

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 with installation to 35 mm wide DIN rail.

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

- 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

Options

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

the displayed data and its type and range are selectable in menu.

Real time is an internal time control of data collection. It is suitable everywhere where it is necessary to register measured data in a given time segment. Up to 65 000 values may be stored in the instrument's memory. Data transmission into PC via serial interface RS232/485.

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): in menu it is possible to perform compensation for 2-wire connection

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 signal longer than the time set 2,5...100

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 programming mode

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)

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): 0/2,5/5/12,5/100 ms

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: 2 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

MECHANICAL 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

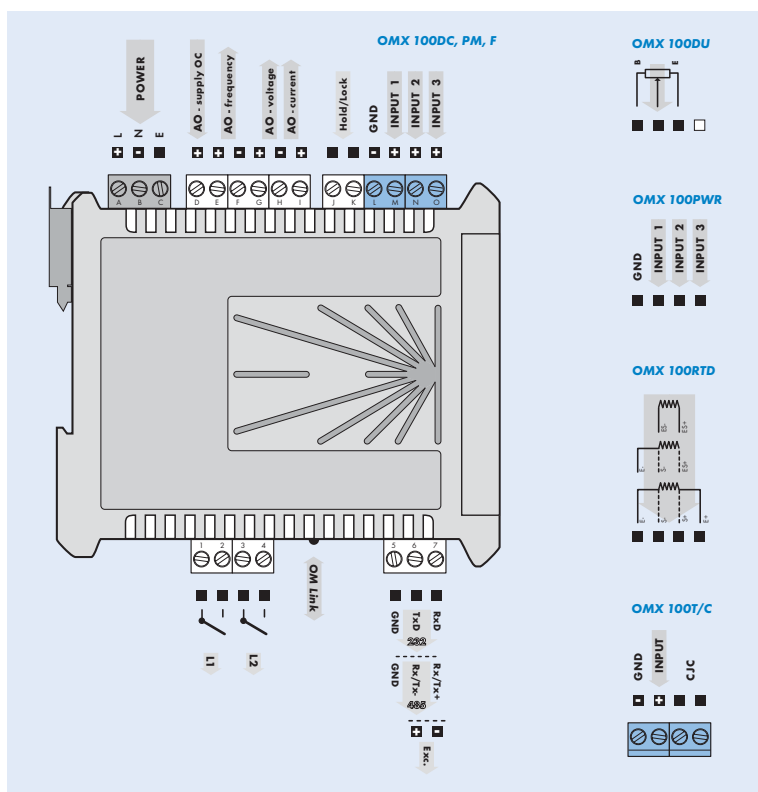
550222, A1, A2

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 counter/frequency timer/clock			
A	±0,2/2/20/200 V, ±2/20 mA				0...999 Ω				1 Pt 100	B
B	±60/150 mV, ±1/5 A				0...9,99 kΩ				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					
I										
J										
K			0...60/150/300 mV							
L										
M										
N										
P				0...1/2,5/5 A						
R										
S		0...10/120 V								
T										
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

230 VAC/50 Hz

110 VAC/50 Hz

10...30 VDC, isolated

0

1

3

4

Measuring range, see table „Measuring ranges“

?

Comparators

no

yes

0

1

Output

none

RS 232

RS 485

Excitation

0

1

2

3

Real time

no

yes

0

1