

- 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: $\pm 0,1\%$ of range + 1 digit [for projection 9999 and 5 meas./s]
 $\pm 0,15\%$ of range + 1 digit RTD, T/C
 $\pm 0,3\%$ (0.6/0.9 %) of range + 1 digit PWR
 $\pm 0,01\%$ of range + 1 digit [UQC]
 Accuracy of cold junction measurement: $\pm 1,5\text{°C}$
 Rate: 0,1...40 meas./s, 0,5...5 meas./s [PWR]
 Overload capacity: 2x; 10x (t < 30 ms) - not for > 250 V and 5 A
 Measuring modes [PWR]: voltage [V_{RMS}], current [A_{RMS}], real power [W], frequency [Hz] and with calculation of Q, S, cos fi
 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 16-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. < 600 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, $\pm 10\%$, max. 27 VA, PF \geq 0,4, I_{STP}> 75 A/2 ms
 80...250 V AC/DC, $\pm 10\%$, max. 27 VA, PF \geq 0,4, I_{STP}< 45 A/2 ms
 Power supply is protected by a fuse inside the instrument

MECHANICAL PROPERTIES

Material: Anodized aluminium, black
 Dimensions: in mm

OPERATING CONDITIONS

Connection: connector terminal board, section < 1,5/2,5 mm²
 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

ACCESSORIES

- 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: $\pm 60/\pm 150/\pm 300/\pm 1 200$ mV
 PM: 0...5/20 mA/4...20 mA; $\pm 2/\pm 5/\pm 10/\pm 40$ V
 OHM: 0...100 Ω /0...1/10/100 k Ω /Auto
 RTD: Pt 50/100/500/1 000
 Cu: Cu 50/100
 Ni: Ni 1 000/10 000
 T/C: J/K/T/E/B/S/R/N/L
 DU: Linear potentiometer [min. 500 Ω]

type UNI, Option A

DC: $\pm 0,1/\pm 0,25/\pm 0,5/\pm 2/\pm 5$ A; $\pm 100/\pm 250/\pm 500$ V

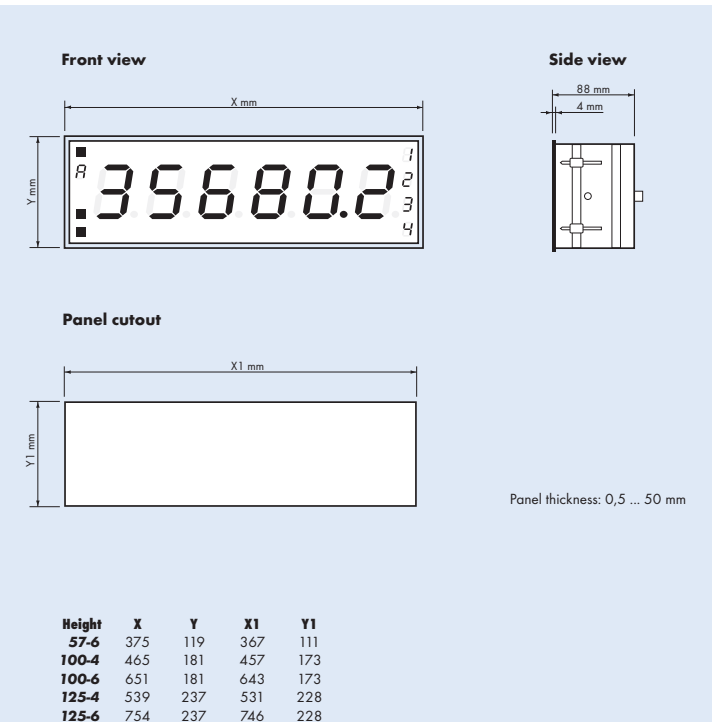
type PWR

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



*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 |
|-----|--|---------------|-------------------|--|------------|
| w/o | standard | | | | |
| A | $\pm 0,1/\pm 0,25/\pm 0,5/\pm 2/\pm 5$ A | | | standard, contact, TTL, NPN/PNP, input: 25 mV...60 V | 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 | | |

ORDER CODE

OMD 202 []

| Type | UNI | PWR* | UQC | RS | | | | | | |
|--|---|------------------|-----|----|----------|----------|----------|----------|----------|-----------|
| Order code shall not include blank spaces! | | | | | | | | | | |
| Power supply | | 10...30 V AC/DC | | | 0 | | | | | |
| | | 80...250 V AC/DC | | | 1 | | | | | |
| Option , see table „Order code specification“ | | | | | ? | | | | | |
| Comparators | none | | | | | 0 | | | | |
| | 1x relays | | | | | 1 | | | | |
| | 2x relays | | | | | 2 | | | | |
| | 3x relays | | | | | 3 | | | | |
| | 4x relays | | | | | 4 | | | | |
| Analog output | no | | | | | 0 | | | | |
| | yes [Compensation < 500 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 digit [100/125 mm] | | | | | | | | 1 | |
| | 6 digits | | | | | | | | 3 | |
| Color/Type display | red [high bright LED] | | | | | | | | | 1 |
| | green [high bright LED] | | | | | | | | | 2 |
| | red/green/orange [7-segment LED] | | | | | | | | | 3 |
| Other | 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