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

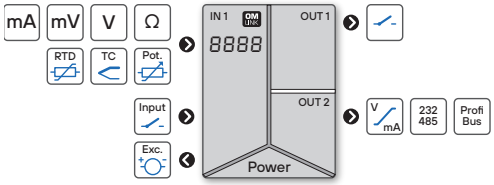
Option

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

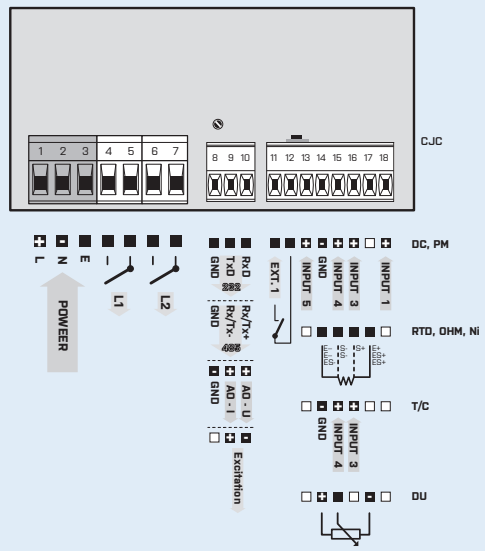
Material	Noryl GFN2 SE1, incombustible UL 94 V-I, black
Dimensions	96 x 48 x 120 mm (w x h x d)
Panel cutout	90.5 x 45 mm (w x h)

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.