ORBIT MERRET, spol. s r. o.
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Czech Republic
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fax: +420 281 040 299
e-mail: orbit@merret.eu
www.orbit.merret.eu

ORBIT MERRET® represents
in the Czech Republic and Slovakia the following companies:

CATALOGUE
OF INSTRUMENTS 2013
MEASURING INSTRUMENTS
BARGRAPHS
LARGE DISPLAYS
TRANSMITTERS TO DIN RAIL
1. Basic provisions
   "The General business terms and guarantee terms along with the relations for the delivery of goods, services, and other obligations for the Supplier have to be understood as the basis and complement to the terms of delivery made in the Quotation and confirmed in the Order Confirmation [hereinafter referred to as the ‘Supplier’] to Customers and are binding upon and any business relations.

2. Price of the subject of performance
   2.1. Catalogues and product lists by the Supplier as well as cost and telephone information about the price of the subject of performance or of the services do not have the status of binding or proof of the subject of performance.
   2.2. Prices of the subject of performance listed in the Quotation do not include any related services, or as the case may be, also the prices of the subject of performance without prior written notice. The Supplier reserves the right to modify technical parameters, or at the case may be, also the price of the subject of performance without prior written notice. The Supplier is not responsible for errors generated during the period of the business relations.
   2.3. An order has to contain the following elementary properties:
   2.4. The Supplier reserves a standard usage of the subject of performance, any specific requirements for the subject of performance need to be expressed in the order.

3. Concluding the contract
   3.1. Individual business deals are concluded on the basis of written codes from the Customer, sent either by mail, TeX, or electronically on the basis of the service order or order
   3.2. Names and last of the Customer including names of sales and service contact numbers, name of the person authorized to act as a depository of the Customer, fax and identification no. (in case the Customer is registered at the VAT)
   3.3. The Supplier reserves the right to invoice immediately after the subject of performance is handed over to the Customer.
   3.4. The Supplier reserves the right to invoice immediately after the subject of performance is handed over to the Customer.

4. Delivery terms
   4.1. Supplies of the subject of performance shall be realized according to the Supplier’s capacity in the terms of delivery of the order
   4.2. If the Customer finds variance with the delivery note, difference in quantity and type of performance, he is obligated to immediately report such fact to the Supplier or bear the consequence and record it in writing on the delivery note at the delivery site.
   4.3. If the Customer fails to take over the subject of performance due to reasons on his part, the Customer is not entitled to claim penalty for the Supplier.
   4.4. If the Customer fails to take over the subject of performance due to reasons on the part of the Customer, the Customer is entitled to bill the Supplier 20 % of the price of not taken products.

5. Orders cancelled by the Customer
   5.1. In case of delay in the performance of the subject of performance, the Supplier is entitled to bill the Customer 20 % of the price of not taken products.
   5.2. If the delivered subject of performance is returned without justification after the agreed-upon term, the Supplier reserves the right to charge a contractual penalty, in the amount of 50 % of the price noted on the delivery note.
   5.3. If the Supplier enforces his right to compensation losses or contractual penalty, for unjustified return of the subject of performance, the Supplier reserves the right to charge a contractual penalty, in the amount of 50 % of the price noted on the delivery note.

6. Terms of payment
   6.1. Unless special terms of payment were arranged for, our invoices are due for payment within 14 days.
   6.2. The Supplier is entitled to invoice immediately after the subject of performance is handed over to the Customer.
   6.3. The Supplier reserves the right to invoice immediately after the subject of performance is handed over to the Customer.

7. Ownership of the subject of performance
   7.1. The Supplier reserves the right to invoice immediately after the subject of performance is handed over to the Customer.

8. Guarantees
   8.1. The Supplier reserves the right to invoice immediately after the subject of performance is handed over to the Customer.

9. Other provisions
   9.1. Claims under the General business terms differ from the terms set out in the separate Customer order. No grievances contained in the order confirmation foot also for the purposes of conclusion of the business relations have any impact on the definition of the General business terms.
   9.2. The order is subject to the terms set out in the separate Customer order. No grievances contained in the order confirmation foot also for the purposes of conclusion of the business relations have any impact on the definition of the General business terms.
   9.3. The General business terms are governed by the provisions of the Commercial code.

ibjak 8053
PANEL
MEASURING INSTRUMENTS

2013.2
### INSTRUMENTS - OVERVIEW

#### DC VA-meters

<table>
<thead>
<tr>
<th>Model</th>
<th>Type</th>
<th>Function</th>
<th>Measurement</th>
<th>Input (RMS)</th>
<th>Resolution</th>
<th>Accuracy</th>
<th>Measurement Range</th>
<th>Power Supply</th>
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#### Omhmmeters

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#### Wattmeters AC VA-meters

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*For more see [Process monitors] (https://example.com/process-monitors)  
*For more see [Wattmeters] (https://example.com/wattmeters)
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### Analog transmitters to DIN rail

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### Digital transmitters to DIN rail

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The program OM Link is designed for easy configuration, operation, firmware upgrade of instruments and converters and for visualization of the measuring process. The new CRIFT MERRET instruments include the OM Link interface in their standard features. To connect to PC an OML cable is required (version USB or RS232).

The program may be used for configuration (1 instrument) or data collection via RS 232 and RS 485 line, more suitable for on-line connection during operation.

**CONNECTION MANAGER**

Connection manager facilitates creating and cancelling connections, provides their list classified as per Type, noting the basic parameters and measurable values (channels), and serves as home location for starting measurements, configuring the OM instruments, projecting their properties etc.

Connection is the key entity of the OM link application - it represents physical or virtual connection with an OM device and is the basic subject of many application functions.

Connection modes:
- On-line, represents a physical connection to an OM device.
- Off-line, serves for projection of instrument menu and its configuration for later use in the on-line mode.
- Matematické, represents a mathematical operation with measured data acquired from other connections [on-line].
- Line tapping, serves to analyse communication in progress among autonomous measuring systems.
MEASUREMENT MANAGER
Measurement manager facilitates creating and cancelling measurement files, graphs and individual data, provides their structured overview and enables modification of graph and value parameters.

WINDOW MEASUREMENT
Window Measurement provides view of historic and current process of measuring certain quantities and their groups. The window offers three possible modes of viewing the measured data:

1) Graphs - they reflect the historic course of measurement in selectable time range.
   By means of the control panel in this mode it is possible to shift the displayed time period, modify the displayed time range (from 1 sec up to 15 days) and set additional parameters of graph projection, (names, date on time axis).

2) Indicators – they show current values of the measured data

3) Table – depicts the history of the measuring process in table numeric format.
   By means of the control panel in this mode it is possible to switch between the projection of interpolated values in particular time steps and the projection of truly taken sample values.
   The graph and table modes also enable to discontinue the measurement in process and restart it again. At the same time it is also possible to specify whether upon restarting the process the measurement retains its former course (history) and the measurement is reassumed or whether it starts anew and the history is cancelled.
   Values from the instrument may be added to the measurement e.g. from the Connection manager by selecting certain instrument channel from the on-line connection (or calculated connection or line tapping connection) and dragging it over to the Window Measurement. This way new values (quantities) may also be incorporated in already existing graphs [in case of graph mode], i.e. two quantities in one graph with common standard and time axis.
   Structuring the quantities and graphs and changing their parameters (names, ranges, colors) may also be performed in Measurement Manager.

DEVICE SETUP
One of the main features of the OM Link program is the opportunity to set up the instruments comfortably from your computer.

- Setting the device values and parameters
- View of the complete setting menu [PROFI/LIGHT/USER]
- Individual configuration of the complete menu
- Device setup export and import

All existing items may be set, even those that are inaccessible or blocked in the instrument.
In majority of the items on the instrument menu their attribute may be set for the “User menu” (see/change/ hide) and in addition it is possible to remove or add any item from the “LIGHT menu”. Client menu of the instrument may be compiled eventually this way for given application and level of service proficiency.
Each setting of the device menu may be stored in a file and used for configuration of other instruments. An advantage is also the possibility of sending complete menu via e-mail directly to the technical support of the manufacturer.

In Properties and Service you will find complete information about the instrument.
3½-DIGIT PROGRAMMABLE PROJECTION
MULTIFUNCTION INPUT UNI (DC, PM, RTD, T/C, DU)
UNIVERSAL COUNTER
DATA DISPLAY
DIGITAL FILTERS, LINEARIZATION
SIZE OF DIN 48 X 24 MM
POWER SUPPLY 10...30 V AC/DC

OPERATION

Instrument is controlled by 4 buttons which are accessed from the rear. 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).

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Selection: of input type and measuring range

Setting (UNI): manual, in menu optional projection on the display may be set for both limit values of the input signal, e.g. input 0…19.99 V

Setting (UQC): measuring mode counter/frequency/timer/counter for IRC/clock with adjustable calibration coefficient, time base and projection

Measuring modes (UQC): counter/frequency/UP-DW counter/frequency/counter for IRC

Measuring channels (UQC): A and B, from one measuring input two independent functions may be evaluated (counter/frequency)

Input (RS): RS 485, with protocol ASCII or MODBUS - RTU

Projection: 9999

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 thermocouple and compensation of cold junctions, which is adjustable or automatic

LINEARIZATION

Linearization: through linear interpolation in 25 points (solely via OM Link)

DIGITAL FILTERS

Exponential average: from 2...100 measurements

Rounding: setting the projection step for display

EXTERNAL CONTROL**

Hold: display/instrument blocking

Lock: control keys blocking

Tare: designed to reset display upon non-zero input signal

The OMM 323 model range are inexpensive 3½ digit panel programable instruments designed for simple applications. Versions UNI, RS and UQC are available.

Type OMM 323UNI is multifunction instrument with the option of configuration for 8 different input options, easily configurable in the instrument’s menu.

The instrument is based on an 8-bit microcontroller and A/D converter, which ensures good accuracy, stability and easy operation of the instrument.

OMM 323UNI
DC VOLTMETER AND AMMETER
PROCESS MONITOR
OHMMETER
THERMOMETER FOR Pt/Cu/Ni/Termocouples
DISPLAY UNIT FOR LINEAR POTENTIOMETERS

OMM 323UQC
UNIVERSAL COUNTER

OMM 323RS
DATA DISPLAY RS 485
### TECHNICAL DATA

**DISPLAY**
Display: 9999, red or green 7-segment LED, digit height 9,1 mm
Decimal point: setting - in menu
Brightness: setting - in menu

**INSTRUMENT ACCURACY**
TK: ±1,5 % of range + 1 digit
Accuracy: ±0,15 % of range + 1 digit
±0,3 % of range + 1 digit
Accuracy of cold junction measurement:
±1,5 °C

**RATE**
0,5…20 meas./s

**WATCH-DOG**
Reset after 500 ms

**RESOLUTION**
0,1°C (RTD), 1°C (T/C)

**POWER SUPPLY**
10…30 VDC/24 VAC, ±10 %, 3 VA, PF ≥ 0,45, ISTP< 45 A/1,1 ms
10…30 VDC/24 VAC, ±10 %, 3 VA, PF ≥ 0,45, ISTP< 45 A/1,1 ms, isolated

**MECHANICAL PROPERTIES**
Material: Noryl GFN2 SE1, incombustible UL 94 V-I
Dimensions: 45 x 4 x 72 mm
Panel cutout: 43,5 x 22,5 mm

**OPERATING CONDITIONS**
Connection: connector terminal board, section < 1,5 mm²
Stabilization period: within 15 minutes after switch-on
Working temperature: -20°...60°C
Storage temperature: -20°...85°C
Cover: IP42 (front panel only)
EL safety: EN 60950-1, A2
Dielectric strength: 2,5 kVAC after 1 min between supply and input
Insulation resistance: for pollution degree II, measuring cat. II
Protection: IP42, EN 61204-1

**TYPE**
UNI: ±90/±180 mA, ±30/±60 mV/±1/±20/±40/±80 V
PM: ±20 mA, ±2 V, 4…20 mA, ±5 V/±10 V
OMM 323 is a multifunction instrument available in following types and ranges
OHM: 0…100 Ω/300 Ω/0…3 kΩ/0…24 kΩ/0…30 kΩ
RTD: Pt 100/100Ω/1 000
Dc: Cu 50/Cu 100
Ni: Ni 1 000/Ni 10 000
T/C: J/N/E/B/S/R/N/L
Du: Linear potentiometer (min. 500 Ω)

**CONNECTING INDIVIDUAL INPUTS**

<table>
<thead>
<tr>
<th>Type</th>
<th>UNI</th>
<th>DC</th>
<th>PM</th>
<th>T/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>UQC</td>
<td>±90/±180 mA</td>
<td>±20 mA, ±2 V</td>
<td>±20 mA, ±2 V</td>
<td>±5 V/±10 V</td>
</tr>
<tr>
<td>RS</td>
<td>±90/±180 mA</td>
<td>±20 mA, ±2 V</td>
<td>±20 mA, ±2 V</td>
<td>±5 V/±10 V</td>
</tr>
</tbody>
</table>

**ORDER CODE**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNI</td>
<td>Type</td>
<td>U</td>
</tr>
<tr>
<td>DC</td>
<td>Power supply</td>
<td>1</td>
</tr>
<tr>
<td>T/C</td>
<td>Display color</td>
<td>1</td>
</tr>
<tr>
<td>00</td>
<td>Other</td>
<td>00</td>
</tr>
</tbody>
</table>

Default execution is shown in bold

* Launch for sale has not been set
The OMM 350 model series are small 6-digit panel programmable instruments designed for maximum usefulness and user comfort while maintaining its fair price. There are two versions available: UNI and DC.

The OMM 350UNI type is a multifunction instrument with the option of configuration for 8 different input options, easily configurable in the instrument menu. Version OMM 350DC is suitable for measurement of larger ranges of DC voltage and current.

The instrument is based on an 8-bit microcontroller with A/D converter, which ensures good accuracy, stability and easy operation of the instrument.

**OPERATION**

The instrument is set and controlled by four control keys located on the front panel. 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).

All settings are stored in the EEPROM memory (they hold even after the instrument is switched off).

**OPTION**

**COMPARATORS** are assigned to monitor two limit values with relay output. 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.

**STANDARD FUNCTIONS**

| PROGRAMMABLE PROJECTION | Setting (UNI): manual, in menu optional projection on the display may be set for both limit values of the input signal, e.g. input 0...19.99 V → 0...150.0
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Projection:</td>
<td>-99999...999999</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMPENSATION</th>
<th>Conduct (RTD, OMM): 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 thermocouple and compensation of cold junctions, which is adjustable or automatic (temperature at the input brackets)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINEARIZATION</td>
<td>through linear interpolation in 25 points [solely via OM Link]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIGITAL FILTERS</th>
<th>Exponential average: from 2...100 measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rounding</td>
<td>setting the projection step for display</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXTERNAL CONTROL*</th>
<th>Hold: display/instrument blocking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lock</td>
<td>control keys blocking</td>
</tr>
</tbody>
</table>

**OMM 350**

**OMM 350DC**

DC VOLTMETER ANDammeter

**OMM 350UNI**

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

**- DIGITAL FILTERS, LINEARIZATION**

**- SIZE OF DIN 72 X 24 MM**

**- POWER SUPPLY 10...30 V AC/DC**

**- 6-DIGIT PROGRAMMABLE PROJECTION**

**- MULTIFUNCTION INPUT [DC, PM, RTD, T/C, DU]**

**- Option Comparators**
**Technical Data**

**Connection**
- Display: 999999...999999, red or green 7-segment LED, digit height 9.1 mm.
- Decimal point: setting - in menu.
- Brightness: setting - in menu.

**Instrument Accuracy**
- Type: UNI
- DC: ±20/±60/±1000 mV
- PM: 0.25 mA/0.25 mA/1 mA/0.5 V/0.5/10 V
- OHM: 0...300 Ω/0...1.5 kΩ/0...3 kΩ/0...30 kΩ
- RTD: Pt 50/100/Pt 500/Pt 1 000
- Cu: Cu 0/50/100
- Ni: Ni 100/200/300
- T/C: J/K/E/N/L B/S/R/T...
- Du: Linear potentiometer (min. 500 Ω)

**Power Supply**
- 10...30 V DC/24 V AC, max. 4 VA, PF ≥ 0.4, I STP< 45 A/1,1 ms, isolated

**Connection Individual Inputs**

<table>
<thead>
<tr>
<th>Type</th>
<th>UNI</th>
<th>DC</th>
<th>PM</th>
<th>T/C</th>
<th>Du</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC</td>
<td>±20/±60/±1 000 mV</td>
<td>±20/±60/±1 000 mV</td>
<td>±1/±5 A</td>
<td>±20/±60/±1 000 mV</td>
<td>±1/±5 A</td>
</tr>
<tr>
<td>PM</td>
<td>0...10 V</td>
<td>0...2 V</td>
<td>0...20 mA, 4...20 mA</td>
<td>0...2 V</td>
<td>0...20 mA, 4...20 mA</td>
</tr>
<tr>
<td>DC/Hi</td>
<td>±100/±200 V</td>
<td>±100/±200 V</td>
<td>±100/±200 V</td>
<td>±100/±200 V</td>
<td>±100/±200 V</td>
</tr>
</tbody>
</table>

**Specification of Input Range in the Order Code**

**Order Code**
- Type: UNI
- Power supply: 10...30 V AC/DC, isolated
- Measuring ranges: see table "Specification"
- Comparators: no relay, Form A, Form B, Form C, Form D, Form E, Form F
- Display color: red, green
- Other: customer version, do not fill in

*In the "UNI" type the measuring range is selected under the order code solely for RTD, NI, OHM. Other ranges (DC, PM, T/C, Du) are user selectable in the instrument's menu.*
The OM 36 model series are 3½-digit panel instruments with good accuracy and stability.

**OM 36DC**
DC VOLTMETER AND AMMETER

**OM 36AC**
AC VOLTMETER AND AMMETER

**OM 36PM**
PROCESS MONITOR

**OM 36OHM**
OHMMETER

**OM 36RTD**
THERMOMETER FOR Pt/Ni

---

**OPERATION**

The instrument is designed for simple measurement without further control. Placement of the decimal point is selectable by a shorting link under the front panel.

**CALIBRATION**

Contingent corrections of display projection for both limit values of input signal may be performed by trimmers under the front panel (± 10%).

**OPTION**

**EXCITATION** is suitable for feeding of sensors and transmitters. It is isolated, with continuously adjustable value in the range of 2...24 VDC.

- 3½-DIGIT PROJECTION
- SIZE OF DIN 96 X 48 MM
- POWER SUPPLY 230 VAC

- Option
  
  Excitation • Power supply 24/10 VAC, 10...30 VDC, 80...250 V AC/DC
TECHNICAL DATA

**CONNECTION**

- Display: 1500; red or green 7-segment LED, digit height 14 mm
- Decimal point: adjustable by jumper
- Brightness: adjustable by trimmer under front panel

**INSTRUMENT ACCURACY**

- DC: ±0.1% of range + 1 digit
- AC: ±0.2% of range + 1 digit
- PM: ±0.2% of range + 1 digit
- RTD: ±0.1% of range + 1 digit
- OHM: ±0.5% of range + 1 digit

**Resolution**: 0.1°C (RTD)

**Calibration**: ±2°C at 25°C and 40 % r.h.

**EXCITATION**

- Adjustable: 2…24 VDC/50 mA, isolated

**POWER SUPPLY**

- 24…100 VAC/50 Hz, ±10%, 5 A
- 24…24 VDC max. 150 mA (without excitations)
- 10…30 VDC max. 200 mA, PM ±20 mA, ±2 V
- 10…30 VDC, isolated
- 80…250 VAC/DC, PM ±20 mA, ±2 V, isolated

*Power supply is protected by a fuse inside the instrument*

**MECHANIC PROPERTIES**

- Material: Noryl GFN2 SE1, incombustible UL 94 V-I
- Dimensions: 96 x 48 x 110 mm
- Panel cutout: 90,5 x 45 mm

**OPERATING CONDITIONS**

- Connection: connector terminal board, section < 2,5 mm²
- Stabilization period: within 15 minutes after switch-on
- Working temperature: 0°…+60°C
- Storage temperature: -10°…+85°C
- Cover: IP42, on request IP64 (front panel only)
- El. safety: EN 61010-1, A2
- Dielectric strength: 4 kVAC after 1 min between supply and input
- Insulation resistance: for pollution degree II, measuring cat. III.

**MEASURING RANGES**

<table>
<thead>
<tr>
<th>DC</th>
<th>AC</th>
<th>PM</th>
<th>OHM</th>
<th>RTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>±199,9 mV</td>
<td>0…199,9 mV</td>
<td>0…5 mA</td>
<td>0…199,9 O</td>
<td>Pt 100</td>
</tr>
<tr>
<td>±1999 V</td>
<td>0…1999 V</td>
<td>±2 mA</td>
<td>0…1999 kΩ</td>
<td>Pt 500</td>
</tr>
<tr>
<td>±19,99 V</td>
<td>0…19,99 V</td>
<td>4…20 mA</td>
<td>0…19,99 kΩ</td>
<td>Pt 1000</td>
</tr>
<tr>
<td>±220 V</td>
<td>0…220 V</td>
<td>±2 V</td>
<td>0…10 V</td>
<td></td>
</tr>
<tr>
<td>±1,999 mA</td>
<td>±1,999 mV</td>
<td>±2 V</td>
<td>0…10 V</td>
<td></td>
</tr>
<tr>
<td>±19,99 mA</td>
<td>±19,99 mA</td>
<td>±20 mA</td>
<td>0…20 mA</td>
<td></td>
</tr>
<tr>
<td>±199,9 mA</td>
<td>±199,9 mA</td>
<td>±200 mA</td>
<td>0…200 mA</td>
<td></td>
</tr>
<tr>
<td>±1999 mA</td>
<td>±1999 mA</td>
<td>±2000 mA</td>
<td>0…2000 mA</td>
<td></td>
</tr>
<tr>
<td>±100,0 mA</td>
<td>±100 mA</td>
<td>±1 mA</td>
<td>0…1 mA</td>
<td></td>
</tr>
<tr>
<td>±19,99 A</td>
<td>±19,99 A</td>
<td>±20 mA</td>
<td>0…20 mA</td>
<td></td>
</tr>
<tr>
<td>±199,9 A</td>
<td>±199,9 A</td>
<td>±100 mA</td>
<td>0…100 mA</td>
<td></td>
</tr>
<tr>
<td>±1999 A</td>
<td>±1999 A</td>
<td>±1000 mA</td>
<td>0…1000 mA</td>
<td></td>
</tr>
<tr>
<td>±300 V</td>
<td>±300 V</td>
<td>±5 V</td>
<td>0…300 V</td>
<td></td>
</tr>
</tbody>
</table>

**ORDER CODE**

**OM 36**

- Type
- Power supply
- Measuring range, see table „Measuring ranges“
- Analog output
- Excitation
- Connection
- Display color

**PI - Primary insulation, DI - Double insulation**

<table>
<thead>
<tr>
<th>DC</th>
<th>AC</th>
<th>PM</th>
<th>OHM</th>
<th>RTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>±199,9 mV</td>
<td>0…199,9 mV</td>
<td>0…5 mA</td>
<td>0…199,9 O</td>
<td>Pt 100</td>
</tr>
<tr>
<td>±1999 V</td>
<td>0…1999 V</td>
<td>±2 mA</td>
<td>0…1999 kΩ</td>
<td>Pt 500</td>
</tr>
<tr>
<td>±19,99 V</td>
<td>0…19,99 V</td>
<td>4…20 mA</td>
<td>0…19,99 kΩ</td>
<td>Pt 1000</td>
</tr>
<tr>
<td>±220 V</td>
<td>0…220 V</td>
<td>±2 V</td>
<td>0…10 V</td>
<td></td>
</tr>
<tr>
<td>±1,999 mA</td>
<td>±1,999 mV</td>
<td>±2 V</td>
<td>0…10 V</td>
<td></td>
</tr>
<tr>
<td>±19,99 mA</td>
<td>±19,99 mA</td>
<td>±20 mA</td>
<td>0…20 mA</td>
<td></td>
</tr>
<tr>
<td>±199,9 mA</td>
<td>±199,9 mA</td>
<td>±200 mA</td>
<td>0…200 mA</td>
<td></td>
</tr>
<tr>
<td>±1999 mA</td>
<td>±1999 mA</td>
<td>±2000 mA</td>
<td>0…2000 mA</td>
<td></td>
</tr>
<tr>
<td>±100,0 mA</td>
<td>±100 mA</td>
<td>±1 mA</td>
<td>0…1 mA</td>
<td></td>
</tr>
<tr>
<td>±19,99 A</td>
<td>±19,99 A</td>
<td>±20 mA</td>
<td>0…20 mA</td>
<td></td>
</tr>
<tr>
<td>±199,9 A</td>
<td>±199,9 A</td>
<td>±100 mA</td>
<td>0…100 mA</td>
<td></td>
</tr>
<tr>
<td>±1999 A</td>
<td>±1999 A</td>
<td>±1000 mA</td>
<td>0…1000 mA</td>
<td></td>
</tr>
<tr>
<td>±300 V</td>
<td>±300 V</td>
<td>±5 V</td>
<td>0…300 V</td>
<td></td>
</tr>
</tbody>
</table>

**OM 36 DC**

**OM 36 AC**

**OM 36 PM**

**OM 36 OHM**

**OM 36 RTD**

Please, state the requested projection for selected input range in your order (PM, OHM)! (e.g.: input 0…20 mA = projection 0.0…100.0)
The OML 343 model series are simple 3½-digit panel programmable instruments designed for maximum usefulness and user comfort while maintaining its fair price. Versions UNI, DC and AC are available.

Type OML 343UNI is a multifunction instrument with the option of configuration for 8 different input options, easily configurable in the instrument menu. Versions OML 343DC and OML 343AC are suitable for measurement of larger ranges of DC and AC voltages and currents.

The instrument is based on an 8-bit microcontroller and A/D converter, which ensures good accuracy, stability and easy operation of the instrument.

### STANDARD FUNCTIONS

**Programmable Projection**
- Selection of input type and measuring range
- Setting (UNI): manual, in menu optional projection on the display may be set for both limit values of the input signal, e.g. input 0…19,99 V → 0…150,0
- Projection: ±1999

**Compensation**
- Of conduct (RTD, OHM): automatic (3- and 4-wire) or manual in menu (2-wire)
- Of conduct in probe (RTD): internal connection (conductive 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 (temperature at the input brackets)

**Linearization**
- Linearization: through linear interpolation in 25 points [solely via OM Link]

**Digital Filters**
- Exponential average: from 2…100 measurements
- Rounding: setting the projection step for display

### OPERATION

The instrument is set and controlled by five control keys located at the rear of the instrument. 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].

### OPTION

**Comparator** is assigned to monitor a limit value with an optional relay output. The limit has 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 limit is signalled by LED and simultaneously by the switch-on of the relay.
## TECHNICAL DATA

### Display:
- ±1999, red or green 7-segment LED, digit height 14 mm
- Brightness: manual or automatic adjustment

### INSTRUMENT ACCURACY
- ±0.15 % of range + 1 digit
- ±0.3 % of range
- TK: 50 ppm/°C
- Accuracy of cold junction measurement: ±1.5°C

### INSTRUMENT ACCURACY
- ±0.15 % of range + 1 digit
- ±0.3 % of range
- TK: 50 ppm/°C
- Accuracy of cold junction measurement: ±1.5°C

### POWER SUPPLY
- 10…30 VDC/24 VAC, ±10 %, 3 VA, PF ≥ 0.4, I STP< 45 A/1.1 ms, isolated

### MECHANIC PROPERTIES
- Material: Polycarbonate, incombustible UL 94 V-0
- Dimensions: 96 x 48 x 30 mm

### OPERATING CONDITIONS
- Connection: connector terminal board, section < 1.5 mm²

### CONNECTING INDIVIDUAL INPUTS

<table>
<thead>
<tr>
<th>Type</th>
<th>UNI</th>
<th>DC</th>
<th>±90/±180 mA, ±30/±60 mV/±1/±20/±40/±80 V</th>
<th>PM</th>
<th>±20 mA/±20 mA/±60 mV/±10 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>±20 mA/±20 mA/±60 mV/±10 V</td>
<td>OHM</td>
<td>±1/±2 V/±5 V/±10 V/±20 V/±50 V/±120 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTD</td>
<td>Pt 50/100/Pt 500/Pt 1 000</td>
<td>Cu</td>
<td>±1/±5 V/±10 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cu</td>
<td>±1/±5 V/±10 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ni</td>
<td>±1/±5 V/±10 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T/C</td>
<td>±1/±5 V/±10 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DU</td>
<td>Linear potentiometer (min. 500 Ω)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC</td>
<td>±1 A/±5 A, ±120/±200 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC</td>
<td>±1 A/±5 A, ±120/±200 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM</td>
<td>±1 A/±5 A, ±120/±200 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T/C</td>
<td>±1 A/±5 A, ±120/±200 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DU</td>
<td>Linear potentiometer (min. 500 Ω)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### CONNECTING INDIVIDUAL INPUTS

<table>
<thead>
<tr>
<th>Type</th>
<th>UNI</th>
<th>DC</th>
<th>±90/±180 mA, ±30/±60 mV/±1/±20/±40/±80 V</th>
<th>PM</th>
<th>±20 mA/±20 mA/±60 mV/±10 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>±20 mA/±20 mA/±60 mV/±10 V</td>
<td>OHM</td>
<td>±1/±2 V/±5 V/±10 V/±20 V/±50 V/±120 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTD</td>
<td>Pt 50/100/Pt 500/Pt 1 000</td>
<td>Cu</td>
<td>±1/±5 V/±10 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cu</td>
<td>±1/±5 V/±10 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ni</td>
<td>±1/±5 V/±10 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T/C</td>
<td>±1/±5 V/±10 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DU</td>
<td>Linear potentiometer (min. 500 Ω)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC</td>
<td>±1 A/±5 A, ±120/±200 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC</td>
<td>±1 A/±5 A, ±120/±200 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM</td>
<td>±1 A/±5 A, ±120/±200 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T/C</td>
<td>±1 A/±5 A, ±120/±200 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DU</td>
<td>Linear potentiometer (min. 500 Ω)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ORDER CODE

<table>
<thead>
<tr>
<th>Type</th>
<th>Comparator</th>
<th>Display color</th>
<th>Gasket</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>00</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>00</td>
</tr>
</tbody>
</table>

**Default execution is shown in bold**
OM 352

The OM 352 model series are simple 3½-digit panel programmable instruments designed for maximum usefulness and user comfort while maintaining its fair price. Versions UNI, DC and AC are available. Type OM 352UNI is a multifunction instrument with the option of configuration for 8 different input options, easily configurable in the instrument menu. Versions OM 352DC and OM 352AC are suitable for measurement of larger ranges of DC and AC voltages and currents. The instrument is based on an 8-bit microcontroller and A/D converter, which ensures good accuracy, stability and easy operation of the instrument.

OM 352DC
DC VOLTMETER AND AMMETER

OM 352AC
AC VOLTMETER AND AMMETER

OM 352UNI
DC VOLTMETER AND AMMETER
PROCESS MONITOR
OHMMETER
THERMOMETER FOR Pt/Cu/Ni/Termocouples
DISPLAY UNIT FOR LINEAR POTENTIOMETERS

- 3,5-DIGIT PROGRAMMABLE PROJECTION
- MULTIFUNCTION INPUT UNI (DC, PM, RTD, T/C, DU)
- DIGITAL FILTERS, LINEARIZATION
- SIZE OF DIN 96 X 48 MM
- POWER SUPPLY 80…250 V AC/DC
- Option Excitation • Comparators • Data output • Analog output
  Power supply 10…30 V AC/DC • Three-color display - 20 mm

OPERATION

The instrument is set and controlled by five control keys located on the front panel. 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).

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 two limit values with relay output. 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 signaled 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 and its type and range are selectable in menu.

PROGRAMMABLE PROJECTION

Selection: of input type and measuring range
Setting (UNI): manual, in menu optional projection on the display may be set for both limit values of the input signal, e.g. input 0…19,99 V  0…150,0
Projection: ±1999

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 thermocouple and compensation of cold junctions, which is adjustable or automatic (temperature at the input brackets)

LINEARIZATION

Linearization: through linear interpolation in 25 points [solely via OM Link]

DIGITAL FILTERS

Exponential average: from 2…100 measurements
Rounding: setting the projection step for display

FUNCTIONS

Tare: designed to reset display upon non-zero input signal
EXTERNAL CONTROL*

Hold: display/instrument blocking
Lock: control keys blocking
Tare: tare activation

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 and its type and range are selectable in menu.
**OM 352** is a multifunction instrument available in following types and ranges:

<table>
<thead>
<tr>
<th>Type</th>
<th>DC</th>
<th>AC</th>
<th>T/C</th>
<th>DU</th>
<th>UNI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OM 352</strong></td>
<td>±20 mA/4…20 mA/0…1 V/10 V</td>
<td>±100/±200 V</td>
<td>±20/±40 V</td>
<td>±1/±5 A</td>
<td>±0,5/1 V</td>
</tr>
<tr>
<td><strong>OM 352</strong></td>
<td>±0,5/1 V</td>
<td>±0,25…2 V</td>
<td>±100 mA</td>
<td>±0,5 A</td>
<td>±1 kΩ</td>
</tr>
</tbody>
</table>

**SPECIFICATION OF INPUT RANGE IN THE ORDER CODE**

- **UNI**: Primary insulation, **DI**: Double insulation.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>±0,2 % of range</td>
<td>00</td>
</tr>
<tr>
<td>±0,05 % of range</td>
<td>01</td>
</tr>
<tr>
<td>±0,1 % of range</td>
<td>02</td>
</tr>
<tr>
<td>±0,02 % of range</td>
<td>03</td>
</tr>
<tr>
<td>±0,005 % of range</td>
<td>04</td>
</tr>
<tr>
<td>±0,001 % of range</td>
<td>05</td>
</tr>
</tbody>
</table>

**ORDER CODE**

- **OM 352**: 00 01 02 03 04 05
- **Type**: U/C/A
- **Measuring ranges**: see table "Specification"
- **Comparators**
- **Output**
- **Display color**
- **Off-shell**

Default execution is shown in bold.

*Launch for sale has not been set*
Modelová řada OM 402 jsou 4-digit panelové programovatelné přístroje navržené pro maximální účelovost a pohodlí uživatele při zachování jeho přiznivé ceny. V nabídce jsou dvě verze UNI, LC a PWR.

Type OM 402UNI je multifunkční přístroj s možností konfigurace pro 8 různých variant inputu, snadno konfigurovatelných v menu přístroje. Dalším Optionem inputních modulů je měřit větší Ranges DC voltage a proudu a rozšířit počet inputu až na 4 (platí pro PM).

Základem přístroje je jednočipový mikrokontroler s vícekanálovým 24 bitovým sigma-delta převodníkem, který přístroji zaručuje vysokou Accuracy, stabilitu a snadné Operation.

OPERATION

The instrument is set and controlled by five control keys located on the front panel. 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 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/PROD-MEAS. 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 signaled 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/EMESSBUS/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.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage [40 records/s] of all measured values up to 8 000 records. Second mode is RTC, where data record is governed by Real

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION

Selection of input type and measuring range
Measuring range: adjustable as fixed or with automatic change (OHM)
Measuring modes (PWR): voltage (V IN), current (A IN), real power (W), frequency (Hz) and with calculation of Q, S, cos F
Setting: manual, in menu optional projection on the display may be set for both limit values of the input signal e.g. input 0...39,99 V > 0...850,0
Projection: 99999...99999

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 thermocouple and compensation of cold junctions, which is adjustable or automatic (temperature at the input brackets)

LINEARIZATION

Linearization: through linear interpolation in 50 points (solely via OM Link)

DIGITAL FILTERS

Floating/Exp./Arithmetic average: from 2...30/100/100 measurements
Rounding: setting the projection step for display

MATHEMATICAL FUNCTIONS

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: polynomial, 1/x, logarithm, exponential, power, root, sin x and mathematic operations between inputs

EXTERNAL CONTROL*

Lock: control keys blocking
Hold: display/instrument blocking
Tare: tare activation
Resetting MM: resetting min/max value
**MEASURING RANGES**

OM 402 is a multifunction instrument available in following types and ranges

<table>
<thead>
<tr>
<th>type U/I</th>
<th>standard [code “U/I”]</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC:</td>
<td>±0,1…16/20 mA/2…8 V/4…16 mV</td>
</tr>
<tr>
<td>PM:</td>
<td>±0,1…16/20 mA, ±2…8 V, ±4…16 V</td>
</tr>
<tr>
<td>DPM:</td>
<td>±0,1…16/20 mA, ±2…8 V, ±4…16 V</td>
</tr>
<tr>
<td>Cu:</td>
<td>±0,1…16/20 mA, ±2…8 V, ±4…16 V</td>
</tr>
<tr>
<td>Ni:</td>
<td>±0,1…16/20 mA, ±2…8 V, ±4…16 V</td>
</tr>
<tr>
<td>T/C:</td>
<td>±0,1…16/20 mA, ±2…8 V, ±4…16 V</td>
</tr>
<tr>
<td>DU:</td>
<td>±0,1…16/20 mA, ±2…8 V, ±4…16 V</td>
</tr>
</tbody>
</table>

*LIN* | Linear potentiometer (max. 500 Ω)
*DC* | Digital potentiometer (min. 500 Ω)

**DC** | Standard ±1…4/2…8/4…16 mV/V
**PM** | ±60/±150/±300/±1200 mV
**Du** | ±0,1/±0,25/±0,5/±2/±5 A

*PC - Primary insulation, DI - Double insulation

**ORDER CODE**

<table>
<thead>
<tr>
<th>Type</th>
<th>-</th>
<th>Power supply</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td>U/I</td>
<td>-</td>
<td>10…30 V AC/DC</td>
<td>80…250 V AC/DC</td>
</tr>
</tbody>
</table>

**ORDER CODE SPECIFICATION**

<table>
<thead>
<tr>
<th>UNIT</th>
<th>LC</th>
<th>PWR - U</th>
<th>PWR - I</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**CONNECTING INDIVIDUAL INPUTS**

- **INPUT “I”**
- **INPUT “U”**

**CONNECTOR**

- **DC**
- **PM**
- **Du**

**OM 402**

- **Type**
- **Power supply**
- **Option, see table “Order code specification”**
- **Comparators**
- **Data output**
- **Display color**
- **Others**

*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.
**OM 402PID**

OM 402PID is a 4-digit versatile panel mount PID regulator designed for maximum flexibility and user comfort while maintaining a low price. Type OM 402PID is a multifunction instrument with the option of configuration for 8 various input options, easily configurable in the instrument menu. In its basic configuration the OM 402PID has two regulatory relays and two relay alarm outputs. Desired value can either be constant, or defined by one of 14 programmes.

The instrument is based on a 8-bit microcontroller and a multichannel 24-bit sigma-delta converter, which secures high accuracy, stability and easy operation of the instrument.

- **4-DIGIT PROGRAMMABLE PROJECTION**
- **MULTIFUNCTION INPUT (DC, PM, RTD, T/C, DU)**
- **4 I/O OUTPUTS**
- **RTC DATA RECORDING FACILITY**
- **DIGITAL FILTERS, TARE, LINEARIZATION**
- **SIZE OF DIN 96 X 48 MM**
- **POWER SUPPLY 80…250 V AC/DC**
- **Option**

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

---

**STANDARD FUNCTIONS**

**PROGRAMMABLE PROJECTION**

Selection of input type and measuring range

Setting ([UNI]: manual, in menu optional projection on the display may be set for both limit values of the input signal, e.g. input 0…39.99 V → 0…850.0

Projection: 999…9999

**PID REGULATOR**

Execution: parallel PID, PI or proportional

Relay output: double, two-state, PWM

Analogue output: electrically isolated, modes: heating, cooling, both

Required value: set, from the analogue output, from program

Number of programs/steps: 14/64

Launching: time - one off/weekly, by external input, by buttons

**RELAY OUTPUTS**

Type: digital, settable in the menu

Outputs: relays L1, L2 are alarm outputs, relays L3, L4 are intended as regulatory but can be also used as alarms

**ANALOG OUTPUT**

Usage: where this type of signal is requested by action devices, or it can be used for processing of the measured value by external devices.

Type: electrically isolated, programmable with a 12 bit D/A convertor. Functions, type and range of the output are selectible in the instrument’s menu

**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 thermocouple and compensation of cold junctions, which is adjustable or automatic (temperature at the input brackets)

**DIGITAL FILTERS**

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

Rounding: setting the projection step for display

**MATHEMATIC FUNCTIONS**

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: polynomial, odmocnina

Linearization: through linear interpolation in 50 points (solely via OM Link)

---

**OPERATION**

The instrument is set and controlled by five control keys located on the front panel. 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 OM 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].

---

**OPTION**

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

**INPUT OF DESIRED VALUE** enables the regulator to be used for follow-up control. Both current and voltage inputs can be used.

**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 isolated RS232 and RS485 with the ASCII/MESSBUS/MODBUS/PROFIBUS protocol.
**OM 402PID** is a multifunction instrument available in the following ranges:

- **DC:** ±50 mV to ±300 V ±0.05 %
- **PM:** 0…5 mA, 0…20 mA, 4…20 mA
- **RTD:** ±2/5/10 V, ±10 V, 0…5 mA, 0/4…20 mA
- **T/C:** ±60/±150/±300/±1200 mV
- **Ni:** ±200/±400 mV
- **Cu:** ±150/±300 mV
- **OHM:** 0…2/5/10 V, ±10 V, 0…5 mA, 0/4…20 mA

The second input for setpoint (Option A):
- **DC:** 80…250 V AC/DC ±10 %, max. 13.5 VA, PF ≥ 0.4, ISTP < 40 A/1 ms
- **PM:** 10…30 V AC/DC ±10 %, max. 13.5 VA, PF ≥ 0.4, ISTP < 40 A/1 ms

**POWER SUPPLY**:
- ±10…±30 V AC/DC, ±10 %, max. 13.5 VA, PF ≥ 0.4, ISTP < 40 A/1 ms
- 80…250 V AC/DC, ±10 %, max. 13.5 VA, PF ≥ 0.4, ISTP < 40 A/1 ms

**Excitation**:
- Adjustable: ±5…±24 V DC/AC max. 1.2 W

**MEASURING RANGES**:
- Analog input range:
  - ±2/5/10 V, ±10 V, 0…5 mA, 0/4…20 mA
- Linearization range:
  - ±2/5/10 V, ±10 V, 0…5 mA, 0/4…20 mA

**Connecting Individual Inputs**:

**Connection**:
- **OM 402PID** is galvanically connected with input terminals GND (main board) and additional board by external connection.

**Order Code**:

- **OM 402PID**
- **Power Supply**
  - 80…250 V AC/DC
  - 0…30 V AC/DC
- **Fieldbus Options**
  - RS 232
  - RS 485
  - MODBUS
  - PROFIBUS
- **Data Output**
  - Relay
  - Data 
  - Excitation
- **Input for Setpoint**
  - No: Yes
- **Regulatory Outputs (Output L1, L4)**
  - Relay
  - Data
- **Analog Output**
  - No: Yes
  - Compensated ±500/0.2 V
  - Compensation ±1000/0.2 V
- **Data Output**
  - RS 232
  - RS 485
  - MODBUS
  - PROFIBUS
- **Excitation**
  - 0: 1
- **Other**
  - Custom version: Do not fill in

**DIMENSIONS**:
- **Display**: 96 x 48 x 120 mm
- **Panel cutout**: 90.5 x 45 mm
- **Material**: Noryl GFN2 SE1, incombustible UL 94 V-I
- **EMC**: EN 61326-1
- **Insulation resistance**: Input, output, Exc. > 300 V (ZI), 150 V (DI)
- **Dielectric strength**: Power supply > 670 V (ZI), 300 V (DI)
- **Dielectric strength**: Input, data/analog output > 2.5 kVAC after 1 min between supply and relay output
- **Dielectric strength**: Input, data/analog output > 4 kVAC after 1 min between supply and relay output
- **Dielectric strength**: Power supply > 670 V (ZI), 300 V (DI)
- **Input, output**: Exc. = 300 V (DI), 60 V (DO)

**Technical Data**:
- **Stabilization period**: 0 to 30 %
- **Storage temperature**: -20°C to +60°C
- **Working temperature**: -20°C to +60°C
- **Humidity**: 80 % RH, non-condensing
- **Altitude**: up to 2000 m
- **Vibration**: 5 g
- **SOLAR**
  - ±1 % of range
  - ±1,5°C
- **Dimension**: 96 x 48 x 120 mm (front panel only)
- **Panel cutout**: 90.5 x 45 mm
- **Material**: Noryl GFN2 SE1, incombustible UL 94 V-I

**Technical Specifications**:
- **Display**: 96 x 48 x 120 mm
- **Panel cutout**: 90.5 x 45 mm
- **Material**: Noryl GFN2 SE1, incombustible UL 94 V-I
- **EMC**: EN 61326-1
- **Insulation resistance**: Input, output, Exc. > 300 V (ZI), 150 V (DI)
- **Dielectric strength**: Power supply > 670 V (ZI), 300 V (DI)
- **Dielectric strength**: Input, data/analog output > 2.5 kVAC after 1 min between supply and relay output
- **Dielectric strength**: Input, data/analog output > 4 kVAC after 1 min between supply and relay output
- **Power supply**: > 300 V (DI), 60 V (DO)

**Dimensions**:
- **Display**: 96 x 48 x 120 mm
- **Panel cutout**: 90.5 x 45 mm
- **Material**: Noryl GFN2 SE1, incombustible UL 94 V-I
- **EMC**: EN 61326-1
- **Insulation resistance**: Input, output, Exc. > 300 V (ZI), 150 V (DI)
- **Dielectric strength**: Power supply > 670 V (ZI), 300 V (DI)
- **Dielectric strength**: Input, data/analog output > 2.5 kVAC after 1 min between supply and relay output
- **Dielectric strength**: Input, data/analog output > 4 kVAC after 1 min between supply and relay output
- **Power supply**: > 300 V (DI), 60 V (DO)

**Order Code**:
- **OM 402PID**
- **Power Supply**
  - 0…250 V AC/DC
  - 0…30 V AC/DC
- **Input for Setpoint**
  - No: Yes
- **Regulatory Outputs (Output L3, L4)**
  - Relay
  - Data
- **Analog Output**
  - No: Yes
  - Compensation ±500/0.2 V
  - Compensation ±1000/0.2 V
- **Data Output**
  - RS 232
  - RS 485
  - MODBUS
  - PROFIBUS
- **Excitation**
  - 0: 1
- **Other**
  - Custom version: Do not fill in

Default execution is shown in bold

+ *Launch for sale has not been set*
OPERATION

The instrument is designed for simple measurement without further control. Placement of the decimal point is selectable by a shorting link under the front panel.

CALIBRATION

Contingent corrections of display projection for both limit values of input signal may be performed by trimmers under the front panel (± 10%).

OM 45

The OM 45 model series are low 4½-digit panel instruments. For their dimensions the instruments are suitable for mosaic panels mounting applications.

OM 45 DC

DC VOLTMETER AND AMMETER

OM 45 PM

PROCESS MONITOR

---

- 4½-DIGIT PROJECTION
- SIZE OF DIN 98 X 24 MM
- POWER SUPPLY 230 VAC
- Option
  - Power supply 12…24 VDC

OM 45

The OM 45 model series are low 4½-digit panel instruments. For their dimensions the instruments are suitable for mosaic panels mounting applications.

OM 45 DC

DC VOLTMETER AND AMMETER

OM 45 PM

PROCESS MONITOR
### TECHNICAL DATA

#### PROJECTION
- Display: ±10000, red or green 7-segment LED, digit height 14 mm
- Decimal point: adjustable - by jumper
- Brightness: adjustable - by trimer under front panel

#### INSTRUMENT ACCURACY
- Tk: ±0.2 ppm/°C
- Accuracy: ±0.15 % of range ± 1 digit
- Rate: (12…30 mess./s)
- Oversized capacity: ±20 mA, - not for 200 V, 2x
- Calibration: at 25°C and 40 % r.h.

#### POWER SUPPLY
- 230 VAC/50 Hz, ±10 %, 4 VA
- 12…24 VDC/max. 150 mA, nonisolated
- Power supply is protected by a fuse inside the instrument

#### MECHANIC PROPERTIES
- Material: Noryl GFN2 SE1, incombustible UL 94 V0
- Dimensions: 96 x 24 x 100 mm
- Panel cutout: 90.5 x 22.5 mm

#### OPERATING CONDITIONS
- Connection: connector terminal board, section < 2.5 mm²
- Stabilization period: within 15 minutes after switch-on
- Working temperature: 0°…60°C
- Storage temperature: -10°…85°C
- Cover: IP40 (front panel only)
- E1: safety: EN 61010-1, A2
- Diathermic strength: 2.5 kVAC after 1 min between supply and input
- Insulation resistance: for pollution degree II, measuring cat. III
- AC Power supply > 600 V (ZI), 300 V (DI)
- DC Power supply, input > 300 V (ZI), 150 V (DI)
- EMC: EN 61326-1

#### MEASURING RANGES

<table>
<thead>
<tr>
<th>Type</th>
<th>DC</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0…5 mA</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>±10000 V</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>±10000 V</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>±10000 V</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>±10000 V</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>±10000 V</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>±10000 V</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>±10000 V</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>±10000 V</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>±10000 V</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>±10000 V</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>±10000 V</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>±10000 V</td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td>on request</td>
<td></td>
</tr>
</tbody>
</table>

#### ORDER CODE
- **OM 45**
- **Type**
- **Power supply**
- 230 VAC/50 Hz
- 12…24 VDC, nonisolated
- **Measuring range**
- (see table "Measuring ranges")
- **Display color**
- red green

Please, state the requested projection for selected input range in your order (PM)!
[e.g.: input 0…20 mA = projection 0.00…100.00]
The OM 47 model series are 4½-digit panel instruments with good accuracy and stability.

OM 47DC
DC VOLTMETER AND AMMETER

OM 47AC
AC VOLTMETER AND AMMETER

OM 47PM
PROCESS MONITOR

OM 47OHM
OHMMETER

OM 47RTD
THERMOMETER FOR Pt/Ni

OPERATION
The instrument is designed for simple measurement without further control. Placement of the decimal point is selectable by a shorting link under the front panel.

CALIBRATION
Contingent corrections of display projection for both limit values of input signal may be performed by trimmers under the front panel (± 10%).

OPTION
EXCITATION is suitable for feeding of sensors and transmitters. It is isolated, with continuously adjustable value in the range of 2...24 VDC.
**TECHNICAL DATA**

**PROJECTION**
Display: ±19999, red or green 7-segment LED, digit height 14 mm
Decimal point: adjustable by jumper
Brightness: adjustable by trimmer under front panel

**INSTRUMENT ACCURACY**
- Type: ±0.5% ± 1 digit
- Decimal accuracy: ±0.01% ± 1 digit
- Resolution: ±0.01% ± 1 digit

**Power supply**
- 24 VAC/50 Hz
- 230 VAC/50 Hz
- 110 VAC/50 Hz
- 10…30 VDC, isolated
- 80…250 VAC/DC, isolated

**Excitation**
- Adjustable: 2…24 VDC/50 mA, isolated

**Power supply**
- DC: 24, 110, 230 VAC, 50/60 Hz, ±10%, 5 VA
- AC input: 10…30 VDC, max. 300 mA, Pt=24 A, I<sub>st</sub>=40 A, not isolated
- 80…250 VAC/DC, Pt=5 A, I<sub>st</sub>=40 A, isolated

**MECHANIC PROPERTIES**
- Material: Noryl GFN2 SEI, incombustible UL 94 V-I
- Dimensions: 96 x 48 x 110 mm
- Panel cutout: 92 x 45 mm

**OPERATING CONDITIONS**
- Connection: connector terminal board, section < 2.5 mm²
- Stabilization period: within 15 minutes after switch-on
- Working temperature: 0°…60°C
- Storage temperature: -10°…85°C
- Cover: (IP64), on request IP65 (front panel only)
- E1 safety: EN 61010-1, A2
- Diathermic strength: 4 kVAC after 1 min between supply and input
- Insulation resistance: for pollution degree II, measuring cat. III
- AC Power supply: > 600 V (ZI), 300 V (DI)
- DC Power supply: > 300 V (ZI), 150 V (DI)

**MEASURING RANGES**

<table>
<thead>
<tr>
<th>DC</th>
<th>AC</th>
<th>PM</th>
<th>OHM</th>
<th>RTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>±300 V</td>
<td>±199.99 mV</td>
<td>0…199.99 mV</td>
<td>0…5 mA</td>
<td>±100 ppm/°C</td>
</tr>
<tr>
<td>±199.99 V</td>
<td>±199.99 V</td>
<td>0…199.99 mV</td>
<td>0…199.99 mA</td>
<td>±100 ppm/°C</td>
</tr>
<tr>
<td>±19,999 V</td>
<td>±19,999 V</td>
<td>±2 V</td>
<td>0…199.99 Ω Pt 100</td>
<td>±100 ppm/°C</td>
</tr>
<tr>
<td>±1000 V</td>
<td>±1000 V</td>
<td>±5 V</td>
<td>0…199.99 kΩ Pt 500</td>
<td>±100 ppm/°C</td>
</tr>
<tr>
<td>±10 V</td>
<td>±10 V</td>
<td>±20 V</td>
<td>0…199.99 kΩ Pt 1000</td>
<td>±100 ppm/°C</td>
</tr>
<tr>
<td>±100 V</td>
<td>±100 V</td>
<td>±50 V</td>
<td>0…199.99 kΩ Pt 10000</td>
<td>±100 ppm/°C</td>
</tr>
<tr>
<td>±1000 V</td>
<td>±1000 V</td>
<td>±100 V</td>
<td>0…199.99 kΩ Pt 100000</td>
<td>±100 ppm/°C</td>
</tr>
</tbody>
</table>

**ORDER CODE**

**Type**
- OM 47
- OM 47 DC
- OM 47 AC
- OM 47 PM
- OM 47 OHM
- OM 47 RTD

**Power supply**
- 24 VAC/50 Hz
- 230 VAC/50 Hz
- 110 VAC/50 Hz
- 10…30 VDC, isolated
- 80…250 VAC/DC, isolated

**Measuring range, see table “Measuring ranges”**

<table>
<thead>
<tr>
<th>Comparators</th>
<th>yes</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excitation</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Connection</td>
<td>3-wire</td>
<td>2-wire</td>
</tr>
</tbody>
</table>

**Display color**
- red
- green

Please, state the requested projection for selected input range in your order (PM, OHM) (e.g.: input 0…20 mA > projection 0.00…100.00)

**Connection**
- 2-wire
- 3-wire
- 4-wire

Default execution is shown in bold
The OM 502 model series are 5-digit panel programmable instruments. The instrument is based on an 8-bit microcontroller with a multichannel 24-bit sigma-delta converter, which secures high accuracy, stability and easy operation of the instrument.

**OPERATION**

The instrument is set and controlled by five control keys located on the front panel. 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 display.

**OPTION**

**EXCITATION** is suitable for feeding of sensors and transmitters. It is isolated, with continuously adjustable value in the range of 2...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 signaled 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.

**MEASURED DATA RECORD** is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage (80 records/s) of all measured values up to 8 000 records. Second mode is RTC, where data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

**STANDARD FUNCTIONS**

**PROGRAMMABLE PROJECTION**

Setting (Uni): manual, in menu optional projection on the display may be set for both limit values of the input signal, e.g. input 0...300,0 V  0...450,0

Projection (T): ±99999 (Mode - Standard)

Selection of segment size (T): 0,001/…/0,1/0,2/0,5/1/2/5/10/20/50/100 (Mode - WEIGHT)

**DIGITAL FILTERS**

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

Rounding: setting the projection step for display

**MATHEMATIC FUNCTIONS**

Min/max. value: registration of min/max. value reached during measurement

Tare: designed to reset display upon non-zero input signal

Fixed tare (T): firmly preset tare

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
## TECHNICAL DATA

**Measurement**
- **Display:** 59999...999999, red or green 14-segment LED, digit height 14 mm
- **Description:** last two characters on the display may be used for description of measured quantities (adjustable in the menu)
- **Decimal point:** setting - in menu

### INSTRUMENT ACCURACY
- **TK: 50 ppm°C**
- **Accuracy:** ±0.2% of range + 1 digit (for projection 99999 and 10 mA)
- **±0.05% of range + 1 digit**
- **DC (±A):**
  - **Rate 1:** 1000 mA, 0...8000 Ω
  - **Overload capacity:** Kn (t > 30 ms) - not for 300 V and 5 A
  - **Time base:** (1 s) [for integration]
- **Linearization:** by linear interpolation in 50 points
- **Linearization (LX):** by linear interpolation in 50 points
- **Protection:** by linear interpolation in 256 points/16 tab.

### DATA RECORD
- **Functions:**
  - **Digital filters:**
    - **Linearization (LX):**
  - **Time base (I):**
  - **Overload capacity:**
  - **Accuracy:** ±0.02% of range + 1 digit (for projection 99999 and 10 m/s)

### CALIBRATION
- **FAST**
- **Data record:**
  - **Functions:**
    - **Digital filters:**
      - **Linearization (LX):**
  - **Time base (I):**

### MEASURING RANGES

<table>
<thead>
<tr>
<th>DC</th>
<th>PM</th>
<th>I</th>
<th>LX</th>
<th>DU</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>±99999 mV</td>
<td>±0.5 mA</td>
<td>±0.5 mA</td>
<td>±0.5 mA</td>
<td>±0.5 mA</td>
</tr>
<tr>
<td>B</td>
<td>±99999 mV</td>
<td>±0.20 mA</td>
<td>±0.20 mA</td>
<td>±0.20 mA</td>
<td>±0.20 mA</td>
</tr>
<tr>
<td>C</td>
<td>±99999 mV</td>
<td>±2.00 mA</td>
<td>±2.00 mA</td>
<td>±2.00 mA</td>
<td>±2.00 mA</td>
</tr>
<tr>
<td>D</td>
<td>±99999 mV</td>
<td>±10 V</td>
<td>±10 V</td>
<td>±10 V</td>
<td>±10 V</td>
</tr>
<tr>
<td>E</td>
<td>±99999 mV</td>
<td>±100 V</td>
<td>±100 V</td>
<td>±100 V</td>
<td>±100 V</td>
</tr>
<tr>
<td>F</td>
<td>±99999 mV</td>
<td>±1000 V</td>
<td>±1000 V</td>
<td>±1000 V</td>
<td>±1000 V</td>
</tr>
<tr>
<td>G</td>
<td>±99999 mV</td>
<td>±0.0005 A</td>
<td>±0.0005 A</td>
<td>±0.0005 A</td>
<td>±0.0005 A</td>
</tr>
</tbody>
</table>

### ORDER CODE

**OM 502**
- **Type**
  - **Power supply:**
    - 10...30 V AC/DC
    - 80...250 V AC/DC
- **Measuring range, two table**
- **Comparators**
  - 1x relay (Form A)
  - 3x relays (2x Form A + 1x Form C)
  - 4x relays (2x Form A + 2x Form C)
- **Data output**
  - [9x Type „LX“ always in standard] 05 0252
    - 05 0455
    - MODBUS
    - PROFIBUS
- **Exclusion**
  - 00
  - 01
  - 02
  - 03

**Default execution is shown in bold**

---

**CONNECTION**

![Connection Diagram](image-url)

**POWER SUPPLY**
- **10...30 V AC/DC**
- **80...250 V AC/DC**
- **Fixed:** 10 V, max. load 80 D

**MECHANICAL PROPERTIES**
- Material: Noryl GFN2 SE1, incombustible UL 94 V-1
- Dimensions: 96 x 48 x 120 mm
- Panel cutout: 90.5 x 45 mm

**OPERATING CONDITIONS**
- Connection: connector terminal board, section < 15/2.5 mm²
- Stabilization period: within 15 minutes after switch-on
- Working temperature: -20...60°C
- Storage temperature: -25...85°C
- Cover: (R44 [front panel only])
- E1 safety: EN 61010-1, A2
- Dialytic strength: 4 kVAC after 1 min between supply and input
- 4 kVAC after 1 min between supply and data/analog output
- 2.5 kVAC after 1 min between input and data/analog output
- Insulation resistance: for pollution degree II, measuring cat. II
- Power supply: 870 V [D3], 300 V [D1]
- Input/output, Exc: > 300 V [D3], 150 V [D1]
- EMC: EN 61000-6-3
OPERATION

The instrument is set and controlled by four control keys located on the front panel. 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.

All settings are stored in the EEPROM memory (they hold even after the instrument is switched off).

OPTION

COMPARATORS are assigned to monitor two limit values with relay output. 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.

TIME BACKUP is suitable where time needs to be measured even in case of supply voltage outage (upon power supply outage the instrument does not display).

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION
Setting: measuring mode counter/frequency/timer/clock with adjustable calibration coefficient, time base and projection
Projection: -99999...99999

LINEARIZATION
Linearization: through linear interpolation in 25 points (solely via OML Link)

DIGITAL FILTERS
Exponential average: from 2...100 measurements
Rounding: setting the projection step for display
Filtration constant: transmits input signal up to 5...1 000 Hz

FUNCTIONS
Preset: initial non-zero value, which is always read after resetting the instrument to zero
Setting current value: initial value, e.g. the amount currently passed-through

EXTERNAL CONTROL*
Hold: display/instrument blocking
Lock: control keys blocking
Resetting: counter resetting
Start/Stop: stopwatch/timer control

OMM 650UC

The OMM 650UC type is a universal low-cost counter/frequencymeter/stopwatch.
The instrument is based on an 8-bit microcontroller, which ensures good accuracy, stability and easy operation of the instrument.
**TECHNICAL DATA**

**PROJECT**

Display: 0.99999...999999, red or green 7-segment LED, digit height 9.1 mm.

Decimal point: setting - in menu

Brightness: setting - in menu

**MEASUREMENT**

Accuracy: ±0.5% of value + 1 digit

Overload capacity: 10x (t < 30 ms); 2x

Time backup: yes

Display color: red or green

**POWER SUPPLY**

10...30 VDC/24 VAC, max. 4 VA, PF > 0.4, I<sub>STP</sub> < 45 A/1 ms, isolated

**HYPERTHERMIA**

Hysteresis: 0.999999

Delay: 0.9999 s

Output: 2x bistable relays (48 VAC/30 VDC, 3 A)

**DIN AM 650UC**

1x relay (Form A)

2x relays (Form A)

1x open collector

2x open collectors

1x Time backup

Display color: red or green

Default execution is shown in bold.
The OML 643RS model is a 6-digit panel display device for projection of data from serial line RS 485.

The OML 643UQC type is a universal low-cost counter/frequency-meter/evaluation of signal from IRC sensor/stopwatch/timer.

The instrument is based on an 8-bit microcontroller, which ensures good accuracy, stability and easy operation of the instrument.

**STANDARD FUNCTIONS**

**PROGRAMMABLE PROJECTION**

- Input (RS): RS 485, with protocol ASCII or MODBUS - RTU
- Selection (UQC): measuring mode
- Setting: measuring mode counter/frequency/timer/clock with adjustable calibration coefficient, time base and projection
- Measuring mode: counter/frequency/UP-DW counter/frequency/counter for IRC
- Measuring channels: A and B, from one measuring input two independent functions may be evaluated (counter/frequency)
- Projection: -99999…999999

**LINEARIZATION**

- Linearization: through linear interpolation in 25 points (solely via OM Link)

**DIGITAL FILTERS**

- Exponential average: from 2…100 measurements
- Rounding: setting the projection step for display
- Filtration constant: transmits input signal up to 5…1 000 Hz

**FUNCTIONS**

- Preset: initial non-zero value, which is always read after resetting the instrument to zero
- Setting current value: initial value, e.g. the amount currently passed-through
- Tare: designed to reset display upon non-zero input signal

**EXTERNAL CONTROL**

- Hold: display/instrument blocking
- Lock: control keys blocking
- Resetting: counter resetting
- Start/Stop: stopwatch/timer control
- Magnet: easy contactless operation of preselected functions

**OPERATION**

The instrument is set and controlled by five control keys located at the rear of the instrument. 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].

**OPTION**

**COMPARATOR** is assigned to monitor a limit value with an optional relay output.

The limit has 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 limit is signalled by LED and simultaneously by the switch-on of the relay.

**TIME BACKUP** is suitable where time needs to be measured even in case of supply voltage outage (upon power supply outage the instrument does not display)

---

**OML 643**

The instrument is based on an 8-bit microcontroller, which ensures good accuracy, stability and easy operation of the instrument.

**OML 643UQC**

- UNIVERSAL COUNTER

**OML 643RS**

- DATA DISPLAY RS 485
**TECHNICAL DATA**

**PROJECTION**
Display: 360x309, red or green 7-segment LED, digit height 14 mm
Decimal point: setting - in menu
Brightness: setting - in menu

**INSTRUMENT ACCURACY**

<table>
<thead>
<tr>
<th>Type</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK</td>
<td>±0,02% of value + 1 digit</td>
</tr>
<tr>
<td>±0,02% of value ±50 ms (stopwatch)</td>
<td></td>
</tr>
</tbody>
</table>

**Overload capacity:**
- 10x (t < 30 ms)
- 2x (t > 30 ms)

**Watchdog:**
- Reset after 500 ms

**Functions:**
- HOLD, LOCK, Digital filters, Tare
- Data backup, Time backup, Preset
- Input filters: Filtration constant, Rounding
- Time base: 0,5/1/5/10 s

**Calibration constant:**
- 0,00001…999999
- 0/5/40/100/1000 Hz

**PRESET:**
- 0…999999

**OM Link:**
- Company communication interface for operation, setting and update of instruments

**Calibration:**
- at 25°C and 40 % r.h.

**COMPARATOR**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit</td>
<td>-99999…999999</td>
</tr>
<tr>
<td>Hysteresis</td>
<td>-99999…999999</td>
</tr>
<tr>
<td>Delay</td>
<td>0…99,9 s</td>
</tr>
</tbody>
</table>

**Power supply:**
- 10…30 VDC/24 VAC, ±10 %, 0,3VA, PF=0,4, $i_{tt}=45 A/11 ms$
- 10…30 VDC/24 VAC, ±10 %, 0,3VA, PF=0,4, $i_{tt}=45 A/11 ms$, isolated

**MECHANIC PROPERTIES**

<table>
<thead>
<tr>
<th>Material</th>
<th>Polypropylene, incombustible UL 94 V-0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>96 x 48 x 30 mm</td>
</tr>
<tr>
<td>Panel cutout</td>
<td>92 x 44 mm</td>
</tr>
</tbody>
</table>

**OPERATING CONDITIONS**

**Connection:**
- Connector terminal board, section < 1,5 mm²
- Stabilization period: within 15 minutes after switch-on
- Working temperature: -20°…60°C
- Storage temperature: -20°…85°C
- Cover: IP65 (front panel only, with the silicone gasket installed), rear side is open!
- EI safety: EN 61010-1, A2
- Di netic strength: 2,5 kVAC after 1 min between supply and input
- 4 kVAC after 1 min between supply and relay output
- Insulation resistance: for pollution degree II, measuring cat. III.
- Power supply > 300 V (ZI)
- Input, output > 300 V (DI)

**EMC:**
- EN 61326-1

**El. safety:**
- EN 61010-1, A2

**Dielectric strength:**
- 2,5 kVAC after 1 min between supply and input
- 4 kVAC after 1 min between supply and relay output

**Insulation resistance:**
- for pollution degree II, measuring cat. III.
- Power supply > 300 V (ZI)
- Input, output > 300 V (DI)

**MEASURING RANGES**

**OML 643** is a multifunction instrument available in following types

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UQC</td>
<td>0…30 V, comparation levels are adjustable in the menu</td>
</tr>
<tr>
<td>LP/DW</td>
<td>0,1 Hz…50 kHz for (UQC and LP/DW), 10 kHz for (QUAD - counter)</td>
</tr>
</tbody>
</table>

**Measuring modes**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Counter/Frequencymter</th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGLE</td>
<td>Counter/Frequencymter</td>
</tr>
<tr>
<td>QUAD</td>
<td>Counter/Frequencymter for IRC sensors</td>
</tr>
<tr>
<td>LP/DW</td>
<td>LP/DW Counter/Frequencymter</td>
</tr>
<tr>
<td>LP</td>
<td>LP Counter/Frequencymter</td>
</tr>
<tr>
<td>DW</td>
<td>DW Counter/Frequencymter</td>
</tr>
<tr>
<td>TIME</td>
<td>Stopwatch</td>
</tr>
<tr>
<td>RTC</td>
<td>Timer</td>
</tr>
<tr>
<td>RS</td>
<td>RS 485, Protocol ASCII, MODEBUS - RTU</td>
</tr>
</tbody>
</table>

**POWER SUPPLY**

- 10…30 V AC/DC, isolated
- 10…30 V AC/DC, 0

**ORDER CODE**

**OML 643**

**Type**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td>10…30 V AC/DC</td>
</tr>
<tr>
<td>Comparators</td>
<td>0</td>
</tr>
<tr>
<td>Time backup</td>
<td>0</td>
</tr>
<tr>
<td>Display color</td>
<td>0</td>
</tr>
<tr>
<td>Gasket</td>
<td>0</td>
</tr>
<tr>
<td>Magnet</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
</tr>
</tbody>
</table>

**Default execution is shown in bold**
The OM 653UQC type is a universal low-cost counter/frequencymeter/evaluation of signal from IRC sensor/stopwatch/timer.

The instrument is based on an 8-bit microcontroller, which ensures good accuracy, stability and easy operation of the instrument.

**STANDARD FUNCTIONS**

**PROGRAMMABLE PROJECTION**
- Selection: measuring mode
- Setting: measuring mode counter/frequency/timer/clock with adjustable calibration coefficient, time base and projection
- Measuring modes: counter/frequency/UP-DW counter/frequency/counter for IRC
- Measuring channels: A and B, from one measuring input two independent functions may be evaluated (counter/frequency)
- Projection: -99999…999999

**DIGITAL FILTERS**
- Exponential average: from 2…100 measurements
- Rounding: setting the projection step for display
- Filtration constant: transmits input signal up to 5…1 000 Hz

**FUNCTIONS**
- Preset: initial non-zero value, which is always read after resetting the instrument to zero
- Setting current value: initial value, e.g. the amount currently passed-through
- Tare: designed to reset display upon non-zero input signal

**EXTERNAL CONTROL**
- Hold: display/instrument blocking
- Lock: control keys blocking
- Resetting: counter resetting
- Start/Stop: stopwatch/timer control

**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 two limit values with relay output. 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 signaled 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 and its type and range are selectable in menu.

**TIME BACKUP** is suitable where time needs to be measured even in case of supply voltage outage (upon power supply outage the instrument does not display).
TECHNICAL DATA

PROJECTION
Display: red or green 7-segment LED, digit height 14 mm, red/green/orange 7-segment LED, digit height 20 mm

INSTRUMENT ACCURACY
Tt: 5 ppm/°C
Accuracy: ±0.02 % of value ± 1 digit
±0.02 % of value ± 10 ms (RTC)
Overload capacity: 3x (t < 30 ms); 2x
Watch-dog: reset after 500 ms
Functions: HOLD, LOCK, Digital filters, Tare
Input filters: filtration constant, Rounding
Time base: 0.5/1/5/10 s
Calibration constant: 0.00001…999999
Filtration constant: 0/5/40/100/1000 Hz
PRESET: 0…999999
OM Link: Company communication interface for operation, setting and update of instruments
Calibration: at 25°C and 40 % r.h.

DATA OUTPUT
Protocol: ASCII, PROFIBUS
Data format: 8 bit + no parity + 1 stop bit (ASCII)
Rate: 300…230 400 Baud
9 600 Baud…12 Mbaud (PROFIBUS)
RS 232: isolated
RS 485: isolated, addressing (max. 31 instruments)

OUTPUT
Type: digital, setting in menu, contact switch-on < 50 ms
Limits: -99999…999999; -999…9999
Hysteresis: 0…999999; -999…9999
Delay: 0…99,9 s
Output: 2x Form A relays (250 VAC/30 VDC, 3 A), 2x open collectors

DATA OUTPUT
Protocol: ASCII, PROFIBUS
Data format: 8 bit + no parity + 1 stop bit (ASCII)
Rate: 300…230 400 Baud
9 600 Baud…12 Mbaud (PROFIBUS)
RS 232: isolated
RS 485: isolated, addressing (max. 31 instruments)

APPLICATION
Type: programmable with 12-bit D/A converter, type and range are selectable in programming mode
Non-linearity: 0.1 % of range
Tt: 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)

EXCITATION
Admissible: 5…24 VDC max. 2.5 W
POWER SUPPLY
10…30 V AC/DC, ±10 %, max. 13.5 VA, PF ≥ 0.4, I STP< 40 A/1 ms
80…250 V AC/DC, ±10 %, max. 13.5 VA, PF ≥ 0.4, I STP< 40 A/1 ms
Power supply is protected by a fuse inside the instrument

MECHANICAL PROPERTIES
Material: Noryl GFN2 SE1, incombustible UL 94 V-I
Dimensions: 96 x 48 x 120 mm
Panel cutout: 90.5 x 45 mm

OPERATING CONDITIONS
Connection: connector terminal board, section < 1,5/2.5 mm 2
Stabilization period: within 15 minutes after switch-on
Working temperature: -20°…60°C
Storage temperature: -20°…85°C
Cover: IP64 (front panel only)
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, Exc. > 300 V (ZI), 150 V (DI)
EMC: EN 61326-1

OM 653 is a multifunction instrument available in following types

UUC: 0…30 V/0…300 V, comparison levels are adjustable in the menu input frequency 0.1 Hz…5 kHz (20 kHz for QUADR and UP/DW, 10 kHz for QUADR - counter)

Measuring modes
SINGLE Counter/Frequencymeter
QUADR Counter/Frequencymeter for IRC sensors
UP/DW UP/DW Counter/Frequencymeter
- used in inputs A, B (direction) and can display count/frequency
- used in inputs A (UP), B (DW) and can display count/frequency
TIME Stopwatch
RTC Timer

ORDER CODE
Power supply
10…30 V AC/DC 0
80…250 V AC/DC 2
Comparators
1x relay [Form A] 0
2x relays [Form A] 3
1x open collector 4
2x open collectors
Output
Analog output 0
Digital output 2
Excitation
1x relay 2
Time backup
Yes, for measuring mode “watch” 1
Display color
Blue [14 mm] 1
Red [20 mm] 3
Other
customer version, do not fill in 00

CONNECTION

OM 653UQC - -

Only for measuring mode "Watch"

OM 653 UQC

Power supply
- -
Comparators
- -
Output
- -
Excitation
- -
Time backup
- -
Display color
- -
Other
customer version, do not fill in

Default execution is shown in bold
* Launch for sale has not been set
### OPERATIONS

The instrument is set and controlled by five control keys located on the front panel. All programmable settings of the instrument may be performed in three adjusting modes:

- **LIGHT MENU** is protected by an optional number code and contains solely items necessary for setting instrument.
- **PROFI MENU** is protected by an optional number code and contains complete instrument setting.
- **USER MENU** may contain arbitrary items from the programming menu (LIGHT/PROFI), 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 display.

### OPTION

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

- **COMPARATORS** are assigned to compare 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.

- **MEASURED DATA RECORD** is an internal time control of data collection. It is suitable where it is necessary to register measured values. Mode RTC, where date record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmits via PC via serial interface RS232/485 and OML Link.

### OM 602UQC

**OM 602UQC** is a universal 6-digit panel programmable dual-channel impulse counter/frequency meter/evaluation of signal from [IRC] sensors and timer/clock.

The instrument is based on a single chip microprocessor and a powerful programmable gate array which guarantees high accuracy, stability and easy control.

**TIME BACKUP** is suitable where time needs to be measured even in case of supply voltage outage (upon power supply outage the instrument does not display).

### STANDARD FUNCTIONS

**PROGRAMMABLE PROJECTION**

- Input: NPN, PNP, upon contact, IRC, line, SSI
- Measuring mode: counter/frequency/UP-DW counter + frequency/counter for IRC
- Calibration: calibration coefficient for each channel may be set in menu independently
- Projection: -99999…999999 with fixed or floating DP in format 10/24/60

**PROGRAMMABLE PROJECTION**

- Measuring channels: A and B, from one or more measuring inputs two independent functions may be evaluated
- Time base: 0,05/0,5/1/2/5/10/20 s/1/2/5/10/15 min

**LINEARIZATION**

- Linearization: through linear interpolation in 50 points (solely via OML Link)

**FUNCTIONS**

- Preset: initial non-zero value, which is always read after resetting the instrument to zero
- Summation: registration of the number upon shift operation
- Pre-division constant: 1…999999

**DIGITAL FILTERS**

- Filtration constant: 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**

- 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 at the same time between inputs - sum, difference, product, quotient

**EXTERNAL CONTROL**

- Lock: control keys blocking
- Hold: display/instrument blocking
- Tare: tare activation
- Resetting MM: resetting min/max value, counter resetting
- Start/Stop: stopwatch/timer control
TECHNICAL DATA

PROJECTION
Display: 0.69999... 9999999, red or green: M-segment LED, digit height 14 mm
Decimal point: setting in menu
Brightening: setting in menu

INSTRUMENT ACCURACY

EXCITATION
Update of instruments
Mathematic operations

INSTRUMENT ACCURACY
Calibration:
OM Link:
Watch-dog:
RTC
Ext. control:
Functions:
Digital filters:
PRESET:
Filtration constant:
Calibration constant:
Time base:
Input filters:
Accuracy:
TK:
Brightness:
Decimal point:
Display:

PROJECTION
UP/DW counter for IRC + frequency
input frequency 0.002 Hz…1 MHz (500 kHz for QUADR and UP/DW)

CONNECTION
RTC  Timer
TIME  Stopwatch
-used in inputs A (UP), B (DW) and can display count/frequency
UP - DW  UP - DW Counter/Frequencymeter
-used in inputs A, B (direction) and can display count/frequency
UP/DW  UP/DW Counter/Frequencymeter
xNOR  Counter/Frequencymeter with function NOR
SINGLE  Counter/Frequencymeter
Measuring modes pro kanál 1 a 2

OM 602 is a multifunction instrument available in following types

MEASURING RANGES
UCC: 0…60 V, comparation levels are adjustable in the menu
input frequency 0.002 Hz…1 MHz [500 kHz for QUADR and LP/DW]

Measuring modes pro kanál 1 a 2
SINGLE  Counter/Frequencymeter
A ∗ B  Counter/Frequencymeter with function AND
knOR  Counter/Frequencymeter with function NOR
DUTY  Duty
QUADR  Counter/Frequencymeter for IRS sensors
LP/DW  LP/DW Counter/Frequencymeter
-used in inputs A, B [direction] and can display count/frequency
LP - DW  LP - DW Counter/Frequencymeter
-used inputs A (LP), B (DX) and can display count/frequency
TIME  Switchtrip
RTC  Timer

ORDER CODE SPECIFICATION

ORDER CODE
OM 602UQC

Power supply
2x standard [50 mV, 80 V]
Synchronous serial interface (SSI)* line

Comparators

Data output

Analog output

Time backup

Exitation

Data record

Display color

Other

- Launch fail safe has been set

Technical details are shown in bold

Power supply is protected by a fuse inside the instrument

MECHANICAL PROPERTIES
Material: Noryl GF20 SE1, incombustible UL 94 V-I
Dimensions: 98 x 48 x 120 mm
Panel output: 92.5 x 45mm

OPERATING CONDITIONS
Connection: connector, terminal board, section = 18/2.5 mm²
Shakilization period: within 15 minutes after switchon
Waking temperature: 20°…85°C
Storage temperature: 20°…85°C
Cover: IP54 [front panel only]
ES safety: EN 61010-1, II
Dielectric strength: 4kVAC after 1 mm between supply and input
4kVAC after 1 mm between supply and data/analog output
2.5kVAC after 1 mm between input and data/analog output
Insulation resistance: for pollution degree II, measuring cat. II
Power supply = 670 V (D), 300 V (D)
input, output, Exc. = 300 V (D), 150 V (D)
EMC: EN 61326
Sismic capacity: EC 980 1993, par. 6

PI - Primary insulation, DI - Double insulation

### Standard Functions

**Programmable Projection**
- Input (RS): optional RS 232 or RS 485, with protocol ASCII, MESSBUS, PROFIBUS, MODBUS - RTU
- Projection: -99999...999999 with fixed or floating DP

**Setting (AO):**
- Optional projection may be set for both limit values of the AO range in „CM“

**Digital Filters**
- Exponent, average: from 2...255 measurements
- „n“ value: from 2...100 measurements
- Rounding: setting the projection step for display

**Functions**
- Min/max: register min./max. values during measurement
- Mat. operations: polynomial, 1/x, log, exponent, mod, modulo, modulo, sin \( x \)

**Type of output signal (AV):**
- Sinus/saw/triangle/rectangle/random functions (selected by control keys or on inputs 1 and 2)

### External Control*
- Hold: display/instrument blocking
- Lock: control keys blocking
- Resetting MM: resetting min/max value
- Functions: control of optional functions from instrument menu

### Operation

The instrument is set and controlled by five control keys located on the front panel. 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/ 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 (w/ 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 display.

### Option

**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.

**Excitation** is suitable for Power supply sensors and transducers. It flows in the range of 5...24 VDC.

**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/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.
**TECHNICAL DATA**

**PROJECTION**
- Display: 96x96, red or green 14-segment LED, digit height 14 mm, 96x96, red/green/orange 7-segment LED, digit height 20 mm
- Decimal point: setting in menu
- Brightness: setting in menu

**INSTRUMENT ACCURACY**
- Input filters: Filtration constant, Rounding
- Functions: HOLD, LOCK, Digital filters, Tare
- OM Link: Company communication interface for operation, setting and update of instruments
- Calibration: ±2°C and ±4% r. ch.

**COMPARATOR**
- Type: digital, setting in menu, contact switch ≤ 30 ms
- Limits: 0.999999...250 V AC/DC
- Power supply: 10…30 V AC/DC, ±10%, max. 13.5 VA, PF ≥ 0.4, I STP< 40 A/1 ms

**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 [Modbus]
- Rate: 9600, 230400 baud
- 9600 baud, 12 bits [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: ± 0.5 °C
- TC: response to change of value ≤ 1 ms
- Ranges:
  - 0...2/5/10 V, ±10 V, ±0.5 mA, ±0...25 mA
  - (comp. = 0 V/0.2 V or 1 V/0.24 V)

**EXCITATION**
- Adjustable: 5...24 V, max. 1.2 W
- Adjustable: 5...24 V, max. 1.2 W
- Non-linearity: 0.1% of range
- TK: ± 15 ppm/°C
- Ranges:
  - 0...2/5/10 V, ±10 V, ±0.5 mA, ±0...25 mA
  - (comp. = 0 V/0.2 V or 1 V/0.24 V)

**POWER SUPPLY**
- 10…30 V AC/DC
- 80…250 V AC/DC

**MECHANIC PROPERTIES**
- Material: Noryl GFN2 SE1, incombustible UL 94 V-I
- Dimensions: 96 x 48 x 120 mm
- Panel cutout: 90.5 x 45 mm
- 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.

**MEASURING RANGES**

**CONNECTION**

**ORDER CODE SPECIFICATION**

**ORDER CODE**

- **OM 602**
- Type: order code shall not include blank spaces
- Power supply: 10...30 V AC/DC
- Power supply: 80...250 V AC/DC
- 96, 94, 93, 92, 91, 90
- 1
- Option, see table "Order code specification"

- **Data output**
  - Programmable analog output
  - RS 232
  - RS 485
  - MODBUS
  - MESSBUS
- **Excitation**
  - Adjustable: 5...24 V
  - Adjustable: 5...24 V

- **Default execution is shown in bold**

- **SW validation** (AV): Class B, C in compliance with IEC 62138, 61226

- **EMC**
  - EN 61326-1
- **Seismic capacity**
  - IEC 980: 1993, par. 6
The OM 621BCD model is a 6-digit panel monitor of serial or parallel BCD/BIN signal and monitor of active transformer tapping lead, allowing for projection of transitional status and servomotor running.

The instrument is based on an 8-bit processor that secures high accuracy, stability and easy operation of the instrument.

**OPERATION**

The instrument is set and controlled by five control keys located on the front panel. All programmable settings of the instrument are realised in two adjusting modes.

**CONFIGURATION MENU** (hereinafter referred to as CM) is protected by an optional number code and contains complete instrument setting.

**USER MENU** may contain arbitrary programming settings defined in „CM” with another selective restriction (see, change).

All settings are stored in the EEPROM memory (they hold even after the instrument is switched off).

**OPTION**

**EXCITATION** is suitable for feeding of sensors and transmitters. It is isolated, with continuously adjustable value in the range of 2...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 OUTPUT** 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 DIN MessBus/ASCII 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.

**SHORT FEATURES**

- 6-DIGIT PROGRAMMABLE PROJECTION
- INPUT BCD/TR ANSFORMER TAPPING LEAD
- SIZE OF DIN 96 X 48 MM
- POWER SUPPLY 80...250 V AC/DC
- Option
  - Excitation
  - Comparators
  - Data output
  - Analog output
  - Power supply 8...50 V AC/DC

**STANDARD FUNCTIONS**

**PROGRAMMABLE PROJECTION**

- **Calibration**: the type of BCD/transformer lead input may be set in „CM”
- **Projection**: -99999...99999

**OUTPUT**

- **Relays’ functions**: For the tapping leads display device it is possible to set the regime of relay switching - BCD (10=10000)/BIN (10=01010)
## TECHNICAL DATA

### INPUT

**BCD display device**
- Serial BCD: 4 data + 6 strobe, 8 data + 3 strobe, 12 data + 2 strobe, 4 data + 3 position + 1 strobe
- Parallel BCD/BCD: 25 data/24 data

**Level**: 5…24 VDC, 10…60 VDC

**Addressing**: up to 8 display devices

**Tapping leads display device**
- Input: 5…24 VDC, 10…60 VDC
- Number of tap. leads: 24 + 1 signalling (on request 27)
- Input resistance: 5,5 kΩ/V

**Input**
- 5…24 VDC, 10…60 VDC, 90…130 VDC, 190…250 VDC

**Number of tap. leads**: 24 + 1 signalling (on request 27)

**Input resistance**: 5,5 kΩ/V

### COMPARATOR

**Type**: digital, setting in menu, contact switch < 15 ms

**Limits**: +99999, -99999

**Hysteresis**: 0…99999

**Delay**: 0,999 s

**Output**: 2x (3) Form A relays and 2x Form C relays

### DATA OUTPUT

**Data format**: 7 bit + even parity + 1 stop bit (DIN Messbus)

**Rate**: 600…115 200 Baud

**RS 232**: isolated

**RS 485**: isolated, addressing (max. 31 instruments)

### ANALOG OUTPUT

**Type**: isolated, programmable with resolution of max. 10 000 points, AO corresponds with the displayed data, type and range are selectable in programming mode

**Non-linearity**: 0,2 % of range

**TK**: 50 ppm/°C

**Rate**: response to change of value < 40 ms

### EXCITATION

**Adjustable**: 0…24 VDC/50 mA, isolated

### POWER SUPPLY

- 9…50 V AC/DC, ±10 %, I<sub>SP</sub> = 40 A, t<sub>sp</sub> = 40 A/1 ms
- 80…250 V AC/DC, ±10 %, I<sub>SP</sub> = 40 A, t<sub>sp</sub> = 40 A/1 ms

Power supply is protected by a fuse inside the instrument

### MECHANIC PROPERTIES

**Material**: Noryl GFN2 SE1, incombustible UL 94 V-1

**Dimensions**: 96 x 48 x 154 mm

### EXCITATION

**Adjustable**: 2…24 VDC/50 mA, isolated

### POWER SUPPLY

- 9…50 V AC/DC, ±10 %, I<sub>SP</sub> = 40 A, t<sub>sp</sub> = 40 A/1 ms
- 80…250 V AC/DC, ±10 %, I<sub>SP</sub> = 40 A, t<sub>sp</sub> = 40 A/1 ms

Power supply is protected by a fuse inside the instrument

### OPERATING CONDITIONS

**Connection**: connector terminal board, section < 2,5 mm²

**Stabilization period**: within 15 minutes after switch-on

**Working temperature**: 20°…60°C

**Storage temperature**: 20°…85°C

**Cover**: IP64 (front panel only)

**EL safety**: EN 61010-1, A2

**Dielectric strength**: 4 kVAC after 1 min between supply and input

**Insulation resistance**: for pollution degree II, measuring cat. III.

**Power supply > 600 V (ZI), 300 V (DI)**

**Input, output, Exc. > 300 V (ZI), 150 V (DI)**

**EMC**: EN 61326-1

### CONNECTION

**Display color**: red or green 14-segment LED, digit height 14 mm

**Brightness**: fixed

**INSTRUMENT ACCURACY**

**TK**: 60 ppm/°C

**Watch-dog**: reset after 1,2 s

**Calibration**: at 25°C and 40 % r.h.

### COMPARATOR

**Type**: digital, setting in menu, contact switch < 15 ms

**Limits**: -99999…999999

**Hysteresis**: 0…99999

**Delay**: 0…99,9 s

**Output**: 2x (3) Form A relays and 2x Form C relays

### DATA OUTPUT

**Data format**: 7 bit + even parity + 1 stop bit (DIN Messbus)

**Rate**: 600…115 200 Baud

**RS 232**: isolated

**RS 485**: isolated, addressing (max. 31 instruments)

### ANALOG OUTPUT

**Type**: isolated, programmable with resolution of max. 10 000 points, AO corresponds with the displayed data, type and range are selectable in programming mode

**Non-linearity**: 0,2 % of range

**TK**: 50 ppm/°C

**Rate**: response to change of value < 40 ms

**Ranges**: 0…2/5/10 V, 0…5 mA, 0/4…20 mA (comp. < 500 Ω)

### EXCITATION

**Adjustable**: 2…24 VDC/50 mA, isolated

### POWER SUPPLY

- 9…50 V AC/DC, ±10 %, 13,5 VA, PF ≥ 0,4, I<sub>SP</sub> = 40 A, t<sub>sp</sub> = 40 A/1 ms
- 80…250 V AC/DC, ±10 %, 13,5 VA, PF ≥ 0,4, I<sub>SP</sub> = 40 A, t<sub>sp</sub> = 40 A/1 ms

Power supply is protected by a fuse inside the instrument

### MECHANIC PROPERTIES

**Material**: Noryl GFN2 SE1, incombustible UL 94 V-1

**Dimensions**: 96 x 48 x 154 mm

**Panel cutout**: 90,5 x 45 mm

### OPERATING CONDITIONS

**Connection**: connector terminal board, section < 2,5 mm²

**Stabilization period**: within 15 minutes after switch-on

**Working temperature**: -20°…60°C

**Storage temperature**: -20°…85°C

**Cover**: IP64 (front panel only)

**El. safety**: EN 61010-1, A2

**Dielectric strength**: 4 kVAC after 1 min between supply and input

**Insulation resistance**: for pollution degree II, measuring cat. III.

**Power supply > 600 V (ZI), 300 V (DI)**

**Input, output, Exc. > 300 V (ZI), 150 V (DI)**

**EMC**: EN 61326-1

### ORDER CODE

<table>
<thead>
<tr>
<th>OM 621BCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
</tr>
<tr>
<td>Input</td>
</tr>
<tr>
<td>Comparators</td>
</tr>
<tr>
<td>Output</td>
</tr>
<tr>
<td>Excitation</td>
</tr>
<tr>
<td>Display color</td>
</tr>
</tbody>
</table>

Default execution is shown in bold
The measured units may be projected on the display.

All settings are stored in the EEPROM memory (they hold even after the instrument is switched off). The program enables modification and filing of all instrument settings as well as firmware updates (with OML cable). The program is also designed for visualization and filing of measured values from more instruments.

Standard equipment is the OM Link interface, which together with operation panel. 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 is 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 display.

**OPERATION**

The instrument is set and controlled by five control keys located on the front panel. 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 is 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 display.

**OPTION**

Comparators are assigned to monitor four or eight limit values with relay output. For each input the user may select an arbitrary number of relays with the regime: LIMIT/FROM-TO. The limits have adjustable hysteresis within full range of the display and selectable delay of the switch-off. 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.

**STANDARD FUNCTIONS**

**PROGRAMMABLE PROJECTION**

Selection of output type and measuring range

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

Projection: 999…9999

**SWITCHING OF INPUTS**

Manual: by key on the front panel or from the outside [EXT. inputs]

Automatic: by a set time interval

**COMPENSATION**

- of conduct (RTD, OHM): automatic [3- and 4-wire] or manual in menu [2-wire]
- of conduct in probe (RTD): internal connection [conductance in measuring head], 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 (temperature at the input brackets)

**LINEARIZATION**

- Linearization: by linear interpolation in 255 points/8 channels [solely via OM Link]

**DIGITAL FILTERS**

- Floating/Exp./Arithmetic average: from 2…30/100/100 measurements
- Rounding: setting the projection step for display

**FUNCTIONS**

- 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, Vx, logarithm, exponential, power, root, sin x and at the same time between inputs - sum, difference, product, quotient

**EXTERNAL CONTROL**

- EXT inputs: switching inputs from superior systems or control Hold, Lock, Tare and resetting Min/max. value
MEASURING RANGES

OMU 40BUNI is a multifunction instrument available in following types and ranges

| DC | ±0,1 mV | ±0,2 mV | ±0,5 mV | ±1 mV | ±5 mV | ±10 mV | ±20 mV | ±50 mV | ±100 mV | ±200 mV | ±500 mV | ±1000 mV |
| PM | ±2 mA | ±5 mA | ±10 mA | ±20 mA | ±50 mA | ±100 mA | ±200 mA | ±500 mA | ±1 A |
| DHn | ±0,01% | ±0,02% | ±0,05% | ±0,1% | ±0,2% | ±0,5% | ±1% | ±2% | ±5% | ±10% |
| RTD | ±0,25% | ±0,5% | ±1% | ±2% | ±5% |
| Cu | ±0,05% | ±0,1% | ±0,2% | ±0,5% | ±1% |
| Ni | ±0,01% | ±0,02% | ±0,05% | ±0,1% | ±0,2% | ±0,5% | ±1% | ±2% | ±5% | ±10% |
| T/C | ±0,05°C | ±0,1°C | ±0,2°C | ±0,5°C | ±1°C | ±2°C | ±5°C | ±10°C |
| DU | ±0,1% | ±0,2% | ±0,5% | ±1% | ±2% |

The inputs do not have galvanic separation among themselves!

Maximum difference between the GND brackets is 0,2V - DC, PM, T/C, DU

[internally connected through resistors 1000Ω]

Brackets E - have to be on the same potential - DHn, RTD-Pt, RTD-Ni, RTD-Cu [internally galvanic connection]

ORDER CODE

OMU 40BUNI

| Power supply | 10…30 V AC/DC | 80…250 V AC/DC |
| Number of inputs | 4 inputs | 8 inputs |
| Comparators | none | 8 relays |
| Output | none | Analog |
| Data record | none | RS 232, RS 485, MODBUS, PROFIBUS |
| Display color** | red | green |

**Recording measured values in the FAST mode is feasible from odd channels 1, 3, 5 and 7 only.

**Identification of channel and measuring units have second color

Default execution is shown in bold
The OMB 402 model series are panel programmable three-color bar graphs with auxiliary display designed for maximum efficiency and user comfort while maintaining its favourable price. Three versions are available: UNI, PWR and UQC.

The OMB 402UNI is a multifunction instrument with the option of configuration for 8 various input options, easily configurable in the instrument menu. The instrument is based on an 8-bit microcontroller with a multichannel 24-bit sigma-delta converter, which secures high accuracy, stability and easy operation of the instrument.

**OPERATION**

The instrument is set and controlled by five control keys located on the front panel. 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 settings.
- **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].

**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/DOGSIN/FRDMTO. 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...999 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.

**MEASURED DATA RECORD** is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage [40 records/s] of all measured values up to 8 000 records. Second mode is RTC, where data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

**STANDARD FUNCTIONS**

**PROGRAMMABLE PROJECTION**

Selection of input type and measuring range

Measuring range: adjustable as fixed or with automatic change [GHM].

Measuring modes [PWR]: voltage (V_mean), current (A_mean), real power (W), frequency [Hz] and with calculation of Q, S, cos φ.

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

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

Projection: 3D LED + 6 digit auxiliary display

**COMPENSATION**

Of conduct [RTD, GHM]: automatic (3- and 4-wire) or manual in menu (2-wire) of conduct in probe [RTD]: internal connection [conductance 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

**LINEARIZATION**

Linearization [DC, PM, DU]: through linear interpolation in 50 points [solely via DM Link]

**DIGITAL FILTERS**

Filtration constant [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

**MATHEMATICAL FUNCTIONS**

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: polynomial, V, logarithm, exponential, power, root, sin x and at the same time between inputs - sum, difference, product, quotient

**EXTERNAL CONTROL**

Lock: control keys blocking

Hold: display/instrument blocking

Tare: tare activation

Resetting MM: resetting min/max value
In case of Option B we recommend to connect terminals GND (main board/additional board) by external connection for complete technical parameters of OMB 402UQC see the universal counter OM 602UQC

GND (input + Option A) is galvanically connected with inputs EXT. and the OM Link connector.TYPICAL INPUT CURRENTS:

<table>
<thead>
<tr>
<th>Type</th>
<th>DC</th>
<th>PM</th>
<th>DM</th>
<th>Ni</th>
<th>T/C</th>
<th>DC</th>
<th>UNI</th>
<th>PWR</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNI</td>
<td>Option A</td>
<td>-</td>
<td>50/100</td>
<td>10/50</td>
<td>0/1.00</td>
<td>50</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>UNI</td>
<td>Option B</td>
<td>-</td>
<td>50/100</td>
<td>10/50</td>
<td>0/1.00</td>
<td>50</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>UNI</td>
<td>Option C</td>
<td>-</td>
<td>50/100</td>
<td>10/50</td>
<td>0/1.00</td>
<td>50</td>
<td>100</td>
<td>-</td>
</tr>
</tbody>
</table>

ORDER CODE SPECIFICATION

ORDER CODE

**Omb 402 is a multifunction input/output available in different types and ranges**

**Type UNI, standard [scale “0”]**

| DC | 0…0.5 mA | 0…20 mA | 0…20 mA | 0…20 mA | 0…20 mA | 0…20 mA | 0…20 mA | 0…50 mA | 0…200 mA | 0…100 mA | 0…50 mA |

| PM | 0…3000 | 0…3000 | 0…3000 | 0…3000 | 0…3000 | 0…3000 | 0…3000 | 0…3000 | 0…3000 | 0…3000 | 0…3000 |

**ORDER CODE**

**Connecting individual inputs**

<table>
<thead>
<tr>
<th>INPUT “+”</th>
<th>INPUT “-”</th>
</tr>
</thead>
<tbody>
<tr>
<td>0…5 mA</td>
<td>0…20 mA</td>
</tr>
<tr>
<td>0…20 mA</td>
<td>0…50 mA</td>
</tr>
</tbody>
</table>

**Connecting individual inputs**

<table>
<thead>
<tr>
<th>ORDER CODE SPECIFICATION</th>
<th>UNI</th>
<th>PWR</th>
<th>U</th>
<th>PWR</th>
<th>I</th>
<th>UDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>w/s</td>
<td>standard</td>
<td>+24V/100/50/50/50/50 mA/A</td>
<td>+24V/100/50/50/50 mA/A</td>
<td>+24V/100/50/50/50 mA/A</td>
<td>+24V/100/50/50/50 mA/A</td>
<td>+24V/100/50/50/50 mA/A</td>
</tr>
<tr>
<td>A</td>
<td>standard</td>
<td>+24V/100/50/50/50 mA/A</td>
<td>+24V/100/50/50/50 mA/A</td>
<td>+24V/100/50/50/50 mA/A</td>
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<td>B</td>
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<td>+24V/100/50/50/50 mA/A</td>
<td>+24V/100/50/50/50 mA/A</td>
</tr>
</tbody>
</table>

**Order code shall not include blank spaces**

**POWER SUPPLY**

10…30 V AC/DC, ±10 %, max. 15.6 VA, PF 0.4, I nom. = 40 A/m3 80…260 V AC/DC, ±10 %, max. 15.6 VA, PF 0.4, I nom. = 40 A/m3 Power supply is protected by a fuse inside the instrument.

**MECHANICAL PROPERTIES**

Material: Non-flammable, recombinant UL 94 V-1 Dimensions: 58 x 48 x 100 mm Panel cutout: 50 x 54 mm

**OPERATING CONDITIONS**

Connection: One terminal board, section = 1/25.4 mm²

**Stabilization period:** within 15 minutes after switching on

**Working temperature:** 20…80°C

**Storage temperature:** 20…90°C

**Cover:** IP 44 (front panel only)

**Safety:** EN 61010-1, A1

**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 = 870 V [ZD] 350 V [ZD] input, output, Exc. = 330 V [ZD], 60 V [ZD]

**EMC EN 61010:2001**

**Swarm validation:** IEC 980:1993, par. 6

**SW validation:** IEC 62108, 61226

**RDC MERET™ 2012 en** 43

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**For complete technical parameters of OMB 402UQC see the universal counter OM 602UQC**

Default execution is shown in bold
DATA RECORD is switched off). All settings are stored in the EEPROM memory (they hold even after the instrument is switched off). The program enables modification and filing of all instrument settings as well as a Standard equipment is the OM Link interface, which together with operation PROFI), which determine the right (see, change). Access w/o password.

USER MENU

instrument setting

PROFI MENU

is protected by optional number code and contains complete instrument setting

EXCITATION

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].

OPERATION

The instrument is set and controlled by five control keys located on the front panel. 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/ 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].

OPTION

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 signaled 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.

MEASURED DATA RECORD is an internal time control of data collection. It is suitable where it is necessary to register measured values. Two modes may be used. FAST is designed for fast storage [40 records/s] of all measured values up to 8 000 records. Second mode is RTC, where data record is governed by Real Time with data storage in a selected time segment and cycle. Up to 266 000 values may be stored in the instrument memory. Data transmission into PC via serial interface RS232/485 and OM Link.

STANDARD FUNCTIONS

PROGRAMMABLE PROJECTION

Selection of input type and measuring range

Measuring range: adjustable as fixed or with automatic change [ohm]

Measuring modes [PWR]: voltage [Vpp], current [Amp], 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

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

Projection: 24 LED + 3-digit auxiliary display

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 thermocouple and compensation of cold junctions, which is adjustable or automatic

LINEARIZATION

Linearization [DC, PM, DU]: through linear interpolation in 60 points [solely via OM Link]

DIGITAL FILTERS

Filteration constant [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

MATHEMATICAL FUNCTIONS

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 and at the same time between inputs - sum, difference, product, quotient

EXTERNAL CONTROL

Lock: control keys blocking

Hold: display/instrument blocking

Tare: tare activation

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

OM 412 is a multifunction instrument available in following types and ranges

<table>
<thead>
<tr>
<th>Type UNI, standard [scale [*]</th>
<th>DC</th>
<th>AC</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC</td>
<td>±0,1 mV/±250 mV/±1000 mV/±2500 mV</td>
<td>±0,1% of range + 1 digit</td>
<td>±0,1 mV/±250 mV/±1000 mV/±2500 mV</td>
<td>±0,1% of range + 1 digit</td>
</tr>
<tr>
<td>PM</td>
<td>±0,1 mA/±20 mA/±200 mA</td>
<td>±0,1% of range + 1 digit</td>
<td>±0,1 mA/±20 mA/±200 mA</td>
<td>±0,1% of range + 1 digit</td>
</tr>
<tr>
<td>DM</td>
<td>±0,1% 250 V/1000 V</td>
<td>±0,1% of range + 1 digit</td>
<td>±0,1% 250 V/1000 V</td>
<td>±0,1% of range + 1 digit</td>
</tr>
<tr>
<td>RTD</td>
<td>Pt 100, Ge 1000</td>
<td>±0,1% of range + 1 digit</td>
<td>Pt 100, Ge 1000</td>
<td>±0,1% of range + 1 digit</td>
</tr>
<tr>
<td>Ni</td>
<td>Ni 1 050/600 °C</td>
<td>±0,1% of range + 1 digit</td>
<td>Ni 1 050/600 °C</td>
<td>±0,1% of range + 1 digit</td>
</tr>
</tbody>
</table>

**ORDER CODE SPECIFICATION**

<table>
<thead>
<tr>
<th>UNI</th>
<th>PWR - U</th>
<th>PWR - I</th>
<th>UDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>standard</td>
<td>standard</td>
<td>standard</td>
</tr>
<tr>
<td>B</td>
<td>Expansion/through inputs (EM)</td>
<td>SSI input</td>
<td>SSI input</td>
</tr>
<tr>
<td>C</td>
<td>line input</td>
<td>line input</td>
<td>line input</td>
</tr>
<tr>
<td>D</td>
<td>±0,5 mA/±10 mA</td>
<td>±10 mA</td>
<td>±10 mA</td>
</tr>
</tbody>
</table>

**ORDER CODE**

OM 412

Type

Order code shall not include blank spaces*

Power supply: 0...250 V AC/DC

<table>
<thead>
<tr>
<th>Option, see table “Order code specification”</th>
</tr>
</thead>
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<tr>
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</tbody>
</table>

Other

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>PW</td>
<td>Power supply</td>
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<tr>
<td>UDC</td>
<td>Technical data</td>
</tr>
<tr>
<td>ØC</td>
<td>Order code</td>
</tr>
</tbody>
</table>

For complete technical parameters of OMB 412/UAC see the universal counter OMB 632/UAC.
The OMB 451 model series are programmable, three-color panel bargraphs with auxiliary display and adjustable LCD scale. The instruments are designed as dimensional replacement of the ZEPA KOMP instruments. Available are types UNI, PWR and UQC.

Type OMB 451UNI is a multifunction instrument with the option of configuration for 8 different types of input, easily configurable in the instrument menu. The instrument is based on an 8-bit microcontroller with multi-channel 24-bit sigma-delta converter, which secures high accuracy, stability and easy operation of the instrument.

**FEATURES**

- **BARGRAPH** - 50 LED with display and LCD scale
- **MULTIFUNCTION INPUT** (DC, PM, RTD, T/C, DU)
- **DIGITAL FILTERS, TARE, LINEARIZATION**
- **SIZE OF DIN 160 x 60 MM**
- **POWER SUPPLY 80…250 V AC/DC**

**OPTIONS**

- **Excitation** • Comparators • Data output • Analog output
- **Data record** • Power supply 10…30 V AC/DC

**OPERATION**

The instrument is set and controlled by two control keys and a turn knob located on the front panel. All programmable settings of the instrument are implemented in three setting 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].

**STANDARD FUNCTIONS**

**PROGRAMMABLE PROJECTION**

- **Selection** of input type and measuring range
- **Measuring range**: adjustable as fixed or with automatic change (OHM)
- **Scale**: LCD, freely programmable
- **Measuring modes** [PWR]: voltage (V<sub>pp</sub>), current [A<sub>pp</sub>], 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
- **Setting** [manual], in menu optional projection on the display may be set for both limit values of the input signal
- **Projection**: 50 LED + 6-digit auxiliary display

**COMPENSATION**

- **Of conduct (RTD, OHM)**: automatic (3- and 4-wire) or manual in menu (2-wire)
- **Of conduct in probe (RTD)**: internal connection [conductance 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

**LINEARIZATION**

- **Linearization** [DC; PM, DU]: through linear interpolation in 50 points [solely via DM Link]

**DIGITAL FILTERS**

- **Filtration constant** (UQC): transmits input signal up to 10…2 000 Hz
- **Floating/Arithmetic average**: from 2…30/100/100 measurements

**MATHMATICAL FUNCTIONS**

- **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 and at the same time between inputs - sum, difference, product, quotient

**EXTERNAL CONTROL**

- **Lock**: control keys blocking
- **Hold**: display/instrument blocking
- **Tare**: tare activation
- **Resetting MM**: resetting min/max value
**TECHNICAL DATA**

**PROJECT**
- Display: 50 mm three-color LED + three-color LED for indication of the limits.
- 8-digit auxiliary display [99999...999995], digit height 0.9 mm
- Illuminated and freely programmable LCD scale

**Decimation point**: setting - in menu

**Brightness**: setting - in menu

**INSTRUMENT ACCURACY**
- Tk: 50 ppm/°C
- Accuracy: ±0.5% of range + 1 digit [for projection 9999 and 5 meas.,±15 ppm/°C]
- ±0.5% of range + 1 digit

Accuracy of cold junction measurement: ±15 ppm/°C
- Tk: 15 ppm/°C
- Ni: 0.1% of range
- RTD: ±15 ppm/°C
- OHM: ±60/±150/±300/±1200 mV
- PM: 0.1% of range
- DC: ±15 ppm/°C

Measuring ranges (UQC):
- Type UQC: input UNI Option A
- Ni: 1000/Ni 10000
- RTD: J/K/T/E/B/S/R/N/L
- OHM: 0…60 mV/0…150 mV/0…300 mV/0…1 A/0…2.5 A/0…5 A
- DC: ±60 mV/±150 mV/±300 mV/±1 A/±2.5 A/±0.5 A

**COMPARATOR**
- Type: digital, setting in menu, contact switch = 30 ms
- Limit: ±0.5% of range, 9999999
- Hysteresis: 0.999999
- Delay: 0.901 s
- Output: 1.4x relays Form A (250 VAC/50 VDC, 3 A), 2x/4x open collector

**DATA OUTPUT**
- Protocol: ASCII, MODBUS, RTU, PROFIBUS
- Data format: 8 bit no parity = 1 stop bit (ASCII)
- 7 bit even parity = 1 stop bit (Modbus)

**ERROR**
- Tk: ±15 ppm/°C
- Data response to change of value = 1 ms
- Ranges: 9.267 V ±10 V, 0.5 mA, 20…200 mA (comp.) ±0.5 mV/°C or ±0.05 (24 V)

**EXCITATION**
- Adjustable: 5…24 VDC max. 12 W

**POWER SUPPLY**
- 10…30 V AC/DC, 10 V max. 15.6 VA, PE >0.4, L=0…40 A (AC/DC), 80…250 V AC/DC, 10 V max. 15.6 VA, PE >0.4, L=0…40 A (AC/DC)

Power supply is protected by a fuse inside the instrument

**MECHANIC PROPERTIES**
- Material: Non flammable, fire resistant UL 94 V-0
- Dimensions: 180 x 80 x 80 mm
- Panel cutout: 150 x 60 mm

**OPERATING CONDITIONS**
- Connection: connector terminal board, section = 150/0.5 mm²
- Stabilization period: within 15 minutes after switch on
- Working temperature: 20…80°C
- Storage temperature: -20…85°C
- Cover: IP64 (front panel only)
- Safety: EN 60529, I/2
- Diaphragm strength: 4 kV/AC after 1 min between supply and input
- 4 kV/AC after 1 min between supply and data/analog output
- 2.5 kV/AC after 1 min between input and data/analog output
- Insulation resistance: for pollution degree II, measuring cat. II
- Power supply: 870 V DC, 350 V DC input, output, Exc. = 300 V DC, 60 V DC
- EMC: EN 61326-1
- Seismic capacity: EC 980 - 1993, par. 6
- SW validation: (M) Class II, C in compliance with IEC 62208, 61226

**ORDER CODE**
- OMB 451UQC
- Type
- Power supply
- Options
- Connectors
- Data output
- Excitation
- Other

**ORDER CODE SPECIFICATION**
- | UNI | PWR - U | PWR - I | UDC |
- |----|--------|--------|----|
- | A  | 0/20 | 0/20 | 0/10 |
- | B  | 0/500 | 0/500 | 0/100 |
- | C  | 0/1000 | 0/1000 | 0/1000 |
- | D  | 0/2000 | 0/2000 | 0/2000 |
- | E  | 0/3000 | 0/3000 | 0/3000 |
- | F  | 0/4000 | 0/4000 | 0/4000 |
- | G  | 0/5000 | 0/5000 | 0/5000 |
- | H  | 0/6000 | 0/6000 | 0/6000 |
- | I  | 0/7000 | 0/7000 | 0/7000 |
- | J  | 0/8000 | 0/8000 | 0/8000 |
- | K  | 0/9000 | 0/9000 | 0/9000 |
- | L  | 10000 | 10000 | 10000 |

**ORDER CODE DETAILS**
- | UDC | UNI | PWR - U | PWR - I |
- |----|----|--------|--------|
- | 2  | 0/10 | 0/10 | 0/10 |
- | 3  | 0/20 | 0/20 | 0/20 |
- | 4  | 0/30 | 0/30 | 0/30 |
- | 5  | 0/40 | 0/40 | 0/40 |
- | 6  | 0/50 | 0/50 | 0/50 |
- | 7  | 0/60 | 0/60 | 0/60 |
- | 8  | 0/70 | 0/70 | 0/70 |
- | 9  | 0/80 | 0/80 | 0/80 |
- | 10 | 0/90 | 0/90 | 0/90 |

**ORDER CODE**
- **OMB 451**
- **Type**
- **Power supply**
- **Options**
- **Connectors**
- **Data output**
- **Excitation**
- **Other**

**MEASURING RANGES**
- OMB 451 is a multifunction instrument available in following types and ranges

**CONNECTION**
- For complete technical parameters of OMB 451UQC see the universal counter OMB 622UDC

**CONNECTING INDIVIDUAL INPUTS**
- | INPUT “I” | INPUT “U” |
- |----|----|
- | DC | ±50 mV/500 mV/1000 mV |
- | PM | 0.5 mA/20 mA/200 mA V/10 V/100 V |
- | DIN | 0.01 mS/0.1 mS/10 V/100 V |
- | RTD | Pt 100/300/500P/1 000 |
- | DI | 5 mA/25 mA/100 mA |
- | Ti | 5 mA/125 mA |
- | T/C | JJ/TE/EN/EN/EN/EN |
- | Ti/C | Linear potentiometer (min. 500 Ω) |
- | type UNI, Option A |
- | DC | ±10 V/100 V/10 V/10 mV/10 V |
- | type PWM |
- | Input U | 0.10 V/10 V/100 V/100 V/1000 V |
- | Input I | 0.08 mV/0.08 mV/0.8 mV/10 mV/100 mV |
- | type UDC |
- | Excitation mode (UQC) | input frequency: 0.002 Hz, 1 kHz 50 kHg for QUAD and UP/DWN |
- | 2x UP or SW counter, UP or SW counter + frequency, UP/DWN counter, UP/DWN counter for DC + frequency, timer | clock/phase |
Data record is switched off). All settings are stored in the EEPROM memory (they hold even after the instrument visualization and filing of measured values from more instruments. The program enables modification and filing of all instrument settings as well as firmware updates (with OML cable). The program is also designed for operation of the instrument.

The instrument is set and controlled by two control keys and a turn knob located on the front panel. All programmable settings of the instrument are implemented in three setting 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.

The 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].

**STANDARD FUNCTIONS**

- Programmable projection
- Standard counter
- Digital filters
- Linearization

**PROGRAMMABLE PROJECTION**

- Selection of input type and measuring range
- Measuring range: adjustable as fixed or with automatic change [OHM]
- Scale: LCD, freely programmable
- Measuring modes [PWR]: voltage [V_{pp}], current [A_{pp}], real power [W], frequency [Hz] and with calculation of Q, S, cos f
- Setting [UOC]: measuring mode 2x counter (UP/DW, IRC)/2x frequency/timer/clock with adjustable calibration coefficient, time base and projection
- Setting: manual, in menu optional projection on the display may be set for both limit values of the input signal

**COMPRESSION**

- 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 conduct (PM, DU): 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

**LINEARIZATION**

- Linearization [DC, PM, DU]: through linear interpolation in 50 points [solely via DM Link]
- Digital filters
- Linearization of input type and measuring range
- Measuring range: adjustable as fixed or with automatic change [OHM]
- Scale: LCD, freely programmable
- Measuring modes [PWR]: voltage [V_{pp}], current [A_{pp}], real power [W], frequency [Hz] and with calculation of Q, S, cos f
- Setting [UOC]: measuring mode 2x counter (UP/DW, IRC)/2x frequency/timer/clock with adjustable calibration coefficient, time base and projection
- Setting: manual, in menu optional projection on the display may be set for both limit values of the input signal

**MATHEMATICAL FUNCTIONS**

- 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 and at the same time between inputs - sum, difference, product, quotient

**EXTERNAL CONTROL**

- Lock: control keys blocking
- Hold: display/instrument blocking
- Tare: tare activation
- Resetting MM: resetting min/max value
**TECHNICAL DATA**

**PROJECTION**
Display: 50 mm three-color LED > three-color LED for indication of the limits, brightness display [0.99%~99.9%±2 analog], 4x digit height 14 mm, 2x digit height 10 mm, illuminated and freely programmable LED scale
Decimal point setting: in menu
Brightness: setting - in menu

**INSTRUMENT ACCURACY**
- GND (input + Option A) is galvanically connected with inputs EXT. and the OM Link connector
- ±0.5% of range + 1 digit
- ±0.2% [±0.5%] of range + 1 digit
- RTD, T/C
- Accuracy of cold junction measurement: ±1°C
- WAT: 0.1°C

**CONNECTION**

**Measuring mode (UQC):**
- Type: UQC
- Input: U
- DC: Type: UNI, Option A
- DU: Ni
- RTD: Cu 50/Cu100
- OHM: Pt 100/Pt 500/Pt 1 000

**OM Link:**
- Watch-dog: FAST (UNI)
- RTC
- Data record:
  - 2x digit height 10 mm, illuminated and freely programmable LCD scale
  - 6-digit display (-999…9999+2 znaky), 4x digit height 14 mm

**Data output:**
- Pre/Post (UQC)

**Digital filters:**
- Filter: standard
- Filtration constant (UQC): ±0,1% of range + 1 digit
- Calibration constant (UQC): ±5ppm/°C

**Measuring modes (PWR):**
- Overload capacity:
  - ±0,3 % (0,6/0,9%) of range + 1 digit
- Rate:
  - ±0,15 % of range + 1 digit
- ±0,1/±0,25/±0,5//±2/±5 A

**Accuracy:**
- ±60/±150/±300/±1 200 mV
- 0…5 mA/0…20 mA/4…20 mA/±2 V/±5 V/±10 V/±40 V
- 0,1…40 meas./s, 0,5…5 meas./s (PWR)
- ±0,15°C

**Communication interface for operation, setting and measured data record into instrument memory:**
- 2x open collectors + 2x relays (Form C)
- 2x/4x open collectors, 1…4x bistable relays

**Dimensions:**
- 150 x 80 x 80 mm
- Panel cutout: 150 x 70 mm

**OPERATING CONDITIONS**
- Connection: connector terminal board, section = 1/25.4 mm²
- Stabilization period: within 15 minutes after switch-on
- Working temperature: -20°...+60°C
- Storage temperature: -20°...+85°C
- Cover: IP64 (front panel only)
- E1: safety: EN 610101, A2
- Diode strength: 4kV AC after 1 minute between supply and input 4kV AC after 1 minute between supply and data/analog output
- Insulation resistance: for pollution degree II, measuring cat. II
- Power supply > 670 V [D], 300 V [D]
- Input, Output: Exc. > 300 V [D], ±6 V [DI]
- EMC: EN 61326
- Seismic capacity: EC 98-1993, par. 6
- SW validation: class B, C in compliance with EC 6238, 6236

**ORDER CODE**

**ORDER CODE SPECIFICATION**

**OM 452** is a multifunction instrument available in following types and ranges

- Type UNI, standard: [scale “U”]
  - DC: ±50/±100/±500/±1000 V
  - PM: 0…20 mA, 20 mA/40 mA/2/5/10 V
  - DM: 0, 100, 200, 1 000 Hz
  - RTD: PT 100/500/1 000
  - C: 0/5/10/20/45/55/…/1000/2000 Hz
  - Ni: 0.1% of range
  - REF: ±5ppm/°C

- Type UNI, Option A
  - DC: ±50/±100/±500/±1000 V
  - PM: 0…20 mA, 20 mA/40 mA/2/5/10 V
  - DM: 0, 100, 200, 1 000 Hz
  - RTD: PT 100/500/1 000 Hz
  - C: 0/5/10/20/45/55/…/1000/2000 Hz
  - Ni: 0.1% of range
  - REF: ±5ppm/°C

**CONNECTING INDIVIDUAL INPUTS**

**OM 452**

**ORDER CODE**
The OMB 200/300/500UNI model series are simple bargraphs designed for maximum efficiency and user comfort while maintaining its low cost.

The OMB 200/300/500UNI type is a multifunction instrument with the option of configuration for 5 different types of inputs easily configurable in the instrument menu.

The instrument is based on an 8-bit microcontroller with A/D converter, which secures good accuracy, stability and easy operation of the instrument.

Another version of the OMB 200/300/500 instrument is the RS type, a display device for projection of data from serial line RS 232/485.

By selecting the mode of insertion of the front plexiglass (reverse/face) you may choose the required printing of scale for vertical or horizontal design of the instrument.

OPERATION

The instrument is set and controlled by five control keys located on the front panel. All programmable settings of the instrument may be performed in two adjusting modes:

**PROFI MENU** contains complete instrument setting

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.

All settings are stored in the EEPROM memory (they hold even after the instrument is switched off).

OPTION

**COMPARATORS** are assigned to monitor two limit values with relay output. 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.
### TECHNICAL DATA

#### PROJECTION
- Display: Three-color LED (red/green/orange)

#### ORDER CODE
- OMB 200 - 20 LED
- OMB 300 - 30 LED
- OMB 500 - 50 LED
- OMB 502 - 2x 50 LED

#### POWER SUPPLY
- 10…30 V AC/DC, ±10 %, max. 10 VA
- 80…250 V AC/DC, ±10 %, max. 18 VA

#### MEASURING RANGES
- **OMB UNI** - -
  - **Type**
  - 20 LED 200
  - 30 LED 300
  - 50 LED 500
  - 2x 50 LED 502
  - **Power supply**
  - 10…30 V AC/DC
  - 80…250 V AC/DC

#### INSTRUMENT ACCURACY
- **TIC**: ±1 %
- **Rate**: ±0.5%/°C
- **Overloaded capacity**: 10 x (t < 30 ms), 2 x (t ≥ 30 ms)

#### POWER SUPPLY
- 10…30 V AC/DC, ±10 %, max. 10 VA, PF ≥ 0,4, I STP < 45 A/1,1 ms
- 10…30 V DC/24 V AC, ±10 %, 3 VA, PF ≥ 0,4, I STP < 45 A/1,1 ms
- 80…250 V AC/DC, ±10 %, max. 18 VA, PF ≥ 0,4, I STP < 45 A/1,1 ms
- 10…30 V DC/24 V AC, ±10 %, 3 VA, PF ≥ 0,4, I STP < 45 A/1,1 ms
- 80…250 V AC/DC, ±10 %, max. 18 VA, PF ≥ 0,4, I STP < 45 A/1,1 ms

#### INSTRUMENT ACCURACY
- **TIC**: ±1 %
- **Rate**: ±0.5%/°C
- **Overloaded capacity**: 10 x (t < 30 ms), 2 x (t ≥ 30 ms)

#### 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

#### MEASURING RANGES
- **OMB 200/300/500UNI** is a multifunction instrument available in following types and ranges
- **PM**: 0…20 mA, 4…20 mA, 0…2 V, 0…5 V, 0…10 V
- **OHM**: 0…100 kΩ
- **RTD**: Pt 1000, KTY, Termistor
- **Ni**: Ni 1000
- **DU**: Linear potentiometer (min. 500 Ω), poze jeden input (1)
- **RS**: input RS 232/485, Protocol ASCII/MODBUS - RTU

#### ORDER CODE
- **OMB**
  - Type
  - 20 LED 2
  - 30 LED 3
  - 50 LED 5
  - 2x 50 LED 2
  - **Power supply**
  - 10…30 V AC/DC
  - 80…250 V AC/DC
- **Comparators**
  - 1 x relay
  - 2 x relays
- **Other**
  - Custom version, do not fill in

#### ORDER CODE
- **OMB**
  - Type
  - 20 LED 2
  - 30 LED 3
  - 50 LED 5
  - 2x 50 LED 2
  - **Power supply**
  - 10…30 V AC/DC
  - 80…250 V AC/DC
- **Comparators**
  - 1 x relay
  - 2 x relays
- **Other**
  - Custom version, do not fill in

**Default execution is shown in bold**

---

**CONNECTION**

**CONNECTING INDIVIDUAL INPUTS**

<table>
<thead>
<tr>
<th>INPUT 1</th>
<th>INPUT 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC</td>
<td>0…20 mA, 4…20 mA</td>
</tr>
<tr>
<td>OHM</td>
<td>0…100 kΩ</td>
</tr>
<tr>
<td>RTD</td>
<td>Pt 1000K/Thermistor</td>
</tr>
<tr>
<td>Ni</td>
<td>Ni 1000</td>
</tr>
<tr>
<td>DU</td>
<td>Linear potentiometer (min. 500 Ω)</td>
</tr>
</tbody>
</table>

**OMB 200/300/500UNI** is a multifunction instrument available in following types and ranges

- **PM**: 0…20 mA, 4…20 mA, 0…2 V, 0…5 V, 0…10 V
- **OHM**: 0…100 kΩ
- **RTD**: Pt 1000, KTY, Termistor
- **Ni**: Ni 1000
- **DU**: Linear potentiometer (min. 500 Ω), poze jeden input (1)
- **RS**: input RS 232/485, Protocol ASCII/MODBUS - RTU

**COMPACTNESS**

- **Material**: Noryl GFN2 SE1, incombustible UL 94 V-I
- **Dimensions**: OMB 200 72 x 24 x 100 mm
  - OMB 300 96 x 24 x 100 mm
  - OMB 500 144 x 48 x 75 mm
  - Panel cutout:
  - OMB 200 68 x 22.5 mm
  - OMB 300 92 x 22.5 mm
  - OMB 500 138 x 43.5 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

**COMPARATOR**

- **Type**: digital, setting in menu, contact switch-on < 50 ms
- **Limits**: within full range
- **Hysteresis**: positive values
- **Delay**: 0…99.9 s
- **Output**: 1(2)x bistable relays (250 VAC/30 VDC, 3 A)
  - 2x relays (250 VAC/50 VDC, 3 A) only for OMB 500/502

**POWER SUPPLY**

- 10…30 V DC/24 V AC, ±10 %, 3 VA, PF ≥ 0,4, I STP < 45 A/1,1 ms
- 10…30 V DC/24 V AC, ±10 %, 3 VA, PF ≥ 0,4, I STP < 45 A/1,1 ms
- 80…250 V AC/DC, ±10 %, max. 18 VA, PF ≥ 0,4, I STP < 45 A/1,1 ms
- 80…250 V AC/DC, ±10 %, max. 18 VA, PF ≥ 0,4, I STP < 45 A/1,1 ms
- 10…30 V DC/24 V AC, ±10 %, 3 VA, PF ≥ 0,4, I STP < 45 A/1,1 ms
- 10…30 V DC/24 V AC, ±10 %, 3 VA, PF ≥ 0,4, I STP < 45 A/1,1 ms
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 6…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 [Vpeak], current [Apeak], real power [W], frequency [Hz] and with calculation of Q, S, cos f
- Setting [UQC]: measuring mode 2x counter (UP/DW, IRC)/2x frequency/timer/clock with adjustable calibration coefficient; time base and projection
- Projection: ...999...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 thermocouple and compensation of cold junctions, which is adjustable or automatic

**LINERIZATION**

- Linearization [DC, PM, DU]: through linear interpolation in 50 points [solely via DM 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: polynomial, 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

**OPERATION**

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/N/Termocouples
- DISPLAY UNIT FOR LINEAR POTENTIOMETERS

**OMD 202PWR**

- AC VOLTMETER AND AMMETER
- AC NETWORK ANALYSER

**OMD 202UQC**

- UNIVERSAL COUNTER

**OMD 202RS**

- DATA DISPLAY
**OMD 202** is a multifunctional instrument available in following types and ranges

<table>
<thead>
<tr>
<th>Type UNI, standard code [A]</th>
<th>DC</th>
<th>AC</th>
<th>RS 485</th>
<th>RS 232</th>
<th>Options</th>
<th>UDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type UNI</td>
<td>Option A</td>
<td>DC</td>
<td>AC</td>
<td>RS 485</td>
<td>RS 232</td>
<td>Options</td>
</tr>
<tr>
<td>UNI PWR</td>
<td>0...250/450 V</td>
<td>0...10/20 mA</td>
<td>0...10/40 mA</td>
<td>0...120 V</td>
<td>0...20 mA</td>
<td>0...230 V</td>
</tr>
<tr>
<td>UNI I</td>
<td>0...120 V</td>
<td>0...20 mA</td>
<td>0...230 V</td>
<td>0...20 mA</td>
<td>0...230 V</td>
<td>0...20 mA</td>
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<tr>
<td>UNI U</td>
<td>0...120 V</td>
<td>0...20 mA</td>
<td>0...230 V</td>
<td>0...20 mA</td>
<td>0...230 V</td>
<td>0...20 mA</td>
</tr>
</tbody>
</table>
The OMX 39 model series are low-price and simple analog transmitters with mounting to 35 mm wide DIN rail. Transmitters have galvanic separation with isolation voltage of 600 V and thus they are suitable as primary isolation for majority of industrial applications.

**OMX 39DC**
DC VOLTMETER AND AMMETER

**OMX 39AC**
AC VOLTMETER AND AMMETER

**OMX 39PM**
PROCESS MONITOR

**OMX 39W**
TRANSMITTER FOR WATTMETER

**OMX 39OHM**
TRANSMITTER FOR OHMMETER

**OMX 39RTD**
TRANSMITTER FOR THERMOMETER - Pt/Ni

**OMX 39DU**
TRANSMITTER FOR LINEAR POTentiometers

**OPERATION**
The transmitter is designed for simple measurement without further control.

**CALIBRATION**
By trimmers accessible from the face of the transmitter we may adjust the range of output signal within the range of ±10%.

**OPTION**
**EXCITATION** is suitable for feeding of sensors and transmitters. It is isolated, with continuously adjustable value in the range of 2...24 VDC.
**MEASURING RANGES**

<table>
<thead>
<tr>
<th>Measuring Range</th>
<th>DC</th>
<th>AC</th>
<th>Power</th>
<th>Analog Output</th>
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</thead>
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<tr>
<td>0…60 mV</td>
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<td>0</td>
<td>±50 V</td>
<td>±50 V</td>
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<tr>
<td>0…150 mV</td>
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<tr>
<td>0…300 mV</td>
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<td>0…1 A</td>
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<td>0…5 A</td>
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<tr>
<td>0…20 mA</td>
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<tr>
<td>0…2 V</td>
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**ORDER CODE**

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<th>OMX 39DU</th>
<th>OMX 39 AC</th>
<th>OMX 39 TD</th>
</tr>
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<tr>
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<td>T</td>
</tr>
<tr>
<td>Z</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Default execution is shown in bold

**CONNECTION**

- **OMX 39 DC, PM**
- **OMX 39DU**
- **OMX 39 AC, W**
- **OMX 39 TD**

**TECHNICAL DATA**

**INSTRUMENT ACCURACY**

- TK: 60 ppm/°C
- Accuracy: ±0.1% of range
- ±0.2% of range
- ±0.2% of range
- ±0.3% of range
- ±0.3% of range
- ±0.3% of range

**ANALOG OUTPUT**

- Type: isolated, fixed setting
- TK: 60 ppm/°C
- Rate: response to change of value = 1 ms

**EXCITATION**

- Adjustable: ±24 VDC/mA, ±1.2 W

**POWER SUPPLY**

- 10…30 V AC/DC, ±10% max. 5 VA, ±10 mA, ±40 A/1 ms
- 80…250 V AC/DC, ±10% max. 5 VA, ±10 mA, ±40 A/1 ms
- Power supply is protected by a fuse inside the instrument

**MECHANIC PROPERTIES**

- Material: PA 66, incombustible UL 94 V-I, blue
- Dimensions: 113 x 98 x 22 mm
- Installation: to DIN rail 35 mm wide

**OPERATING CONDITIONS**

- Connection: connector terminal board, section < 2.5 mm²
- Stabilization period: within 5 minutes after switch-on
- Working temperature: -20°…+60°C
- Storage temperature: -20°…+85°C
- Cover: IP20
- 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 analog output
- 2.5 kVAC after 1 min between input and analog output
- Insulation resistance: for pollution degree II, measuring cat. III.
- Power supply > 600 V (ZI), 300 V (DI)
- Input, output, Exc. > 500 V (ZI), 250 V (DI)
- EMC: EN 61326-1
The OMX 102 model range are DIN rail mountable programmable transmitters designed with the utmost versatility and user comfort in mind whilst keeping the cost at a favourable level. The OMX 102 various executions are UNI, DC, PWR, UQC and T. As a standard the instrument is fitted with a backlit LCD display which projects measured values and configuration settings. OMX 102UNI is a multifunctional instrument with 8 possible input configurations easily adjustable in the instrument’s menu. OMX 102DC and OMX 102PWR are designed to measure extended AC and DC voltage and current. The instrument is based on an 32-bit microcontroller with A/D converter, which ensures good accuracy, stability and easy operation of the instrument. The OMX 102UQC type is a universal low-cost counter/frequencymeter/stopwatch/timer. 

**PROGRAMMABLE ISOLATED TRANSMITTERS**

- OMX 102DC
  - DC VOLTMETER AND AMMETER
- OMX 102PWR
  - AC VOLTMETER AND AMMETER
- OMX 102UNI
  - DC VOLTMETER AND AMMETER
- OMX 102T
  - TRANSMITTER FOR STRAIN GAUGE

**MULTIFUNCTION INPUT (DC, PM, RTD, T/C, DU)**

- OMX 102DC
  - PROCESS MONITOR
- OMX 102PWR
  - PROCESS MONITOR
- OMX 102UNI
  - PROCESS MONITOR
- OMX 102T
  - PROCESS MONITOR

**LCD DISPLAY, DIGITAL FILTER, TARE**

- OMX 102DC
  - DIGITAL FILTER
- OMX 102PWR
  - DIGITAL FILTER
- OMX 102UNI
  - DIGITAL FILTER
- OMX 102T
  - DIGITAL FILTER

**OUTPUT**

- OMX 102DC
  - 0/4...20 mA/0...5 mA/0,2...2 kHz, 0...2/5/10 V/±10 V
- OMX 102PWR
  - 0/4...20 mA/0...5 mA/0,2...2 kHz, 0...2/5/10 V/±10 V
- OMX 102UNI
  - 0/4...20 mA/0...5 mA/0,2...2 kHz, 0...2/5/10 V/±10 V
- OMX 102T
  - 0/4...20 mA/0...5 mA/0,2...2 kHz, 0...2/5/10 V/±10 V

**Option**

- OMX 102DC
  - Excitation • Comparators • Data output
  - Data record • Power supply 10...30 V AC/DC
- OMX 102PWR
  - Excitation • Comparators • Data output
  - Data record • Power supply 10...30 V AC/DC
- OMX 102UNI
  - Excitation • Comparators • Data output
  - Data record • Power supply 10...30 V AC/DC
- OMX 102T
  - Excitation • Comparators • Data output
  - Data record • Power supply 10...30 V AC/DC

**STANDARD FUNCTIONS**

**PROGRAMMABLE INPUT**

- OMX 102DC
  - Selection of input type and measuring range
  - Setting: manual, in menu it is possible to set for both limit values of the input signal arbitrary type (V, mA, Hz) and range of the analog output as well as projection on the LCD display
- OMX 102PWR
  - Selection of input type and measuring range
  - Setting: manual, in menu it is possible to set for both limit values of the input signal arbitrary type (V, mA, Hz) and range of the analog output as well as projection on the LCD display
- OMX 102UNI
  - Selection of input type and measuring range
  - Setting: manual, in menu it is possible to set for both limit values of the input signal arbitrary type (V, mA, Hz) and range of the analog output as well as projection on the LCD display
- OMX 102T
  - Selection of input type and measuring range
  - Setting: manual, in menu it is possible to set for both limit values of the input signal arbitrary type (V, mA, Hz) and range of the analog output as well as projection on the LCD display

**ANALOG OUTPUT**

- OMX 102DC
  - Type: isolated, programmable with resolution of max. 12 bit, rate < 10 ms
  - Rozsah: 0...2/5/10 V, ±10 V, 0...5 mA, 0/4...2 mA, 0,2...2 200 Hz
- OMX 102PWR
  - Type: isolated, programmable with resolution of max. 12 bit, rate < 10 ms
  - Rozsah: 0...2/5/10 V, ±10 V, 0...5 mA, 0/4...2 mA, 0,2...2 200 Hz
- OMX 102UNI
  - Type: isolated, programmable with resolution of max. 12 bit, rate < 10 ms
  - Rozsah: 0...2/5/10 V, ±10 V, 0...5 mA, 0/4...2 mA, 0,2...2 200 Hz
- OMX 102T
  - Type: isolated, programmable with resolution of max. 12 bit, rate < 10 ms
  - Rozsah: 0...2/5/10 V, ±10 V, 0...5 mA, 0/4...2 mA, 0,2...2 200 Hz

**COMPENSATION**

- OMX 102DC
  - Of conduct (RTD, OHM): manual or automatic 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
- OMX 102PWR
  - Of conduct (RTD, OHM): manual or automatic 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
- OMX 102UNI
  - Of conduct (RTD, OHM): manual or automatic 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
- OMX 102T
  - Of conduct (RTD, OHM): manual or automatic 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

**LINEARIZATION**

- OMX 102DC
  - Linearization: through linear interpolation in 25 points (solely via OM Link)
- OMX 102PWR
  - Linearization: through linear interpolation in 25 points (solely via OM Link)
- OMX 102UNI
  - Linearization: through linear interpolation in 25 points (solely via OM Link)
- OMX 102T
  - Linearization: through linear interpolation in 25 points (solely via OM Link)

**DIGITAL FILTERS**

- OMX 102DC
  - Exponential average: from 2...100 measurements
  - Rounding: setting the projection step for display
  - Filtration constant (UQC): transmits input signal up to 10...1 000 Hz
- OMX 102PWR
  - Exponential average: from 2...100 measurements
  - Rounding: setting the projection step for display
  - Filtration constant (UQC): transmits input signal up to 10...1 000 Hz
- OMX 102UNI
  - Exponential average: from 2...100 measurements
  - Rounding: setting the projection step for display
  - Filtration constant (UQC): transmits input signal up to 10...1 000 Hz
- OMX 102T
  - Exponential average: from 2...100 measurements
  - Rounding: setting the projection step for display
  - Filtration constant (UQC): transmits input signal up to 10...1 000 Hz

**FUNCTIONS**

- OMX 102DC
  - Preset (UQC): initial non-zero value, which is always read after resetting the instrument to zero
  - Setting current value (UQC): initial value, e.g. amount passed through
  - Tare: designed to reset display upon non-zero input signal
- OMX 102PWR
  - Preset (UQC): initial non-zero value, which is always read after resetting the instrument to zero
  - Setting current value (UQC): initial value, e.g. amount passed through
  - Tare: designed to reset display upon non-zero input signal
- OMX 102UNI
  - Preset (UQC): initial non-zero value, which is always read after resetting the instrument to zero
  - Setting current value (UQC): initial value, e.g. amount passed through
  - Tare: designed to reset display upon non-zero input signal
- OMX 102T
  - Preset (UQC): initial non-zero value, which is always read after resetting the instrument to zero
  - Setting current value (UQC): initial value, e.g. amount passed through
  - Tare: designed to reset display upon non-zero input signal

**EXTERNAL CONTROL**

- OMX 102DC
  - Hold: display/instrument blocking
  - Lock: control keys blocking
  - Resetting (UQC): counter resetting
  - Start/Stop (UQC): stopwatch/timer control
- OMX 102PWR
  - Hold: display/instrument blocking
  - Lock: control keys blocking
  - Resetting (UQC): counter resetting
  - Start/Stop (UQC): stopwatch/timer control
- OMX 102UNI
  - Hold: display/instrument blocking
  - Lock: control keys blocking
  - Resetting (UQC): counter resetting
  - Start/Stop (UQC): stopwatch/timer control
- OMX 102T
  - Hold: display/instrument blocking
  - Lock: control keys blocking
  - Resetting (UQC): counter resetting
  - Start/Stop (UQC): stopwatch/timer control

**OPERATION**

The instrument is set and controlled by two control keys located on the front panel. 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 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 display.
**MEASURING RANGES**

OMX 102 is a multifunction instrument available in following types and ranges

<table>
<thead>
<tr>
<th>Type UQC</th>
<th>Channel 1</th>
<th>Channel 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC</td>
<td>±200/±400 V</td>
<td>±200/±400 V</td>
</tr>
<tr>
<td>AC</td>
<td>±240 V (±400 V in UQC)</td>
<td>±240 V (±400 V in UQC)</td>
</tr>
<tr>
<td>PM</td>
<td>±1,5 A/±3 A</td>
<td>±1,5 A/±3 A</td>
</tr>
<tr>
<td>OHM</td>
<td>0…999 kΩ</td>
<td>0…999 kΩ</td>
</tr>
<tr>
<td>RTD</td>
<td>±1°C (RTD), 1°C (T/C), for display</td>
<td></td>
</tr>
<tr>
<td>TK</td>
<td>±200°C (±300°C in UQC)</td>
<td></td>
</tr>
</tbody>
</table>

**DONIFICATION**

**Inputs**
- **DC**: ±200/±400 V
- **AC**: ±240 V (±400 V in UQC)
- **PM**: ±3 A
- **OHM**: 0…999 kΩ
- **RTD**: ±1°C (RTD), 1°C (T/C), for display
- **TK**: ±200°C (±300°C in UQC)

**Outputs**
- **DC**: ±200/±400 V
- **AC**: ±240 V (±400 V in UQC)
- **PM**: ±3 A
- **OHM**: 0…999 kΩ
- **RTD**: ±1°C (RTD), 1°C (T/C), for display
- **TK**: ±200°C (±300°C in UQC)

**Order Code**

<table>
<thead>
<tr>
<th>UNI</th>
<th>PWR - U</th>
<th>PWR - I</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,4 mV</td>
<td>1,4 mV</td>
</tr>
<tr>
<td>2</td>
<td>1,8 mV</td>
<td>4,16 mV</td>
</tr>
<tr>
<td>3</td>
<td>0.8…30 mV</td>
<td>0.8…30 mV</td>
</tr>
<tr>
<td>4</td>
<td>±30 mA</td>
<td>±30 mA</td>
</tr>
<tr>
<td>5</td>
<td>±250 mV</td>
<td>±250 mV</td>
</tr>
</tbody>
</table>

**Other**
- **Customer version, do not fill in**
- **SM validation**: EC 61320, EC 61010
PROGRAMMABLE ISOLATED TRANSMITTERS
MULTIFUNCTION INPUT UNI (DC, PM, RTD, T/C, DU)
TEACH-IN, DIGITAL FILTER, TARE
OUTPUT: 0/4...20 mA/0...5 mA/0...2/5/10 V/±10 V
POWER SUPPLY 10...30 V AC/DC

Option
Comparators • Data output

OPERATION
Instrument can be controlled by two push buttons and a DIP switch located on the front panel. When frequent changes of settings are needed, we recommend the use of OM Link interface, which in conjunction with free control SW allows for modification and storage of all instrument’s settings and also for firmware upload (using OM Link cable) from a PC.

The above mentioned SW can also be used for visualisation and archiving of measured values from a number of instruments via the RS 485 line. All settings are stored in the EEPROM memory (they hold even after the instrument is switched off).

STANDARD FUNCTIONS
PROGRAMMABLE INPUT
Setting: manual, any type and range of analogue output can be assigned to any min. and max. values of input signal
Setting (UQC): measuring mode counter/frequency with adjustable calibration coefficient and time base

ANALOG OUTPUT
Type: isolated, programmable with resolution of max. 12 bit, type and range of output selectable in the menu
Ranges: 0...2/5/10 V/±10 V, 0...5 mA/0/4...20 mA (comp. < 500 Ω)

COMPARATORS are assigned to monitor two limit values with relay output. 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...399.9 s. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUT 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 RS485 with the ASCII protocol.

Model range OMX 333 are simple DIN rail mountable programmable signal convertors. The range consists of UNI, DC, PWR and UQC versions.

Type OMX 333UNI is a multifunction device which allows for selection from 8 inputs easily configurable in the instrument’s menu.

OMX 333DC a OMX 333PWR are versions used for measurement of higher DC and AC voltage and current.

This instrument is based on a single-chip microcontroller with a 12bit A/D and D/A converter, which provides high accuracy, stability and ease of use.

Type OMX 333UQC is a universal counter/frequency meter.

 extern
**TECHNICAL DATA**

**INSTRUMENT ACCURACY**

- Nominal accuracy: ±0.05% of range + 1 digit [for 20 ms/samples]
- ±0.05% of value + 1 digit

- ±0.05% of value + 1 digit 

**Accuracy of cold junction measurement:** ±1°C

**Specifications:**

- **Input frequency**: 0.1 Hz to 50 kHz (20 kHz for QUADR and UP/DOWN, 10 kHz for QUADR - counter)
- **2x open collectors**
- **CONNECTION**
  - OMX 333UQC
  - OMX 333PWR
  - OMX 333DC
  - DU:
  - T/C:
  - Ni:
  - Cu:
  - RTD:
  - OHM:
  - PM:
  - DC:
  - OMX 333UNI

**OMX 333** is a multifunction instrument available in following types and ranges

- **MEASURING RANGES**
  - **Output**
  - **Delay**
  - **Hysteresis**
  - **Limits**
  - **Type**
  - **Calibration**
  - **OM Link**
  - **Measuring modes (PWR)**
  - **PRESET (UQC)**
  - **Calibration constant (UQC)**
  - **Time base (UQC)**
  - **Input filters (UQC)**
  - **Linearization (DC, PM, DU)**
  - **Functions**
  - **Watch-dog**
  - **Overload capacity**
  - **Rate**
  - **±0.05 % of value + 1 digit**
  - **Accuracy**
  - **TK:**
  - **INSTRUMENT ACCURACY**
  - **TERMINATION**
  - **Input filters (UQC)**
  - **50 Ω residual ripple at output voltage of 10 V**

**CONNECTING INDIVIDUAL INPUTS**

- **DC**
- **PM**
- **T/C**
- **SCN**
- **PWR**

**ORDER CODE SPECIFICATION**

- **ORDER CODE**

**ORDER CODE**

- **OMX 333**

**OPERATING CONDITIONS**

- **Connection**
- **Terminal board**, section < 1.5 mm²
- **EN 61326-1**
- **Insulation resistance:** for pollution degree II, measuring cat. II.
- **Power supply:** 550 V DC (24 V DC)

**INSTALLATION**

- **Dimensions:** 90.5 x 79 x 25 mm
- **Material:** PA 66, incombustible UL 94 V0, blue
- **Power supply:** 10…30 V DC/24 V AC/DC, ±10 %, 3 VA, PF ≥ 0.4, I STP < 40 A/1 ms, isolated

**RIPPLE**

- 5 mV residual ripple at output voltage of 10 V

**RATES**

- 0,01…9999

**RESPONSE TO CHANGE OF VALUE**

- < 1 ms

**SPECTRAL RESPONSE**

- Power supply > 550 V (ZI), 255 V (DI)

**EMC**

- EN 61010-1, A2

**INSULATION RESISTANCE**

- ≥ 10¹³ Ohm

**DIELECTRIC STRENGTH**

- 15 ppm/°C

**NON-LINEARITY**

- ±0.1 % of range

**STORAGE TEMPERATURE**

- -20°…60°C

**WORKING TEMPERATURE**

- -20°…80°C

**STABILIZATION PERIOD**

- within 15 minutes after switch-on

**Connection**

- Terminal board, section < 1.5 mm²
- Power supply isolation
- OM Link: for communication interface for operation, setting and update of instruments

**Coverage**

- EN 61326-1

**Safety**

- **EI safety:** EN 60831-1

**DIELECTRIC STRENGTH**

- 25 kV/AC after 1 min between supply/input/output

**Insulation resistance:** for pollution degree II, measuring cat. II.

**Power supply:** 550 V DC (24 V DC)

**EN 61010-1**
PROGRAMMABLE ISOLATED TRANSMITTERS
MEASURING RATE - UP TO 7 500 MEAS/S
TEACH-IN
OUTPUT: 4...20 mA/0...10 V
POWER SUPPLY 18...30 VDC
Option
Excitation • Data output • Power supply 10...30 V AC/DC

OPERATION
The instrument is controlled by two push buttons on the front panel. The mode of the output signal and the access to the teach-in mode is realised by a switch at the rear. Standard equipment is the OM Link interface, which together with operating program allows modification and filing of all instrument’s settings as well as performing firmware updates (with OML cable).
All settings are stored in the EEPROM memory (they hold even after the instrument is switched off).

OPTION
EXCITATION is suitable for powering sensors and transmitters. It is not galvanically isolated. The set values are either 24 V.
DATA OUTPUT 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 RS485 with the ASCII/MODBUS protocol.

STANDARD FUNCTIONS
PROGRAMMABLE INPUT
Selection of: measuring range
Setting: Teach-in, allows easy setting of both min. and max. of the measuring range
ANALOG OUTPUT
Type: programmable with resolution 16 bit, rate < 0,2 ms
Range: 0...10 V, 4...20 mA
EXCITATION
Fixed: 13,8 V (by supply 18...30 V) or 15 V (by supply 10...30 V)

OMX 380
The OMX 380 model range are very fast digital transmitters to DIN rail with and Teach-in function.
Modifications available are PM, DU and T.
The instrument is based on a single chip microcontroller, 24 bit A/D and 16-bit D/A converter, which ensures good accuracy, stability and easy operation of the instrument.

OMX 380PM
PROCESS MONITOR
OMX 380DU
TRANSMITTER FOR LINEAR POTENTIOMETERS
OMX 380T
TRANSMITTER FOR STRAIN GAUGE

OMX 380
The OMX 380 model range are very fast digital transmitters to DIN rail with and Teach-in function.
Modifications available are PM, DU and T.
The instrument is based on a single chip microcontroller, 24 bit A/D and 16-bit D/A converter, which ensures good accuracy, stability and easy operation of the instrument.
**TECHNICAL DATA**

**INSTRUMENT ACCURACY**
- Tk: 10 pm/°C
- Accuracy: ±0,01% of range
- Rate: 1 000…7 500 meas./s
- Overload capacity: 35x 0 < 30 ms; 2x
- Watch-dog: reset after 450 ms
- Functions: Teache-in
- OM Link: Company communication interface for operation, setting and update of instruments
- Calibration: ±25°C and 40 % ch.

**DATA OUTPUT**
- Type: RS 485
- Protocol: ASCII, MODBUS - RTU
- Data format: 8 bit + no parity + 1 stop bit
- Rate: 9600, 230 400 baud
- Address: ASCII - max. 31 instruments
- MODBUS - max. 246 instruments

**ANALOG OUTPUT**
- Type: programmable with resolution of 10 bit, type and range are selectable
- Non-linearity: 0,01% of range
- Tk: 10 pm/°C
- Rate: response to change of value < 0,2 ms
- Ranges: 0…10 V, 4…20 mA (comp. < 500 Ω)
- Ripple: 5 mV residual ripple at output voltage of 10 V

**EXCITATION**
- Fixed (PM): 13,8 VDC/max. 20 mA (by supply 18…30 V)
- 24 VDC/max. 40 mA (by supply 10…30 V)
- Fixed (DU): 10 V (±0,2 %)
- Fixed (T): 10 V, max. load 150 Ω

**POWER SUPPLY**
- 18…30 VDC, ±10 %, max. 2,5 W, I STP< 40 A/1 ms
- 10…30 VDC, ±10 %, max. 2,5 W, I STP< 40 A/1 ms, isolated

**MECHANIC PROPERTIES**
- Material: PA 66, incombustible UL 94 V0, blue
- Dimensions: 90,5 x 79 x 25 mm
- Installation: to DIN rail 35 mm wide

**OPERATING CONDITIONS**
- Connection: connector terminal board, section < 1,5 mm²
- Stabilization period: within 15 minutes after switch-on
- Working temperature: -20°…60°C
- Storage temperature: -20°…80°C
- Cover: IP20
- El. safety: EN 61010-1, A2
- Dielectric strength: 2,5 kVAC after 1 min between supply/input/outputs
- Insulation resistance: for pollution degree II, measuring cat. III. Power supply > 550 V (ZI), 255 V (DI)
- EMC: EN 61326-1

**INSTRUMENT ACCURACY**
- Tk: 10 ppm/°C
- Accuracy: ±0,01 % of range
- Rate: 1 000…7 500 meas./s
- Overload capacity: 35x 0 < 30 ms; 2x
- Watch-dog: reset after 450 ms
- Functions: Teach-in
- OM Link: Company communication interface for operation, setting and update of instruments
- Calibration: ±25°C and 40 % ch.

**DATA OUTPUT**
- Type: RS 485
- Protocol: ASCII, MODBUS - RTU
- Data format: 8 bit + no parity + 1 stop bit
- Rate: 9600, 230 400 baud
- Address: ASCII - max. 31 instruments
- MODBUS - max. 246 instruments

**ANALOG OUTPUT**
- Type: programmable with resolution of 10 bit, type and range are selectable
- Non-linearity: 0,01% of range
- Tk: 10 ppm/°C
- Rate: response to change of value < 0,2 ms
- Ranges: 0…10 V, 4…20 mA (comp. < 500 Ω)
- Ripple: 5 mV residual ripple at output voltage of 10 V

**EXCITATION**
- Fixed (PM): 13,8 VDC/max. 20 mA (by supply 18…30 V)
- 24 VDC/max. 40 mA (by supply 10…30 V)
- Fixed (DU): 10 V (±0,2 %)
- Fixed (T): 10 V, max. load 150 Ω

**POWER SUPPLY**
- 18…30 VDC, ±10 %, max. 2,5 W, I STP< 40 A/1 ms
- 10…30 VDC, ±10 %, max. 2,5 W, I STP< 40 A/1 ms, isolated

**MECHANIC PROPERTIES**
- Material: PA 66, incombustible UL 94 V0, blue
- Dimensions: 90,5 x 79 x 25 mm
- Installation: to DIN rail 35 mm wide

**OPERATING CONDITIONS**
- Connection: connector terminal board, section < 1,5 mm²
- Stabilization period: within 15 minutes after switch-on
- Working temperature: -20°…60°C
- Storage temperature: -20°…80°C
- Cover: IP20
- El. safety: EN 61010-1, A2
- Dielectric strength: 2,5 kVAC after 1 min between supply/input/outputs
- Insulation resistance: for pollution degree II, measuring cat. III. Power supply > 550 V (ZI), 255 V (DI)
- EMC: EN 61326-1

**INSTRUMENT ACCURACY**
- Tk: 10 ppm/°C
- Accuracy: ±0,01 % of range
- Rate: 1 000…7 500 meas./s
- Overload capacity: 35x 0 < 30 ms; 2x
- Watch-dog: reset after 450 ms
- Functions: Teach-in
- OM Link: Company communication interface for operation, setting and update of instruments
- Calibration: ±25°C and 40 % ch.

**DATA OUTPUT**
- Type: RS 485
- Protocol: ASCII, MODBUS - RTU
- Data format: 8 bit + no parity + 1 stop bit
- Rate: 9600, 230 400 baud
- Address: ASCII - max. 31 instruments
- MODBUS - max. 246 instruments

**ANALOG OUTPUT**
- Type: programmable with resolution of 10 bit, type and range are selectable
- Non-linearity: 0,01% of range
- Tk: 10 ppm/°C
- Rate: response to change of value < 0,2 ms
- Ranges: 0…10 V, 4…20 mA (comp. < 500 Ω)
- Ripple: 5 mV residual ripple at output voltage of 10 V

**EXCITATION**
- Fixed (PM): 13,8 VDC/max. 20 mA (by supply 18…30 V)
- 24 VDC/max. 40 mA (by supply 10…30 V)
- Fixed (DU): 10 V (±0,2 %)
- Fixed (T): 10 V, max. load 150 Ω

**POWER SUPPLY**
- 18…30 VDC, ±10 %, max. 2,5 W, I STP< 40 A/1 ms
- 10…30 VDC, ±10 %, max. 2,5 W, I STP< 40 A/1 ms, isolated

**MECHANIC PROPERTIES**
- Material: PA 66, incombustible UL 94 V0, blue
- Dimensions: 90,5 x 79 x 25 mm
- Installation: to DIN rail 35 mm wide

**OPERATING CONDITIONS**
- Connection: connector terminal board, section < 1,5 mm²
- Stabilization period: within 15 minutes after switch-on
- Working temperature: -20°…60°C
- Storage temperature: -20°…80°C
- Cover: IP20
- El. safety: EN 61010-1, A2
- Dielectric strength: 2,5 kVAC after 1 min between supply/input/outputs
- Insulation resistance: for pollution degree II, measuring cat. III. Power supply > 550 V (ZI), 255 V (DI)
- EMC: EN 61326-1

OMX 380 is available in these modifications and measuring ranges

<table>
<thead>
<tr>
<th>Type</th>
<th>Input “I”</th>
<th>Input “U”</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>0…20 mA/4…20 mA/0…10 V</td>
<td>0…10 V</td>
</tr>
<tr>
<td>DU</td>
<td>Linear potentiometer (min. 500 Ω)</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>1.4 mV, 2…3 mV, 4…5 mV</td>
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**CONNECTING INDIVIDUAL INPUTS**

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**ORDER CODE SPECIFICATION**

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<td>T</td>
<td>1.4 mV, 2…3 mV, 4…5 mV</td>
<td></td>
</tr>
</tbody>
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**POWER SUPPLY**
- 18…30 VDC, ±10 %, max. 2,5 W, I STP< 40 A/1 ms
- 10…30 VDC, ±10 %, max. 2,5 W, I STP< 40 A/1 ms, isolated

**Data**
- OM 380, ASCII
- MODBUS

**APPLICATION**
- OM Link: Company communication interface for operation, setting and update of instruments

**CALIBRATION**
- at 25°C and 40 % r.h.
OMX PROFIBUS

The transmitter is designed for easy and cost-effective connection of ORBIT MERRET™ instruments to PROFIBUS line. One apparatus may control up to 31 instruments via the RS 485 line with communication protocol OM ASCII.

From the OM xxx instruments individual values may be downloaded from as many as 9 channels (for one instrument) as well as limit statuses may be set. Another option is projecting values and texts on displays of individual instruments.

OPERATION

The instrument is designed for transfer of communication among the OM xxx instruments to PROFIBUS bus without further control.

On the front panel of the transmitter there are 4 LED diodes for signalization of the operational status and communication in progress.

- TRANSMITTER PROFIBUS TO RS 485
- SIZE OF 113 X 98 MM, WIDTH 22 MM
- POWER SUPPLY 80...250 V AC/DC
- Option
  Power supply 10...30 V AC/DC
**INPUT PROFIBUS**

Address: 0…125, adjustable in OM instruments with '00' address
Rate: 9 600 Baud; 12 Mbaud
Data transmission: 54B to OM, 44B from OM

Modes:
- data downloading + setting limits
- projection of FLOAT values [Real]/LONG
- projection of texts
- sending OM ASCII commands

**DATA OUTPUT**

Data format: 8 bit + no parity + 1 stop bit (OM ASCII)
Rate: 600…115 200 Baud
RS 485: isolated, addressing [max. 31 instruments]

**POWER SUPPLY**

10…30 V AC/DC, ±10 %, max. 1 VA, PF = 0.4, I<sub>LP</sub> = 40 mA
80…250 V AC/DC, ±10 %, max. 1 VA, PF = 0.4, I<sub>LP</sub> = 40 mA

**MECHANIC PROPERTIES**

Material: PA 6,6, incombustible UL 94 V-I, blue
Dimensions: 113 x 98 x 22 mm
Installation: to DIN rail 35 mm wide

**OPERATING CONDITIONS**

Connection: connector terminal board, section < 2.5 mm²
Stabilization period: within 5 minutes after switch-on
Working temperature: -20°…60°C
Storage temperature: -20°…85°C
Cover: IP20
IEC safety: EN 61010-1, A2
Dielectric strength: 4 kVAC after 1 min between supply and input
Insulation resistance: for pollution degree II, measuring cat. II
Power supply > 600 V (ZI), 300 V (DI)
input, output, Exc. > 500 V (ZI), 150 V (DI)

**EMC**

EN 61326-1

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**ORDER CODE**

**OMX Profibus**

- □

Power supply:
10…30 V AC/DC, isolated
80…250 V AC/DC, isolated

Default execution is shown in bold

*Launch for sale has not been set
The OMP 38 is a stabilized source for sensor power supply. The source is in a plastic box with terminal board to DIN rail. On the face of the transmitter there are LEDs, which indicate the operation status of the source.

- ADJUSTABLE STABILIZED SOURCE TO DIN RAIL
- OUTPUT 5/12/24 VDC, 5/15/24 VDC
- CURRENT AND HEAT PROTECTION
- POWER SUPPLY 80...250 V AC/DC

Switch for the setting of output voltage is located on the lower edge of the instrument.
**OUTPUT**

Output:

A - 5 VDC/450 mA; 12 VDC/300 mA; 24 VDC/150 mA
B - 5 VDC/450 mA; 15 VDC/240 mA; 24 VDC/150 mA

[adjustable by a switch on the box]

- Tolerance: ±0,25 V
- Regulation: ±0,1 V
- Ripple: < 50 mV<br>
- Efficiency: 63 %
- Functions: active current restriction as per selected range, overs/stepping the restriction is signalled by red LED

**OPERATING CONDITIONS**

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

- Stabilization period: within 5 minutes after switch-on
- Working temperature: 20°...60°C
- Storage temperature: 20°...80°C
- Cover: IP20
- El. safety: EN 61010-1, A2
- Dielectric strength: 4 kVAC after 1 min between supply and output
- Insulation resistance: for pollution degree II, measuring cat. III
- Power supply, výstup > 300 V (ZI), 150 V (DI)
- EMC: EN 61326

**POWER SUPPLY**

- Range: 80...250 V AC/DC, 50/60 Hz, ±10 %, max. 5,7 VA, PF ≥ 0,4
- Input frequency: DC, 47...63 Hz
- Input current: 100...45 mA
- Starting current: < 20 A, < 1,5 ms
- Protection: by a fuse inside the instrument [T63 mA]

**MECHANIC PROPERTIES**

- Material: PA 66, incombustible UL 94 V-I, blue
- Dimensions: 113 x 98 x 22 mm
- Installation: to DIN rail 35 mm wide

**ORDER CODE**

OMP 38

<table>
<thead>
<tr>
<th>Output</th>
<th>6/12/24 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6/12/24 VDC</td>
</tr>
<tr>
<td>B</td>
<td>6/12/24 VDC</td>
</tr>
</tbody>
</table>

Default execution is shown in bold
The OMA 10S is a manual panel switch of measuring points. For its parameters, low transitional resistance and high endurance the switch is designed for low-voltage applications (e.g. for sensors Pt 100).

- MANUAL SWITCH OF MEASURING POINTS 4X 10
- SIZE OF DIN 96 X 48 MM

**OPERATION**

Switching of the measuring points is performed by revolving switch on the front panel.
**TECHNICAL DATA**

**INPUT**
- Connection: 4 x 10 positions
- Number of positions is adjustable inside the switch (2...10 x 4)
- Max. load: 30 VDC/100 mA
- Max. current switched: 5 mA

**MECHANICAL PROPERTIES**
- Material: Noryl GRN 5E1, incombustible UL 94 V-I
- Dimensions: 96 x 48 x 120 mm
- Panel cutout: 90.5 x 45 mm

**OPERATING CONDITIONS**
- Connection: connector terminal board, section < 2.5 mm²
- Working temperature: -20°...+60°C
- Storage temperature: -20°...+85°C
- Cover: IP40
- Insulation resistance: 50 V
- El. safety: EN 61010-1, A2

**ORDER CODE**

OMA 10S
FUNCTIONS
Instrument configuration: The transmitter provides galvanic separation of USB bus and RS output. Output lines RS 232 and RS 485 have galvanic connection and via exciters connected to one UART. Therefore it is possible to use always one output only.

DATA OUTPUT
Rate: RS 232: 600…460 800 baud
Rate: RS 485: 600…921 600 baud

POWER SUPPLY
5 V/100 mA from USB

OPERATING CONDITIONS
Connector terminal board: conductor section <1,5 mm²
Working temperature: 0…60 °C
Storage temperature: -10…85 °C
Insulation capability: for pollution degree II, measuring category III input/output > 300 V(PI), 150 V(DI)

ACCESSORIES
USB A-B cable may be provided with the transmitter

OM USB-RS
Isolated transmitter USB > RS 232/RS 485

ADDITIONAL COVER IP64
For instruments of the OM 36 and OM 47 series
1. **General business terms**
   
2. **Notices and Orders**
   
3. **Delivery and title**
   
4. **Price of the Subject of Performance**
   
5. **Terms of payment and Delivery**
   
6. **Ownership of the Subject of Performance**
   
7. **Conditions for Return of the Subject of Performance**
   
8. **Delivery terms**
   
9. **Orders and Contract**
   
10. **Alterations to the General Business Terms**
   
11. **Disputes**

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**GENERAL BUSINESS TERMS**

1. **Basic provisions**
   
2. **Price of the Subject of Performance**
   
3. **Concluding the contract**
   
3.1. An order has to contain the following elementary properties:
   
3.2. Prices of the Subject of performance listed in the Quotation do not include any related services, unless expressly provided for otherwise. The Supplier reserves the right to modify technical and technical materials.
   
3.3. Any disputes related to the application, implementation or interpretation hereof would be solved at the Commercial court in Prague.

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**GENERAL BUSINESS TERMS**
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fax: +420 281 040 299
e-mail: orbit@merret.eu
www.orbit.merret.eu

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www.belgomat.com

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www.a-tech.ca

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www.el-gammal.com

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