



- PROGRAMMABLE ISOLATED TRANSMITTERS
- 2x MULTIFUNCTION INPUT (DC, PM, RTD, T/C, DU)
- LCD DISPLAY, DIGITAL FILTER, TARE
- 2x OUTPUT
0/4...20 mA/0...5 mA/0,2...2,2 kHz, 0...2/5/10 V/±10 V
- POWER SUPPLY 80...250 V AC/DC
- Option
Excitation • Comparators • Data output • Data record
Power supply 10...30 V AC/DC

OMX 102

OMLINK

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 a 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.

OMX 102DC

DC VOLTMETER AND AMMETER

OMX 102PWR

AC VOLTMETER AND AMMETER
AC NETWORK ANALYSER

OMX 102UNI

DC VOLTMETER AND AMMETER
PROCESS MONITOR
OHMMETER
THERMOMETER FOR PT/CU/NI/TC
FOR LINEAR POTENTIOMETERS

OMX 102UQC

UNIVERSAL COUNTER

OMX 102T

TRANSMITTER FOR STRAIN GAUGE

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 and USB 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 adjustable value in the range of 5/12/17/24 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 signalled by LED and simultaneously by the switch-on of the relevant relay.

DATA OUTPUTS are for their rate and accuracy suitable for transmission of the measured data for further projection or directly into the control systems. We offer an isolated RS232 and RS485 with the ASCII/PROFIBUS protocols, CAN and LAN.

STANDARD FUNCTIONS

PROGRAMMABLE INPUT

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

Weighing function [T]: manual or automatic calibration, signalization of stabilized equilibrium, zero stabilization, aut. zero monitoring, defined number of segm. on the scale

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

ANALOG OUTPUT

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

Rozsah: 0...2/5/10 V, ±10 V, 0...5 mA, 0/4...20 mA, 0,2...2 200 Hz

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 50 points (solely via OM Link)

DIGITAL FILTERS

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

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

Hold: display/instrument blocking

Lock: control keys blocking

Resetting [UQC]: counter resetting

Start/Stop [UQC]: stopwatch/timer control

TECHNICAL DATA

PROJECTION

Display: LCD with backlighting, 2x 3 characters + 2x description (3 characters)

Description: second and fourth line of LCD display may be used for description of measured quantity, resp. output quantity v menu)

Decimal point: setting - in menu

INSTRUMENT ACCURACY

TK: 50 ppm/°C

Accuracy: ±0,15% of range + 1 digit (for 20 meas./s)

±0,3/±0,6/±0,9% of range + 1 digit

±0,05% of value + 1 digit

±0,01% of value ±2ms (UQC - stopwatch)

±0,01% of value ±130ms (UQC - RTC)

Accuracy of cold junction measurement: ±1,5°C

Rate: 0,5...160 meas./s, 0,6...5 meas./s for PWR

Overload capacity: 2x; 10x (t < 30 ms) - not for > 200 V and 5 A

Resolution: 0,1°C (RTD), 1°C (T/C), for display

Watch-dog: reset after 20 ms

Functions: HOLD, LOCK, Digital filters, Tare

Linearization (DC, PM, DU): by linear interpolation in 50 points

Functions (UQC): Data backup, Time backup, Present

Input filters (UQC): Filtration constant, Rounding

Time base (UQC): 0,5/1/5/10/50 s

Calibration constant (UQC): 0,01m...999M

Filtration constant (UQC): 0,5/4/10/100/1000 Hz

PRESET (UQC): 0,01m...999M

Measuring modes (PWR): voltage (V_{RMS}), current (A_{RMS}), real power (W),

frequency (Hz) and with calculation of Q, S, cos φ

Data record: measured data record into instrument memory

RTC - 15 ppm/°C, time-date-display value, < 266k data

PWR, T/C

UQC

UQC

UQC

FAST (UNI) - display value, < 8k data

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

Calibration: at 25°C and 40% r.h.

COMPARATOR

Type: digital, setting in menu, contact switch-on < 50 ms

Limits: 999, resp. -99M...999M

Hysteresis: 0...999, resp. 999 k

Delay: 0...99,9 s

Output: 2x Form A relays (250 VAC/30 VDC, 3 A)

DATA OUTPUT

Protocol: ASCII, MESSBUS, MODBUS - RTU, PROFIBUS

Data format: 8 bit + no parity + 1 stop bit (ASCII)

7 bit + even parity + 1 stop bit (Messbus)

Rate: 600...230 400 Baud

9 600 Baud...12 Mbaud (PROFIBUS), 1 Mbaud (CAN)

RS 232/RS 485: isolated, adresace (max. 31 instruments/RS485)

Ethernet: 10/100BaseT, Security Protocols, POP3, ftp, http

ANALOG OUTPUT

Type: isolated, dual programmable with 16-bit D/A converter, type and range are selectable in programming mode

Non-linearity: 0,1% of range

TK: 15 ppm/°C

Rate: response to change of value < 1 ms

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

(comp. < 600 Q/12 V)

Frequency: isolated, programmable, open collector with inside power resistor, 0,2...2 200 Hz

EXCITATION

Adjustable: 5/12/17/24 VDC/max. 2,5 W, isolated

POWER SUPPLY

10...30 V AC/DC, ±10%, max. 13,5 VA, PF ≥ 0,4, I_{lim} < 40 A/1 ms

80...250 V AC/DC, ±10%, max. 13,5 VA, PF ≥ 0,4, I_{lim} < 40 A/1 ms

Power supply is protected by a fuse inside the instrument

MECHANICAL PROPERTIES

Material: PA 66, incombustible UL 94 V-1, blue

Dimensions: 113 x 98 x 35 mm

Installation: to DIN rail 35 mm wide

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...80°C

Cover: IP20

Construction: safety class I

El. safety: EN 61010-1, A2

Dielectric strength: 4 kVAC after 1 min between supply and inputs

4 kVAC after 1 min between supply and data/anal. outputs

4 kVAC after 1 min between input and relays

3,75 kVAC after 1 min between input and data/anal. outputs

3,75 kVAC after 1 min between inputs

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

Power supply, input, output, Exc. > 600 V (Z), 300 V (DI)

EMC: EN 61326-1

Seismic capacity: IEC 980: 1993, par. 6

SW validation (UNI): class B, C in compliance with IEC 62138, 61226

PI - Primary insulation, DI - Double insulation

MEASURING RANGES

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

type UNI (Channel 1 and 2)

DC: ±30/±60/1000 mV; ±20/±40/±80 V; ±90/±180 mA

PM: ±5/±20 mA/4...20 mA; ±2/±5/±10 V

OHM: 0...100/300 Q/0...1,5/3/30 kQ

RTD: Pt 50/100/500/1 000

Cu: Cu 50/100

Ni: Ni 1 000/10 000

T/C: J/K/T/E/B/S/R/N/L

DU: Linear potentiometer (min. 500 Q)

Type DC - Hi: ±1/±5 A; ±25/±50/±100/±200/±400 V (Channel 1)

Type PWR: 0...1/5 A

0...60/300 mV; 0...10/120/250/450 V (Channel 1)

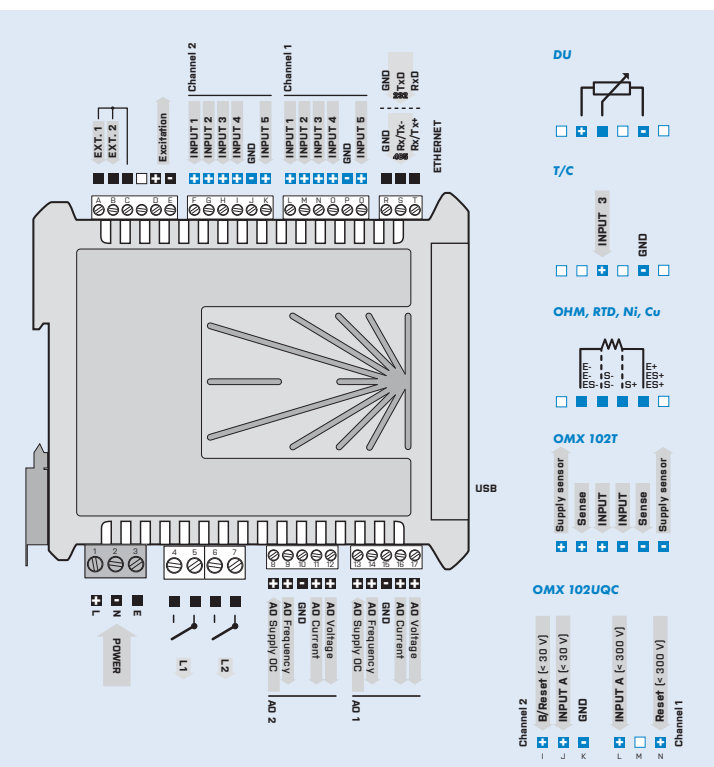
Type T: 1...4/2...8/4...16 mV/V (Channel 1)

Type UQC: 0...30/300 V, (Channel 1/12/17/274)

comparison levels are adjustable in the menu,

input frequency 0,1 Hz...500 kHz

CONNECTION



CONNECTING INDIVIDUAL INPUTS

	INPUT 1	INPUT 2	INPUT 3	INPUT 4	INPUT 5
DC	±20/±40/±80 V		±30/60 mV/±1 V		±90/180 mA
PM	±2/±5/±10 V				±5/20 mA, 4...20 mA
T/C			J/K/T/E/B/S/R/N/L		
DC/Hi	±25/±50/±100 V ±200/±400 V Channel 1				±1/±5 A Channel 2
PWR-I				0...60/300 mV Channel 2	0...1/5 A Channel 2
PWR-U	0...450 V Channel 1	0...250 V Channel 1	0...120 V Channel 1	0...10 V Channel 1	

ORDER CODE SPECIFICATION

UNI	
A	channel 1
B	channel 1 and 2

ORDER CODE

OMX 102	UNI	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6	Channel 7	Channel 8	Channel 9	Channel 10
Type	U N I	•	•	•	•	•	•	•	•	•	•
	D C*	•	•	•	•	•	•	•	•	•	•
	P W R*	•	•	•	•	•	•	•	•	•	•
	U Q C*	•	•	•	•	•	•	•	•	•	•
	T*	•	•	•	•	•	•	•	•	•	•
Power supply	10...30 V AC/DC 80...250 V AC/DC	0	1								
Measuring range , see table „Order code specification“		?									
Comparators	no 1x relay (Form A) 2x relays (Form A) 1x open collector 2x open collectors	0	1	2	3	4					
Analog output	none 1x 2x HART (not with data output)*	0	1	2	3						
Output	none RS 232 RS 485 (ASCII, MESSBUS, MODBUS) CAN* PROFIBUS 10/100BaseT Ethernet*	0	1	2	3	4	7				
Excitation	no Type OMX 102T always comes with excitation in standard	0	1								
Data record	no RTC FAST (only for UNI)	0	1	2							
Other	customer version, do not fill in SW validation - IEC 62138, IEC 61226									00	VS

Default execution is shown in bold

* Launch for sale has not been set