



OMD 202UNI



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 number of inputs can be extended up to 4 (applicable for PM).

The instrument is based on a single-chip microcontroller with multichannel 24-bit sigma-delta converter, 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.

UNIVERSAL LARGE DISPLAY

- 4/6-digit programmable projection
- Multifunction input (DC, PM, RTD, T/C, DU)
- Three-color or highly 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

OMD 202UNI

DC VOLTMETER AND AMMETER
PROCESS MONITOR
OHMMETER
THERMOMETER FOR Pt/Cu/Ni/THERMOCOUPLES
DISPLAY UNIT FOR LINEAR POTENTIOMETERS

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...10,00 V > 0...850.0

Projection: -999...9999/-99999...999999

COMPENSATION

Of conduct (RTD): automatic (3-wire) or manual in menu (2-wire)

Of conduct in probe (RTD): internal connection (conduct resistance in measuring head)

Of CJC (T/C): manual or automatic, in menu it is possible to perform selection of the type of thermocouple and compensation of cold junctions, which is adjustable or automatic

FUNCTIONS

Linearization: non-linear signals can be linearized by the means of a linearization table (up to 50 points)

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 MM: resetting min./max. value

TECHNICAL DATA

INPUT	
Number of inputs	1
DC Range	optional in configuration menu ±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	optional in configuration menu 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	optional in configuration menu with aut. range range 0...100 Ω 0...1 kΩ 0...10 kΩ 0...100 kΩ
Connection	2, 3 or 4 wire
Pt Type	optional in configuration menu EU > 100/500/1 000 Ω, 3 850 ppm/°C -50°...450°C US > 100 Ω, 3 920 ppm/°C -50°...450°C RU > 50 Ω, 3 910 ppm/°C -200°...1100°C RU > 100 Ω, 3 910 ppm/°C -200°...450°C
Connection	2, 3 or 4 wire
Ni Type	optional in configuration menu Ni 1 000/10 000 with 5 000 ppm/°C -50°...250°C Ni 1 000/10 000 with 6 180 ppm/°C -50°...250°C
Connection	2, 3 or 4 wire
Cu Type	optional in configuration menu Cu 50/100 with 4 260 ppm/°C -50°...200°C Cu 50/100 with 4 280 ppm/°C -200°...200°C
Connection	2, 3 or 4 wire
T/C Type	optional in configuration menu 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
DU P. supply	2 VDC/6 mA, Potentiometer resistance > 500 Ω
Ext. inputs	3 inputs, on contact The following functions can be assigned: OFF / HOLD / LOCK / PASS. / TARE / CL. TA. / CL. M.M. / SAVE / CL. ME. / CHAN. A. / FIL. A. / MAT. FN. / SWITCH.

OPTION „A“	
DC Range	optional in configuration menu ±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“	
Number of inputs	3
PM Range	optional in configuration menu 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

PROJECTION	
Display:	-999...9999 or -99999...999999
	single color - highly luminous individ. LED
	three-color - segment LED
Digit number:	4 (100/125 mm) or 6 (57/100/125 mm)
Digit height:	57, 100 or 125 mm
Display color:	red or green (highly luminous - 1200 mcd) red/green/orange
Description:	the last two digits on a 6-digit display can be used to describe the measured quantities (menu adjustable)
Decimal point:	adjustable - in menu
Brightness:	adjustable - in menu

INSTRUMENT ACCURACY	
TC:	50 ppm/°C
Accuracy:	±0.1% of range + 1 digit (for proj. 9999 and 5 measur./s) ±0.15% of range + 1 digit RTD, T/C
Accuracy of cold junction measur.:	±1.5°C
Rate:	0.1...40 measurement/s
Overload capacity:	2x; 10x (t < 30 ms) - not for > 200 V and 5 A
Resolution (RTD, T/C):	1/10/0.1/0.01°C
Line compensation:	max. 30 Ω (RTD)
Cold junction compens.:	adjustable -20°...99°C or automatic
Linearization:	linear interpolation in 50 points (only via OM Link)
Digital filters:	Exp./Floating/Arithm. average, Rounding
Functions:	Offset, Min/max value, Tare, Peak value, Mat. operations
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.

COMPARATOR	
Type:	digital, menu adjustable, contact switch-on < 30 ms
Hysteresis mode:	switching limit, hysteresis band (Lim and ±1/2 Hys.) and time (±99.9 s) determining the switching delay
Mode From-To:	switching on and switching off interval
Mode Batch:	period, its multiples and time (0...99.9 s), within which the output is active
Output:	1...4x Form A relays (250 VAC/50 VDC, 3 A)

DATA OUTPUTS	
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:	600...230 400 Baud, 0,0096...12 Mbaud (PROFIBUS)
RS 232:	isolated
RS 485:	isolated, addressing (max. 31 instruments)

ANALOG OUTPUTS	
Type:	isolated, programmable with a 16-bit D/A converter, output type and range are optional in the menu
Non-linearity:	0.1% of range
TC:	15 ppm/°C
Rate:	response to change of value < 1 ms
Ranges:	0...2/5/10 V, ±10 V, 0...5 mA, 0/4...20 mA (comp. < 600 Ω/12 V or 1 000 Ω/24 V)

EXCITATION	
Adjustable:	5...24 VDC/max. 1.2 W

POWER SUPPLY	
Range:	10...30 V AC/DC, ±10%, PF ≥ 0.4, I _{isp} < 75 A/1 ms, isolated
	80...250 V AC/DC, ±10%, PF ≥ 0.4, I _{isp} < 45 A/1 ms, isolated
Consumption:	< 22 W/22 VA
	Power supply is protected by a fuse inside the instrument.

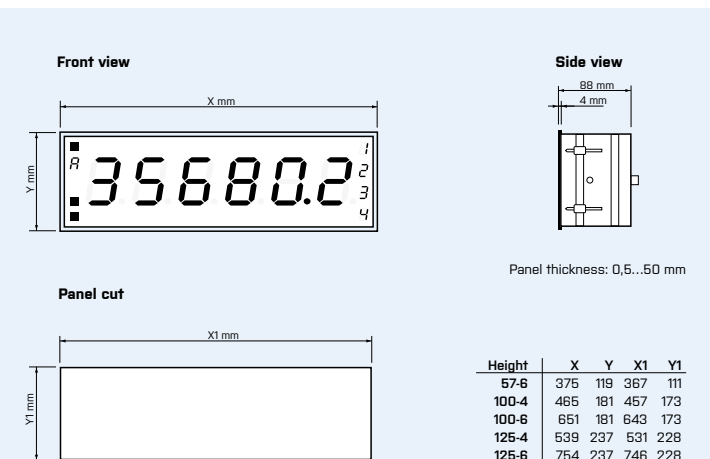
MECHANIC PROPERTIES	
Material:	Anodized aluminium, black
Dimensions:	see picture

OPERATING CONDITIONS	
Connection:	connector terminal blocks, section < 1.5/2.5 mm ²
Stabilization period:	within 5 minutes after switch-on
Working temperature:	-20°...60°C
Storage temperature:	-20°...85°C
Protection:	IP64
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
El. safety:	EN 61010-1, A2
Insulation resistance:	for pollution degree II, measuring cat. III power supply > 670 V (PI), 300 V (DI) input, output, PN > 300 V (PI), 150 V (DI)
EMC:	EN 61326-1

ACCESSORIES	
	- holder for wall/ceiling installation

PI - Primary insulation, DI - Double insulation

DIMENSIONS



*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 80...250 V AC/DC	0														
Measuring range	standard option „A“ option „B“	0	A	B												
Comparators	none 1x relay 2x relays 3x relays 4x relays	0	1	2	3	4										
Analog output	no yes (compensation < 600 Ω/12 V) yes (compensation < 1 000 Ω/24 V)	0	1	2												
Data output	none RS 232 RS 485 MODBUS PROFIBUS	0	1	2	3	4										
Excitation	no yes	0	1													
Digit height	57 mm 100 mm 125 mm			1	2	3										
Number of digits	4 digits (100/125 mm) 6 digits									1	3					
Color/Display type	red (highly luminous LED) green (highly luminous LED) red/green/orange (7-segment LED)													1	2	3
Specification	customized version, do not fill in															00

Basic configuration of the instrument is indicated in bold.