



PROGRAMMABLE ISOLATED TRANSMITTER

- 2x multifunction input (DC, PM, RTD, T/C, DU)
- LCD display, Digit. filters, Tare, Linearization
- 3x Card slots
- Galvanic separation: 2,5 kVAC
- Power supply 10...30 V AC/DC; 80...250 V AC/DC
- Option
 - Comparators • Data output • Measured data record

OPERATION

The instrument is set and controlled by two buttons 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 instrument setting.

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 determine the access rights (see, change). Access w/o password.

Standard equipment is the OM Link and USB interfaces, which together with operation program enables modification and filing of all instrument settings as well as performing firmware updates. The program is also designed for visualization and filing of measured values from more instruments.

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

The measured units can be projected on the display.

OPTIONS

COMPARATORS are assigned to monitor six 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.

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/MODBUS/PROFIBUS protocols and LAN.

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 RS 232/485 and OM Link.

OMX 103UNI



The OMX 103 model series are DIN rail mountable programmable transmitters designed with the utmost versatility and user comfort whilst keeping the cost at a favourable level.

Type OMX 103UNI is a multifunction two-input instrument with 8 possible input configurations easily adjustable in the instrument's menu.

Modular concept of the device allows any card to be fitted in 3 slots. This can be performed on the end-user level. The converter can be used, for example, as a splitter with up to 4 analogue outputs.

The instrument is based on a single-chip microcontroller with a 24-bit A/D converter, which ensures good accuracy, stability and easy operation of the instrument.

For displaying measured data, easier setup and clear function arrangement, the instrument is delivered with a backlit LCD display.

OMX 103UNI

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

STANDARD FUNCTIONS

PROGRAMMABLE INPUT

Selection: of input type and measuring range

Standard setting: any display values can be assigned to Min and Max values of a defined standard input signal

Teach-in: any display values can be assigned to Min and Max values of actual (unknown) input signal

Manual setting: known Min and Max input signal values can be entered manually and any display values can be assigned to each signal

ANALOG OUTPUT

Type: isolated, programmable with a resolution of 16 bit, rate < 1 ms

Range: 0...2/5/10 V, ±10 V, 0...5 mA, 0/4...20 mA

EXCITATION

Range: 24 VDC/1 W, isolated

COMPENSATION

Of leads resistance (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)

Of leads resistance in probe (RTD): internal connection (leads resistance in measuring probe)

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

FUNCTIONS

Linearization: non-linear signals can be linearized by the means of a linearisation table

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

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

Peak value: the display shows only max. or min. value

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

DIGITAL FILTERS

Floating average: from 2...30 measurements

Exponential average: from 2...100 measurements

Arithmetic average: from 2...100 measurements

Rounding: setting the projection step for display

EXTERNAL CONTROL

Hold: display/instrument blocking

Lock: control keys blocking

Tare: activation and tare resetting

Resetting MM: resetting min/max value

TECHNICAL DATA

INPUT																																									
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	The following functions can be assigned: OFF / HLD. / B.PA. / TR.A / TR.B / C.TA / C.T.B / C.M.M. / SAVE / LOC.																																								

PROJECTION
 Display: -99...999
 LCD with backlighting, 2x 3 digits + 2x description (3 digits)
 Description: second and fourth line of the LCD display may be used for description of measured quantity, resp. output quantity (adjustable in menu)
 Decimal point: adjustable - in menu

INSTRUMENT ACCURACY
 TC: 50 ppm/ $^{\circ}$ C
 Accuracy: $\pm 0,15\%$ of range + 1 digit
 $\pm 0,3/\pm 0,6/\pm 0,9\%$ of range + 1 digit
 Accuracy of cold junction measur.: $\pm 1,5^{\circ}$ C
 Rate: 0,5...80 measurement/s
 Overload capacity: 2x - long term; 10x (t < 30 ms)
 Resolution: 0,1 $^{\circ}$ C (RTD), 1 $^{\circ}$ C (T/C), for display
 Digital filters: Exp./Floating/Arithm. average, Rounding
 Functions: Offset, Min/max value, Tare, Peak value, Mat. operations
 Linearization: linear interpolation in 177 points and 3 tables (only via OM Link)
 Data record: measured data record into instrument memory
 RTC - 15 ppm/ $^{\circ}$ C, time-date-display value < 266k data
 OM Link: company communication interface for operation, setting and update of instruments, microUSB
 Watch-dog: reset after 20 ms
 Calibration: at 25 $^{\circ}$ C and 40 % r.h.

T/C

COMPARATOR
 Number of outputs: 2...6
 Type: digital, menu adjustable, contact switch-on < 50 ms
 Hysteresis mode: switching limit, hysteresis band (Lim and $\pm 1/2$ Hys.) and time ($\pm 99,9$ s) determining the switching delay
 Mode From-To: switching on and switching off interval
 Mode Batch: period, its multiples and time (0...99,9 s), within which the output is active
 Mode Error - adjustable limits for signalling underflow/overflow
 Output: 2...6x Form C relays (250 VAC/30 VDC, 3 A);
 2...6x open collector (30 VDC/100 mA)

DATA OUTPUTS
 Number of outputs: 1...2
 Protocol: ASCII, MODBUS RTU, PROFIBUS DP
 Data format: 8 bit + no parity + 1 stop bit (ASCII)
 Rate: 600...230 400 Baud
 9 600 Baud...12 Mbaud (PROFIBUS)
 RS 232/RS 485: isolated, addressing (max. 31 instruments/RS485)
 Ethernet: 10/100BaseT, TCP/IP Modbus (Slave)

ANALOG OUTPUTS
 Number of outputs: 1...4
 Type: isolated, programmable with 16-bit D/A converter, type and range are selectable in programming mode
 Non-linearity: 0,1% of range
 TC: 15 ppm/ $^{\circ}$ C
 Rate: response to change of value < 1 ms
 Ranges: 0...2/5/10 V, ± 10 V, 0...5 mA, 0/4...20 mA
 (comp. < 600 Ω /12 V)

EXCITATION
 Fixed: 24 VDC/max. 1W, isolated

POWER SUPPLY
 Range: 10...30 V AC/DC, $\pm 10\%$, PF $\geq 0,4$, I_{STP} < 40 A/1 ms, isolated
 80...250 V AC/DC, $\pm 10\%$, PF $\geq 0,4$, I_{STP} < 40 A/1 ms, isolated
 Consumption: < 9,4 W/9,2 VA
 Power supply is protected by a fuse inside the instrument.

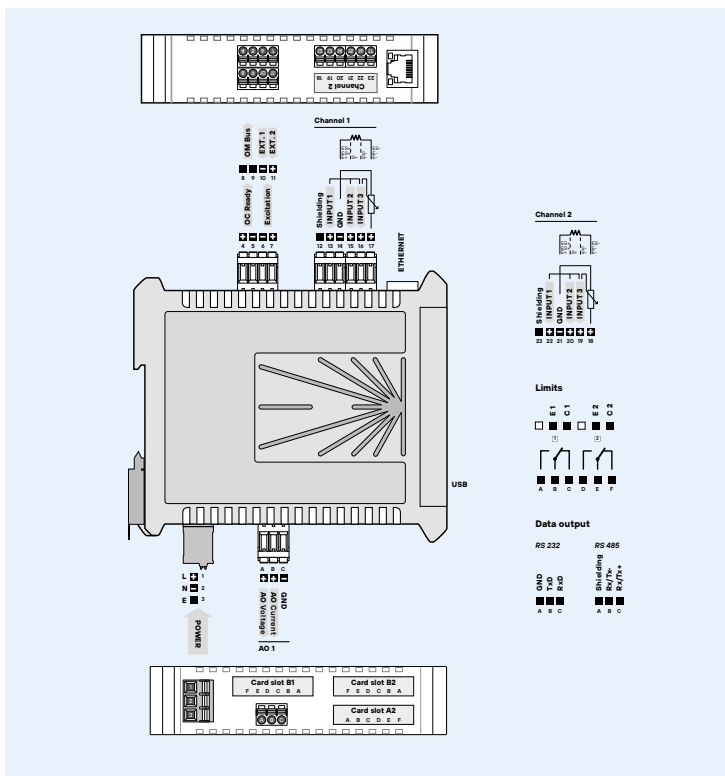
MECHANICAL PROPERTIES
 Material: PA 66, incombustible UL 94 V-0, blue
 Dimensions: 35 x 98 x 113 mm (w x h x d)
 Installation: on DIN rail, width 35 mm

OPERATING CONDITIONS
 Connection: connector terminal blocks, section < 1,5/2,5 mm²
 Stabilization period: within 5 minutes after switch-on
 Working temperature: -20°...60 $^{\circ}$ C
 Storage temperature: -20°...80 $^{\circ}$ C
 Protection: IP20
 El. safety: EN 61010-1, A2

Dielectric strength: 4 kVAC per 1 min test between supply and input
 2,5kVAC per 1 min test between supply and data/analog output
 4 kVAC per 1 min test between input and relay output
 2,5 kVAC per 1 min test between input and data/analog output
 2,5 kVAC per 1 min test between inputs
 Insulation resistance: for pollution degree II, measuring cat. III
 power supply, input, output, PN > 600 V (PI), 300 V (DI)
 EMC: EN 61326-1
 Seismic capacity: IEC 980: 1993, par. 6

PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 103UNI

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Power supply	10...30 VDC/24 VAC 80...250 V AC/DC	0							
Number inputs	1 input 2 inputs	A B							
Analogue output	no yes	0 1							
Card A2	no Comparator - 2x relays Comparator - 2x open collectors Analogue output RS 232 RS 485 Profibus	0 1 2 3 4 5 6							
Card B1	no Comparator - 2x relays Comparator - 2x open collectors Analogue output	0 1 2 3							
Card B2	no Comparator - 2x relays Comparator - 2x open collectors Analogue output RS 232 RS 485	0 1 2 3 4 5							
Ethernet - TCP/IP Modbus	no yes					0 1			
Data record	no yes						0 1		
Specification	customized version, do not fill in SW validation - IEC 61218, IEC 61226							00 VS	

Basic configuration of the instrument is indicated in bold.