



## OMX 333UNI



The OMX 333 model series are simple DIN rail mountable programmable transmitters.

Type OMX 333UNI is a multifunction transmitter with 8 possible input configurations easily adjustable in the instrument's menu.

The instrument is based on a single-chip microcontroller with a 16-bit A/D and D/A converter, which provides good accuracy, stability and ease of use.

### PROGRAMMABLE ISOLATED TRANSMITTER

- Multifunction input (DC, PM, RTD, T/C, DU)
- Digital filters, Tare, Linearization
- Output: 0/4...20 mA/0...5 mA/0...2/5/10 V/±10 V
- Galvanic separation: 2,5 kVAC
- Power supply 10...30 VDC/24 VAC
- Option  
Comparators • Data output

### OMX 333UNI

DC VOLTMETER AND AMMETER

PROCESS MONITOR

OHMMETER

THERMOMETER FOR Pt/Cu/Ni/THERMOCOUPLES

TRANSMITTER FOR LINEAR POTENTIOMETERS

### OPERATION

Instrument can be controlled by two push buttons and a DIP switch located on the front panel. When frequent changes of settings are needed, we recommend the use of OM Link interface, which in conjunction with free control SW allows for modification and storage of all instrument's settings and also for firmware upload (using OM Ling cable) from a PC.

The above mentioned SW can also be used for visualisation and archiving of measured values from a number of instruments via the RS 485 line.

All settings are stored in the EEPROM memory (they hold even after the instrument is switched off).

### OPTION

**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 RS485 with ASCII protocol.

### STANDARD FUNCTIONS

#### PROGRAMMABLE INPUT

Measuring range: adjustable in menu

Teach-In: Min and Max values can be assigned to any two values of (unknown) input signal

#### ANALOG OUTPUT

Type: isolated, programmable with a resolution of 16 bit, rate < 0,2 ms

Ranges: 0...2/5/10 V/±10 V, 0...5 mA/0/4...20 mA (comp. < 600 Ω)

#### COMPENSATION

Of conduct (RTD, OHM): automatic (3- or 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

#### FUNCTIONS

Linearization: non-linear signals can be linearized by the means of a linearization table (up to 25 points)

Tare: designed to reset display upon non-zero input signal

#### DIGITAL FILTERS

Exponential average: from 2...100 measurements

Rounding: setting the projection step for display

#### EXTERNAL CONTROL

Hold: display/instrument blocking

Lock: control keys blocking

Tare: activation and tare resetting

TECHNICAL DATA

INPUT

Number of inputs				1
DC	Range	optional in configuration menu		
		±90 mA	< 200 mV	Input 5
		±180 mA	< 200 mV	Input 5
		±30 mV	> 10 MΩ	Input 3
		±60 mV	> 10MΩ	Input 3'
		±1000 mV	> 100 MΩ	Input 3
		±20 V	1,25 MΩ	Input 1
		±40 V	1,25 MΩ	Input 1
		±80 V	1,25 MΩ	Input 1
PM	Range	optional in configuration menu		
		±20 mA	< 200 mV	Input 5
		4...20 mA	< 200 mV	Input 5
		±2 V	1 MΩ	Input 1
		±5 V	1 MΩ	Input 1
		±10 V	1 MΩ	Input 1
OHM	Range	optional in configuration menu with autorange		
		0...100 Ω		
		0...300 Ω		
		0...1,5kΩ		
		0...3 kΩ		
		0...24 kΩ		
		0...30 kΩ		
		0...30 kΩ (only for 2- or 4-wire connection)		
Pt	Type	optional in configuration menu		
		EU > 100/500/1 000 Ω, 3 850 ppm/°C	-50°...450°C	
		US > 100 Ω, 3 920 ppm/°C	-50°...450°C	
		RU > 50 Ω, 3 910 ppm/°C	-200°...1 100°C	
		RU > 100 Ω, 3 910 ppm/°C	-200°...450°C	
Connection	2, 3 or 4 wire			
Ni	Type	optional in configuration menu		
		Ni 1 000/10 000 with 5 000 ppm/°C	-50°...250°C	
		Ni 1 000/10 000 with 6 180 ppm/°C	-50°...250°C	
Connection	2, 3 or 4 wire			
Cu	Type	optional in configuration menu		
		Cu 50/100 with 4 260 ppm/°C	-50°...200°C	
		Cu 50/100 with 4 280 ppm/°C	-200°...200°C	
Connection	2, 3 or 4 wire			
T/C	Type	optional in configuration menu		
		J (Fe-CuNi)	-200°...900°C	
		K (NiCr-Ni)	-200°...1 300°C	
		T (Cu-CuNi)	-200°...400°C	
		E (NiCr-CuNi)	-200°...690°C	
		B (PtRh30-PtRh6)	300°...1 820°C	
		S (PtRh10-Pt)	-50°...1 760°C	
		R (Pt13Rh-Pt)	-50°...1 740°C	
		N (Omegalloy)	-200°...1 300°C	
		L (Fe-CuNi)	-200°...900°C	
		DU	Pot. power supply	2,5 VDC/6 mA, Potentiometer resistance > 500 Ω

External input

1 input, on contact

The following functions can be assigned:

OFF

input off

HLD.

display stop

LOCK

control keys blocking

TAR.

tare activation

INSTRUMENT ACCURACY

TC: 50 ppm/°C

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

±0,3% of range

Accuracy of cold junction measur.: ±1,5°C

Rate: 0,5...100 measurement/s

Overload capacity: 2x; 10x (t < 30 ms)

Digital filters: exponential average, rounding

Functions: Tare

Linearization: through linear interpolation in 25 points (only via OM Link)

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

Watch-dog: reset after 20 ms

Calibration: at 25°C and 40 % r.h.

COMPARATOR

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

Hysteresis mode: switching limit, hysteresis band (Lim and ±1/2 Hys.) and time (±99,9 s) determining the switching delay

Mode READY - output switching signals flawless status

Mode Error - output switching signals error status

Output: 1...2x Form A relays (250 VAC/30 VDC, 3 A);

1...2x open collector (30 VDC/100 mA)

DATA OUTPUTS

Protocol: ASCII

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

Rate: 600...230 400 Baud

RS 485: isolated, addressing (max. 31 instruments)

ANALOG OUTPUTS

Type: isolated, programmable with a 16 bit D/A converter, type and range are selectable in menu

Non-linearity: 0,1% of range

TC: 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 Ω/12 V)

Ripple: 5 mV residual ripple at output voltage of 10 V

POWER SUPPLY

Range: 10...30 VDC/24 VAC, ±10 %, PF≥0,4, I<sub>STP</sub>< 40 A/1 ms, isolated

Consumption: < 2 W/2 VA

MECHANIC PROPERTIES

Material: PA 66, incombustible UL 94 V0, blue

Dimensions: 25 x 79 x 90,5 (w x h x d)

Installation: on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection: connector terminal blocks, section < 1,5 mm²

Stabilization period: within 5 minutes after switch-on

Working temperature: -20°...60°C

Storage temperature: -20°...80°C

Protection: IP20

El. safety: EN 61010-1, A2

Dielectric strength: 2,5kV per 1 min test between pow. supply, inputs and outputs

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

power supply > 550 V (PI), 255 V (DI)

EMC: EN 61326-1

PI - Primary insulation, DI - Double insulation