency meter/UP-DW counter + frequency/counter for IRC + frequency
Calibration: calibration coef. for each channel may be set in menu independently
Measur. channels: A and B, from one or more measuring inputs two independent functions may be evaluated
Time base: 0.05/0.5/1/2/5/10/20 s /1/2/5/10/15 min

ANALOG OUTPUT
Type: isolated, programmable with a resolution of 16 bit, rate < 1 ms
Range: 0...2/5/10 V, ±10 V, 0...5 mA, 0/4...20 mA

EXCITATION
Range: 5/10/12/24 VDC , isolated

FUNCTIONS
Linearization: non-linear signal is converted by a 177-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Min./max. value: registration of min./max. value reached during measurement
Peak value: the display shows only max. or min. value
Mathemat. operations: polynom, 1/x, logarithm, exponential, power, root, sin x
Preset: initial nonzero value that is always read after resetting the device
Current value: one-off setting of the initial value
Summation: registration of figures upon shift operation
Time backup: time is running even when the power supply is turned off (the display is off)

DIGITAL FILTERS
Input filter: transmits input signal up to 1...1000 Hz
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting the projection step for display

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: activation and tare resetting
Resetting Min/Max: resetting min./max. value, counter resetting
Start/Stop: timer/clock control

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu	
UQC Input	on contact, TTL, NPN/PNP, Line 0...30 V, comparation levels are adjustable in the menu	
Input frequency	0.002 Hz...1 MHz 0.002 Hz...100 kHz DUTY 0.002 Hz...500 kHz QUADR., UP/DW	
Measuring mode	SINGLE counter/frequency A * B counter/frequency with function AND xNOR counter/frequency with function NOR DUTY duty cycle measurement QUADR counter/frequency for IRC sensors UP/DW UP/DW counter/frequency - measures on inputs A, B (direction) and can display numbers/frequenc UP-DW UP - DW counter/frequency - measures on inputs A (UP), B (DW) and can display numbers/frequency TIME Timer RTC Clock	
Time base	0.05 / 1 / 2 / 3 / 5 / 10 / 20 s 1 / 2 / 5 / 10 min	
Multiplication constant	0.00001...999999	
Dividing constant	0.00001...999999	
Preset	-99999...999999	
Input filter	off 1 / 10 / 100 / 250 / 500 / 1 000 kHz 1 / 10 / 45 / 55 / 65 / 100 Hz 2 / 5 / 10 s 1 / 10 min	
Functions	Offset Tare Preset Summation Min/Max value Peak value One time setting of the initial value Time backup (TIME / RTC)	

EXTERNAL INPUT

No. of inputs	3, on contact
Function	OFF no function assigned HOLD measurement paused LOCK control keys blocking TARE tare activation CL. T. tare resetting CLEAR display reseting SUM. sum showing C.SU. sum reset CL. ST. resetting and preset of counter/clock C.M.M. resetting min/max value SAV. data recording start (RTC)

PROJECTION

Display	2x -99...999 LCD with backlighting
Description	2x 3 characters on the display may be used for description of measured quantities
Decimal point	adjustable - in menu

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.05 % of value + 1 digit ±0.01 % of value ±2 ms TIME ±0.01 % of value ±130 ms RTC
Overload	10x (t < 30 ms), 2x
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Linearization	linear interpolation in 177 points and 3 tables *setup only via OM Link*
Data record	RTC 15 ppm/°C, time-date-display value < 266k data
Time backup	Lithium cell CR 2032, 3V/220 mAh
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 400 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 6
Type	digital, menu adjustable
Mode	HYSTER. active above set value WINDOW active in the set window / band BATCH active in set period
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...6x relay with switching contact (Form C) (250 VAC/50 VDC, 3 A)* 1...6x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	up to 4
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, comp. < 600 Ω/12 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	up to 2
Protocol	ASCII, MESSBUS, Modbus RTU, PROFIBUS DP
Data format	8 bit + no parity + 1 stop bit (ASCII) 7 bit + even parity + 1 stop bit (Messbus)
Rate	300...230 400 Baud 9 600 Baud...12 Mbaud (PROFIBUS)
RS 232	isolated
RS 485	isolated, addressing (max. 31 instruments)
Ethernet	10/100BaseT, TCP/IP Modbus (Slave)

EXCITATION

Fixed	24 VDC, <1 W, isolated

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 9.4 W / 9.2 VA

MECHANIC PROPERTIES

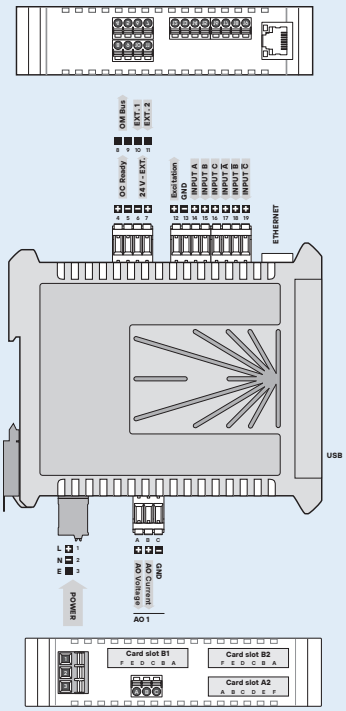
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	35 x 98 x 113 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and input 2.5 kVAC per 1 min test between supply and data/ analog output 2.5 kVAC per 1 min test between input and data/ analog output 4 kVAC per 1 min test between input and relay output
Insulation resist.*	for pollution degree II, measuring cat. III power supply, input > 600 V (PI), 300 (DI) input, output, excitation > 600 V (PI), 300 V (DI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 103UQC - □□ - □□□ - □□ - □

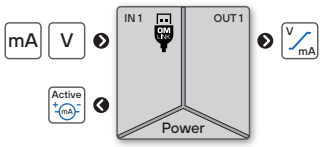
Power supply	10...30 VDC / 24 VAC	**0**							
	80...250 V AC/DC	**1**							
Analogue output	no		**0**						
	yes		**1**						
Card A2	no			**0**					
	Comparator - 2x relays			**1**					
	Comparator - 2x open collectors			**2**					
	Analogue output			**3**					
	RS 232			**4**					
	RS 485			**5**					
	Profibus			**6**					
Card B1	no				**0**				
	Comparator - 2x relays				**1**				
	Comparator - 2x open collectors				**2**				
	Analogue output				**3**				
Card B2	no					**0**			
	Comparator - 2x relays					**1**			
	Comparator - 2x open collectors					**2**			
	Analogue output					**3**			
	RS 232					**4**			
	RS 485					**5**			
Ethernet - TCP/IP Modbus	no						**0**		
	yes						**1**		
Data record	no							**0**	
	yes							**1**	
Specification	customized version, do not fill in								**00**

Basic configuration of the instrument is indicated in bold.

OMX 211PM

- Input 0...2/5/10 V
  0...5/20 mA, 4...20 mA, passive/active
- Analog output, passive/active
- Quick configuration by DIP switch
- PC configurable via USB port
- Galvanic isolation 2.5 kVAC
- Simple instalation to DIN rail
- Power supply 10...30 VDC, 24 VAC

PROGRAMMABLE ISOLATED TRASMITTERS



The OMX 200 model series are digital DIN rail mounted trasmitterss housed in an enclosure only 12.5 mm wide.
The OMX 211PM type is a simple single-channel isolator with a convenient setting of the input and output ranges either using a DIP switch on the side of the housing or the free OM Link SW from a PC.
This device is based on a 32-bit processor and 24-bit ΔΣ ADC, which guarantees high accuracy and excellent stability.

OPERATION

The device can be configured either by DIP switch located on the side of the housing or by PC using the OM Link SW. The same SW can be used to edit and archive all device settings, as well as to perform firmware updates and customer calibration.

Tech-in process can be performed for the measuring range currently selected using the front panel buttons.

All settings are stored in the EEPROM memory (preserved even after power-off)

STANDARD FUNCTIONS*

PROGRAMMABLE INPUT
Measuring range: adjustable in menu
Standard setting: any input values can be assigned to Min and Max values of the analog output
Teach-in: any input values can be assigned to Min and Max values of the actual (unknown) input signal
Manual setting: the known Min and Max values of the input signal can be set manually and any analog output values can be assigned to each of them at the same time

ANALOG OUTPUT
Type: isolated, configurable with resolution of 10 000 parts, rate < 3.5 ms
Range: 0...10 V, 0...20 mA,4...20 mA

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Fixed tare: fixed preset tare
Simulation: test mode in which range, value and duration of the step can be set
Math functions: polynomial, inverse polynomial, logarithm, exponential, power, root

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting a „shorter" number for further signal processing

* this setting is only possible via the OM Link SW

TECHNICAL DATA

INPUT

No. of inputs	1 The range is selectable either by DIP switch or by OM Link free SW from PC	
PM Range	0...5 mA 0...20 mA 4...20 mA ±2 V ±5 V ±10 V	< 200 mV < 200 mV < 200 mV 1 MΩ 1 MΩ 1 MΩ

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.1 % of FS + 1 digit *above accuracies apply for 20 meas./s*
Rate	1...100 measurement/s
Latency	< 13 ms
Overload	10x (t < 30 ms), 2x
Functions	Teach-in, offset, tare, preset tare, min/max value, math. functions, simulation
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Linearization	linear interpolation in 100 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with resolution of max. 10 000 points, type and range are selectable in menu
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Rate	response to change of value < 3.5 ms
Ranges	0...10 /10...0 V, resistive load ≥ 1 kΩ 0...20 / 20...0 mA 4...20 / 20...4 mA, compensation < 600 Ω/12 V

EXCITATION

Fixed	24 VDC / 35 mA, isolated *only for 4...20 mA input*

POWER SUPPLY

Range	10...30 VDC / 24 AC, ±10 %, PF ≥ 0.4, I_{STP}< 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 1.8 W / 1.7 VA

MECHANIC PROPERTIES

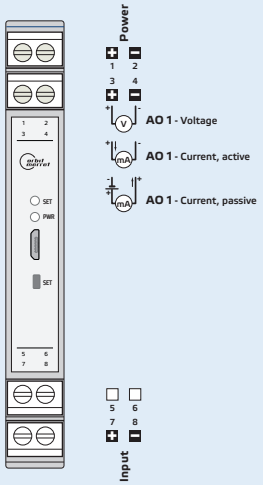
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	12.5 x 99 x 114.5 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC per 1 min test between supply and input 2.5 kVAC per 1 min test between supply and analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI), 255 (DI) input, output > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

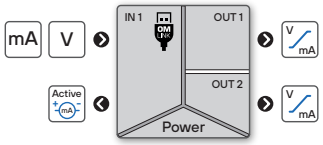
OMX 211PM - ☐

Specification	customized version, do not fill in	**00**

OMX 212PM

- Input 0...2/5/10 V
  0...5/20 mA, 4...20 mA, passive/active
- 2x Analog outputs, passive/active
- Quick configuration by DIP switch
- PC configurable via USB port
- Galvanic isolation 2.5 kVAC
- Simple instalation to DIN rail
- Power supply 10...30 VDC, 24 VAC

DIGITAL ISOLATED TRASMITTERS



The OMX 200 model series are digital DIN rail mounted trasmitterss housed in an enclosure only 12.5 mm wide.
The OMX 212PM type is a simple single-channel isolator/splitter with a convenient setting of the input and output ranges either using a DIP switch on the side of the housing or the free OM Link SW from a PC.
You can also use this trasmitters as a splitter into 2 analogue outputs.
This device is based on a 32-bit processor and 24-bit ΔΣ ADC, which guarantees high accuracy and excellent stability.

OPERATION

The device can be configured either by DIP switch located on the side of the housing or by PC using the OM Link SW. The same SW can be used to edit and archive all device settings, as well as to perform firmware updates and customer calibration.

Tech-in process can be performed for the measuring range currently selected using the front panel buttons.

All settings are stored in the EEPROM memory (preserved even after power-off)

STANDARD FUNCTIONS*

PROGRAMMABLE INPUT
Measuring range: adjustable in menu
Standard setting: any input values can be assigned to Min and Max values of the analog output
Teach-in: any input values can be assigned to Min and Max values of the actual (unknown) input signal
Manual setting: the known Min and Max values of the input signal can be set manually and any analog output values can be assigned to each of them at the same time

ANALOG OUTPUT
Type: isolated, configurable with resolution of 10 000 parts, rate < 3.5 ms
Range: 0...10 V, 0...20 mA,4...20 mA

FUNCTIONS
Linearization: non-linear signal is converted by a 50-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Fixed tare: fixed preset tare
Simulation: test mode in which range, value and duration of the step can be set
Math functions: polynomial, inverse polynomial, logarithm, exponential, power, root

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting a „shorter" number for further signal processing

* this setting is only possible via the OM Link SW

TECHNICAL DATA

INPUT

No. of inputs	1 The range is selectable either by DIP switch or by OM Link free SW from PC	
PM Range	0...5 mA 0...20 mA 4...20 mA ±2 V ±5 V ±10 V	< 200 mV < 200 mV < 200 mV 1 MΩ 1 MΩ 1 MΩ

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.1 % of FS + 1 digit *above accuracies apply for 20 meas./s*
Rate	1...100 measurement/s
Latency	< 13 ms
Overload	10x (t < 30 ms), 2x
Functions	Teach-in, offset, tare, preset tare, min/max value, math. functions, simulation
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Linearization	linear interpolation in 100 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

ANALOG OUTPUTS

No. of outputs	2
Type	isolated, adjustable with resolution of max. 10 000 points, type and range are selectable in menu
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Rate	response to change of value < 3.5 ms
Ranges	0...10 /10...0 V, resistive load ≥ 1 kΩ 0...20 / 20...0 mA 4...20 / 20...4 mA, compensation < 600 Ω/12 V

EXCITATION

Fixed	24 VDC / 35 mA, isolated *only for 4...20 mA input*

POWER SUPPLY

Range	10...30 VDC / 24 AC, ±10 %, PF ≥ 0.4, I_{STP}< 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 2.5 W / 2.4 VA

MECHANIC PROPERTIES

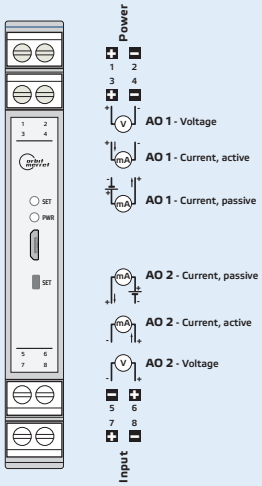
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	12.5 x 99 x 114.5 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC per 1 min test between supply and input 2.5 kVAC per 1 min test between supply and analog output 2.5 kVAC per 1 min test between analog outputs
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI), 255 (DI) input, output > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

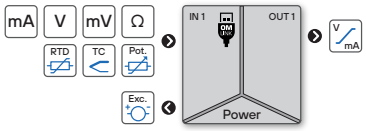
OMX 212PM -

Specification	customized version, do not fill in	**00**

OMX 311UNI

- Multifunction input (DC, PM, RTD, T/C, DU)
- Analog output, passive/active
- Quick configuration by DIP switch
- PC configurable via USB port
- Excitation 24 VDC
- Galvanic isolation 2.5 kVAC
- Simple instalation to DIN rail
- Power supply 10…30 VDC, 24 VAC

DIGITAL ISOLATED TRASMITTERS



The OMX 300 model series are digital DIN rail mounted trasmitterss housed in an enclosure only 17.5 mm wide.

The OMX 311UNI type is a galvanic isolated single-channel universal. It can be configured for 10 different input variants. Setting of both the input and output ranges can be done conveniently by a DIP switch located on the side of the housing or from a PC via the OM Link SW.

This device is based on a 32-bit processor and 24-bit ΔΣ ADC, which guarantees high accuracy and excellent stability.

OPERATION

The device can be configured either by DIP switch located on the side of the housing or by PC using the OM Link SW. The same SW can be used to edit and archive all device settings, as well as to perform firmware updates and customer calibration.

Tech-in process can be performed for the measuring range currently selected using the front panel buttons.

All settings are stored in the EEPROM memory (preserved even after power-off)

STANDARD FUNCTIONS*

PROGRAMMABLE INPUT
Selection: of input type and measuring range
Standard setting: any input values can be assigned to Min and Max values of the analog output
Teach-in: any input values can be assigned to Min and Max values of the actual (unknown) input signal
Manual setting: the known Min and Max values of the input signal can be set manually and any analog output values can be assigned to each of them at the same time

ANALOG OUTPUT
Type: isolated, configurable with resolution of 10 000 parts, rate < 3.5 ms
Range: 0…10 V, 0…20 mA,4…20 mA

EXCITATION
Range: 24 VDC/35 mA, isolated

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signal is converted by a 100-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Fixed tare: fixed preset tare
Simulation: test mode in which range, value and duration of the step can be set
Math functions: polynomial, inverse polynomial, logarithm, exponential, power, root

DIGITAL FILTERS
Floating average: from 2…30 measurements
Exponential average: from 2…100 measurements
Arithmetic average: from 2…100 measurements
Rounding: setting a „shorter" number for further signal processing

* this setting is only possible via the OM Link SW

TECHNICAL DATA

INPUT

No. of inputs	1 The range is selectable either by DIP switch or by OM Link free SW from PC		
DC Range	±60 mV	> 10 MΩ	Input 1
	±75 mV	> 10 MΩ	Input 1
	±100 mV	> 10 MΩ	Input 1
	±150 mV	> 10 MΩ	Input 1
	±300 mV	> 10 MΩ	Input 1
	±1000 mV	> 10 MΩ	Input 1
	±20 V	1 MΩ	Input 2
	±40 V	1 MΩ	Input 2
	±100 mA	< 200 mV	Input 3
PM Range	±5 mA	< 200 mV	Input 3
	±20 mA	< 200 mV	Input 3
	4...20 mA	< 200 mV	Input 3
	±2 V	1 MΩ	Input 2
	±5 V	1 MΩ	Input 2
	±10 V	1 MΩ	Input 2
OHM Range	0...100 / 300 Ω 0...1 / 3 / 10 / 30 / 100 kΩ 0...300 kΩ (only 2- and 4-wire)		
Connection	2-, 3- and 4-wire with broken cable/sensor detection		
Pt Range	Pt 100/500/1 000, 3 850 ppm/°C	-50°...450°C	
	Pt 100, 3 920 ppm/°C	-50°...450°C	
	Pt 50, 3 910 ppm/°C	-200°...1100°C	
	Pt 100, 3 910 ppm/°C	-200°...450°C	
Connection	2-, 3- and 4-wire with broken cable/sensor detection		
Ni Range	Ni 1 000/10 000, 5 000 ppm/°C	-50°...250°C	
	Ni 1 000/10 000, 6 180 ppm/°C	-200°...250°C	
Connection	2-, 3- and 4-wire with broken cable/sensor detection		
Cu Range	Cu 50/100, 4 260 ppm/°C	-50°...200°C	
	Cu 50/100, 4 280 ppm/°C	-200°...200°C	
Connection	2-, 3- and 4-wire with broken cable/sensor detection		
NTC Range	NTC 1 2k2, $B_{25/85}$ = 3600	-40°...125°C	
	NTC 2 2k0, $B_{25/85}$ = 3528	-40°...125°C	
	NTC 3 10k, $B_{25/85}$ = 3435	-40°...125°C	
	NTC 4 10k, $B_{25/85}$ = 3977	-40°...125°C	
	NTC 5 12k, $B_{25/85}$ = 3740	-40°...125°C	
	NTC 6 20k, $B_{25/85}$ = 4263	-40°...125°C	
Connection	2-, 3- and 4-wire with broken cable/sensor detection		
PTC Range	KTY 81/210	-55°...150°C	
Connection	2-, 3- and 4-wire with broken cable/sensor detection		
T/C Range	J (Fe-CuNi)	-200°...900°C	
	K (NiCr-Ni)	-200°...1 300°C	
	T (Cu-CuNi)	-200°...400°C	
	E (NiCr-CuNi)	-200°...690°C	
	B (PtRh30-PtRh6)	300°...1 820°C	
	S (PtRh10-Pt)	-50°...1 760°C	
	R (Pt13Rh-Pt)	-50°...1 740°C	
	N (Omegalloy)	-200°...1 300°C	
	L (Fe-CuNi)	-200°...900°C	
	XK (Chromel-Copel)	-200°...800°C	
	with broken cable/sensor detection		
CJC	adjustable: -20°...99°C or automatic		
DU Sensor power supply	1.65 VDC/3 mA, potentiometer resistance > 500 Ω		

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.1 % of FS + 1 digit *above accuracies apply for 20 meas./s*
Rate	1...100 measurement/s
Latency	< 13 ms
Overload	10x (t < 30 ms), 2x
Compensation of conduct	< 30 Ω RTD
Measurement accuracy CJC	±1.5°C T/C
Functions	Teach-in, offset, tare, preset tare, min/max value, math. functions, simulation
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Linearization	linear interpolation in 100 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with resolution of max. 10 000 points, type and range are selectable in menu
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Rate	response to change of value < 3.5 ms
Ranges	0...10 /10...0 V, resistive load ≥ 1 kΩ 0...20 / 20...0 mA 4...20 / 20...4 mA, compensation < 600 Ω/12 V

EXCITATION

Fixed	24 VDC / 35 mA, isolated

POWER SUPPLY

Range	10...30 VDC / 24 AC, ±10 %, PF ≥ 0.4, I_{STP}< 40 A / 1 ms, isolated *Protection by fuse inside the device*
Consumption	< 1.9 W / 1.8 VA

MECHANIC PROPERTIES

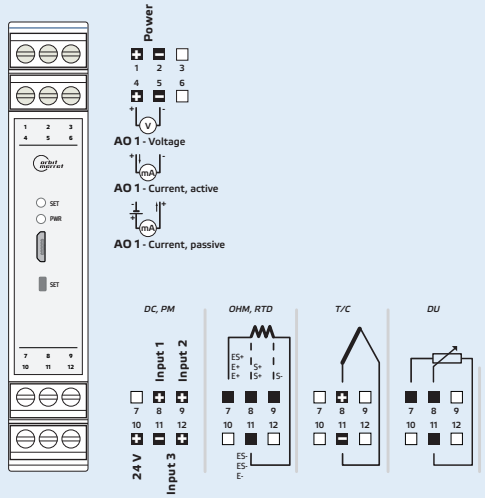
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	17.5 x 99 x 114.5 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC per 1 min test between supply and input 2.5 kVAC per 1 min test between supply and analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI), 255 (DI) input, output > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

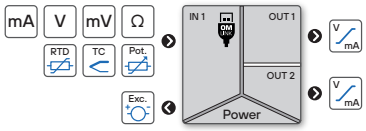
OMX 311UNI - ☐

Specification	customized version, do not fill in	**00**

OMX 312UNI

- Multifunction input (DC, PM, RTD, T/C, DU)
- 2x Analog outputs, passive/active
- Quick configuration by DIP switch
- PC configurable via USB port
- Excitation 24 VDC
- Galvanic isolation 2.5 kVAC
- Simple instalation to DIN rail
- Power supply 10...30 VDC / 24 VAC

DIGITAL ISOLATED TRASMITTERS



The OMX 300 model series are digital DIN rail mounted trasmitterss housed in an enclosure only 17.5 mm wide.

The OMX 312UNI type is a galvanic isolated single-channel universal trasmitters / splitter. It can be configured for 10 different input variants. Setting of both the input and output ranges can be done conveniently by a DIP switch located on the side of the housing or from a PC via the OM Link SW.

You can also use this trasmitters as a splitter into 2 analogue outputs.

This device is based on a 32-bit processor and 24-bit ΔΣ ADC, which guarantees high accuracy and excellent stability.

OPERATION

The device can be configured either by DIP switch located on the side of the housing or by PC using the OM Link SW. The same SW can be used to edit and archive all device settings, as well as to perform firmware updates and customer calibration.

Tech-in process can be performed for the measuring range currently selected using the front panel buttons.

All settings are stored in the EEPROM memory (preserved even after power-off)

STANDARD FUNCTIONS*

PROGRAMMABLE INPUT
Selection: of input type and measuring range
Standard setting: any input values can be assigned to Min and Max values of the analog output
Teach-in: any input values can be assigned to Min and Max values of the actual (unknown) input signal
Manual setting: the known Min and Max values of the input signal can be set manually and any analog output values can be assigned to each of them at the same time

ANALOG OUTPUT
Type: isolated, configurable with resolution of 10 000 parts, rate < 3.5 ms
Range: 0...10 V, 0...20 mA,4...20 mA

EXCITATION
Range: 24 VDC/35 mA, isolated

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signal is converted by a 100-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Fixed tare: fixed preset tare
Simulation: test mode in which range, value and duration of the step can be set
Math functions: polynomial, inverse polynomial, logarithm, exponential, power, root

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting a „shorter" number for further signal processing

* this setting is only possible via the OM Link SW

TECHNICAL DATA

INPUT

No. of inputs		1 The range is selectable either by DIP switch or by OM Link free SW from PC	
DC	Range	±60 mV > 10 MΩ Input 1 ±75 mV > 10 MΩ Input 1 ±100 mV > 10 MΩ Input 1 ±150 mV > 10 MΩ Input 1 ±300 mV > 10 MΩ Input 1 ±1000 mV > 10 MΩ Input 1 ±20 V 1 MΩ Input 2 ±40 V 1 MΩ Input 2 ±100 mA < 200 mV Input 3
PM	Range	±5 mA < 200 mV Input 3 ±20 mA < 200 mV Input 3 4...20 mA < 200 mV Input 3 ±2 V 1 MΩ Input 2 ±5 V 1 MΩ Input 2 ±10 V 1 MΩ Input 2
OHM	Range	0...100 / 300 Ω 0...1 / 3 / 10 / 30 / 100 kΩ 0...300 kΩ (only 2- and 4-wire)
	Connection	2-, 3- and 4-wire with broken cable/sensor detection
Pt	Range	Pt 100/500/1 000, 3 850 ppm/°C -50°...450°C Pt 100, 3 920 ppm/°C -50°...450°C Pt 50, 3 910 ppm/°C -200°...1100°C Pt 100, 3 910 ppm/°C -200°...450°C
	Connection	2-, 3- and 4-wire with broken cable/sensor detection
Ni	Range	Ni 1 000/10 000, 5 000 ppm/°C -50°...250°C Ni 1 000/10 000, 6 180 ppm/°C -200°...250°C
	Connection	2-, 3- and 4-wire with broken cable/sensor detection
Cu	Range	Cu 50/100, 4 260 ppm/°C -50°...200°C Cu 50/100, 4 280 ppm/°C -200°...200°C
	Connection	2-, 3- and 4-wire with broken cable/sensor detection
NTC	Range	NTC 1 2k2, $B_{25/85}$ = 3600 -40°...125°C NTC 2 2k0, $B_{25/85}$ = 3528 -40°...125°C NTC 3 10k, $B_{25/85}$ = 3435 -40°...125°C NTC 4 10k, $B_{25/85}$ = 3977 -40°...125°C NTC 5 12k, $B_{25/85}$ = 3740 -40°...125°C NTC 6 20k, $B_{25/85}$ = 4263 -40°...125°C
	Connection	2-, 3- and 4-wire with broken cable/sensor detection
PTC	Range	KTY 81/210 -55°...150°C
	Connection	2-, 3- and 4-wire with broken cable/sensor detection
T/C	Range	J (Fe-CuNi) -200°...900°C K (NiCr-Ni) -200°...1 300°C T (Cu-CuNi) -200°...400°C E (NiCr-CuNi) -200°...690°C B (PtRh30-PtRh6) 300°...1 820°C S (PtRh10-Pt) -50°...1 760°C R (Pt13Rh-Pt) -50°...1 740°C N (Omegalloy) -200°...1 300°C L (Fe-CuNi) -200°...900°C XK (Chromel-Copel) -200°...800°C with broken cable/sensor detection
	CJC	adjustable: -20°...99°C or automatic
DU	Sensor power supply	1.65 VDC/3 mA, potentiometer resistance > 500 Ω

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.1 % of FS + 1 digit *above accuracies apply for 20 meas./s*
Rate	1...100 measurement/s
Latency	< 13 ms
Overload	10x (t < 30 ms), 2x
Compensation of conduct	< 30 Ω RTD
Measurement accuracy CJC	±1.5°C T/C
Functions	Teach-in, offset, tare, preset tare, min/max value, math. functions, simulation
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Linearization	linear interpolation in 100 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

ANALOG OUTPUTS

No. of outputs	2
Type	isolated, adjustable with resolution of max. 10 000 points, type and range are selectable in menu
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Rate	response to change of value < 3.5 ms
Ranges	0...10 /10...0 V, resistive load ≥ 1 kΩ 0...20 / 20...0 mA 4...20 / 20...4 mA, compensation < 600 Ω/12 V

EXCITATION

Fixed	24 VDC / 35 mA, isolated

POWER SUPPLY

Range	10...30 VDC / 24 AC, ±10 %, PF ≥ 0.4, I_{STP}< 40 A / 1 ms, isolated *Protection by fuse inside the device*
Consumption	< 2.5 W / 2.4 VA

MECHANIC PROPERTIES

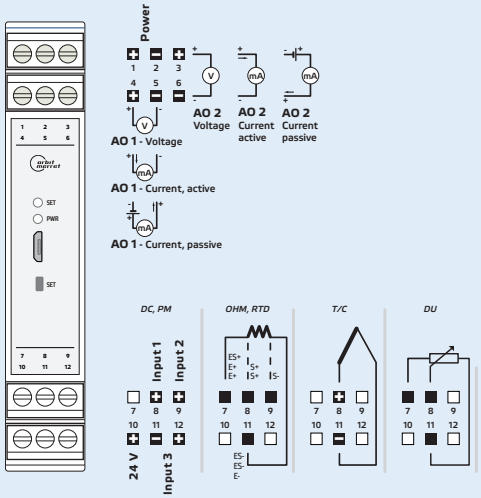
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	17.5 x 99 x 114.5 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC per 1 min test between supply and input 2.5 kVAC per 1 min test between supply and analog output 2.5 kVAC per 1 min test between analog outputs
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI), 255 (DI) input, output > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 312UNI -

Specification	customized version, do not fill in	**00**

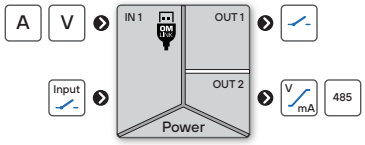
OMX 333DC

- Range ±0.5/±1/±5 A
  ±25/±50/±100/±200/±400 V
- Output 0/4...20 mA/0...5 mA/0...2/5/10 V/±10 V
- Digital filters, Tare, Linearization
- Galvanic separation 2.5 kVAC
- Power supply 10...30 VDC / 24 VAC

Option

Comparators ● Data output

DIGITAL ISOLATED TRANSMITTER



The OMX 333 model series are simple DIN rail mountable adjustable trasmitters.
Type OMX 333DC is designed for measurements of higher DC and AC voltage and current, easily adjustable in the instrument´s menu.
The instrument is based on a microcontroller and 16-bit ADC and DAC, which provides good accuracy, stability and ease of use.

OPERATION

Instrument can be controlled by two push buttons and a DIP switch located on the front panel. When frequent changes of settings are needed, we recomend the use of OM Link interface, which in conjunction with free control SW alows for modification and storage of all instrument's settings and also for firmware upload (using OM Ling cable) from a PC.

The above mentioned SW can also be used for visualisation and archiving of measured values from a number of instruments via the RS 485 line.

All settings are stored in the EEPROM memory (they hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS485 with ASCII protocol.

STANDARD FUNCTIONS

PROGRAMMABLE INPUT
Measuring range: adjustable in menu
Teach-In: Min and Max values can be assigned to any two values of (unknown) input signal

ANALOG OUTPUT
Type: isolated, programmable with a resolution of 16 bit, rate < 0.2 ms
Ranges: 0...2/5/10 V/±10 V, 0...5 mA/0/4...20 mA

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation
Tare: designed to reset display upon non-zero input signal

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting a „shorter" number for further signal processing

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: activation and tare resetting

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
PM Range	±0,5 A	< 15 mV	Input 5
	±1 A	< 30 mV	Input 5
	±5 A	< 150 mV	Input 5
	±25 V	10 MΩ	Input 1
	±50 V	10 MΩ	Input 1
	±100 V	10 MΩ	Input 1
	±200 V	10 MΩ	Input 1
	±400 V	10 MΩ	Input 1

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned HOLD measurement paused LOCK control keys blocking TARE tare activation CL. TA. tare resetting

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Accuracy	±0.1% of FS + 1 digit *above accuracies apply for 20 meas./s*
Rate	0.5...80 measurement/s
Overload	10x (t < 30 ms), 2x *not valid for > 200 V and 5 A ranges*
Functions	Teach-in, tare
Digital filters	exponential average, rouding
Linearization	linear interpolation in 25 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25ºC and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 2
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode READY output indicates error-free status ERROR output indicates an error condition
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/ºC
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, comp. < 600 Ω/12 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII
Data format	8 bit + no parity + 1 stop bit
Rate	300...230 400 Baud
RS 485	isolated, addressing (max. 31 instruments)

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 2 W / 2 VA

MECHANIC PROPERTIES

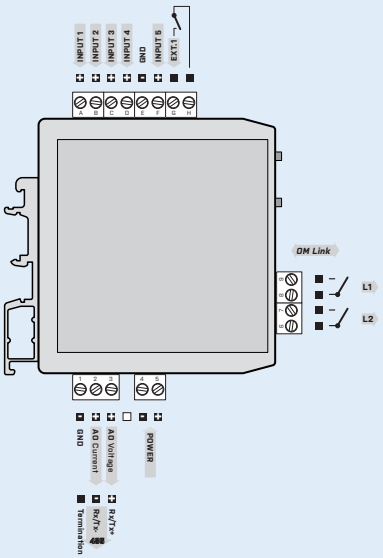
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	25 x 79 x 90.5 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º...60ºC
Storage temperat.	-20º...85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC per 1 min test between supply and input 2.5 kVAC per 1 min test between supply and analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI), 255 (DI) input, output > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 333DC - □□ - □

Comparators	no	**0**		
	1x relay (Form A)	**1**		
	2x relay (Form A)	**2**		
	1x open collector	**3**		
	2x open collector	**4**		
Output	none		**0**	
	analog		**1**	
	RS 485		**2**	
Specification	customized version, do not fill in			**00**

Basic configuration of the instrument is indicated in bold.

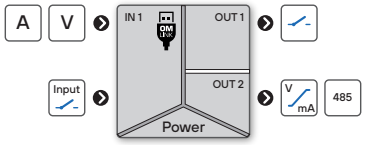
OMX 333PWR

- Range 0...1 / 2.5 / 5 A; 0...60 / 150 / 300 mV
  0...10 / 120 / 250 / 450V
- Output 0/4...20 mA/0...5 mA/0...2/5/10 V/±10 V
- Digital filters, Tare
- Galvanic separation 2.5 kVAC
- Power supply 10...30 VDC / 24 VAC

Option

Comparators ● Data output

DIGITAL ISOLATED AC TRANSMITTER



The OMX 333 model series are simple DIN rail mountable adjustable trasmitters.

Type OMX 333PWR is a universal alternating current V-A meter with the extention of functions for further network analysis. The instrument measures voltage, current, active power and with calculation also apparent power and cos fi.

The instrument is based on a microcontroller, true RMC and DAC, which provides good accuracy, stability and ease of use.

OPERATION

Instrument can be controlled by two push buttons and a DIP switch located on the front panel. When frequent changes of settings are needed, we recomend the use of OM Link interface, which in conjunction with free control SW alows for modification and storage of all instrument's settings and also for firmware upload (using OM Ling cable) from a PC.

The above mentioned SW can also be used for visualisation and archiving of measured values from a number of instruments via the RS 485 line.

All settings are stored in the EEPROM memory (they hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS485 with ASCII protocol.

STANDARD FUNCTIONS

PROGRAMMABLE INPUT
Measuring range: adjustable in menu
Teach-In: Min and Max values can be assigned to any two values of (unknown) input signal
Measuring modes (PWR): voltage (V_{RMS}), current (A_{RMS}), power (W) and with calculation apparent power (S) and power factor (cos fi)

ANALOG OUTPUT
Type: isolated, programmable with a resolution of 16 bit, rate < 0.2 ms
Ranges: 0...2/5/10 V/±10 V, 0...5 mA/0/4...20 mA

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation
Tare: designed to reset display upon non-zero input signal

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting a „shorter" number for further signal processing

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: activation and tare resetting

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu		
PWR Range	0...60 mV	21 kOhm	Input 5
	0...150 mV	21 kOhm	Input 5
	0...300 mV	1,2 kOhm	Input 5
	0...1 A	< 150 mV	Input 5
	0...2,5 A	< 150 mV	Input 5
	0...5 A	< 150 mV	Input 5
	0...10 V	152 kOhm	Input 3
	0...120 V	930 kOhm	Input 1
	0...250 V	730 kOhm	Input 3
	0...450 V	930 kOhm	Input 1
Input frequency	40...400 Hz		
Measured quantities	Voltage (V_{RMS}) Current (A_{RMS}) Active power (P) *with calculation* Reactive powen (Q) Apparent power Power factor (cos fi)		

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned HOLD measurement paused LOCK control keys blocking TARE tare activation CL. TA. tare resetting

INSTRUMENT SPECIFICATION

TC	50 ppm/ºC
Accuracy	±0.3 % of FS + 1 digit
Rate	0.5...5 measurement/s
Overload	10x (t < 30 ms), 2x *not valid for > 200 V and 5 A ranges*
Functions	tare
Digital filters	exponential average, rouding
Linearization	linear interpolation in 25 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25ºC and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 2
Type	digital, menu adjustable
Mode	HYSTER. active above set value
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode READY output indicates error-free status ERROR output indicates an error condition
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/ºC
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, comp. < 600 Ω/12 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII
Data format	8 bit + no parity + 1 stop bit
Rate	300...230 400 Baud
RS 485	isolated, addressing (max. 31 instruments)

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 2 W / 2 VA

MECHANIC PROPERTIES

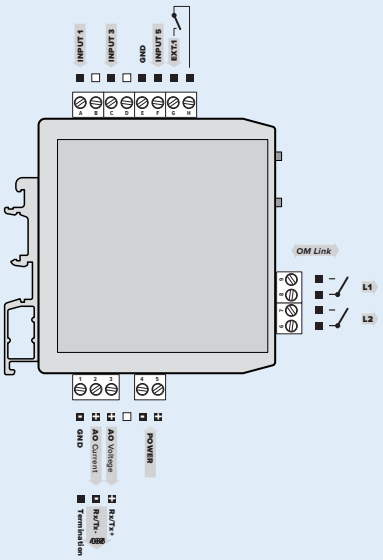
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	25 x 79 x 90.5 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20º...60ºC
Storage temperat.	-20º...85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC per 1 min test between supply and input 2.5 kVAC per 1 min test between supply and analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI), 255 (DI) input, output > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION

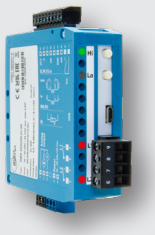


ORDER CODE

OMX 333PWR - [ ][ ][ ][ ] - [ ]

Volatge range	0...10 V/120 V	**S**					
	0...250 V/450 V	**U**					
Current range	0...60 mV/300 mV		**K**				
	0...1 A/2,5 A/5 A		**P**				
Comparators	no			**0**			
	1x relay (Form A)			**1**			
	2x relay (Form A)			**2**			
	1x open collector			**3**			
	2x open collector			**4**			
Output	none				**0**		
	analog				**1**		
	RS 485				**2**		
Specification	customized version, do not fill in						**00**

Basic configuration of the instrument is indicated in bold.



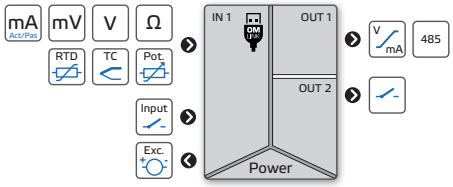
OMX 333iUNI

- Multifunction input (DC, PM, RTD, T/C, DU)
- Output 0/4...20 mA/0...5 mA/0...2/5/10 V/±10 V
- Teach-in, Digital filters, Tare, Linearization
- Quick configuration by DIP switch
- PC configurable via USB port
- Excitation 24 VDC
- Galvanic separation 2.5 kVAC
- Power supply 10...30 VDC / 24 VAC

Option

Comparators ● Data output

DIGITAL ISOLATED TRANSMITTER



The OMX 333i model series are simple DIN rail mountable adjustable trasmitters.

The OMX 333iUNI is a multifunction isolated transmitter. It can be configured for 10 different input variants. Setting of both the input and output ranges can be done conveniently by a DIP switch located on the side of the housing or from a PC via the OM Link SW.

This device is based on a 32-bit processor, 24-bit ΔΣ ADC and 16-bit DAC, which guarantees high accuracy and excellent stability.

OPERATION

The device can be configured either by DIP switch located on the side of the housing or by PC using the OM Link SW. The same SW can be used to edit and archive all device settings, as well as to perform firmware updates and customer calibration.

Tech-in process can be performed for the measuring range currently selected using the front panel buttons.

All settings are stored in the EEPROM memory (preserved even after power-off).

OPTION

COMPARATORS are intended for monitoring two limit values with relay or open collector output. A wide selection of operating modes from basic activation when Above/Below pre-set value, Window - from/to or Batch - period and time, enables many requirements to be met. Another option is to set the mode of contact in idle state (NO/NC), pulse – contact closure for a defined duration or continuous mode - safety relay (IEC EN 61496).

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS485 with ASCII and Modbus protocol.

STANDARD FUNCTIONS

PROGRAMMABLE INPUT
Selection: of input type and measuring range
Standard setting: any display values can be assigned to Min and Max values of a defined standard input signal
Teach-in: any display values can be assigned to Min and Max values of actual (unknown) input signal
Manual setting: known Min and Max input signal values can be entered manually and any display values can be assigned to each signal

ANALOG OUTPUT
Type: isolated, programmable with a resolution of 16 bit, rate < 0.2 ms
Ranges: 0...2/5/10 V/±10 V, 0...5 mA/0/4...20 mA

EXCITATION
Range: 24 VDC/1 W, isolated

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signal is converted by a 100-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Fixed tare: fixed preset tare
Min./max. value: registration of min./max. value reached during measurement
Simulation: test mode in which range, value and duration of the step can be set
Math functions: polynomial, inverse polynomial, logarithm, exponential, power, root

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting a „shorter" number for further signal processing

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: activation and tare resetting
Resetting Min/Max: resetting min/max value
Hold Min/Max: start of a measurement to evaluate the Min/Max value
Sample: start of a one-time measurement
Opening of a limit: a command to open the relay when in LATCH mode (safety relay)

TECHNICAL DATA

INPUT

No. of inputs		1 The range is selectable either by DIP switch or by OM Link free SW from PC	
DC	Range	±60 mV > 10 MΩ Input 3 ±75 mV > 10 MΩ Input 3 ±100 mV > 10 MΩ Input 3 ±150 mV > 10 MΩ Input 3 ±300 mV > 10 MΩ Input 3 ±1000 mV > 10 MΩ Input 3 ±20 V 1 MΩ Input 1 ±40 V 1 MΩ Input 1 ±100 mA < 200 mV Input 5	
PM	Range	±5 mA < 200 mV Input 5 ±20 mA < 200 mV Input 5 4...20 mA < 200 mV Input 5 ±2 V 1 MΩ Input 1 ±5 V 1 MΩ Input 1 ±10 V 1 MΩ Input 1	
OHM	Range	0...100 / 300 Ω 0...1 / 3 / 10 / 30 / 100 kΩ 0...300 kΩ (only 2- and 4-wire)	
	Connection	2-, 3- and 4-wire with broken cable/sensor detection	
Pt	Range	Pt 100/500/1 000, 3 850 ppm/°C -50°...450°C Pt 100, 3 920 ppm/°C -50°...450°C Pt 50, 3 910 ppm/°C -200°...1100°C Pt 100, 3 910 ppm/°C -200°...450°C	
	Connection	2-, 3- and 4-wire with broken cable/sensor detection	
Ni	Range	Ni 1 000/10 000, 5 000 ppm/°C -50°...250°C Ni 1 000/10 000, 6 180 ppm/°C -200°...250°C	
	Connection	2-, 3- and 4-wire with broken cable/sensor detection	
Cu	Range	Cu 50/100, 4 260 ppm/°C -50°...200°C Cu 50/100, 4 280 ppm/°C -200°...200°C	
	Connection	2-, 3- and 4-wire with broken cable/sensor detection	
NTC	Range	NTC 1 2k2, $B_{25/85}$ = 3600 -40°...125°C NTC 2 2k0, $B_{25/85}$ = 3528 -40°...125°C NTC 3 10k, $B_{25/85}$ = 3435 -40°...125°C NTC 4 10k, $B_{25/85}$ = 3977 -40°...125°C NTC 5 12k, $B_{25/85}$ = 3740 -40°...125°C NTC 6 20k, $B_{25/85}$ = 4263 -40°...125°C	
	Connection	2-, 3- and 4-wire with broken cable/sensor detection	
PTC	Range	KTY 81/210 -55°...150°C	
	Connection	2-, 3- and 4-wire with broken cable/sensor detection	
T/C	Range	J (Fe-CuNi) -200°...900°C K (NiCr-Ni) -200°...1 300°C T (Cu-CuNi) -200°...400°C E (NiCr-CuNi) -200°...690°C B (PtRh30-PtRh6) 300°...1 820°C S (PtRh10-Pt) -50°...1 760°C R (Pt13Rh-Pt) -50°...1 740°C N (Omegalloy) -200°...1 300°C L (Fe-CuNi) -200°...900°C XK (Chromel-Copel) -200°...800°C with broken cable/sensor detection	
	CJC	adjustable: -20°...99°C or automatic	
DU	Sensor power supply	1.65 VDC/3 mA, potentiometer resistance > 500 Ω	

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned TARE tare activation CL.TAR. reset of Tare CL.M.M. reset of Min./Max. values CL.REL. open relay/OC (Type LATCH) HOLD measurement paused SAMPLE take a one-off measurement HLD.MIN start measurement of MIN HLD.MAX start measurement of MAX HLD.M-M start measurement of MAX-MIN KEY.LCK. device buttons blocked

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0,07 % of FS ±0,05 % of FS DC, PM ±0,1 % of FS OHM - 100k/300k *the specified accuracy applies to 20 measurements/s*
Rate	1...400 measurements/s *speed of 400 meas./s is with FFT signal filtering*
Latency	< 2.5 ms
Overload	10x (t < 30 ms), 2x
Compensation of conduct	< 30 Ω RTD
Measurement accuracy CJC	±1.5°C T/C
Functions	Teach-in, tare, preset tare, min/max value, math. functions, delayed start, simulation
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm /exponential / power / root
Linearization	linear interpolation in 100 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	2
Type	digital, configurable in menu
Mode	RISE active above set value DROP active below set value WINDOW active in the set window / band BATCH active in set periods
Function Relays/OC	SW. ON is closed in active mode SW. OFF is open in active mode PULSE switches on once in active mode LATCH in active mode the output is switched permanently, disconnection is blocked (IEC EN 61496) *- disconnection is performed by ext. input*
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...999.9 s
Outputs	2x relays with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 2x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUT

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 0.2 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, comp. < 600 Ω/12 V Indication of broken current loop Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, Modbus RTU
Data format	8 bit + no parity + 1 stop bit
Rate	300...230 400 Baud
RS 485	isolated, addressing (max. 31 instruments)

EXCITATION

Fixed voltage	24 VDC/< 60 mA, isolated

POWER SUPPLY

Range	10...30 VDC / 24 AC, ±10 %, PF ≥ 0.4, I_{STP}< 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 3.1 W / 3.0 VA

MECHANIC PROPERTIES

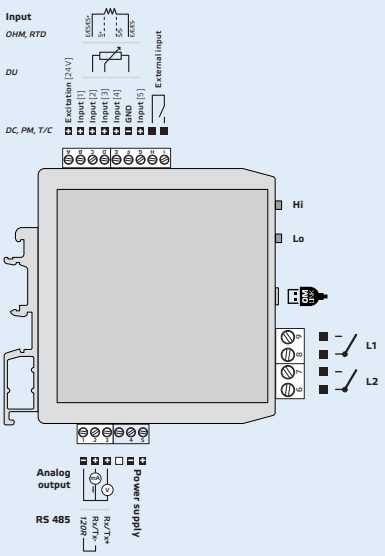
Material	PA66, incombustible UL 94 V-0, blue
Dimensions	25 x 79 x 90.5 mm (w x h x d)
Installation	to DIN rail 35 mm wide

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5/2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. test between supply and input 2.5 kVAC for 1 min. test between input and outputs 4 kVAC for 1 min. test between input and relays
Insulation resist.*	for pollution degree II, measurement cat. III power supply > 300 V (PI), 255 V (DI) Input/outputs > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 333iUNI - □□ - □

Comparators	no	**0**		
	2x relay (Form A)	**2**		
	2x open collector	**4**		
Output	none		**0**	
	analog		**1**	
	RS 485s		**2**	
Specification	customized version, do not fill in			**00**

Basic configuration of the instrument is indicated in bold.

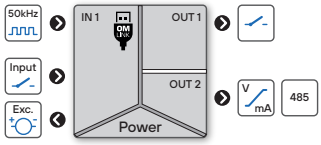
OMX 333UQC

- Counter/Frequency/Clock/Timer
- Output 0/4...20 mA/0...5 mA/0...2/5/10 V/±10 V
- Digital filters, Tare, Linearization, Sum
- Galvanic separation 2.5 kVAC
- Power supply 10...30 VDC / 24 VAC

Option

Comparators ● Data output

DIGITAL ISOLATED TRANSMITTER



The OMX 333 model series are simple DIN rail mountable adjustable trasmitters.

Type OMX 333UQC is a universal transmitter - counter/frequency meter/timer/clock adjustable in the instrument´s menu.

The instrument is based on a microcontroller, which provides good stability and ease of use.

OPERATION

Instrument can be controlled by two push buttons and a DIP switch located on the front panel. When frequent changes of settings are needed, we recomend the use of OM Link interface, which in conjunction with free control SW alows for modification and storage of all instrument's settings and also for firmware upload (using OM Ling cable) from a PC.

The above mentioned SW can also be used for visualisation and archiving of measured values from a number of instruments via the RS 485 line.

All settings are stored in the EEPROM memory (they hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor two limit values with relay output. The limits have adjustable hysteresis within the full range of the display as well as selectable delay of the switch-on in the range of 0...99.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS485 with ASCII protocol.

STANDARD FUNCTIONS

PROGRAMMABLE INPUT
Setting: measuring mode counter/frequency with adjustable calibration coefficient and time base
Teach-In: Min and Max values can be assigned to any two values of (unknown) input signal

ANALOG OUTPUT
Type: isolated, programmable with a resolution of 16 bit, rate < 1 ms
Ranges: 0...2/5/10 V/±10 V, 0...5 mA/0/4...20 mA

FUNCTIONS
Linearization: non-linear signal is converted by a 25-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Preset: initial nonzero value that is always read after resetting the device

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting a „shorter" number for further signal processing
Input filter: passes the input signal up to 5...1 000 Hz

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: activation and tare resetting
Rounding: setting a „shorter" number for further signal processing

TECHNICAL DATA

INPUT

No. of inputs	1 The range is adjustable in the instrument menu	
UQC Input	on contact, TTL, NPN/PNP 0...30 / 300 V, comparation levels are adjustable in the menu or automatic	
Input frequency	0.1 Hz...50 kHz 0.1 Hz...20 kHz 0.1 Hz...20 kHz 0.1 Hz...20 kHz 0.1 Hz...10 kHz	SINGLE UP/DW UP-DW QUADR., frequency QUADR., counter, duty cycle 50 %
Measuring mode	SINGLE QUADR UP/DW UP-DW TIME RTC	counter/frequency counter/frequency for IRC sensors UP/DW counter/frequency - measures on inputs A, B (direction) and can display numbers/frequenc UP - DW counter/frequency - measures on inputs A (UP), B (DW) and can display numbers/frequency Timer Clock
Time base	0.5 / 1 / 5 / 10 s	
Multiplication constant	0.00001...999999	
Dividing constant	0.00001...999999	
Preset	0...999999	
Input filter	0 / 5 / 40 / 100 / 1000 Hz	
Functions	Offset Tare Preset Summation One time setting of the initial value	

EXTERNAL INPUT

No. of inputs	1, on contact
Function	OFF no function assigned HOLD measurement paused LOCK control keys blocking TARE tare activation CL. TA. tare resetting CLEAR display reseting SUMA sum showing CLR.ST. counter/timer reset and preset CL.SUM. sum reset

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Accuracy	±0.05 % of value + 1 digit ±0.01 % of value ±2 ms TIME ±0.01 % of value ±130 ms RTC
Overload	10x (t < 30 ms), 2x *not valid for 300 V range*
Functions	tare
Digital filters	exponential average, rouding, 1/Fr.
Linearization	linear interpolation in 25 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

RELAYS / OC OUTPUT

No. of outputs	up to 2
Type	digital, menu adjustable
Mode	HYSTER. active above set value C-PULS automatic counter resetting at the set value (L1) ONCE switching limit, which will switch off only after the counter has been reset (L1) ON RUN output is active when the timer is running (L2)
Function Relays/OC	CLOSE is closed in active mode OPEN is open in active mode READY output indicates error-free status
Limits	-99999...999999
Hysteresis	0...999999
Delay	0...99.9 s
Outputs	1...2x relay with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)* 1...2x open collector (30 VDC/100 mA)
Relays	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

ANALOG OUTPUTS

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Accuracy	±0.02 % of FS
Rate	response to change of value < 1 ms
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA /4...20 mA, comp. < 600 Ω/12 V Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII
Data format	8 bit + no parity + 1 stop bit
Rate	300...230 400 Baud
RS 485	isolated, addressing (max. 31 instruments)

POWER SUPPLY

Range	10...30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 2 W / 2 VA

MECHANIC PROPERTIES

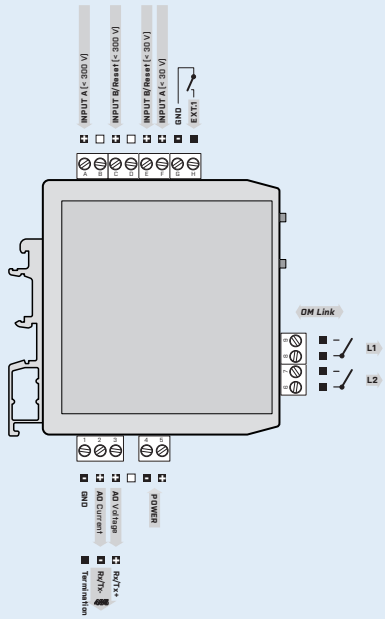
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	25 x 79 x 90.5 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC per 1 min test between supply and input 2.5 kVAC per 1 min test between supply and analog output
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI), 255 (DI) input, output > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 333UQC - [ ][ ][ ] - [ ]

Power supply	10...30 VDC / 24 VAC	**0**			
	10...30 VDC / 24 VAC, isolated	**1**			
Comparators	no		**0**		
	1x relay (Form A)		**1**		
	2x relay (Form A)		**2**		
	1x open collector		**3**		
	2x open collector		**4**		
Output	none			**0**	
	analog			**1**	
	RS 485			**2**	
Specification	customized version, do not fill in				**00**

Basic configuration of the instrument is indicated in bold.

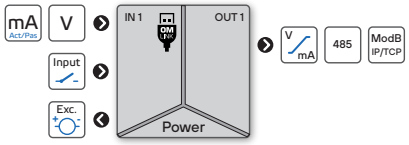
OMX 380iPM

- Input 0…20 mA/4…20 mA/0…10 V
- Output 0/4…20 mA/0…5 mA/0…2/5/10 V/±10 V
- Rate up to 7200 meas./s
- Teach-in, Digital filters, Tare, Linearization
- Quick configuration by DIP switch
- PC configurable via USB port
- Excitation 24 VDC
- Galvanic separation 2.5 kVAC
- Power supply 10…30 VDC/24 VAC

Option

Excitation ● Data output

DIGITAL ISOLATED TRANSMITTER



The OMX 380i model series are very fast DIN rail mountable digital transmitters with a Teach-in function.

Type OMX 380iPM is a isolated transmitter. Setting of both the input and output ranges can be done conveniently by a DIP switch located on the side of the housing or from a PC via the OM Link SW.

This device is based on a 32-bit processor, fast 24-bit ΔΣ ADC with PGQ and 16-bit DAC, which guarantees high accuracy and excellent stability.

OPERATION

The device can be configured either by DIP switches located on the side of the housing or by PC using the OM Link SW. The same SW can be used to edit and archive all device settings, as well as to perform firmware updates and customer calibration

Tech-in process can be performed for the measuring range currently selected using the front panel buttons.

All settings are stored in the EEPROM memory (preserved even after power-off).

OPTION

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS485 with ASCII and Modbus protocol.

STANDARD FUNCTIONS

PROGRAMMABLE INPUT
Measuring range: adjustable in menu
Standard setting: any display values can be assigned to Min and Max values of a defined standard input signal
Teach-in: any display values can be assigned to Min and Max values of actual (unknown) input signal
Manual setting: known Min and Max input signal values can be entered manually and any display values can be assigned to each signal

ANALOG OUTPUT
Type: isolated, programmable with a resolution of 16 bit, rate < 160 µs
Ranges: 0…2/5/10 V/±10 V, 0…5 mA/0/4…20 mA

EXCITATION
Range: 24 VDC/1 W, isolated

FUNCTIONS
Linearization: non-linear signal is converted by a 100-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Fixed tare: fixed preset tare
Min./max. value: registration of min./max. value reached during measurement
Simulation: test mode in which range, value and duration of the step can be set
Math functions: polynomial, inverse polynomial, logarithm, exponential, power, root

DIGITAL FILTERS
Floating average: from 2…30 measurements
Exponential average: from 2…100 measurements
Arithmetic average: from 2…100 measurements
Rounding: setting a „shorter" number for further signal processing

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: activation and tare resetting
Resetting Min/Max: resetting min/max value
Hold Min/Max: start of a measurement to evaluate the Min/Max value
Sample: start of a one-time measurement

TECHNICAL DATA

INPUT

No. of inputs	1 The range is selectable either by DIP switch or by OM Link free SW from PC		
PM Range	0...20 mA 4...20 mA 0...10 V	< 200 mV < 200 mV 1 MΩ	Input I Input I Input U

EXTERNAL INPUT

No. of inputs	2, on contact	
Function	OFF	no function assigned
	TARE	tare activation
	CL.TAR.	reset of Tare
	CL.M.M.	reset of Min./Max. values
	HOLD	measurement paused
	SAMPLE	take a one-off measurement
	HLD.MIN	start measurement of MIN
	HLD.MAX	start measurement of MAX
	HLD.M-M	start measurement of MAX-MIN
	KEY.LCK.	device buttons blocked

INSTRUMENT SPECIFICATION

TC	15 ppm/°C
Accuracy	±0.01 % of FS ±0.02 % of FS PM - I
Rate	100...7 200 measurements/s *speed of 400 meas./s is with FFT signal filtering*
Latency	< 580 µs
Overload	10x (t < 30 ms), 2x
Functions	Teach-in, tare, preset tare, min/max value, math. functions, delayed start, simulation
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm /exponential / power / root
Linearization	linear interpolation in 100 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

ANALOG OUTPUT

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.024 % from FS
Accuracy	±0.02 % of FS ±0.03 % of FS 0...5 V ±0.05 % of FS 0...2 V / 0...5 mA
Rate	response to change of value < 160 µs
Ranges	0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0...5 / 20 mA / 4...20 mA, comp. < 600 Ω/12 V Indication of broken current loop Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, Modbus RTU / TCP
Data format	8 bit + no parity + 1 stop bit
Rate	300...230 400 Baud
RS 485	isolated, addressing (max. 31 instruments)
Ethernet	10/100BaseT, Modbus TCP/IP (Slave)

EXCITATION

Fixed voltage	24 VDC/< 60 mA, isolated

POWER SUPPLY

Range	10...30 VDC / 24 AC, ±10 %, PF ≥ 0.4, I_{STP}< 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 3.1 W / 3.0 VA

MECHANIC PROPERTIES

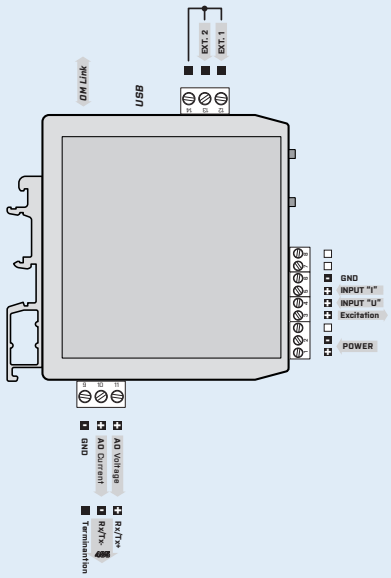
Material	PA66, incombustible UL 94 V-0, blue
Dimensions	25 x 79 x 90.5 mm (w x h x d)
Installation	to DIN rail 35 mm wide

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. test between supply and input 2.5 kVAC for 1 min. test between input and outputs
Insulation resist.*	for pollution degree II, measurement cat. III power supply > 300 V (PI), 255 V (DI) Input/outputs > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 380iPM - ☐ - ☐

Output	Analog	**1**	
	Data - RS 485	**2**	
	Data - Ethernet	**3**	
Specification	customized version, do not fill in		**00**

Basic configuration of the instrument is indicated in bold.

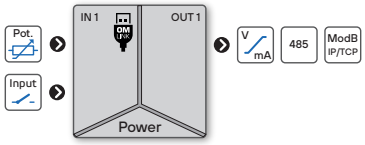
OMX 380iDU

- Input for potentiometer
- Output 0/4...20 mA/0...5 mA/0...2/5/10 V/±10 V
- Rate up to 7200 meas./s
- Teach-in, Digital filters, Tare, Linearization
- Quick configuration by DIP switch
- PC configurable via USB port
- Galvanic separation 2.5 kVAC
- Power supply 10...30 VDC/24 VAC

Option

Data output

DIGITAL ISOLATED TRANSMITTER



The OMX 380i model series are very fast DIN rail mountable digital transmitters with a Teach-in function.

Type OMX 380iDU is a isolated transmitter for potentiometers. Setting of both the input and output ranges can be done conveniently by a DIP switch located on the side of the housing or from a PC via the OM Link SW.

This device is based on a 32-bit processor, fast 24-bit ΔΣ ADC with PGQ and 16-bit DAC, which guarantees high accuracy and excellent stability.

OPERATION

The device can be configured either by DIP switches located on the side of the housing or by PC using the OM Link SW. The same SW can be used to edit and archive all device settings, as well as to perform firmware updates and customer calibration. A standard microUSB cable is required for PC to device connection.

Tech-in process can be performed for the measuring range currently selected using the front panel buttons.

All settings are stored in the EEPROM memory (preserved even after power-off).

OPTION

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS485 with ASCII protocol.

STANDARD FUNCTIONS

PROGRAMMABLE INPUT
Standard setting: any display values can be assigned to Min and Max values of a defined standard input signal
Teach-in: any display values can be assigned to Min and Max values of actual (unknown) input signal
Manual setting: known Min and Max input signal values can be entered manually and any display values can be assigned to each signal

ANALOG OUTPUT
Type: isolated, programmable with a resolution of 16 bit, rate < 160 µs
Ranges: 0...2/5/10 V/±10 V, 0...5 mA/0/4...20 mA

FUNCTIONS
Linearization: non-linear signal is converted by a 100-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Fixed tare: fixed preset tare
Min./max. value: registration of min./max. value reached during measurement
Simulation: test mode in which range, value and duration of the step can be set
Math functions: polynomial, inverse polynomial, logarithm, exponential, power, root

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting a „shorter" number for further signal processing

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: activation and tare resetting
Resetting Min/Max: resetting min/max value
Hold Min/Max: start of a measurement to evaluate the Min/Max value
Sample: start of a one-time measurementg

TECHNICAL DATA

INPUT

No. of inputs	1 The range is selectable either by DIP switch or by OM Link free SW from PC
DU Sensor power supply	2.5 VDC/3 mA, potentiometer resistance > 500 Ω

EXTERNAL INPUT

No. of inputs	2, on contact
Function	OFF no function assigned TARE tare activation CL.TAR. reset of Tare CL.M.M. reset of Min./Max. values HOLD measurement paused SAMPLE take a one-off measurement HLD.MIN start measurement of MIN HLD.MAX start measurement of MAX HLD.M-M start measurement of MAX-MIN KEY.LCK. device buttons blocked

INSTRUMENT SPECIFICATION

TC	15 ppm/°C
Accuracy	±0.01 % of FS
Rate	100…7 200 measurements/s *speed of 400 meas./s is with FFT signal filtering*
Latency	< 580 µs
Overload	10x (t < 30 ms), 2x
Functions	Teach-in, tare, preset tare, min/max value, math. functions, delayed start, simulation
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm /exponential / power / root
Linearization	linear interpolation in 100 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

ANALOG OUTPUT

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.024 % from FS
Accuracy	±0.02 % of FS ±0.03 % of FS 0…5 V ±0.05 % of FS 0…2 V / 0…5 mA
Rate	response to change of value < 160 µs
Ranges	0…2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0…5 / 20 mA / 4…20 mA, comp. < 600 Ω/12 V Indication of broken current loop Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, Modbus RTU / TCP
Data format	8 bit + no parity + 1 stop bit
Rate	300…230 400 Baud
RS 485	isolated, addressing (max. 31 instruments)
Ethernet	10/100BaseT, Modbus TCP/IP (Slave)

POWER SUPPLY

Range	10…30 VDC / 24 AC, ±10 %, PF ≥ 0.4, I_{STP}< 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 1.4 W / 1.3 VA

MECHANIC PROPERTIES

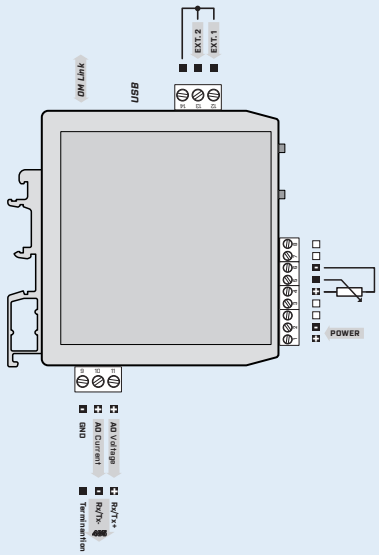
Material	PA66, incombustible UL 94 V-0, blue
Dimensions	25 x 79 x 90.5 mm (w x h x d)
Installation	to DIN rail 35 mm wide

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°…60°C
Storage temperat.	-20°…85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. test between supply and input 2.5 kVAC for 1 min. test between input and outputs
Insulation resist.*	for pollution degree II, measurement cat. III power supply > 300 V (PI), 255 V (DI) Input/outputs > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 380iDU - ☐ - ☐

Output	Analog	**1**	
	Data - RS 485	**2**	
	Data - Ethernet	**3**	
Specification	customized version, do not fill in		**00**

Basic configuration of the instrument is indicated in bold.

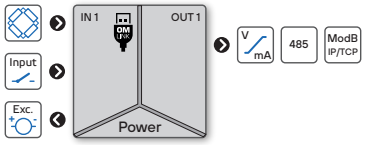
OMX 380iT

- Input for strain gauges
- Output 0/4...20 mA/0...5 mA/0...2/5/10 V/±10 V
- Rate up to 7200 meas./s
- Teach-in, Digital filters, Tare, Linearization
- Quick configuration by DIP switch
- PC configurable via USB port
- Galvanic separation 2.5 kVAC
- Power supply 10...30 VDC/24 VAC

Option

Data output

DIGITAL ISOLATED TRANSMITTER



The OMX 380i model series are very fast DIN rail mountable digital transmitters with a Teach-in function.

Type OMX 380iT is a transmitter for strain gauges. Setting of both the input and output ranges can be done conveniently by a DIP switch located on the side of the housing or from a PC via the OM Link SW.

This device is based on a 32-bit processor, fast 24-bit ΔΣ ADC with PGQ and 16-bit DAC, which guarantees high accuracy and excellent stability.

OPERATION

The device can be configured either by DIP switches located on the side of the housing or by PC using the OM Link SW. The same SW can be used to edit and archive all device settings, as well as to perform firmware updates and customer calibration.

Tech-in process can be performed for the measuring range currently selected using the front panel buttons.

All settings are stored in the EEPROM memory (preserved even after power-off).

OPTION

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS485 with ASCII and Modbus protocol.

STANDARD FUNCTIONS

PROGRAMMABLE INPUT
Measuring range: adjustable in menu
Standard setting: any display values can be assigned to Min and Max values of a defined standard input signal
Teach-in: any display values can be assigned to Min and Max values of actual (unknown) input signal
Manual setting: known Min and Max input signal values can be entered manually and any display values can be assigned to each signal

ANALOG OUTPUT
Type: isolated, programmable with a resolution of 16 bit, rate < 160 µs
Ranges: 0...2/5/10 V/±10 V, 0...5 mA/0/4...20 mA

FUNCTIONS
Linearization: non-linear signal is converted by a 100-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Fixed tare: fixed preset tare
Min./max. value: registration of min./max. value reached during measurement
Simulation: test mode in which range, value and duration of the step can be set
Math functions: polynomial, inverse polynomial, logarithm, exponential, power, root

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting a „shorter" number for further signal processing

EXTERNAL CONTROL
Hold: display/instrument blocking
Lock: control keys blocking
Tare: activation and tare resetting
Resetting Min/Max: resetting min/max value
Hold Min/Max: start of a measurement to evaluate the Min/Max value
Sample: start of a one-time measurement

TECHNICAL DATA

INPUT

No. of inputs		1 The range is selectable either by DIP switch or by OM Link free SW from PC
T	Range	1…2 mV/V 2…4 mV/V 4…8 mV/V 8…16 mV/V
	Sensor power supply	10 VDC, load ≥ 80 Ω *on request 5 V*
	Connection	6-wire

EXTERNAL INPUT

No. of inputs	2, on contact	
Function	OFF	no function assigned
	TARE	tare activation
	CL.TAR.	reset of Tare
	CL.M.M.	reset of Min./Max. values
	HOLD	measurement paused
	SAMPLE	take a one-off measurement
	HLD.MIN	start measurement of MIN
	HLD.MAX	start measurement of MAX
	HLD.M-M	start measurement of MAX-MIN
	KEY.LCK.	device buttons blocked

INSTRUMENT SPECIFICATION

TC	15 ppm/°C
Accuracy	±0.01 % of FS ±0.02 % of FS PM - I
Rate	100…7 200 measurements/s *speed of 400 meas./s is with FFT signal filtering*
Latency	< 580 µs
Overload	10x (t < 30 ms), 2x
Functions	Teach-in, tare, preset tare, min/max value, math. functions, delayed start, simulation
Digital filters	exponential / floating / arithmetic average, rouding
Math functions	polynomial / inverse polynomial / logarithm /exponential / power / root
Linearization	linear interpolation in 100 points *setup only via OM Link*
OM Link	company communication interface for operation, setting and update of instruments (microUSB)
Watch-dog	reset after 500 ms
Calibration	at 25°C and 40 % r.h.

ANALOG OUTPUT

No. of outputs	1
Type	isolated, adjustable with 16-bit DAC, output type and range is selectable
TC	15 ppm/°C
Non-linearity	0.024 % from FS
Accuracy	±0.02 % of FS ±0.03 % of FS 0…5 V ±0.05 % of FS 0…2 V / 0…5 mA
Rate	response to change of value < 160 µs
Ranges	0…2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ 0…5 / 20 mA / 4…20 mA, comp. < 600 Ω/12 V Indication of broken current loop Indication of error message (output < 3.2 mA)

DATA OUTPUTS

No. of outputs	1
Protocol	ASCII, Modbus RTU / TCP
Data format	8 bit + no parity + 1 stop bit
Rate	300…230 400 Baud
RS 485	isolated, addressing (max. 31 instruments)
Ethernet	10/100BaseT, Modbus TCP/IP (Slave)

POWER SUPPLY

Range	10…30 VDC / 24 AC, ±10 %, PF ≥ 0.4, I_{STP}< 40 A / 1 ms, isolated *Protection by fuse inside the device*
Consumption	< 3.4 W / 3.3 VA < 5.0 W / 4.9 VA (at 80 Ω load)

MECHANIC PROPERTIES

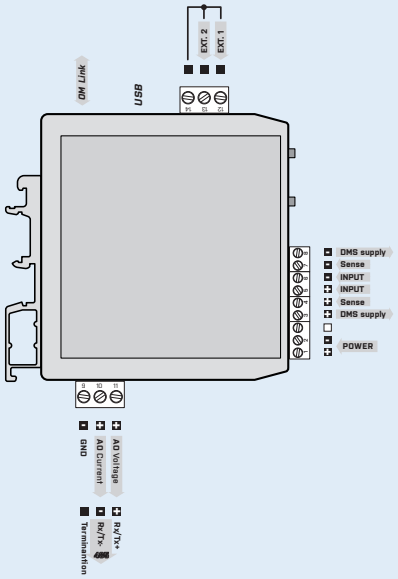
Material	PA66, incombustible UL 94 V-0, blue
Dimensions	25 x 79 x 90.5 mm (w x h x d)
Installation	to DIN rail 35 mm wide

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°…60°C
Storage temperat.	-20°…85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. test between supply and input 2.5 kVAC for 1 min. test between input and outputs
Insulation resist.*	for pollution degree II, measurement cat. III power supply > 300 V (PI), 255 V (DI) Input/outputs > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 380iT - □□ - □

Output	Analog	**1**		
	Data - RS 485	**2**		
	Data - Ethernet	**3**		
Strain gauge excitation	10 V		**1**	
	5 V		**2**	
Specification	customized version, do not fill in			**00**

Basic configuration of the instrument is indicated in bold.

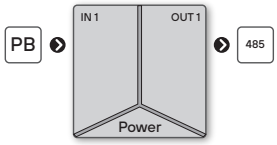
OMX PROFIBUS

- Galvanic separation 2.5 kVAC
- Power supply 10…30 V AC/DC; 80…250 V AC/DC

The transmitter is designed for easy and cost-eff ective connection of ORBIT MERRET™ instruments to PROFIBUS line with installation on DIN rail. One transmitter may control up to 31 instruments via the RS 485 line with communication protocol OM ASCII.

From the OM xxx instruments individual values may be downloaded from as many as 9 channels (for one instrument), as well as limit statuses may be set. Another option is projecting values and texts on displays of individual instruments.

TRANSMITTER PROFIBUS > RS 485



OPERATION

The instrument is designed for transfer of communication among the OM xxx instruments to PROFIBUS bus without further control.

On the front panel of the transmitter there are 4 LED diodes for signalization of the operational status and communication in progress.

TECHNICAL DATA

FUNCTION

Input - PROFIBUS	
Input	EIA RS-485
Protocol	PROFIBUS DP
Rate	9.6 kBaud…12 MBaud
Address	0…125, adjustable in OM instruments with address „00"
Data transfer	54B to OM, 44B fromz OM
Modes	- reading values + setting limits - value display FLOAT (Real)/LONG - text display - sending OM ASCII instructions
Number particip.	< 32 < 126 using a repeater
Transfer state	4x signal LED
Output - RS 485	
Input	RS 485
Protocol	OM ASCII - modified company protocol for connecting OM instruments
Format	8 bitů + no parity + 1 stop bit
Rate	600…115 200 Baud
Number OM instr.	< 32
Communicat. rate	0.1…17 s + communication time according to rate (def. 0.6 s)
Connection	
Type	shielded twisted double-line
Resistance	characteristic resistance 135…165 Ω
Capacity	< 30 pF/m
Section	> 0.32 mm²
Lenght	1 200 m at baud rate 9.6 / 19.2 / 93.75 kBit/s 1 000 m at baud rate 187.5 kBit/s 400 m at baud rate 500 kBit/s 200 m at baud rate 1 500 kBit/s 100 m at baud rate 3 000/6 000/12 000 kBit/s Moving line is allowed up to transmission rate of max. 1 500 kBit/s, for increased security a transmission rate greater than 500 kBit/s should not be used.

POWER SUPPLY

Range	10…30 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated 80…250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device*
Consumption	< 1.5 W / 1.5 VA

MECHANIC PROPERTIES

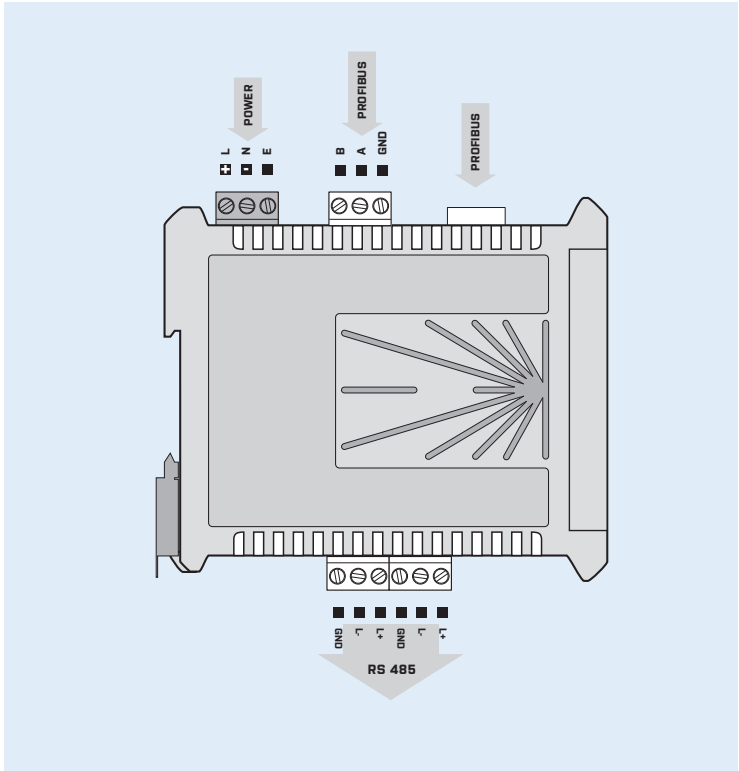
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	22 x 98 x 113 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2,5 mm² 9-pin SUB-D (Canon) shielded twisted double-line with charact. resistance 135…165 Ω
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°…60°C
Storage temperat.	-20°…85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and output
Insulation resist.*	for pollution degree II, measuring cat. II power supply > 600 V (PI), 300 V (DI) input, output > 500 V (PI), 250 V (DI)
EMC	EN 61326-1, Industrial area

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX Profibus -

Power supply	10…30 V AC/DC	**0**
	80…250 V AC/DC	**1**

Basic configuration of the instrument is indicated in bold.

OMP 38

- Output 5/12/24 VDC
  5/15/24 VDC
- Current and heat protection
- Power supply 80...250 V AC/DC

The OMP 38 is a DIN rail mountable stabilized source for sensor excitation. The source is in a plastic box with terminal blocks to DIN rail.

On the face of the transmitter there are LEDs, which indicate operating status of the source.

STABILIZED SOURCE

OPERATION

Switch for setting the output voltage is located on the lower edge of the instrument.

TECHNICAL DATA

OUTPUT

No. of outputs	1 The range is adjustable by a switch on the box
Range	A 5 VDC / 450 mA 12 VDC / 300 mA 24 VDC / 150 mA B 5 VDC / 450 mA 15 VDC / 240 mA 24 VDC / 150 mA
Tolerance	±0.25 V
Regulation	±0.1 V
Ripple	< 50 mVpp
Outage span	< 200 ms
Efficiency	63 %
Function	active current restriction as per selected range, overstepping the restriction is signalled by red LED

POWER SUPPLY

Range	80...250 V AC/DC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device*
Consumption	< 6 W / 6 VA
Input frequency	DC, 47...63 Hz
Input current	100...45 mA
Starting current	< 20 A, < 1.5 ms

MECHANIC PROPERTIES

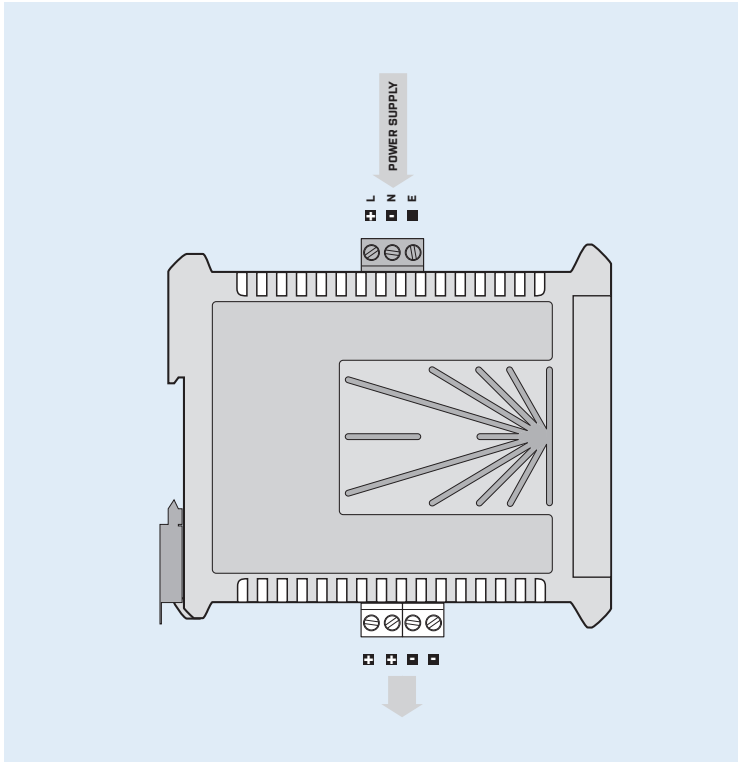
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	22 x 98 x 113 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and output
Insulation resist.*	for pollution degree II, measuring cat. II power supply, output > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMP 38 -

Output	5/12/24 VDC	**A**
	5/15/24 VDC	**B**

Basic configuration of the instrument is indicated in bold.

STABILIZED SOURCE

OMP 100

- Output 2x 5 VDC/8 A
  2x 12 VDC/4 A
  2x 15 VDC/3,2 A
- Current and heat protection
- Power supply 230 VAC

The OMP 100 is a DIN rail mountable universal power source with active power factor compensation.
The source is in a plastic box with terminal blocks to DIN rail.
On the face of the transmitter there is a two-color LED, which indicates operating status of the source.

OPERATION

The output voltage is selected by connecting the input terminals. Outputs can be operated in parallel, in series or independently, as separated with a 60 VDC insulation.

TECHNICAL DATA

OUTPUT

No. of outputs	1 The range is adjustable by a switch on the box
Range	A 5 VDC / 8 A B 12 VDC / 4 A C 15 VDC / 3.2 A
Tolerance	±0.25 V
Regulation	±0.1 V
Ripple	< 50 mVpp
Outage span	< 200 ms
Efficiency	80 %
Function	active current restriction, overstepping is signalled by red LED

POWER SUPPLY

Range	230 VAC, ±10 %, PF ≥ 0.4, I_{STP} < 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 115 W
Input frequency	DC, 47…63 Hz
Input current	500…45 mA
Starting current	< 20 A, < 1.5 ms

MECHANIC PROPERTIES

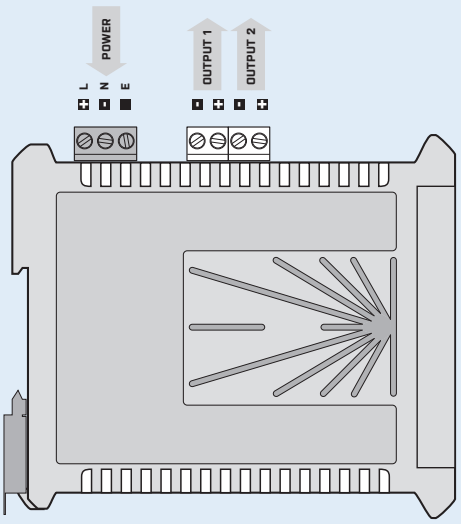
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	35 x 98 x 113 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°…60°C
Storage temperat.	-20°…85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	4 kVAC per 1 min test between supply and output
Insulation resist.*	for pollution degree II, measuring cat. II power supply, output > 300 V (PI), 150 V (DI)
EMC	EN 61326-1, Industrial area
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMP 100 -

Output	2x 5 VDC	**A**
	2x 12 VDC	**B**
	2x 15 VDC	**C**

Basic configuration of the instrument is indicated in bold.

OMA 10S

- Manual switch of measuring points 4x 10
- Size of DIN 96 x 48 mm

The OMA 10S is a manual panel switch of measuring points.
For its parameters, low transitional resistance and high endurance the switch is designed for low-voltage applications (e.g. for sensors Pt 100).

SWITCH OF MEASURING POINTS

OPERATION

Switching of the measuring points is performed by a revolving switch on the front panel.

TECHNICAL DATA

INPUT

No of switching positions	4x 10 positions number of positions is adjustable inside the switch (2...10x 4)
Max. switching capacity	115 VDC / 300 mA
Max. switched current	100 mA
Initial contact resistance	< 50 mΩ
Stationary contact material	Ag / Ni + Au
Movable contact material	Ag + Be / Cu
Expected life	50 000 cycles (at current ≤ 100 mA)
Insulation resistance	1000 MΩ, between contacts and shaft
Meet the following requirements	MIL-S-3786:

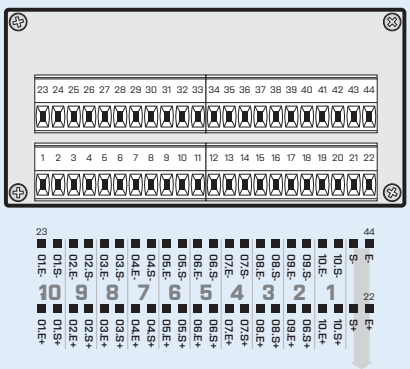
MECHANIC PROPERTIES

Material	Noryl, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm^2
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP40
ESD	15 kV
El. safety	EN 61010-1, A2
Insulation resist.*	500 V

CONNECTION



ORDER CODE

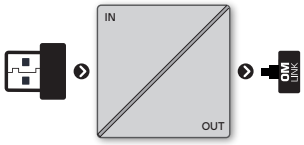
OMA 10S

OM LINK-USB II

- Galvanic separation 2.5 kVAC
- Compact design

Isolated USB transducer for configuration of OM instruments.
Transducer in conjunction with the OM Link program, which is freely available on our website, is intended for configuration of OM instruments prior to their use in technology.

TRANSMITTER FOR CONFIGURATION OF OM INSTRUMENTS



OPERATION

For correct operation of the transmitter kindly download the drivers, which are available on our website

www.orbitmerret.eu/en/om-link-usb-ii

TECHNICAL DATA

FUNCTION

Connection with PC		
Type	USB 2.0	
Rate	12 Mb	
Connection	connector USB-A	
Connection connection with OM instruments		
Type	RS 232	
Rate	< 230 400 Baud	
Connection	exchangeable „OM Cable" with connectors, length 1 m	
Signalling		
Type	color LED in transducer	
USB	green	indication of power supply from USB
TxD	yellow	transmission indication
RxD	yellow	indication of reception
PROG	red	indication of instrument´s programming mode
OM	green	indication of power supply from the instrument

POWER SUPPLY

Fixed	5 VDC/100 mA, powered from USB and OM instrument

MECHANIC PROPERTIES

Material	PC, incombustible UL 94 V-0, blue
Dimensions	50 x 24 x 14 mm (w x h x d)

OPERATING CONDITIONS

Connection	flat wire with connectors
Working temperat.	0°...60°C
Storage temperat.	-10°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP00
ESD	15 kV
Dielectric strength	2.5 kVAC per 1 min test between supply and output
Insulation resist.*	for pollution degree II, measuring cat. II power supply > 300 V (PI), 150 V (DI)

* PI - Primary insulation, DI - Double insulation

ACCESSORIES

OML cable	exchangeable cable with connectors for connecting OM instruments

ORDER CODE

Complete transducer

OM Link-USB II

Replacement exchangeable cable

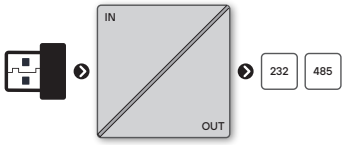
OM Cable

OM USB-RS II

- Galvanic separation 2.5 kVAC
- Rate < 921.6 kBaud
- Compact design

Galvanically separated transducer of USB bus to serial lines RS 232/485. The output lines RS 232 and RS 485 have galvanic connection and via excitors they are connected to one UART. Therefore it is possible to use always one output only.

TRANSMITTER USB <> RS 232/485



OPERATION

For correct operation of the transducer kindly download the drivers, which are available on our website

www.orbitmerret.eu/en/om-usb-rs-ii

TECHNICAL DATA

FUNCTION

Connection with PC	
Type	USB 2.0
Rate	12 Mb
Connection	connector USB-A
Data output	
Type	RS 232 RS 485
Rate	RS 232 < 460.8 kBaud RS 485 < 921.6 kBaud
Connection	connector terminal blocks, section < 1.5 mm^2
Signalling	
Type	color LED in transducer
USB	green indication of power supply from USB
TxD	yellow transmission indication
RxD	yellow indication of reception

POWER SUPPLY

Fixed	5 VDC/100 mA, powered from USB and OM instrument

MECHANIC PROPERTIES

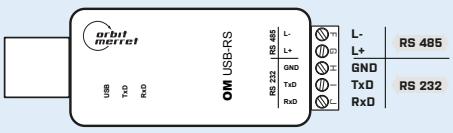
Material	PC, incombustible UL 94 V-0, blue
Dimensions	50 x 24 x 14 mm (w x h x d)

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 1.5 mm^2
Working temperat.	0º...60ºC
Storage temperat.	-10º...85ºC
Working humidity	< 95 % r.v., non condensing
Protection	IP00
ESD	15 kV
Dielectric strength	2.5 kVAC per 1 min test between supply and output
Insulation resist.*	for pollution degree II, measuring cat. II power supply > 300 V (PI), 150 V (DI)

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

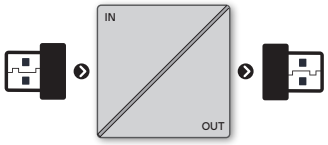
OM USB-RS II

OM USB-ISO

- USB 2.0
- Galvanic separation: 4 kVAC
- Rate 12 Mbaud
- Compact design

Isolator for USB line.
The isolator provides galvanic separation from Full Speed USB bus and thus safely protects your connected device from interference, discharge and overvoltage up to 4 kV.

USB ISOLATOR



OPERATION

Using the isolator does not require installation of any drivers.

TECHNICAL DATA

FUNCTION

Connection with PC	
Type	USB 2.0
Rate	12 Mb
Connection	connector USB-A
USB output	
Type	USB 2.0
Rate	12 Mb
Connection	connector USB-A
Load	output current < 200 mA
Signalling	
Type	color LED in transducer
USB	green indication of power supply from USB
Power	green indication of active output

POWER SUPPLY

Fixed	5 VDC/100 mA, powered from USB and OM instrument

MECHANIC PROPERTIES

Material	PC, incombustible UL 94 V-0, blue
Dimensions	50 x 24 x 14 mm (w x h x d)

OPERATING CONDITIONS

Connection	USB-A
Working temperat.	0°...60°C
Storage temperat.	-10°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP00
ESD	15 kV
Dielectric strength	4 kVAC per 1 min test between input and output
Insulation resist.*	for pollution degree II, measuring cat. II input / output > 600 V (PI), 300 V (DI)

* PI - Primary insulation, DI - Double insulation

ORDER CODE

OM USB-ISO

OMT 01

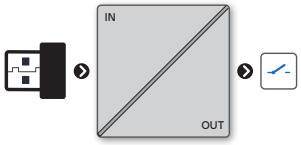
- USB 2.0
- Output Relay
- Power supply 5 VDC/100 mA from USB
- Galvanic separation 4 kVAC
- Compact design

Optional

Timer relay with RTC

The OMT 01 allows you to control electrical appliances via the computer's USB port and can be used for various applications such as home and industrial automation, hobby projects or temperature measurement and control. Relay actions can also be performed automatically based on user-configurable time schedules.

USB RELAY



OPERATION

Freely downloadable OMT 01 Control software is used for setting up and controlling the OMT 01. You can find it at *www.orbitmerret.eu/en/omt-01* in the software section, including the driver for Windows. OMT 01 normally works without the need for manual driver installation.

After launching the OMT 01 Control SW and connecting the device to the PC, OMT 01 is automatically detected and a connection is established. This is signalled in the SW by the Device icon turning green and further by loading the ID, name and the current status of the OMT 01.

In automatic connection mode "Auto connect" OMT 01 automatically connects and disconnects depending on the physical state of the OMT 01 device. In case of connecting multiple devices or when a manual connection is preferred, "Auto connect" mode can be deactivated. In this case, it is necessary to use the "Refresh" button to search for available devices on the PC's COM ports, select the required port in the drop-down list, and finally connect to the OMT 01 with the "Connect" button. OMT 01 can be disconnected from PC by simply unplugging the device out of the PC USB port or by pressing the "Disconnect" button. For direct control of the relay from a PC, an ON/OFF button is available on the line "Relay" for switching ON/OFF the relay contact. On the line called "Identification", there is an ON/OFF button that, when activated, makes the LED inside the OMT 01 flash and thus enables its physical identification. On the line tiled "Name" there is a space for inserting text. You can create a name for easier identification (maximum length of 10 characters).

For the OMT 01 version with RTC (optional), time frames can be set for selected days of the week. In the table with the heading "Time Configuration", there are days of the week listed, each one on an individual line. After clicking the selected day, you must first activate the given day by the "Activate" button. When the days is active, you can enter up to 3 time frames per day.

"Start" stands for the time when the relay contact is to close. It is entered in the format hh:mm, where hh represent hours 0-23 and mm represent minutes 0-59. "Duration" defines the time frame during which the relay contact is to be closed. Each time frame needs to be activated by the ON/OFF button on the "Frame" line. Desired configuration is sent to the device by the "Upload to device" button. Data from the OMT 01 is read out by PC automatically.

COMMANDS

Relay ON	FF 01 01 (HEX) or 255 1 1 (DEC)
Relay OFF	FF 01 00 (HEX) or 255 1 0 (DEC)
Start device ident.	FF C8 01 (HEX) or 255 200 1 (DEC)
Stop device ident.	FF C8 02 (HEX) or 255 200 2 (DEC)
Read serial No.	FF C9 03 (HEX) or 255 201 3 (DEC)
Read Name	FF C9 01 (HEX) or 255 201 1 (DEC)
Set Name	FF C9 02 (HEX) or 255 201 2 (DEC)

FOR VER. B (WITH RTC) FOLLOWING COMMANDS ARE AVAILABLEY

Time	FF 02 01 XX XX XX XX (HEX) XX XX XX XX - 32-bit time value in UNIX format
Day	FF 03 01 XX YY (HEX) or 255 3 1 X Y (DEC) XX > value 1-7 according to the day of the week YY > 0 - OFF, 1 - ON
Time frame	FF 04 01 XX HH MM YY YY (HEX) XX > time frame id 1-3, HH MM > art of time frame, hours and minutes (24h format) YY YY > duration of ON in seconds (UINT16)

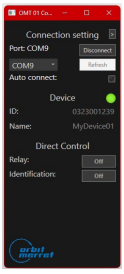
Example

1/1/2023 00:00, to switch ON every Tuesday at 10:30 and stay ON for 20 min:

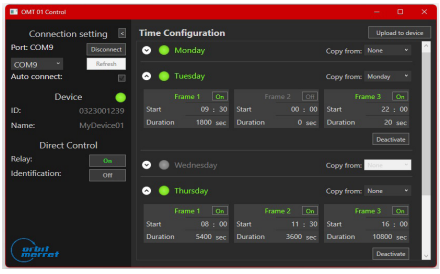
Time	*FF 02 01 63 B0 CD 00*
Day	*FF 03 01 02 01*
Frame	*FF 04 01 1 0A 00 04B0*

OMT 01 CONTROLL

variant A



variant B



TECHNICAL DATA

INPUT

Connection with PC	
Type	USB 2.0
Rate	12 Mb
Connection	connector USB-A
Signalling	
Type	color LED in transducer
USB	green indication of power supply from USB
Relay	green indication of relay switching

INSTRUMENT SPECIFICATION

TC	50 ppm/°C
Function	var. A USB relay var. B USB relay with timer and RTC - 3 time frames for 7 days
RTC	time is backed up for about 90 days accuracy is ±12 s/month
Watch-dog	reset after 500 ms

RELAYS OUTPUT

No. of outputs	1
Type	digital, configurable in PC app
Output	1x relays with switch-on contact (Form A) (250 VAC/30 VDC, 3 A)*
Relay	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

* values apply for resistance load

POWER SUPPLY

Power	5 VDC/100 mA, powered from USB

MECHANIC PROPERTIES

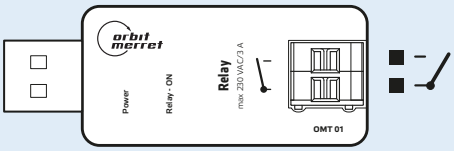
Material	PC, incombustible UL 94 V-0, blue
Dimensions	50 x 24 x 14 mm (w x h x d)

OPERATING CONDITIONS

Connection	USB-A connector, section < 0.5...2,1 mm²
Working temp.	0°...60°C
Storage temp.	-10°...85°C
Working humidity	< 95 % r.h., non condensing
Protection	IP20
El. safety	EN 61010-1, A2
ESD	< 15 kV
Dielectric strength	4 kVAC for 1 min. between signal input and relays
Insulation resist.*	for pollution degree II, measurement cat. III Input/outputs > 600 V (PI), 300 V (DI)

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMT 01 - ☐

Function	basic	**A**
	Timer with RTC	**B**

General business terms

1. Use of Terms and Conditions

1.1 These General Terms and Conditions (hereinafter referred to as the "GBT") further define and specify mutual rights and obligations between ORBIT MERRET, Inc., VAT No. CZ 00551309, with its registered office at Klanova 81/141, 142 00 Prague 4 as the seller or service provider (hereinafter referred to as "OM") and its business partners (hereinafter referred to as "Partner") in the sale and purchase of goods, service of goods and provision of services (hereinafter referred to as "goods").

1.2 The GBT are an integral part of the order on the basis of which the Partner ordered the goods from OM. The Partner acknowledges and agrees that the contractual relationship with OM will be governed by these Terms and Conditions.

2. Method of Contract Conclusion

2.1 The goods will be delivered on the basis of a Partner´s written order sent by e-mail, post or fax, in exceptional cases also by a verbal or telephone order.
The partner is obliged to state in his order at least the following:
- identification data incl. VAT paying information
- person authorized to act on behalf of the Partner
- detailed description of the goods, determined by quantity, type and quality
- requested lead time and place of delivery
- proposal for conclusion of a detailed written contract if the subject of the order is a requirement that is not specified on OM website or if it requires any other specific options. As well as unambiguous determination of the subject of performance according to OM technical documentation or other specific requirements for the subject of performance (incl. service).

2.2 OM notifies the Partner within 3 working days after receipt of the order, usually via e-mail communication, of acceptance of the contract and quantifies the price of the ordered goods. Within two working days from the date of receipt of the acceptance with the price of the goods, the partner has the possibility to inform OM in the same way that it withdraws from the contract due to the price disagreement. In this case the contract expires.
Amendments and changes in the order are valid only by agreement of both parties.
If OM does not confirm the order within the above-mentioned period of 3 working days, the contract has not been concluded and OM has no obligations to the Partner.

3. Contract Conclusion

Contract is considered concluded:

3.1 By sending the Order Confirmation.

3.2 By conclusion of a written contract if it is suggested by either party or if the subject of the order is goods not listed on OM website.

3.2 By paying a deposit if the subject of performance exceeds the price of 5.000 € or if the Partner requests a non-standard performance and OM in its Order Confirmation sets a deposit and stipulates its payment as a condition for contract conclusion. The deadline for performance starts on the day the deposit is credited to OM account.

4. Delivery of goods

4.1 OM undertakes to deliver the goods in quality, design and within the agreed time specified in the order, usually within 2-21 days. In case of special goods and larger deliveries within 3-8 weeks.

4.2 The place of delivery shall be either registered office of OM, check-out place of OM or handover of the goods to the first public carrier. This should be agreed in the contract. The costs associated with transportation are paid by the Partner. By accepting the goods, the Partner acquires the ownership right to the goods and at the same time the risk of their damage passes on him.

4.3 If the subject of delivery is SW or HW, the Partner is obliged to inspect the goods received with professional care no later than 7 days from the moment of handover, and to inform OM of detected defects. After receipt of a written notification from the Partner, OM is obliged to rectify the defects of the goods without undue delay. The Partner is not obliged to take over the goods with defects or in other than ordered quantity. In case of delay in delivery of goods on the part of OM, the Partner is not obliged to take over the goods either. However, this shall not apply if such a condition has been stated in the order or if the parties have agreed otherwise. The Partner shall confirm the take-over of the goods in writing.

4.4 OM assumes a standard use of the subject of performance. Any specific requirements for the subject of performance must be explicitly stated in the order.

4.5 Fulfilment of all Partner´s obligations is a condition for compliance with the OM lead time.

4.6 The expected date of performance is stated in the order confirmation. In exceptional cases, OM may change (shorten or extend) the period of performance, but must immediately notify the Partner of this change.

4.7 Delays in the lead time of subcontractors, strike, export or import bans, war as well as other cases of force majeure release OM of the obligation to meet the lead time and thus to pay for any damage or sanctions for failure to comply with in time.

4.8 If the goods are agreed to be taken over at the registered office of OM, the moment, when the Partner, being informed by OM about the readiness of the goods for dispatch, had the opportunity to take over the goods is considered as fulfilment of the contract.

4.9 The costs associated with delivery to a place of performance other than the OM registered office, shall be borne by the Partner.

4.10 If the Partner fails to take over the goods for reasons on his part, he shall bear the costs associated with repeated delivery or return of the goods back to OM.

4.11 If the Partner discovers any non-compliance with the delivery note, difference in quantity and type of performance, apparent damage to packaging or goods, he is obliged to inform OM or the carrier immediately and make a note of it in writing on the OM delivery note or on the carrier´s delivery note, but not later than within 2 working days of receipt of the goods.
Later complaints need not be taken into account by OM.

5. Licence

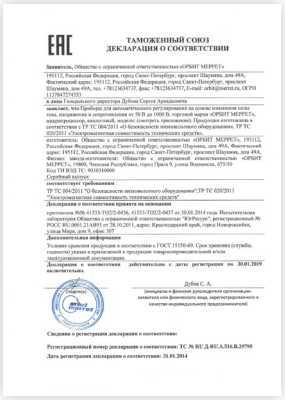
5.1 If SW is a subject of delivery, OM by delivering the goods grants a non-exclusive license to the goods according to the Copyright Act for all uses and without any time limit, i.e. for the duration of the copyright property rights without territorial or quantity limitation unless the order determines otherwise. If by mutual agreement of the parties the contractual relationship is not governed by the OM licence terms and conditions, this Article shall be deemed to apply.

5.2 In the case of software, OM is entitled to back up data in accordance with standard IT procedures and to make backup copies for this purpose.

5.3 The Partner is obliged to inform OM in advance and in writing of any facts that may affect the use of the goods.

5.4 OM warrants that the Partner´s use of the goods will not violate any rights of third parties.

6. Price and payment terms



6.1 Purchase price of the goods is determined by the current OM price list. However, the final price is set in the Order Confirmation.

6.2 Purchase price on any confirmed order of OM is final, unchangeable and includes all expenses, costs and OM guarantees related to the delivery of goods, including shipping costs. Change of the purchase price is possible only by a written agreement.

6.3 The Partner is entitled to request in advance a binding price offer (hereinafter referred to as the "offer"), which is valid for 21 calendar days from the date of issue, unless stated otherwise.

6.4 The prices of the subject of performance stated in the offer do not include any related services unless expressly agreed otherwise. Any request for provision of related services must be stated by the Partner in the order.

6.5 OM will issue a tax invoice for the delivered goods with a maturity of 14 days from its delivery or handover.

6.6 If the Partner is in default in payment of the price according to the tax invoice, OM has the right to charge the Partner interest on late payment of 0.05% of the outstanding amount for each day of the delay. During the period of delay in payment, OM is not obliged to fulfil any other obligation to the Partner, even if such obligation arose under the contract.

6.7 OM is entitled to transfer its claim on Partner´s money to a third party.

7. Duty of quality control and defect reporting

7.1 OM warrants that the goods will have the required characteristics and that they don´t infringe the rights of any third party. If the goods prove to be defective, OM will meet its obligation arising from liability for defects by providing new impeccable goods, by eliminating the defect or by providing a reasonable discount on the purchase price. The Partner shall notify OM, without undue delay, of the option he has chosen from the defective performance of OM. In case of legal defects, OM will meet its obligations arising from liability for legal defects by granting a non-contradictory license (right of use) to the delivered goods, or at its own discretion by providing an equivalent replacement of the goods or modified goods.

7.2 If the defects of the goods repeatedly prevent their use, the Partner has the right to withdraw from the contract.

7.3 If a third party declares that the exercise of the rights under the license to the delivered goods violates its rights, the party, who received this declaration, is obliged to inform the other party of the contract in writing and without delay, otherwise it is liable for any damage resulting therefrom.

8. Warranty

8.1 OM is obliged to deliver goods in the quality and design agreed with the Partner. OM provides a warranty of 60 months for the delivered goods, unless another term is agreed. The warranty period starts on the day of handover/takeover of the goods.

8.2 If a defect occurs during the warranty period, the Partner is entitled to request its repair for free. The Partner shall notify OM of the warranty defect by e-mail, registered letter or by fax. OM is obliged to settle the claim within 30 days from the date of its notification. The warranty period is extended by the period, during which the Partner could not use the goods. If the goods are replaced, a new warranty period will be provided.

8.3 The Partner acknowledges that if he or she attempts to repair the defect of the goods by himself or through a third unauthorized or unqualified party, the right to claim the warranty defect expires at the moment of such intervention.

8.4 OM is not liable for any damage caused by improper storage, incorrect external wiring, for damage caused by external influences, especially effects of electrical quantities of unacceptable range, improper installation, incorrect adjustment or incorrect operation.

8.5 OM is only liable for actual damages caused to the Partner, not for the loss of profit, indirect damages or damages to third parties. The Parties agree to limit the amount of damage reparation in such manner that the total amount of reparation incurred pursuant to or in connection with this Agreement shall in no case exceed 50% of the total price for performance (goods) under this Agreement. The Partner declares that this amount corresponds to the maximum amount of damage that is foreseen as a possible consequence of a breach of OM's obligation.

9. Termination of the Contract

9.1 The contract terminates by fulfilment of mutual obligations. OM and the Partner are free to terminate their contractual relationship any time earlier by a written agreement of both parties. The agreement should include mutual settlement.

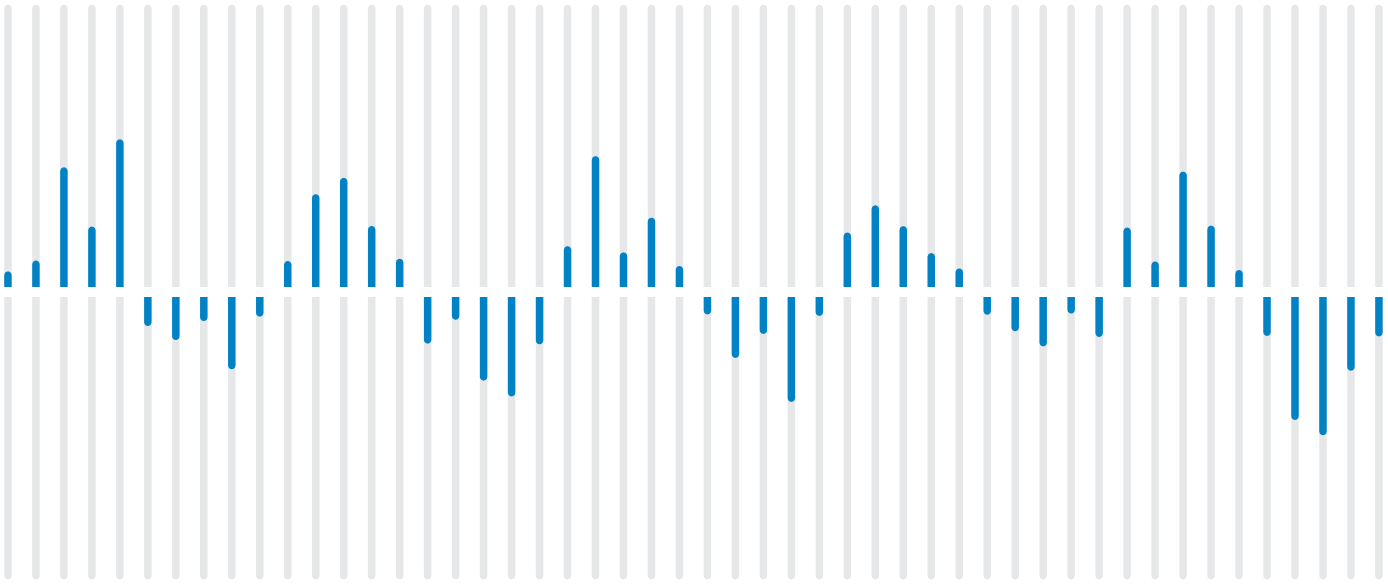
9.2 Consequences of an early termination of the contract:
- in the event of termination for reasons on the part of the Partner after the order has been confirmed or a written contract has been concluded, OM is entitled to demand from the Partner an amount corresponding to 20% of the agreed price.
- if the Partner unlawfully returns properly delivered goods, OM has the right to a penalty of 50% of the total price of the delivery.
Sanctions are payable within 10 days of the date on which they were billed by OM.

10. Final Provisions

10.1 The rights and obligations arising from the contract between OM and the Partner are governed by the Czech legal order.
In case of a conflict between the concluded contract and these GBT, the contract shall prevail, unless the parties agree differently.
All disputes arising from and in connection with the concluded contract shall be resolved by the locally competent court of OM. If any of the provisions of these GBT proves to be invalid or ineffective, this shall not affect the validity or effectiveness of the other provisions.

10.2 Each of the parties to the contract, concluded in accordance with these GTB, undertakes to maintain confidentiality, to keep secret all confidential information and business secrets of the other party obtained in connection with mutual contractual relations, and to use such information only for the fulfilment of its obligations under the contract. Regardless of the form of their existence, information relating to the contract between OM and the Partner (in particular information on the rights and obligations of the parties as well as information about prices) or one of the parties (in particular trade secrets, information on their activities, structure, financial results, clients, know-how), information for which a special confidentiality regime is required by law, or information that one party has designated as confidential and has made the other party aware of it.

10.3 OM is entitled to unilaterally amend these GTB, provided that their new version will be promptly sent to all regular partners and at the same time published on OM web pages. The Partner is obliged to become acquainted with the new GTB. These GTB are valid and effective from 1 June 2016.



ORBIT MERRET, spol. s r. o.
Vodnanska 675/30
198 00 Praha 9
Czech Republic
tel.: +420 281 040 200
fax.: +420 281 040 299
e-mail: orbit@merret.eu

www.orbit.merret.eu

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