

# OMD 202



<b>OMD 202UNI</b>	<b>DC VOLTMETER AND AMMETER PROCESS MONITOR OHMMETER THERMOMETER FOR Pt, Cu, Ni THERMOMETER FOR THERMOCOUPLES DISPLAY UNIT FOR LINEAR POTENTIOMETERS</b>
<b>OMD 202PWR</b>	<b>AC NETWORK ANALYSER</b>
<b>OMD 202UQC</b>	<b>UNIVERSAL COUNTER</b>
<b>OMD 202RS</b>	<b>DATA DISPLAY</b>

## Description

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 production lines and operations with legibility up to 80 m.

Holder for wall mounting applications may be supplied on request.

## 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.

## Options

**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/FROMTO. The limits have adjustable hysteresis within the full range of the display as

- 4/6-digit programmable projection
- Three-color LED or high bright LED
- Digit height 57; 100; 125 mm
- IR remote control
- Digital filter, Tare
- Power supply 230 VAC

## Options

- Excitation • Comparators • Data output • Analog output
- Power supply 10...30 V AC/DC

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

**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  $\varphi$

**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):** automatic (3- and 4-wire) or manual in menu (2-wire)

**of CJC (T/C):** manual or automatic

### LINEARIZATION

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

### DIGITAL FILTERS

**Input filter (UQC):** transmits input signal up to 10...2 000 Hz

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

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

### 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

**Pre-division constant (UQC):** 1/10/60/100/1 000/3 600

**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

**Hold:** display/instrument blocking

**Lock:** control keys blocking

**Tare:** tare activation

**Resetting:** resetting the min/max value, 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**

**TC:** 50 ppm/°C  
**Accuracy:** ±0,1% of range + 1 digit **RTD, T/C**  
 ±0,15% of range + 1 digit **PWR**  
 ±0,3% (0,6/0,9%) of range + 1 digit  
 The accur. applies for project. 9999 and rate 5 (2,5) meas./s (PWR)  
 ±0,01% of range + 1 digit **UQC**  
**Accuracy of cold junction measurement:** ±1°C  
**Rate:** 1,3...40 meas./s, 0,5...5 meas./s (PWR)  
**Overload capacity:** 10x (t < 30 ms) - not for > 250 V, 5A; 2x  
**Measuring modes (PWR):** voltage (V<sub>RMS</sub>), current (A<sub>RMS</sub>), real power (W), frequency (Hz) and with calculation of Q, S, cos φ  
**Linearity:** by linear interpolation in 50 points  
**Data protocol (RS):** ASCII, MessBus, Modbus-RTU, Profibus DP  
**Time base (UQC):** 0,2...50 s  
**Calibration constant (UQC):** 0,00001...999999  
**Input filters (UQC):** 0/10/20/45/55/.../1 000/2 000 Hz  
**PRESET (UQC):** 0...999999  
**Digital filters:** Exp./Floating/Arithmetic average, Rounding  
**Function:** Offset, Min/max.value, Tare, Peak value, Math.

operation  
**Ext. control:** HOLD, LOCK, Tare, Resetting  
**Watch-dog:** reset after 0,4 s  
**OM Link:** Company communication interface for instrument control, setting and update  
**Calibration:** at 25°C and 40% r.h.

**COMPARATOR**

**Type:** digital, setting in prog. mode, 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 DP  
**Data format:** 8 bit + no parity + 1 stop bit (ASCII)  
 7 bit + even parity + 1 stop bit (DIN Messbus)  
**Rate:** 600...230 400 Baud, 9,6 kBaud...12 Mbaud (PROFIBUS)  
**RS 232/RS 485:** isolated, addressing (max. 31 instr./RS485)  
**Ethernet:** 10/100BaseT, Security Protocols, POP3, FTP

**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  
**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. < 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  
 80...250 V AC/DC, ±10%, max. 27 VA  
 Power supply is protected by a fuse inside the instrument

**MECHANIC PROPERTIES**

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

**OPERATING CONDITIONS**

**Connection:** connectors, section < 2,5 mm<sup>2</sup>  
**Stabilization period:** within 15 minutes after switch-on  
**Working temperature:** -20°...65°C, storage : -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 (ZI), 300 V (DI)  
 input, output, excitation > 300 V (ZI), 150 V (DI)  
**EMC:** EN 61326-1

**OPTIONS**

- 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

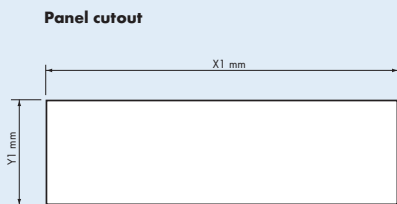
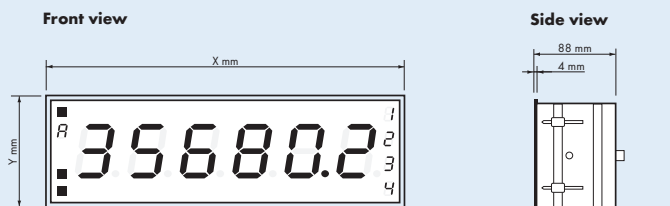
**type PWR**  
**input U:** 0...10 V/0...120 V/0...250 V/0...450 V  
**input I:** 0...60 mV/0...150 mV/0...300 mV/0...1 A/0...2,5 A/0...5 A

**type UQC**  
**Measuring mode (UQC):** 2x UP or DW counter, UP or DW counter + frequency, UP/DW counter, UP/DW counter for IRC + frequency, timer/clock/phase (0,02 Hz...1 MHz)

**Order code specifications**

	UNI	PWR	PWR	UQC	RS
w/a	0 = Standard				
A	±0,1/±0,25/±0,5 / ±2/±5 A ±100/±250/±500 V			contact, TTL, NPN/PNP	RS 232/485
B	expansion about three inputs (PM)			Synchronous serial interface (SSI)	MODBUS
C				Line input	PROFIBUS
K			0...60/150/300 mV		
P			0...1/2,5/5 A		
S			0...10/120 V		
U			0...250/450 V		
Z	on request	on request	on request		

**Connection**



Panel thickness: 0,5 ... 50 mm

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 202**

Type	U	N	I	R*	C*	S	?	0	1	2	3	4	7	00
<b>Power supply</b>	10...30 V AC/DC							0						
	80...250 V AC/DC							1						
<b>Measuring range, see table „Measuring ranges“</b>							?							
<b>Comparators</b>	no								0					
	1x Relay								1					
	2x Relays								2					
	3x Relays								3					
	4x Relays								4					
<b>Analog output</b>	none								0					
	yes (comp. < 500 Ω/12 V)								1					
	yes (comp. < 1 000 Ω/24 V)								2					
<b>Data output</b>	none									0				
	RS 232									1				
	RS 485									2				
	MODBUS									3				
	PROFIBUS									4				
	10/100BaseT Ethernet (not possible with analog output)*									7				
<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 digits (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

\* Launch for sale has not been set