

OMX 100



OMX 100DC	DC VOLTMETER AND AMMETER
OMX 100PWR	UNIVERSAL WATTMETER
OMX 100PM	PROCESS MONITOR
OMX 100OHM	OHMMETER
OMX 100RTD	THERMOMETER FOR Pt/Ni
OMX 100T/C	THERMOMETER FOR THERMOCOUPLES
OMX 100DU	LINEAR POTENTIOMETERS
OMX 100F	UNIVERSAL COUNTER FREQUENCY METER

Description

The OMX 100 model series are programmable transmitters. The instrument is based on an 8-bit controller with precise A/D converter, which secures high accuracy, stability and easy operation feasibility. For projection of measured data, easier setting and clear function arrangement it is, as a standard, equipped with illuminated LCD display. Transmitters have galvanic separation with isolation voltage of 500 V.

Operation

The instrument is set and controlled by two control keys located on the front panel or via data line RS 232/485.

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.

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.

Options

Excitation is suitable for feeding of sensors and transmitters. It has a galvanic isolation with fixed preset value of 12...15 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 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/frequency. The value of analog output corresponds with the displayed data and its type and range are selectable in menu.

- Programmable isolated transmitters
- LCD display, Digital filter, Tare
- Output: 0/4...20 mA/0...5 mA/0,2...2,2 kHz
0...2/5/10 V
- Power supply 230 VAC

OMLINK

Options

- Excitation • Dual comparator • Data output
- Power supply: 24/110 VAC, 10...30 VDC

Standard functions

PROGRAMMABLE INPUT

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

Setting (F): measuring mode counter/frequency with adjustable calibration coefficient and time base

COMPENSATION

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

Exponential average: from 2...100 measurements

Rounding: setting the projection step for display

Filtration constant (F): transmits input signal up to 5...1 000 Hz

FUNCTIONS

Preset (F): initial non-zero value, which is always read after resetting the instrument to zero

Tare: resetting display upon non-zero input signal

EXTERNAL CONTROL

Hold: display/instrument blocking

Resetting (F): counter resetting

Lock: control keys blocking

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 (setting in menu)
Decimal point: setting - in menu

INSTRUMENT ACCURACY

TC: 100 ppm/°C
Accuracy: ±0,2% of range + 1 digit
 ±0,3% of range + 1 digit (PWR, T/C)
 ±0,05% of range + 1 digit (F)
Accuracy of cold junction measurement: ±1 °C
Rate: 0,5...80 meas./s
Overload capacity: 10x (t < 30 ms) - not for 200 V a 5A; 2x
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 25 points
Functions (F): Data backup, Time backup, Preset
Input filters (F): Filtration constant, Rounding
Time base (F): 0,1/0,5/1/5/10/50 s
Calibration constant (F): 0,01...9999 Hz
Filtration constant (F): 0/5/40/100/1 000 Hz
PRESET (F): 0...999
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 prog. mode, contact switch < 50 ms
Limits: 999, resp. -99...999 k
Hysteresis: 0...999, resp. 999 k
Delay: 0...99,9 s
Output: 2x Form A relays (250 VAC/30 VDC, 3 A)

DATA OUTPUT

Data format: 8 bit + no parity + 1 stop bit
Rate: 1 200...38 400 Baud
RS 232: isolated
RS 485: isolated, addressing (max. 31 instruments)

ANALOG OUTPUT

Type: isolated, programmable with resolution of max. 12 bit, type and range are selectable in programming mode
Non-linearity: 0,2% of range
TC: 100 ppm/°C
Rate: response to change of value < 100 ms
Ranges: 0...2/5/10 V, on request ±5 V/±10 V
 0...5 mA, 0/4...20 mA, on request ±20 mA, (comp. < 500 Ω)
Ripple: 5 mV residual ripple at output voltage of 10 V
Frequency: isolated, programmable, open collector with inside power resistor, 0,2...2 200 Hz

EXCITATION

Adjustable: 12...24 VDC/25 mA, isolated

POWER SUPPLY

24, 110, 230 VAC, 50/60 Hz, ±10%, 5 VA
 10...30 VDC/max. 150 mA, isolated
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 35 mm
Installation: to DIN rail 35 mm wide

OPERATING CONDITIONS

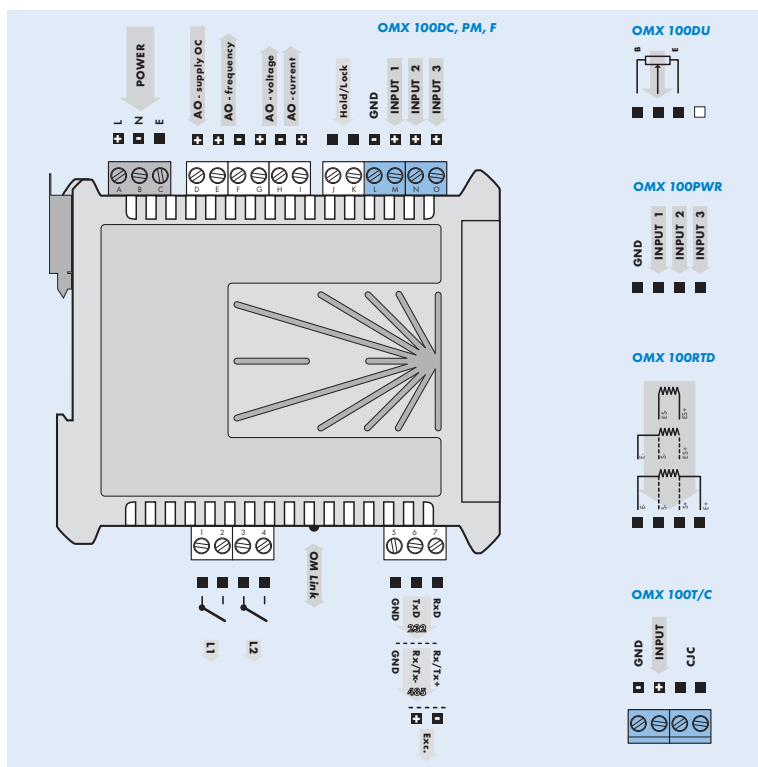
Connection: connector terminal board, section < 2,5 mm²
Stabilization period: within 15 minutes after switch-on
Working temperature: 0°...60 °C
Storage temperature: -10°...85 °C
Cover: IP20
El. safety: EN 61010-1, A2
Insulation resistance: for pollution degree II, measuring cat. III.
 AC power supply > 600 V (PI), 300 V (DI)
 DC power supply, input, output, Exc. > 500 V (PI), 250 V (DI)
EMC: EN 61000-3-2+A12; EN 61000-4-2, 3, 4, 5, 8, 11;
 EN 550222, A1, A2
Seismic capacity: IEC 980: 1993, par. 6

PI - Primary insulation, DI - Double insulation

Measuring ranges

	DC	PWR	PWR	PM	OHM	DU	UC		RTD	T/C
w/o				0/4...20 mA, 0...2/5/10 V		lin. potentiometer > 500 Ω	contact, TTL, NPN/PNP < 50 kHz			
A	±0,2/2/20/200 V, ±2/20 mA				0...999 Ω		counter/frequency	1	Pt 100	B
B	±60/150 mV, ±1/5 A				0...999 kΩ		timer/clock	2	Pt 500	R, S, T
C					0...99,9 kΩ			3	Pt 1 000	E, J, K, N
D								4	Ni 1 000	
E								5	Ni 2 226	
F								6	Ni 10 000	
G								7	Pt 100 (3920 ppm/°C)	
H					5...105 Ω					
K			0...60/150/300 mV							
P			0...1/2,5/5 A							
S		0...10/120 V								
U		0...250/450 V								
Z	on request	on request								

Connection



Order code

OMX 100

Type

D	C	.	.	.	.	.	.
P	M	.	.	.	.	.	.
O	H	M	.	.	.	.	.
P	W	R	.	.	.	.	.
R	T	D	.	.	.	.	.
T	C	.	.	.	.	.	.
D	U	.	.	.	.	.	.
F	.	.	.	.	.	.	.

Order code shall not include blank spaces!

Power supply	24 VAC/50 Hz	0	
	230 VAC/50 Hz	1	
	110 VAC/50 Hz	3	
	10...30 VDC, isolated	4	
Measuring range, see table „Measuring ranges“		?	
Comparators	no	0	1
	yes	1	
Output	none	0	1
	RS 232	1	
	RS 485	2	
	Excitation	3	