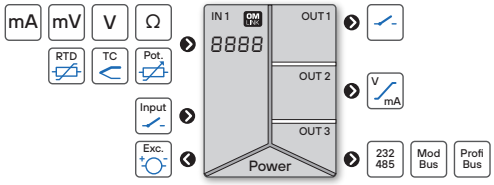
OMD 202UNI

- 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	No function assigned Activation of Tare Reset of Tare Measurement paused Resetting min/max value Value display „Channel A" Value display „Channel A" + filter Value display „Math. functions"

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 ±0.15 % of FS 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
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
Accuracy	±0.02 % of FS ±0.03 % of FS 0...5 V ±0.06 % of FS 0...2 V / 0...5 mA
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, 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

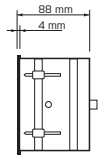
Connection	connector terminal blocks, section < 1.5 / 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP64, front panel only
Construction	safety class I
El. safety	EN 61010-1, 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 61326-1:2021, Industrial area
RoHS	EN IEC 63000:2018
Seismic capacity	IEC 980: 1993, par. 6

* PI - Primary insulation, DI - Double insulation

DIMENSIONS

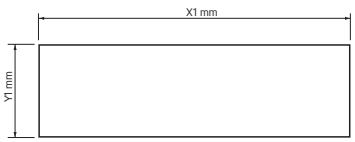
Front view

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 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 (comp. < 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**

*In case of Option B we recommend to connect terminals GND (main board/addit. board) by ext. connection

Basic configuration of the instrument is indicated in bold.