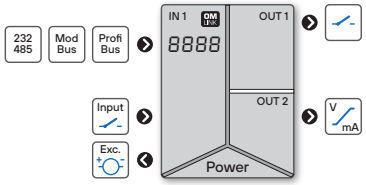

# OMD 202RS

- 4/6-digit programmable projection
- Input RS 232/485
- ASCII, PROFIBUS DP, PROFINET, Modbus RTU
- Three-color or higly luminous LED
- Digit height 57; 100; 125 mm, IR operation
- Power supply 10...30 V AC/DC; 80...250 V AC/DC

## Option

Excitation ● Comparators ● Data output ● Analog output

## DATA LARGE DISPLAY




The OMD 202 model series are large programmable displays for indoor and outdoor use with IP64 protection.

Type OMD 202UQC is a data display from serial lines RS 232/485 with protocol ASCII, MESSBUS, Modbus RTU, PROFIBUS DP and PROFINET.

The instrument is based on a single-chip microcontroller, which secures 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.

## 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**
**Input:** both RS 232 and RS 485
**Protocol:** ASCII - Master/Slave/Universal, MESSBUS, PROFIBUS DP, Modbus RTU
**Projection:** -999...9999/-99999...999999

**MATHEMATIC FUNCTIONS**
**Linearization:** non-linear signal is converted by a 50-point linear interpolation
**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

**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 Min/Max:** resetting min./max. value

## TECHNICAL DATA

### INPUT

| | | |
|---|---|---|
| No. of inputs | | 1 |
| RS | Input | RS 232/RS 485<br>PROFIBUS |
| | Protocol | **ASCII - Master**<br>- the instrument controls data sending from the slave system<br>- „COMM" can be used to select the received data<br>- the instrument asks with the rate of 10 queries/s<br>**ASCII - Slave**<br>- Passive bus display where other devices or computers communicate in „MAST." mode. If the „COMM" and the requested data are correctly received, they will be displayed by the instrument<br>**ASCII - Universal**<br>- in dynamic menu items (Stat, Ad.Un, Sign, Data, Stop, Req.) you can build your own communication protocol format<br>**MESSBUS**<br>**Modbus RTU**<br>**PROFIBUS DP**<br>**PROFINET** |
| | Format | 8 bit + no parity + 1 stop bit<br>7 bit + even parity + 1 stop bit |
| | Adresse | ASCII 0...31<br>Modbus 1...247<br>Profibus 1...127 |
| | Rate | 300...230 400 Baud<br>9 600 Baud...12 Mbaud (PROFIBUS) |
| | Line termination | short-circuit jumper on the connector<br>*resistance inside the instrument is 120 R* |

### EXTERNAL INPUT

| | |
|---|---|
| No. of inputs | 3, on contact |
| Function | OFF no function assigned<br>HOLD measurement paused<br>LOCK control keys blocking<br>TARE tare activation<br>CL. M.M. resetting min/max value<br>CL. T. tare resetting |

### PROJECTION

| | |
|---|---|
| Display | -999...9999<br>-99999...999999 |
| Digit height | 57 mm<br>100 mm<br>125 mm |
| Display color | red or green with high brightness 1200 mcd<br>red / green / orange |
| Description | last two characters on the display may be used for description of measured quantities<br>*only for 6-digit display* |
| Decimal point | adjustable - in menu |
| Brightness | adjustable - in menu |

### INSTRUMENT SPECIFICATION

| | |
|---|---|
| TC | 50 ppm/ºC |
| Functions | Min/max value, math. functions |
| Digital filters | exponential / floating / arithmetic average, rouding |
| Math functions | polynomial / inverse polynomial / logarithm / exponential / power / root |
| OM Link | company communication interface for operation, setting and update of instruments |
| Watch-dog | reset after 500 ms |
| Calibration | at 25ºC and 40 % r.h. |

### RELAYS OUTPUT

| | |
|---|---|
| No. of outputs | up to 4 |
| Type | digital, menu adjustable |
| Mode | HYSTER. active above set value<br>WINDOW active in the set window / band<br>BATCH active in set period |
| Function Relays/OC | CLOSE is closed in active mode<br>OPEN is open in active mode |
| Limits | -99999...999999 |
| Hysteresis | 0...999999 |
| Delay | 0...99.9 s |
| Outputs | 1...4x relay with switch-on contact (Form A)<br>(250 VAC/30 VDC, 3 A)* |
| Relays | 1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300 |

* values apply for resistance load

### ANALOG OUTPUTS

| | |
|---|---|
| No. of outputs | 1 |
| Type | isolated, adjustable with 16-bit DAC,<br>output type and range is selectable |
| TC | 15 ppm/ºC |
| Non-linearity | 0.1 % from FS |
| Accuracy | ±0.02 % of FS |
| Rate | response to change of value < 1 ms |
| Ranges | 0...2 / 5 / 10 V, ±10 V, resistive load ≥ 1 kΩ<br>0...5 / 20 mA /4...20 mA,<br>compensation < 600 Ω/12 V or 1000 Ω / 24 V<br>Indication of error message (output < 3.2 mA) |

### DATA OUTPUTS

| | |
|---|---|
| No. of outputs | 1 |
| Protocol | ASCII, MESSBUS, Modbus RTU, PROFIBUS DP |
| Data format | 8 bit + no parity + 1 stop bit (ASCII)<br>7 bit + even parity + 1 stop bit (Messbus) |
| Rate | 300...230 400 Baud<br>9 600 Baud...12 Mbaud (PROFIBUS) |
| RS 232 | isolated |
| RS 485 | isolated, addressing (max. 31 instruments) |

### EXCITATION

| | |
|---|---|
| Adjustable | 5...24 VDC, <1.2 W, isolated |

### POWER SUPPLY

| | |
|---|---|
| Range | 10...30 V AC/DC, ±10 %, PF ≥ 0.4, $I_{STP}$ < 40 A / 1 ms, isolated<br>80...250 V AC/DC, ±10 %, PF ≥ 0.4, $I_{STP}$ < 40 A / 1 ms, isolated<br>*Protection by fuse inside the device.* |
| Consumption | < 22 W / 22 VA |

### MECHANIC PROPERTIES

| | |
|---|---|
| Material | anodized aluminium, black |
| Dimensions | see picture |
| Installation | in panel or on wall<br>*wall/ceiling bracket included* |

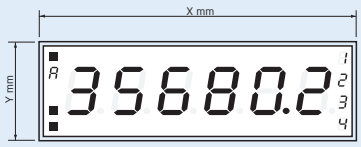
### OPERATING CONDITIONS

| | |
|---|---|
| Connection | connector terminal blocks, section < 1.5 / 2.5 mm² |
| Stabilization period | within 5 minutes after switch-on |
| Working temperat. | -20º...60ºC |
| Storage temperat. | -20º...85ºC |
| Working humidity | < 95 % r.v., non condensing |
| Protection | IP64, front panel only |
| Construction | safety class I |
| El. safety | EN 61010-1, A2 |
| Dielectric strength | 4 kVAC per 1 min test between supply and input<br>4 kVAC per 1 min test between supply and data/ analog output<br>4 kVAC per 1 min test between input and relay output<br>2.5 kVAC per 1 min test between input and data/ analog output |
| Insulation resist.* | for pollution degree II, measuring cat. III<br>power supply, input > 670 V (PI), 300 (DI)<br>input, output, excitation > 300 V (PI), 150 V (DI) |
| EMC | EN 61326-1, Industrial area |
| Seismic capacity | IEC 980: 1993, par. 6 |
| Mechanical resistance | EN 60068-2-6 ed. 2:2008 |

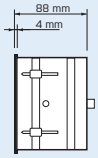
* PI - Primary insulation, DI - Double insulation

## DIMENSIONS

**Front view**

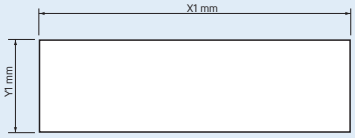



**Side view**




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 |

## ORDER CODE

**OMD 202RS** - [ ][ ][ ][ ][ ][ ][ ][ ] - [ ]

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Power supply** | 10...30 VDC / 24 VAC | **0** | | | | | | | | |
| | **80...250 V AC/DC** | **1** | | | | | | | | |
| **Data protocol** | **ASCII** | | **A** | | | | | | | |
| | Modbus RTU | | **B** | | | | | | | |
| | PROFIBUS DP | | **C** | | | | | | | |
| | PRPFINET | | **D** | | | | | | | |
| **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** | | | | | |
| **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.