



- 4/6 -DIGIT PROGRAMMABLE PROJECTION
- THREE -COLOR LED OR HIGH BRIGHT LED
- DIGIT HEIGHT 57; 100; 125 MM
- IR OPERATION
- DIGITAL FILTERS, TARE, LINEARIZATION
- POWER SUPPLY 80...250 V AC/DC
- Option
  - Excitation • Comparators • Data output • Analog output
  - Power supply 10...30 V AC/DC

## OMD 202



The OMD 202 model series are large programmable displays, which are produced in many designs.

The instrument is based on an 8-bit processor and a precise A/D converter, which secures high accuracy, stability and easy operation of the instrument. Displays are designed for indoor and outdoor use with IP64 cover.

Displays are suitable for projection of measured data in productions lines and operations with legibility up to 80 m.

### OMD 202UNI

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

### OMD 202PWR

AC VOLTMETER AND AMMETER  
 AC NETWORK ANALYSER

### OMD 202UQC

UNIVERSAL COUNTER

### OMD 202RS

DATA DISPLAY

### OPERATION

The instrument is set and controlled by 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 perform 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 (they hold even after the instrument is switched off).

The measured units may be projected on the 6-digit display.

### OPTION

**EXCITATION** is suitable for feeding of sensors and transmitters. It is isolated, with continuously adjustable value in the range of 5...24 VDC.

**COMPARATORS** are assigned to monitor one, two, three or four limit values with relay output. The user may select limits regime: LIMIT/DOSING/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/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. The value of analog output corresponds with the displayed data and its type and range are selectable in menu.

### STANDARD FUNCTIONS

#### PROGRAMMABLE PROJECTION

**Selection:** of input type and measuring range

**Measuring range:** adjustable as fixed or with automatic change (OHM)

**Setting:** manual, in menu optional projection on the display may be set for both limit values of the input signal

**Measuring modes (PWR):** voltage ( $V_{RMS}$ ), current ( $A_{RMS}$ ), real power (W), frequency (Hz) and with calculation of Q, S, cos fi

**Setting (UQC):** measuring mode 2x counter (UP/DW, IRC)/2x frequency/timer/clock with adjustable calibration coefficient, time base and projection

**Projection:** -999...9999/99999...999999, for version „UQC“ there are selectable also time formats, user-adjustable display color also with measuring units (red-green-orange)

#### COMPENSATION

**Of conduct (RTD, OHM):** automatic (3- and 4-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 the thermocouple and compensation of cold junctions, which is adjustable or automatic

#### LINEARIZATION

**Linearization (DC, PM, DU):** through linear interpolation in 50 points (solely via OM Link)

#### DIGITAL FILTERS

**Filtration constant (UQC):** transmits input signal up to 1 MHz...10 min

**Floating/Exp./Arithmetic average:** from 2...30/100/100 measurements

**Rounding:** setting the projection step for display

#### MATHEMATIC FUNCTIONS

**Preset (UQC):** initial non-zero value, which is always read after resetting the instrument to zero

**Summation (UQC):** registration of the number upon shift operation

**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

**Mat. operations:** polynome, 1/x, logarithm, exponential, power, root, sin x

#### EXTERNAL CONTROL\*

**Lock:** control keys blocking

**Hold:** display/instrument blocking

**Tare:** tare activation

**Resetting MM:** resetting min/max value

**Resetting:** resetting counter/stopwatch/timer

## TECHNICAL DATA

### PROJECTION

**Display:** 4 [100/125 mm] or 6 digit [57/100/125 mm]  
 Three-color segment LED - red/green/orange  
 High bright singles LED - red or green [1200 mcd]  
**Projection:** :999...9999/99999...999999  
 for version „UQC“ there are selectable also time formats  
**Decimal point:** setting - in menu  
**Brightness:** setting - in menu

### INSTRUMENT ACCURACY

**TK:** 50 ppm/°C  
**Accuracy:** ±0,1% of range + 1 digit [for projection 9999 and 5 meas./s]  
 ±0,15% of range + 1 digit **RTD, T/C**  
 ±0,3% (0,6/0,9 %) of range + 1 digit **PWR**  
 ±0,01% of range + 1 digit [UQC]  
**Accuracy of cold junction measurement:** ±1,5°C  
**Rate:** 0,1...40 meas./s, 0,5...5 meas./s [PWR]  
**Overload capacity:** 10x [t < 30 ms] - not for > 250 V and 5 A; 2x  
**Measuring modes [PWR]:** voltage [V<sub>meas</sub>], current [A<sub>meas</sub>], real power [W],  
 frequency [Hz] and with calculation of Q, S, cos φ  
**Linearization:** by linear interpolation in 50 points  
**Data Protocol [RS]:** ASCII, MessBus, Modbus-RTU, Profibus DP  
**Time base [UQC]:** 0,05 s...15 min  
**Calibration constant [UQC]:** 0,00001...9999999  
**Filtration constant [UQC]:** 1 MHz...10 min  
**PRESET [UQC]:** 0...9999999  
**Digital filters:** Exp/Floating/Arithmetic average, Rounding  
**Functions:** Offset, Min/max, hod, Tare, Peak value, Mat. operations  
**Ext. control:** HOLD, LOCK, Tare, Reset  
**Watch-dog:** reset after 0,4 s

**OM Link:** Company communication interface for operation, setting and update of instruments  
**Calibration:** at 25°C and 40 % r.h.

### COMPARATOR

**Type:** digital, setting in menu, contact switch < 30 ms  
**Limits:** :99999...999999  
**Hysteresis:** 0...999999  
**Delay:** 0...99,9 s  
**Output:** 4x Form C relays [250 VAC/30 VDC, 3 A]

### DATA OUTPUT

**Protocol:** ASCII, MESSBUS, MODBUS - RTU, PROFIBUS  
**Data format:** 8 bit + no parity + 1 stop bit [ASCII]  
 7 bit + even parity + 1 stop bit [Messbus]  
**Rate:** 600...230 400 Baud  
 9 600 Baud...12 Mbaud [PROFIBUS]  
**RS 232:** isolated  
**RS 485:** isolated, addressing (max. 31 instruments)

### ANALOG OUTPUT

**Type:** isolated, programmable with 12-bit D/A converter, type and range are selectable in programming mode  
**Non-linearity:** 0,1% of range  
**TK:** 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. < 500 Ω/12 V or 1 000 Ω/24 V]

### EXCITATION

**Adjustable:** 5...24 VDC/max. 1,2 W

### POWER SUPPLY

10...30 V AC/DC, ±10 %, max. 27 VA, PF≥0,4, I<sub>STP</sub>> 75 A/2 ms  
 80...250 V AC/DC, ±10 %, max. 27 VA, PF≥0,4, I<sub>STP</sub>< 45 A/2 ms  
**Power supply is protected by a fuse inside the instrument**

### MECHANIC PROPERTIES

**Material:** Anodized aluminium, black  
**Dimensions:** in mm

### OPERATING CONDITIONS

**Connection:** connector terminal board, section < 1,5/2,5 mm<sup>2</sup>  
**Stabilization period:** within 15 minutes after switch-on  
**Working temperature:** -20...60°C  
**Storage temperature:** -20...85°C  
**Cover:** IP64  
**Construction:** safety class I  
**El. safety:** EN 61010-1, A2  
**Dielectric strength:** 4 kVAC after 1 min between supply and input  
 4 kVAC after 1 min between supply and data/analog output  
 4 kVAC after 1 min between supply and relay output  
 2,5 kVAC after 1 min between input and data/analog output  
**Insulation resistance:** for pollution degree II, measuring cat. III.  
 Power supply > 670 V [Z1], 300 V [D1]  
 input, output, Exc.: > 300 V [Z1], 150 V [D1]  
**EMC:** EN 61326-1

### PRÍSLUŠENSTVÍ

- holder for wall installation

PI - Primary insulation, DI - Double insulation

## MEASURING RANGES

**OMD 202 is a multifunction instrument available in following types and ranges**

### type UNI, standard [code „0“]

**DC:** ±60/±150/±300/±1 200 mV  
**PM:** 0...5 mA/0...20 mA/4...20 mA/±2 V/±5 V/±10 V/±40 V  
**OHM:** 0...100 Ω/0...1 kΩ/0...10 kΩ/0...100 kΩ  
**RTD:** Pt 100/Pt 500/Pt 1 000  
**Cu:** Cu 50/Cu100  
**Ni:** Ni 1 000/Ni 10 000  
**T/C:** J/K/T/E/B/S/R/N/L  
**DU:** Linear potentiometer [min. 500 Ω]

### type UNI, Option A

**DC:** ±0,1/±0,25/±0,5/±2/±5 A/±100 V/±250 V/±500 V

### type PWR

**input U:** 0...10 V/0...120 V/0...250 V/0...450 V  
**input I:** 0...60 mV/0...150 mV/0...300 mV/0...1 A/0...2,5 A/0...5 A

### type UQC

**Measuring mode [UQC]:** input frequency 0,002 Hz...1 MHz [500 kHz for QUADR and UP/DW]  
 2x UP or DW counter, UP or DW counter + frequency, UP/DW counter, UP/DW counter for IRC + frequency, timer/clock/phase

## CONNECTION

**Front view**

**Side view**

**Panel cutout**

Panel thickness: 0,5 ... 50 mm

Height	X	Y	X1	Y1
<b>57-6</b>	375	119	367	111
<b>100-4</b>	465	181	457	173
<b>100-6</b>	651	181	643	173
<b>125-4</b>	539	237	531	228
<b>125-6</b>	754	237	746	228

\*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/additional board) by external connection

## ORDER CODE SPECIFICATION

	UNI	PWR - U	PWR - I	UQC	RS
<b>w/o</b>	standard			contact, TTL, NPN/PNP	
<b>A</b>	±0,1/±0,25/±0,5/ /±2/±5 A				RS 232/485
<b>B</b>	Expansion about three inputs (PM)				MODBUS
<b>C</b>					PROFIBUS
<b>K</b>			0...60/150/300 mV		
<b>P</b>			0...1/2,5/5 A		
<b>S</b>		0...10/120 V			
<b>U</b>		0...250/450 V			
<b>Z</b>	on request	on request	on request		

## ORDER CODE

### OMD 202

Type	U	N	I								
	•	•	•	•	•	•	•	•	•	•	•
	•	•	•	•	•	•	•	•	•	•	•
	•	•	•	•	•	•	•	•	•	•	•
	•	•	•	•	•	•	•	•	•	•	•
	•	•	•	•	•	•	•	•	•	•	•
<b>Power supply</b>	10...30 V AC/DC	0									
	80...250 V AC/DC	1									
<b>Option, see table „Order code specification“</b>		?									
<b>Comparators</b>	none		0								
	1x relays		1								
	2x relays		2								
	3x relays		3								
	4x relays		4								
<b>Analog output</b>	no		0								
	yes [Compensation < 500 Ω/12 V]		1								
	yes [Compensation < 1 000 Ω/24 V]		2								
<b>Data output</b>	none		0								
	RS 232		1								
	RS 485		2								
	MODBUS		3								
	PROFIBUS		4								
<b>Excitation</b>	no		0								
	yes		1								
<b>Digit height</b>	57 mm					1					
	100 mm					2					
	125 mm					3					
<b>Number of digits</b>	4 digit [100/125 mm]							1			
	6 digits							3			
<b>Color/Type display</b>	red [high bright LED]								1		
	green [high bright LED]								2		
	red/green/orange [7-segment LED]								3		
<b>Other</b>	customer version, do not fill in										00

For complete technical parameters of OMD 202UQC see the universal counter OM 602UQC

Default execution is shown in bold

\* Launch for sale has not been set