Data Sheet

OMD 202UNI

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UNIVERSAL LARGE DISPLAY

- 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

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.

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°...1 100°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 luminuous 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 luminuous - 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°/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_{STP}< 75 A/1 ms, isolated
80...250 V AC/DC, ±10 %, PF≥ 0,4, I_{STP}< 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 mm²
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

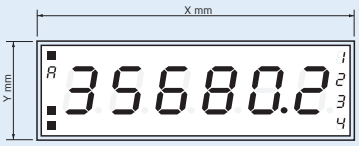
ACCESSORIES

- holder for wall/ceiling installation

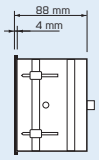
PI - Primary insulation, DI - Double insulation

DIMENSIONS

Front view

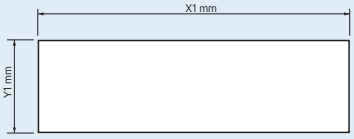


Side view



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

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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.