OMX 100

- **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

Extension

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

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 DIN rail of 35 mm width.

The instrument is based on an 8-bit controller with precise A/D converter, that secures high accuracy, stability and easy operation feasibility.

For projection of measured data, easier setting and clear function arrangement it is equipped, as a standard, 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.

Extension

Excitation is suitable for feeding of sensors and transmitters. It has a galvanic isolation with fixed preset value of 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 CM.

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 „CM" 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 „CM" 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 „CM" 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: z 2...100 measurements
Rounding: setting the projection step for display
Filtration constant (F): limiting maximum input frequency, suppressing interfering impulses 5 Hz...400 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 illumination, 2x 3 signs +2x description (3 signs)
Decimal point: adjustable - 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 (UC)
Rate: 0,5...80 measurements/s
Overload capacity: 10x (t < 30 ms) - not for 200 V and 5A; 2x
Resolution: 0,1°C (RTD), 1°C (T/C)
Watch-dog: reset after 20 ms
Functions: HOLD, LOCK, digital filters, tare
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): 0,00001...999999
Filtration constant (F): 0/2,5/5/12,5/100 ms
Presetting (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, adjustable in programming mode, contact switch-on < 50 ms
Limits 1 and 2: ±999, resp -99...999 k
Hysteresis: 0...999, resp. 999 k
Delay: 0...99,9 s
Output: 2 relays with switch-on contact (250 VAC/30 VDC, 3 A)

DATA OUTPUTS
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 OUTPUTS
Type: isolated, programmable with resolution of max. 12 bit, output type and range are selecatble in „CM"
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 (comp. < 600 Ω), on request ±20 mA
Corrugation: 5 mV residual corrugation at input voltage 10 V
Frequency: isolated, programmable, open collector 0,2...2 220 Hz

EXCITATION
Fixed: 12...15 VDC/25 mA, with galvanic isolation

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

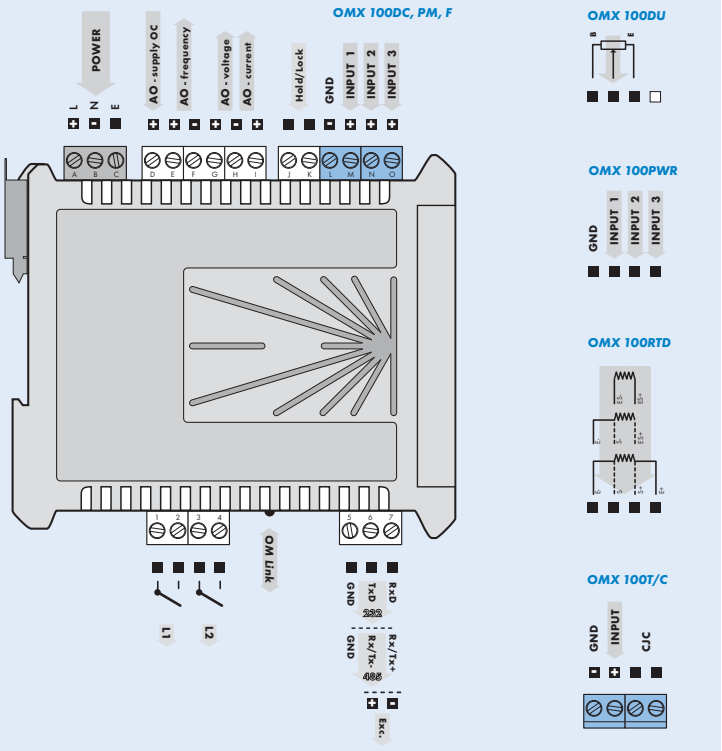
MECHANIC PROPERTIES
Material: Polyamid PA 6.6, V0 (UL 94), blue
Dimensions: 113 x 98 x 35 mm
Installation: to DIN rail, width of 35 mm

OPERATING CONDITIONS
Connection: connector terminal board, conductor section < 2,5 mm²
Stabilization period: within 15 minutes after switch-on
Working temperature: 0°...60°C
Storage temperature: -10°...85°C
Protection: IP20
Construction: safety class I
El. safety: EN 61010-1, A2
Overvoltage category: elementary isolation
III. - instrument power supply, relay output (500 V)
III. - input, output (500V)
EMC: EN 61000-3-2+A12; EN 61000-4-2, 3, 4, 5, 8, 11; EN 550222, A1, A2

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	w/o		
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...9,99 kΩ		stopwatch/watch	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...1/5 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	•		•	•	•
Order code shall not include blank spaces!				F	•		•	•	•
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		
	yes						1		
Output	none							0	
	RS 232							1	
	RS 485							2	
	Excitation							3	
Real time	no								0
	yes								1