

# OMX 100



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

## 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 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.

- 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

### ANALOG OUTPUT

**Type:** isolated, programmable with resolution of max. 12 bit, type and range are selectable in programming mode

**Ranges:** 0...2/5/10 V, on request  $\pm 5$  V/ $\pm 10$  V

0...5 mA, 0/4...20 mA, on request  $\pm 20$  mA, (comp. < 500  $\Omega$ )

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

### 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)

### LINEARIZATION

**Linearization (DC, PM, DU):** by 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 (F):** transmits input signal up to 5...200 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:** 50 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 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:** 50 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 mm<sup>2</sup>

**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

**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 supply and data/analog output

**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 61326-1

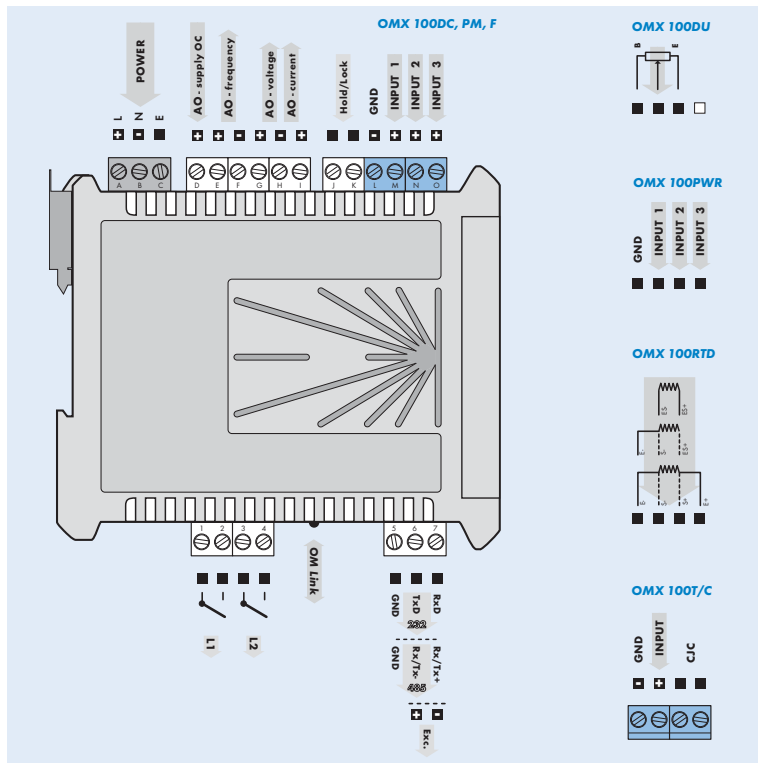
**Seismic capacity:** IEC 980: 1993, par. 6

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	±0,4/4/40/400 V, ±4/40 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  
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