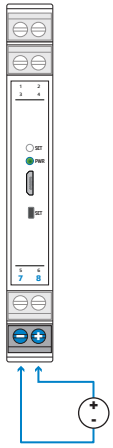
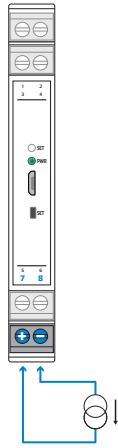


Wiring diagram

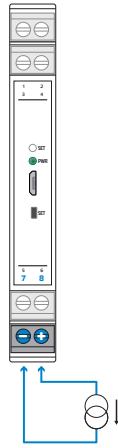
Input - Voltage [V]



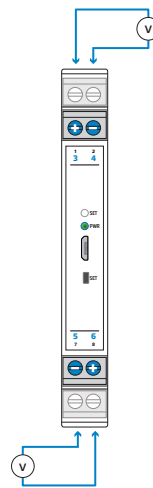
Input - Current [mA]



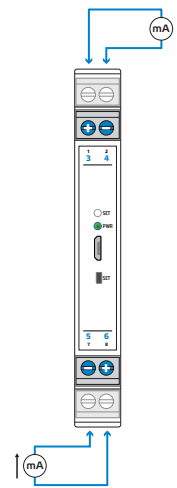
Input - Current, active [mA]



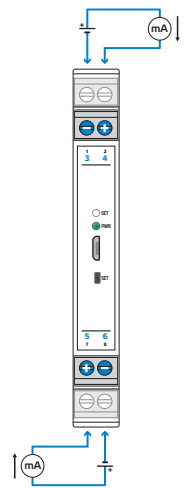
Output - Voltage [V]



Output - Current, active [mA]



Output - Current, passive [mA]



3

Device setting

DIP switch

For a quick set up you can use the DIP switch. Changing a configuration only takes effect after power off/on.

1	2	3	4	Input - Type
				Working Mode includes Teach-in, Setup via OM Link
•				0..2 V
•	•			0..5 V
•	•	•		0..10 V
•	•	•	•	2..0 V
•	•	•	•	5..0 V
•	•	•	•	10..0 V
•	•	•	•	±10 V
•	•	•	•	0..5 mA
•	•	•	•	0..20 mA
•	•	•	•	4..20 mA DEF
•	•	•	•	4..20 mA + Excitation
•	•	•	•	5..0 mA
•	•	•	•	20..0 mA
•	•	•	•	20..4 mA
•	•	•	•	20..4 mA + Excitation

5	6	7	8	Without function
				DEF

9	10	Output 1 - Range
		0..10 V
•		0..20 mA [Act]
•	•	4..20 mA [Act] DEF
•	•	4..20 mA [Pas]

11	12	Output 2 - Range
		0..10 V
•		0..20 mA [Act]
•	•	4..20 mA [Act] DEF
•	•	4..20 mA [Pas]



Setting of **Analog input, Teach-in** is active only when DIP switches **No. 1-4** are in the "OFF" position, i.o. **Setting via OM Link**

Analog input range setting, Teach-in

1. Enter the teach-IN mode by a long press (>2 s) of the **SET** button - LED **PWR** ● yellow and LED **SET** ● turquoise (DIP 1-4 to OFF)
 2. Put the connected sensor in the position that shall have minimum output **RNG.MIN** (for example 4.02 mA)
 3. Set the minimum output value by a long press (>2 s) of the **SET** button - LED **PWR** ● yellow, LED **SET** ● purple
 4. Put the connected sensor in the position that shall have maximum output **RNG.MAX**. (for example 19.97 mA)
 5. Set the maximum output value by a long press (>2 s) of the **SET** button - LED **PWR** ● yellow, LED **SET** ● green
 6. Leave teach-IN mode by a short press of the **SET** button and return to the standard working mode - LED **PWR** ● green
- The teached measuring range is non volatile and retained even after power off/on



Minimum range of **Analog output** for U/I inputs signals is pre-set as unipolar, i.e. "0 V/mA" or "4 mA". If required, it is also possible to enter a negative value of the maximum in the minimum, i.e. zero will be in the middle of the selected range.

Zero settings (Tare)

1. Enter the tare mode by a short press of the **SET** button - LED **PWR** ○ white and LED **SET** ● turquoise
 2. Put the connected sensor in the position where the tare function shall be executed
 3. Set the tare by a long press (>2s) of the **SET** button - LED **PWR** ○ white, LED **SET** ● green
 4. Leave tare mode by a short press of the **SET** button - LED **PWR** ● green, LED **SET** ○ white
- The tare is always reset automatically when the device is switched off.



A short press at any time during the calibration will end the calibration without saving. After one minute of inactivity, the calibration is terminated without saving and both LEDs return to the basic state.

Input

Reset of internal values	CLEAR	>	<input type="button" value="CL. TAR."/> Clear tare
Sampling rate	READ./S	>	<input type="button" value="1"/> <input type="button" value="2"/> <input type="button" value="5"/> <input checked="" type="button" value="10"/> <input type="button" value="20"/> <input type="button" value="50"/> <input type="button" value="100"/> Measuring rate selection
Measuring range	M.RANGE	>	<input type="button" value="2V"/> <input type="button" value="5V"/> <input type="button" value="10V"/> <input type="button" value="0-5mA"/> <input type="button" value="0-20mA"/> <input checked="" type="button" value="4-20mA"/> Measuring range selection
Offset	OFFSET	>	<input type="text" value="-99999...0...999999"/> Setting the offset value ("0")
Excitation	EXCIT.	>	<input type="button" value="ON"/> <input type="button" value="OFF"/> Sensor excitation 24V – only for 4-20mA range
Minimum of range	RNG.MIN.	>	<input type="text" value="-99999...4...999999"/> For the minimum of the selected input range
Maximum of range	RNG.MAX.	>	<input type="text" value="-99999...20...999999"/> For the maximum of the selected input range
Advanced input settings	TEACH-IN	>	<input type="button" value="T-IN.LO"/> <input type="button" value="T-IN.HI"/> Setting the input range in the Teach-in mode
	MANUAL	>	<input type="button" value="MAN. LO"/> <input type="button" value="MAN. HI"/> Setting the input range in the Manual mode
Filter mode	F.MODE	>	<input type="button" value="OFF"/> <input type="button" value="AVER."/> <input type="button" value="FL. AVR."/> <input type="button" value="EXPON."/> <input type="button" value="ROUND."/> Filters for math. adjust. of the input signal
Filter constant	F.CONST.	>	<input type="text" value="0...9999"/> Setting the constant for the filter

<input type="button" value="T-IN.LO"/>	Device measures the value of the Lo signal
<input type="button" value="YES"/>	Lo signal connection confirmed
<input type="button" value="T-IN.HI"/>	Device measures the value of the Hi signal
<input type="button" value="YES"/>	Hi signal connection confirmed
<input type="button" value="MAN. LO"/>	Manual entry of Lo input signal for MIN
<input type="text" value="4.02"/>	Entry of signal value (example: 4.02 mA)
<input type="button" value="MAN. HI"/>	Manual entry of Hi input signal for MAX
<input type="text" value="19.97"/>	Entry of signal value (example: 19.97 mA)

Function

Input of mathematical function	INP. M.F.	>	<input type="button" value="OFF"/> <input type="button" value="INPUT"/> <input type="button" value="INRFIL."/> Input selection for the math function
	TYPE M.F.	>	<input type="button" value="POL."/> <input type="button" value="IN. POL."/> <input type="button" value="LOGAR."/> <input type="button" value="EXPON."/> <input type="button" value="POWER."/> <input type="button" value="ROOT"/>
	CONST. A ... F	>	<input type="text" value="0...99"/> Setting constants for mathematical functions
Input of linearization table	INP. LT.	>	<input type="button" value="OFF"/> <input type="button" value="INPUT"/> <input type="button" value="INRFIL."/> Input selection for the linearization table
	N.OF.PTS.	>	<input type="text" value="5...100"/> Number of points in the table
	VALUES	>	<input type="text" value="-9999...99999"/> Values X/Y

<input type="button" value="POL."/>	Polynomial	$Ax^5 + Bx^4 + Cx^3 + Dx^2 + Ex + F$
<input type="button" value="IN. POL."/>	Inv. polynomial	$\frac{A}{x^2} + \frac{B}{x^3} + \frac{C}{x^4} + \frac{D}{x^5} + \frac{E}{x} + F$
<input type="button" value="LOGAR."/>	Logarithmic	$A \times \ln\left(\frac{Bx+C}{Dx+E}\right) + F$
<input type="button" value="EXPON."/>	Exponential	$A \times e^{\left(\frac{Bx+C}{Dx+E}\right)} + F$
<input type="button" value="POWER."/>	Power	$A \times (Bx+C)^{(Dx+E)} + F$
<input type="button" value="ROOT."/>	Square root	$A \times \sqrt{\frac{Bx+C}{Dx+E}} + F$

Output

Analog output 1	A.O. INP.	>	<input type="button" value="INPUT"/> <input type="button" value="INRFIL."/> <input type="button" value="MAT.FNC."/> <input type="button" value="LIN.TAB."/> Selection of input for analog output 1
	A.O.TYPE	>	<input type="button" value="0-20 mA"/> <input type="button" value="4-20 mA"/> <input type="button" value="P4-20"/> <input type="button" value="ER.4-20"/> <input type="button" value="0-10 V"/>
	A.O. MIN.	>	<input type="text" value="-99999...0...999999"/> Assigning the value of the input to the lower end of the range of AO 1
	A.O. MAX.	>	<input type="text" value="-99999...100...999999"/> Assigning the value of the input to the upper end of the range of AO 1
Analog output 2	A.O. INP.	>	<input type="button" value="INPUT"/> <input type="button" value="INRFIL."/> <input type="button" value="MAT.FNC."/> <input type="button" value="LIN.TAB."/> Selection of input for analog output 2
	A.O.TYPE	>	<input type="button" value="0-20 mA"/> <input type="button" value="4-20 mA"/> <input type="button" value="P4-20"/> <input type="button" value="ER.4-20"/> <input type="button" value="0-10 V"/>
	A.O. MIN.	>	<input type="text" value="-99999...0...999999"/> Assigning the value of the input to the lower end of the range of AO 2
	A.O. MAX.	>	<input type="text" value="-99999...100...999999"/> Assigning the value of the input to the upper end of the range of AO 2

Selection of range for analog output 1	
<input type="button" value="P4-20"/>	4...20 mA, passive
<input type="button" value="ER.4-20"/>	4...20 mA, with error indication (< 3,6 mA)
Selection of range for analog output 2	
<input type="button" value="P4-20"/>	4...20 mA, passive
<input type="button" value="ER.4-20"/>	4...20 mA, with error indication (< 3,6 mA)

Service

Sett password	PASSW.	>	<input type="text" value="0...9999"/> Password to connect the device to PC. If it is set to "0", access is not blocked
Delayed Start	DLY.STR.	>	<input type="text" value="0...99"/> Setting the time [sec.] - when the measurement is not performed after powering the device on
Save user settings	SAV.SET.	>	<input type="button" value="YES"/> Saves the current device settings
Load user settings	LOA.SET.	>	<input type="button" value="YES"/> Loads the user settings into the device
Factory reset	FACT.ST.	>	<input type="button" value="YES"/> Loads the original factory settings, restores the initial settings (BLUE TEXTS)
Erase user calibration	CLR.CAL.	>	<input type="button" value="YES"/> Clears user calibration, restores factory calibrations (after user calibration by script via OM Link SW had been performed)
Key lock	KEY.LCK.	>	<input type="button" value="ON."/> <input type="button" value="OFF"/> Disables the push button(s) on the front panel of the device
Simulation of input signal	SIM.MIN.	>	<input type="button" value="MIN"/> <input type="text" value="-99999...0...999999"/> Setting the beginning of the range for simulation
	SIM.MAX.	>	<input type="button" value="MAX"/> <input type="text" value="-99999...100...999999"/> Setting the end of range for simulation
	STEP	>	<input type="text" value="-99999...1...999999"/> Setting of increment/step value
	TIME	>	<input type="text" value="0...100...999.9"/> Setting the increment/step duration time [sec.]
	START	>	<input type="button" value="STOP"/> <input type="button" value="YES"/> Start of simulation
	STOP	>	<input type="button" value="START"/> <input type="button" value="YES"/> End of simulation

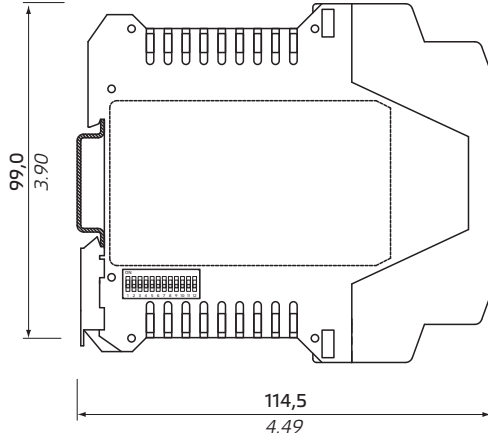


The USB connector is galvanically connected to the input!
 USB-to-USB Isolator must be used when input signal is connected to the device.
DANGER OF COMPUTER DAMAGE

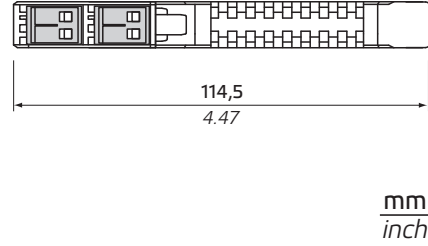
Front view



Side view



Top view



Installation to DIN rail of 35 mm width

6 Technical data

INPUT

No. of inputs	1 The range is selectable either by DIP switch or by OM Link free SW from PC	
PM Range	0...5 mA	< 200 mV
	0...20 mA	< 200 mV
	4...20 mA	< 200 mV
	±2 V	1 MΩ
	±5 V	1 MΩ
	±10 V	1 MΩ

INSTRUMENT SPECIFICATIONS

TC	50 ppm/°C
Accuracy	±0.1% of FS <i>accuracy is valid at 20 measurements/s</i>
Rate	1...100 measurements/s
Latency	< 13 ms
Overload	10x (t < 30 ms), 2x
Functions	Teach-in, Offset, Tare, Math functions, Simulation
Digital filters	exponential / floating / arithmetic average, rounding
Math functions	polynomial / inverse polynomial / logarithm / exponential / power / root
Linearization	linear interpolation in 100 points (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 OUTPUT

No. of outputs	2
Type	isolated, configurable with a resolution of 10 000 parts, type and range are selectable in the menu
Accuracy	±0.1% of FS
TC	15 ppm/°C
Rate	response to change of value < 3.5 ms
Ranges	0...10 V <i>resistive load > 26 kΩ</i> 0...20 mA <i>compen. < 600 Ω/12 V</i> 4...20 mA (active/passive) <i>compen. < 600 Ω/12 V</i> with error indication (< 3.6 mA)
Error indication	at range 4...20 mA (ER 4-20) - A/D converter oversaturated - range exceeded by 20% (in both directions) - broken current loop 4...20 mA (≤ 3.6 mA)

EXCITATION

Fixed voltage	24 VDC/35 mA, isolated (only for input 4...20mA)
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POWER SUPPLY

Power	10...30 VDC/24 VAC, ±10%, PF ≥ 0.4, $I_{in} < 40 A/1 ms$, isolated <i>Fuse inside (1500mA)</i>
Consumption	< 2.5 W / 2.4 VA

MECHANIC PROPERTIES

Material	PA66, incombustible UL 94 V-0, blue
Dimensions	114.5 x 99.0 x 12.5 mm
Installation	to DIN rail 35 mm wide

OPERATING CONDITIONS

Connection	connector terminal blocks, section < 2.5 mm ²
Stabilization period	within 5 minutes after switch-on
Working temp.	-20°...60°C
Working humidity	< 95% r.h., non condensing
Storage temp.	-20°...85°C
Protection	IP20
Construction	safety class I
El. safety	EN 61010-1, A2
Dielectric strength	2.5 kVAC for 1 min. between power supply and signal input 2.5 kVAC for 1 min. between signal input and outputs
Insulation resist.*	for pollution degree II, measurement cat. III power supply > 300 V (PI), 255 V (DI) Input/outputs > 300 V (PI)
EMC	EN 61326-1 (Industrial area)
RoHS	EN IEC 63000000:2018
Seismic qualification	IEC/IEEE 60980-344 ed. 1.0:2020, par. 6, 9
Mechanical resistance	EN 60068-2-6 ed. 2:2008

* PI - Primary insulation, DI - Double insulation



ORBIT MERRET, spol. s r.o.

Vodňanská 675/30
198 00 Praha 9
Czech Republic

+420 - 281 040 200 info@orbitmerret.eu