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PXN30/R

ISOLATED TRANSDUCER OF DC SIGNALS WITH ACTIVE OUTPUT FOR RAILWAY APPLICATIONS

- Measures and separates signals from RTD, TC and RTD sensors
- active output 4-20mA or 0-20mA or 0-10V or inverse conversion
- galvanic isolation 4000Vef input - output - power supply
- AY-USB adapter user configuration
- auxiliary power supply in a wide range of 19 to 300VDC and 90 to 250VAC
- version for mounting into switchboard on DIN 35 rail
- accuracy <0.1%

Converter with software programmable input and active output is used to convert:

- voltage from any thermocouple with linearization and internal cold junction compensation
- resistance (0..320Ω, 0..2.5kΩ)
- RTD signal (Pt100, Ni1000 temperature sensor)
- KTY thermistors up to 2.5kΩ
- potentiometer 0..100Ω, 0..1300Ω a 0..11kΩ, 2w OV 0..10k
- NTC 10kΩ, 0..100kΩ, 0..1V .. (more in the input signal table)

Electrical specifications:

- operating temperature range:	OT (-40 ... + 70 ° C)
- storage temperature range:	- 40 ... + 80 ° C
- auxiliary power supply:	rated: 24VDC
- auxiliary power range:	16.5 - 300VDC, 90 – 250VAC
- power supply without interruption:	Class S1 Art .: 5.2.4
- power consumption:	max 1.5VA
- Input PXN30 / R.A:	Thermocouples: J, K, T, B, L, S, F, E, N, R Pt100, Pt1000, Pt200, Pt500 Ni100, Ni1000 TKR 5000 or 6180ppm / K OV and PTC according to input signal table input 2w only with connection of terminals 1 and 2
- Input PXN30 / R.B:	Potentiometer (0..150Ω, 1300Ω, 11kΩ) a KTY81-210)
- Input PXN30 / R.C:	RTD 4w, NTC ..
- max. lead resistance:	<10 Ω / 1 wire
- current through RTD sensor:	<0.5mA
- cold junction temperature compensation for thermocouples:	-30 ..70 ° C, accuracy ± 1 ° C
- resolution:	0.01%
- output active signal:	4..20mA, 0..20mA, 0..10V or inverse conversion
- current output loop amplitude:	min. 15V (Rz - 750ohm) at 20mA
- load voltage output:	max. 10mA
- current and voltage limit:	2,5..24mA, 0..24mA, 0 ..13,8V
- damping:	0,1..20s (basic setting: OV, Pot <0,2s, RTD, U, I, Tc 0,3s)
- accuracy of measurement error:	± (0.1% + error see table)
- temperature error:	max. 0.05% / 10K
- EMC error :	<0.3%
- enclosure:	IP40 / IP20 enclosure rating
- mounting position:	Vertical, Latch down
- weight:	90g
- environment:	degree of pollution 2
- air and surface distance input / output / power:	min. 6,5mm
- rated impulse voltage Uni:	6kV
- test voltage Ua:	4kV
- connection wire:	0.5 to 2.5mm2
- optional:	AY-USB programming adapter (Rawet Studio setup program)

Type tests:

ČSN EN 50155 ed.5:2022	Electronic equipment for rail vehicles
ČSN EN 50121-3-2 ed.4:2017+A1:2019	Electromagnetic compatibility
ČSN EN 50124-1	Coordination of insulation
ČSN EN 61373 ed.2	Impact and vibration test (Category 1, Class B)
ČSN EN 45545-2+A1	Fire protection meets the set of requirements for monitored products according to Table 2
	- the printed circuit board meets the set of R24 requirements
	- the box meets the R26 requirements

Input Signal Variants:

User-adjustable inputs: (Actual input and measuring range can be set within the specified maximum range)

Typ	Input			range (linearization table)	error
PXN30/R.A	Thermocouple thermometer (Tc), internal compensation	Fe-CuNi	J	-210..1200°C	0,3°C od -60°C
				-210..1050°C	0,3°C od -100°C
				-210..300°C	0,3°C od -160°C
		Fe-Ko	L	0..899°C	0,05%
		NiCr-NiAl	K	-210..400°C	0,3°C od -150°C
				-270..1372°C	0,1% od -99°C
				-60..1372°C	0,3°C od -20°C
		Pt10Rh-Pt	S	-50..1768°C	0,1% od 40°C
		Pt30Rh-Pt6Rh	B	0..1820°C	0,1% od 386°C
		NiCr-CuNi	E	-270..1000°C	0,1% od -153°C
		NiCrSi-NiSi	N	-270..1300°C	0,1% od -122°C
		Pt13Rh-Pt	R	-50..1768°C	0,1% od 54°C
		Cu-CuNi	T	-270..400°C	0,1% od -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% od 49°C
		W-W26Re	G	0..2301°C	0,1% od 286°C
			F	-30..1400°C	0,05%
			U	-200..400°C	0,1%
	Resistance thermometer (RTD) 2w or 3w	Pt100		-200..400°C	0,18°C
		Pt100		-30..600°C	0,18°C
		Pt1000		-200..400°C	0,18°C
		Pt1000		-100..500°C	0,18°C
		Ni100, Ni1000 TKR6180 (5000)		-60..180°C	0,18°C
	Linear temp. sensor (KTY)	KTY81..KTY85		-55..150°C	0,25°C
	Resistance Transmitter (OV)	OV/3w		0..320Ω, 0..2,5kΩ	0,03Ω, 0,1Ω
	Potentiometer or OV/2w	potentiometer value affects		0..320Ω, 0..2,5kΩ	0,03Ω, 0,1Ω
	DC voltage (U)	-0,07V..1V		-70mV..140mV, 0..1V	0,01%
PXN30/R.B	Linear sensors	KTY81-210 3w		-55..150°C	0,2°C
		KTY81-210 2w		-50..145°C	0,15°C
		OV 2W		0..11kΩ	2Ω
PXN30/R.C	Potentiometer	does not depend on value in the range		0..1(20)kΩ	0,02%

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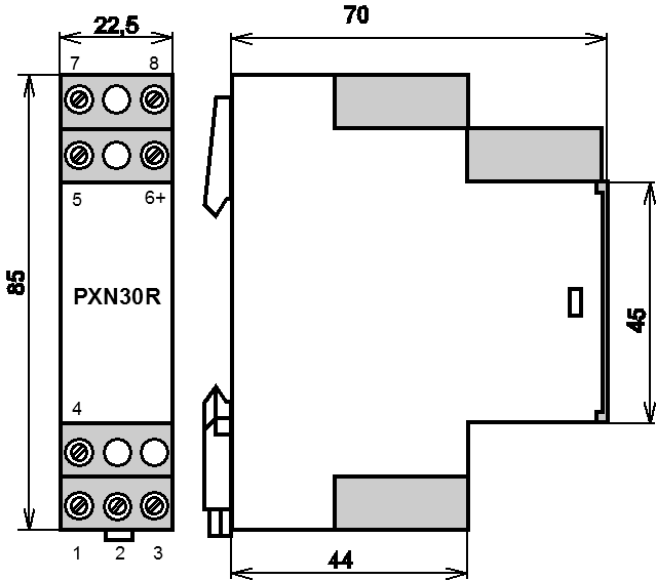
Mounting:

The transducers are mechanically mounted on a 35 mm DIN rail. After attaching the top edge with a screwdriver, the latch of the fastening mechanism is released and the device is pushed to the bottom with the bottom. After locking, the assembly is finished. Dismantling is carried out in the opposite way.

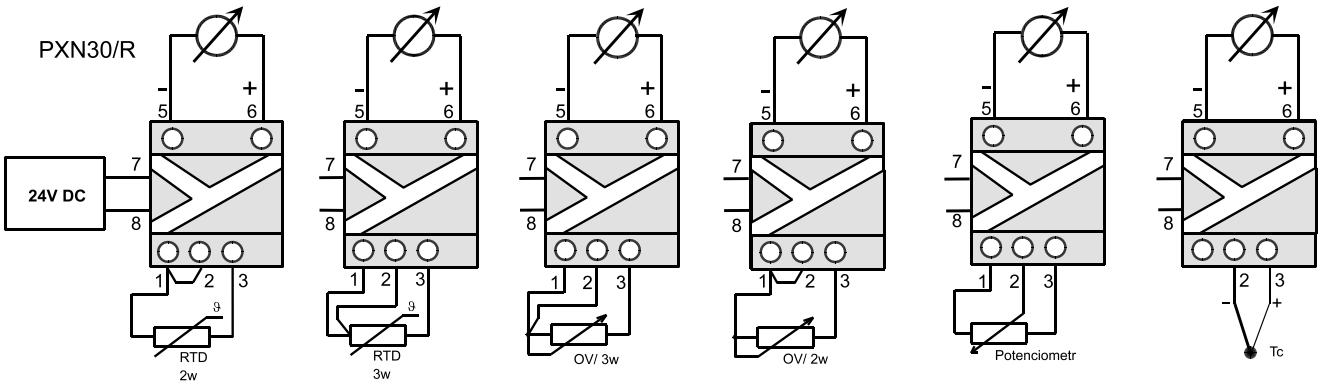
Connection of terminals:

1…3:	input RTD 2W, (OV) 2W – connect terminals 1,2
1 + 2,3:	input RTD(OV) 3W, OV/3
1…2…3:	input potentiometer (center = 2)
2…3(+):	input Thermocouple (U)
5(-)...6(+):	output 4..20mA
7,8	auxiliary power supply

Dimensions:



Connection variants:



Ordering:
It is necessary to state in the order: see. Examples of ordering.
- converter type and variant
- input parameters (for two-wire connection it is necessary to connect terminals 1 and 2)
- range
- output parameters
- wiring
- damping (if not stated, the basic damping is 0.3s
- quantity

Examples of ordering :

Typ	variant	input	range	output	connection	damping	quantity
PXN30/R	.A	Pt100	-15...120°C	4-20mA	3w	0,2	2
PXN30/R	.A	Ni1000/6180	0-90°C	0-10V	2w)*	0,5	4
PXN30/R	.A	Tc"K"	-30...330°C	4-20mA		0,3	1
PXN30/R	.A	R	5-105 Ohm	4-20mA	OV/3w	-	5
PXN30/R	.A	Pt1000	0...180°C	0-20mA	2w)*	-	3
PXN30/R	.B	R	0-10k Ohm	0-10V	potentiometer	0,2	6
PXN30/R	.B	KTY81-210	0..145°C	0-20mA		0,3	1

)* connect the terminals 1,2

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Notice:

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Likvidaci po ukončení životnosti provést odděleným sběrem.
Rawet s.r.o. je členem sdružení RETELA www.retela.cz

rev.2

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