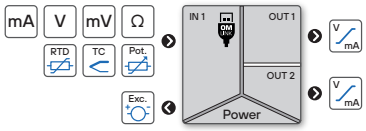
OMX 312UNI

- Multifunction input (DC, PM, RTD, T/C, DU)
- 2x Analog outputs, passive/active
- Quick configuration by DIP switch
- PC configurable via USB port
- Excitation 24 VDC
- Galvanic isolation 2.5 kVAC
- Simple instalation to DIN rail
- Power supply 10...30 VDC / 24 VAC

DIGITAL ISOLATED TRASMITTERS



The OMX 300 model series are digital DIN rail mounted trasmitterss housed in an enclosure only 17.5 mm wide.

The OMX 312UNI type is a galvanic isolated single-channel universal trasmitters / splitter. It can be configured for 10 different input variants. Setting of both the input and output ranges can be done conveniently by a DIP switch located on the side of the housing or from a PC via the OM Link SW.

You can also use this trasmitters as a splitter into 2 analogue outputs.

This device is based on a 32-bit processor and 24-bit ΔΣ ADC, which guarantees high accuracy and excellent stability.

OPERATION

The device can be configured either by DIP switch located on the side of the housing or by PC using the OM Link SW. The same SW can be used to edit and archive all device settings, as well as to perform firmware updates and customer calibration.

Tech-in process can be performed for the measuring range currently selected using the front panel buttons.

All settings are stored in the EEPROM memory (preserved even after power-off)

STANDARD FUNCTIONS*

PROGRAMMABLE INPUT
Selection: of input type and measuring range
Standard setting: any input values can be assigned to Min and Max values of the analog output
Teach-in: any input values can be assigned to Min and Max values of the actual (unknown) input signal
Manual setting: the known Min and Max values of the input signal can be set manually and any analog output values can be assigned to each of them at the same time

ANALOG OUTPUT
Type: isolated, configurable with resolution of 10 000 parts, rate < 3.5 ms
Range: 0...10 V, 0...20 mA,4...20 mA

EXCITATION
Range: 24 VDC/35 mA, isolated

COMPENSATION
Wiring (RTD, OHM): automatic (3- or 4-wire) or manual in menu (2-wire)
Probes (RTD): internal wiring (resistance of conductors in the measuring head)
CJC (T/C): manual or automatic (terminal temperature)

FUNCTIONS
Linearization: non-linear signal is converted by a 100-point linear interpolation
Tare: designed to reset display upon non-zero input signal
Fixed tare: fixed preset tare
Simulation: test mode in which range, value and duration of the step can be set
Math functions: polynomial, inverse polynomial, logarithm, exponential, power, root

DIGITAL FILTERS
Floating average: from 2...30 measurements
Exponential average: from 2...100 measurements
Arithmetic average: from 2...100 measurements
Rounding: setting a „shorter" number for further signal processing

* this setting is only possible via the OM Link SW

TECHNICAL DATA

INPUT

No. of inputs		1 The range is selectable either by DIP switch or by OM Link free SW from PC		
DC	Range	±60 mV	> 10 MΩ	Input 1
		±75 mV	> 10 MΩ	Input 1
		±100 mV	> 10 MΩ	Input 1
		±150 mV	> 10 MΩ	Input 1
		±300 mV	> 10 MΩ	Input 1
		±1000 mV	> 10 MΩ	Input 1
		±20 V	1 MΩ	Input 2
		±40 V	1 MΩ	Input 2
		±100 mA	< 200 mV	Input 3
PM	Range	±5 mA	< 200 mV	Input 3
		±20 mA	< 200 mV	Input 3
		4...20 mA	< 200 mV	Input 3
		±2 V	1 MΩ	Input 2
		±5 V	1 MΩ	Input 2
		±10 V	1 MΩ	Input 2
OHM	Range	0...100 / 300 Ω 0...1 / 3 / 10 / 30 / 100 kΩ 0...300 kΩ (only 2- and 4-wire)		
	Connection	2-, 3- and 4-wire with broken cable/sensor detection		
Pt	Range	Pt 100/500/1 000, 3 850 ppm/°C		-50°...450°C
		Pt 100, 3 920 ppm/°C		-50°...450°C
		Pt 50, 3 910 ppm/°C		-200°...1100°C
		Pt 100, 3 910 ppm/°C		-200°...450°C
	Connection	2-, 3- and 4-wire with broken cable/sensor detection		
Ni	Range	Ni 1 000/10 000, 5 000 ppm/°C		-50°...250°C
		Ni 1 000/10 000, 6 180 ppm/°C		-200°...250°C
	Connection	2-, 3- and 4-wire with broken cable/sensor detection		
Cu	Range	Cu 50/100, 4 260 ppm/°C		-50°...200°C
		Cu 50/100, 4 280 ppm/°C		-200°...200°C
	Connection	2-, 3- and 4-wire with broken cable/sensor detection		
NTC	Range	NTC 1 2k2, $B_{25/85}$ = 3600		-40°...125°C
		NTC 2 2k0, $B_{25/85}$ = 3528		-40°...125°C
		NTC 3 10k, $B_{25/85}$ = 3435		-40°...125°C
		NTC 4 10k, $B_{25/85}$ = 3977		-40°...125°C
		NTC 5 12k, $B_{25/85}$ = 3740		-40°...125°C
		NTC 6 20k, $B_{25/85}$ = 4263		-40°...125°C
	Connection	2-, 3- and 4-wire with broken cable/sensor detection		
PTC	Range	KTY 81/210		-55°...150°C
	Connection	2-, 3- and 4-wire with broken cable/sensor detection		
T/C	Range	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
		XK (Chromel-Copel)		-200°...800°C
		with broken cable/sensor detection		
	CJC	adjustable: -20°...99°C or automatic		
DU	Sensor power supply	1.65 VDC/3 mA, potentiometer resistance > 500 Ω		

INSTRUMENT SPECIFICATION

TC	50 ppm/°C	
Accuracy	±0.1 % of FS + 1 digit *above accuracies apply for 20 meas./s*	
Rate	1...100 measurement/s	
Latency	< 13 ms	
Overload	10x (t < 30 ms), 2x	
Compensation of conduct	< 30 Ω	RTD
Measurement accuracy CJC	±1.5°C	T/C
Functions	Teach-in, offset, tare, preset tare, min/max value, math. functions, simulation	
Digital filters	exponential / floating / arithmetic average, rouding	
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root	
Linearization	linear interpolation in 100 points *setup only via OM Link*	
OM Link	company communication interface for operation, setting and update of instruments (microUSB)	
Watch-dog	reset after 500 ms	
Calibration	at 25°C and 40 % r.h.	

ANALOG OUTPUTS

No. of outputs	2
Type	isolated, adjustable with resolution of max. 10 000 points, type and range are selectable in menu
TC	15 ppm/°C
Non-linearity	0.1 % from FS
Rate	response to change of value < 3.5 ms
Ranges	0...10 /10...0 V, resistive load ≥ 1 kΩ 0...20 / 20...0 mA 4...20 / 20...4 mA, compensation < 600 Ω/12 V

EXCITATION

Fixed	24 VDC / 35 mA, isolated

POWER SUPPLY

Range	10...30 VDC / 24 AC, ±10 %, PF ≥ 0.4, I_{STP}< 40 A / 1 ms, isolated *Protection by fuse inside the device.*
Consumption	< 2.5 W / 2.4 VA

MECHANIC PROPERTIES

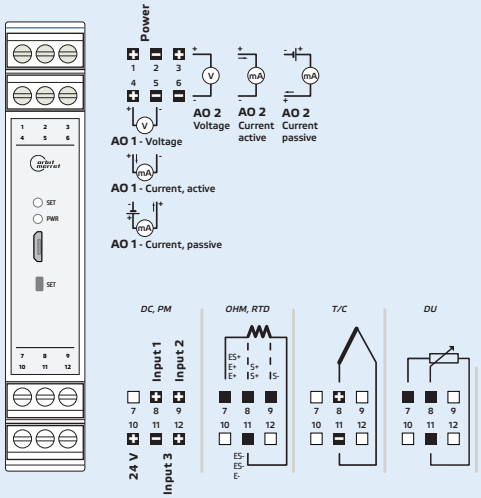
Material	PA 66, incombustible UL 94 V-I, blue
Dimensions	17.5 x 99 x 114.5 mm (w x h x d)
Installation	on DIN rail, width 35 mm

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm²
Stabilization period	within 5 minutes after switch-on
Working temperat.	-20°...60°C
Storage temperat.	-20°...85°C
Working humidity	< 95 % r.v., non condensing
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC per 1 min test between supply and input 2.5 kVAC per 1 min test between supply and analog output 2.5 kVAC per 1 min test between analog outputs
Insulation resist.*	for pollution degree II, measuring cat. III power supply > 300 V (PI), 255 (DI) input, output > 300 V (PI)
EMC	EN 61326-1, Industrial area
Seismic qualification	IEC/IEEE 60980-344 Edition 1.0, 2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation

CONNECTION



ORDER CODE

OMX 312UNI - ☐

Specification	customized version, do not fill in	**00**