

Čapkova 22  
678 01 Blansko  
tel.: +420 516 416942, 419995  
fax: +420 516 416963

**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  
Potentiometer (0..150Ω, 1300Ω, 11kΩ) a KTY81-210  
RTD 4w, NTC ..  
<10 Ω / 1 wire  
<0.5mA
- Input PXN30 / R.B:
- Input PXN30 / R.C:
- max. lead resistance:
- current through RTD sensor:
- 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 2.5mm<sup>2</sup>
- optional: AY-USB programming adapter (Rawet Studio setup program)



**Type tests:**

ČSN EN 50155 ed.5:2022  
 ČSN EN 50121-3-2 ed.4:2017+A1:2019  
 ČSN EN 50124-1  
 ČSN EN 61373 ed.2  
 ČSN EN 45545-2+A1

Electronic equipment for rail vehicles  
 Electromagnetic compatibility  
 Coordination of insulation  
 Impact and vibration test ( Category 1, Class B )  
 Fire protection meets the set of requirements for monitored products according to Table 2

- the printed circuit board meets the set of R26 requirements
- the box meets the R24 and 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	Fe-CuNi	J	-210..1200°C	0,3°C od -60°C
		J	-210..1050°C	0,3°C od -100°C
		J	-210..300°C	0,3°C od -160°C
	Fe-Ko	L	0..899°C	0,05%
		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%

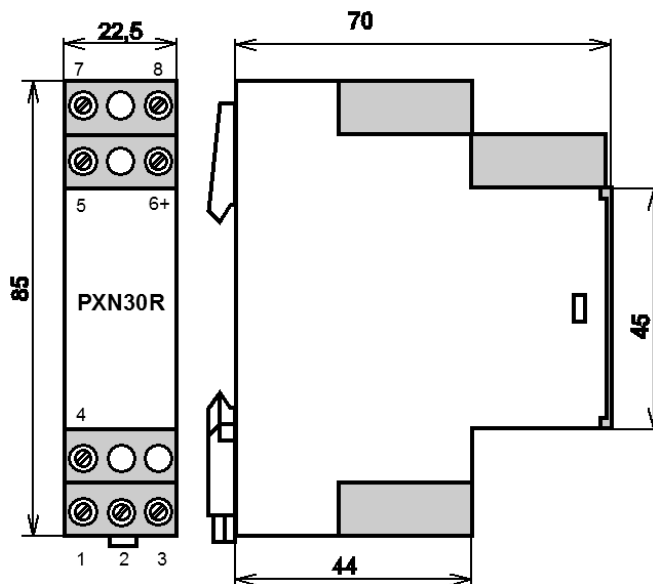
**Mounting:**

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.

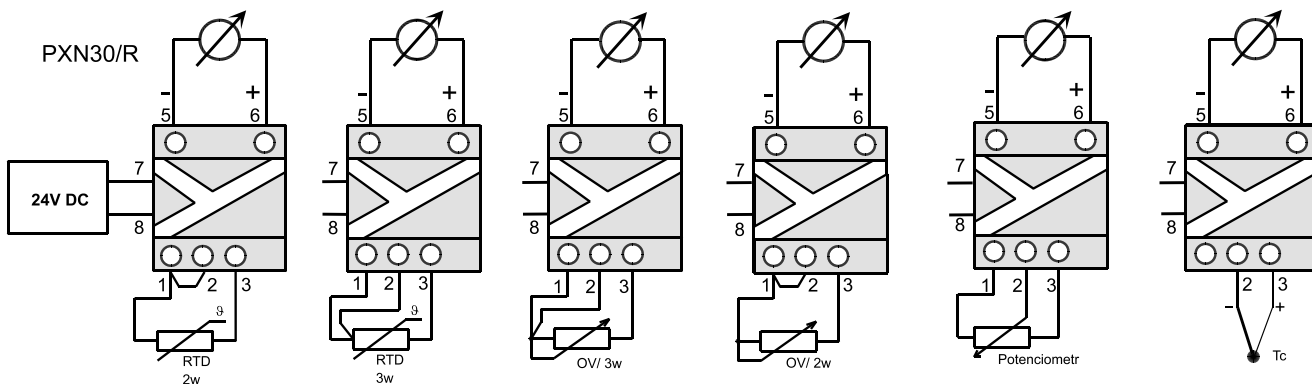
**Connection of terminals:**

- 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

**Notice:**

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Likvidaci po ukončení životnosti provést odděleným sběrem.  
Rawet s.r.o. je členem sdružení RETELA [www.retela.cz](http://www.retela.cz)

rev.2

Rawet s.r.o.  
Čapkova 22  
Blansko  
678 01

IČO: 47901411  
DIČ: CZ47901411  
ČSOB Blansko  
č. ú. 106093786/0300

tel.: 516 419995, 516 416942  
fax: 516 416963  
E-mail: [rawet@rawet.cz](mailto:rawet@rawet.cz)  
Internet: [www.rawet.cz](http://www.rawet.cz)