R/I TRANSMITTER

- Input for Pt100, Ni100 or Ohm
- Sensor cable compensation
- Linearised analogue output
- 24 VDC or universally supplied
- Individual 0 and 100% adjustment
- DIN rail mounting on a standard 11-pole relay socket

Application:
Electronic temperature measurement with a Pt100...Pt1000 or a Ni100...Ni1000 sensor. ● Conversion of a linear resistance change to a standard analogue current / voltage signal from e.g. valves or linear movements with attached potentiometer. ● As signal simulator via externally mounted 10-turn potentiometer. ● Suitable in applications with potentiometers that are not fully utilised as the 0 and 100% adjustments on the front can be adjusted individually without interacting.

Technical characteristics:
General:
The unit is built around a microprocessor core with an efficient program operation. The supply voltage may be ordered to 24 VDC or with a universal supply of 24...230 VAC and 24...250 VDC with galvanic isolation between supply and input / output ground. The adjustment range for the 0 and 100% trimmers has a standard set-up for ±2.5% of span, but the module may be ordered with an adjustment range of up to ±25%. The sensor connextion is always a 3-wire connexion with cable compensation for up to 10 Ω in each wire. If a 2-wire connexion is requested, pin 7 and 6 must be short-circuited in the socket (no cable compensation).

Input:
Pt100 temperature input according to the norm IEC 751 within the range -200...+850°C. Ni100 temperature input according to the norm DIN 43760 within the range -50...+250°C. Linear resistance input within the range 0...10 kΩ. The measurement range should be specified when placing the order, e.g. 0...150°C. The min. span is 50°C for the RTD input; for linear resistance the min. span is 30 Ω. The RTD input can be delivered as multiples of the main type (e.g. Pt100 x 10 = Pt1000). The input can be reversed so that 0% e.g. is 150°C and 100% is 0°C.

Output:
Analogue standard current / voltage output of 0/4...20 mA / 0/2...10 VDC. The output signal is proportional and linear to the value of the temperature or resistance value that influences the input. Special current or voltage signals can be ordered. The max. load of the current output is 600 Ω. The minimum load of the voltage output is 500 kΩ. Also, a number of different sensor error detection methods are offered, for instance Upscale ≥ 23 mA.

Electrical specifications:
Specifications range:
(@ -20°C to +60°C)
Common specifications:

Supply voltage DC	24 VDC ±20%
Supply voltage universal	24...230 VAC ±10%, 50...60 Hz 24...250 VDC ±20%
Internal consumption, 2202_ _ D	≤ 0.9 W
Internal consumption, 2202 _ _ P (universally supplied)	≤ 1.4 W
Isolation, test / operation (2202 _ _ P)	3.75 kVAC / 250 VAC
Signal / noise ratio	Min. 60 dB
Signal dynamics, input	17 bit
Signal dynamics, output	16 bit
Response time (0...90%, 100...10%)	< 165 ms
Calibration temperature	20...28°C
Temperature coefficient:	
span < 100°C	< ±0.01°C /°Camb.
span > 100°C	< ±0.01% of span /°Camb.
Linearity error	< ±0.1% of span
EMC immunity influence	< ±0.5%
Humidity	< 95% RH (non-cond.)
Dimensions (HxWxD)	80.5 x 35.5 x 84.5 mm
Tightness	IP50
Weight DC / universally supplied	100 g / 150 g

Input:

Type	Min. value	Max. value	Min. span	Norm
Pt100	-200°C	+850°C	50°C	IEC 751
Ni100	-50°C	+250°C	50°C	DIN 43760
Lin.R	0 Ω	10 kΩ	30 Ω	-----

Max. offset	50% of max. value
Adjustment acc. to order	±2.5...±25% of span
Cable resistance per wire max.	10 Ω
Sensor current	> 0.2 mA, < 0.4 mA
Basic accuracy	< ±0.3°C

Output:

Signal range	0...20 mA / 0...10 VDC
Min. signal range	5 mA / 250 mV
Max. offset	50% of max. value
Load (max.)	20 mA / 600 Ω / 12 VDC
Load stability	< ±0.01% of span / 100 Ω
Sensor error detection	Upscale / Downscale
Current limit	≤ 28 mA
Observed authority requirements:	**Standard:**
EMC 89/336/EEC, Emission	EN 50 081-1, EN 50 081-2
Immunity	EN 50 082-2, EN 50 082-1
Emission and immunity	EN 61 326
LVD 73/23/EEC (2202 _ _ P)	EN 61 010-1

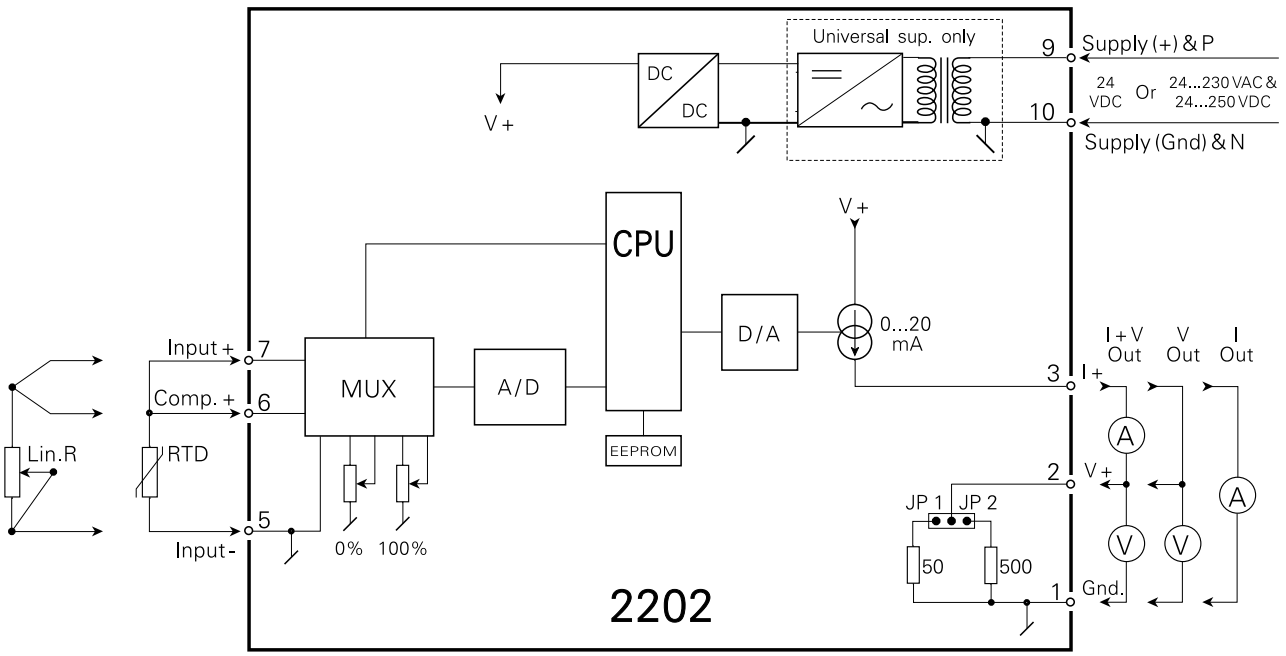
Of span = Of the presently selected range

PR electronics
DS CERTIFIED Quality System DS/EN ISO 9001
Lerbakken 10 · DK-8410 Rønde
Tel. +45 8637 2677 · Fax +45 8637 3085
www.prelectronics.dk

Order: 2202

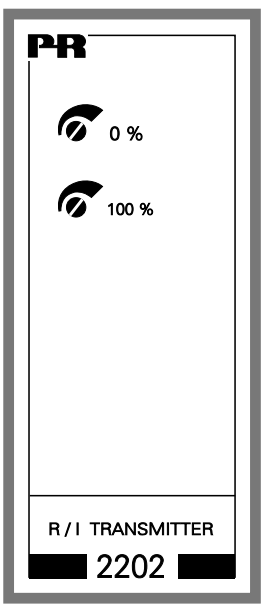
Type	Input	Output	Supply	Range
2202	Pt100 : L	Spec. : 0	24 VDC : D	Acc. to order
	Ni100 : N	0...20 mA : 1	24...230 VAC &	
	Lin. R : R	4...20 mA : 2	24...250 VDC : P	
	Spec. : X	0...5 mA : 3		
		0...1 V : 4		
		0.2...1 V : 5		
		0...10 V : 6		
		2...10 V : 7		

Block diagram:



For 2-wire connexion pin 6 and 7 must be short-circuited in the socket.

Front layout:



Voltage output:	
JP1 ON JP2 ON	0/0.2...1 VDC 0/2...10 VDC
Short-circuit pins 3 and 2, V+ = 2, V- = 1	