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ISOLATED PROGRAMMABLE DC SIGNAL CONVERTER

- user-configurable converter
- galvanic isolation of input from output and power supply: 4000 Vrms
- version with RS485 output, communication speed 2400..19200 Bd, typically up to 56 converters on a line up to 1200 m
- design for mounting in a switchboard on a DIN rail

Description:

PXL310 isolated programmable converter with RS485 output (MODBUS-ASCII or MODBUS-RTU, 2400-19200 Bd, response delay 0, 8, 16 and 24 ms, configured in register 0x1032)
PXL312 dual version of PXL310, isolation between inputs 1 kV

Input signal options:

User-configurable inputs: (The actual input and measuring range can be set within the limits of the maximum range stated)

Input		Range (linearisation table)	Error
Thermocouple (Tc), internal compensation	Fe-CuNi J	-210..1200°C	0.3°C from -60°C
		-210..1050°C	0.3°C from -100°C
		-210..300°C	0.3°C from -160°C
	Fe-Ko L	0..899°C	0.05%
		-210..400°C	0.3°C from -150°C
	NiCr-NiAl K	-270..1372°C	0.1% from -99°C
		-60..1372°C	0.3°C from -20°C
		-50..1768°C	0.1% from 40°C
	Pt30Rh-Pt6Rh B	0..1820°C	0.1% from 386°C
	NiCr-CuNi E	-270..1000°C	0.1% from -153°C
	NiCrSi-NiSi N	-270..1300°C	0.1% from -122°C
	Pt13Rh-Pt R	-50..1768°C	0.1% from 54°C
	Cu-CuNi T	-270..400°C	0.1% from -163°C
	Ni-Ni18Mo M	-50..1410°C	0.1%
	W5Re-W26Re C	0..2301°C	0.05%
	W3Re-W25Re D	0..2301°C	0.1% from 49°C
Resistance thermometer (RTD) 2-wire or 3-wire	W-W26Re G	0..2301°C	0.1% from 286°C
	F	-30..1400°C	0.05%
	U	-200..400°C	0.1%
	Pt100	-200..400°C	0.18°C
	Pt100	-30..600°C	0.18°C
Linear temp. sensor (KTY)	Pt1000	-200..400°C	0.18°C
	Pt1000	-100..500°C	0.18°C
	Ni100, Ni1000 TKR6180 (5000)	-60..180°C	0.18°C
Res. transmitter (RT)	KTY81..KTY85	-55..150°C	0.25°C
Potentiometer (POT)		0..320Ω, 0..2.5kΩ	0.1Ω, 1Ω
Potentiometer 10kΩ		0..320Ω, 0..1300Ω, 0..10kΩ	4Ω
DC voltage (U)	-0.5V..1V	-70mV..140mV, 0..1V	0.03%

Other input versions: (modification of the standard version required)

- Thermocouple with optional external cold junction compensation by a Pt100 sensor
- Resistance thermometer in four-wire (4w) connection
- DC voltage up to 1000V
- DC current 0..23mA, up to 5A on request
- Resistance transmitter or potentiometer 3kΩ to 10 kΩ
- NTC thermistors 10k, 15k, 20k, 25k
- Linear temperature sensors KTY, thermistors... on request
- **Input can be customised to customer requirements**

Electrical parameters:

- supply voltage	8...30V DC
- consumption PXL310/312:	< 5 mA/ <9 mA
- user linearisation	table (32 segments)
- sampling	programmable 60ms/160ms
- digital filter (damping)	programmable 0..20 s
- max. sensor lead resistance	< 10 Ω / 1 wire
- sensor current	< 0.5mA
- cold junction compensation for thermocouples: -30 ..70°C, accuracy $\pm 1^\circ\text{C}$	
- input isolation (PXL312)	1kV
- output signal by version:	MODBUS-ASCII (gaps between characters max 250ms) or MODBUS/RTU
- accuracy:	measurement error max. 0.05% of range + see table temperature error max. 0.03% / 10K
- operating temperature range	-30...+ 80°C
- protection class housing / terminals	IP40 / IP20
- connection	wire 0.5 to 2.5mm ² , input <10m
- optional accessories	programming adapter AY-USB-RS485 (configuration software Rawet Studio)

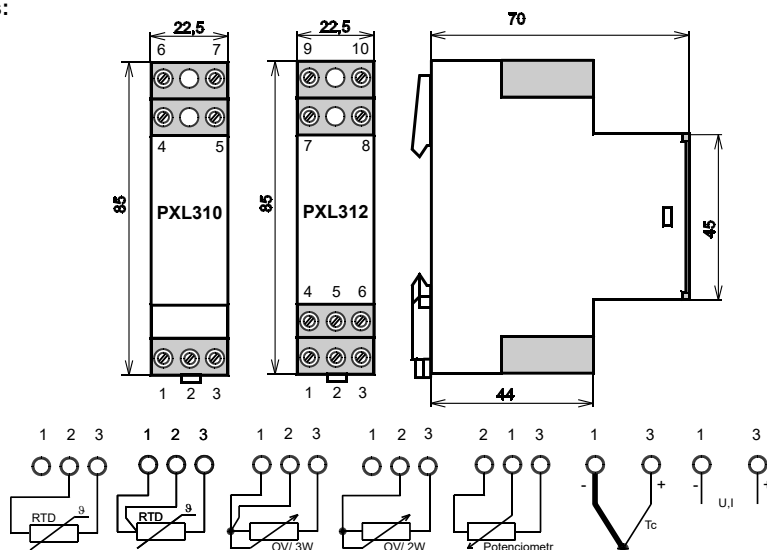
Dimensional drawing and terminal connections:

PXL310:

7(+), 6(-):	power supply
5(A), 4(B):	RS485 output
1,2 - 3:	RTD, RT input 3w
1,2,3:	potentiometer input
2 - 3:	RTD, RT input 2w
1 - 3(+):	Tc, U, I input

PXL312:

10(+), 9(-):	power supply
8(A), 7(B):	RS485 output
1,2 - 3:	1st input RTD, RT 3w
1,2,3:	potentiometer input
2 - 3:	1st input RTD, RT 2w
1 - 3(+):	1st input Tc, U, I
4,5 - 6:	2nd input RTD, RT 3w
4,5,6:	potentiometer input
5 - 6:	2nd input RTD, RT 2w
4 - 6(+):	2nd input Tc, U, I



Mounting:

The converters are mounted mechanically on a 35 mm DIN rail. After hooking the upper edge onto the rail, release the latch of the fastening mechanism with a screwdriver and push the lower part of the device towards the rail. Once the latch engages, mounting is complete. Dismounting is carried out in reverse order.

Type tests:

Basic type test	acc. to ČSN EN 60688 ed.2
EMC assessed	acc. to ČSN EN IEC 61326-1 ed.3
Safety assessed	acc. to ČSN EN 61010-1 ed.2

Ordering:

When ordering, specify:	- quantity
	- converter type
	- input signal, range and type
	- output signal
	- communication parameters and added response delay (addr. 6, 9600 8E1, 24 ms)

Order examples:

Standard version: (user-configurable with the PK-USB or AX-USB adapter)

1pc PXL312, 2x0..60mV / MODBUS-RTU	1pc PXL310, Pot 0..1k Ω / MB-ASCII (response delay)
3pcs PXL310, Pt100 3W 0..200°C / MODBUS-ASCII	5pcs PXL312, 0..1V/ MODBUS - RTU
9pcs PXL312, Tc "J" -210..1050°C / MODBUS-RTU	

Other versions:

3pcs PXL310, 4..20mA / 0..40 MODBUS-ASCII (24ms)	8pcs PXL310, 0..100V / MB-RTU
1pc PXL312, 2x0..20mA / MB-ASCII	2pcs PXL310, Tc "J" 0..+400°C / MODBUS-RTU
	1pc PXL312, 2x0..10V / MODBUS-RTU



At the end of its service life, dispose of the device via separate collection.

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