

IPAQ®



## R202 PC-Programmable 2-wire Transmitter for Pt100 Input



IPAQ R202 is a digital, easy-to-use temperature transmitter developed specifically for measurements with Pt100 sensors.

Its robust design and high quality gives excellent performance and accuracy also under harsh conditions.

With the new runtime counter function you can easily supervise the elapsed operational time between calibrations.

### Measurements with Pt100 sensors in 3-wire connection

IPAQ R202 accepts inputs from Pt100 sensors in 3-wire connection: Pt100 acc. to IEC 60751 ( $\alpha=0.00385$ )

### Runtime counter

With the runtime counter function you can easily supervise the elapsed operational time.

### Temperature linear output

Fully temperature linear 4-20 mA output.

### High accuracy

With an accuracy of  $\pm 0.1$  °C /  $\pm 0.2$  °F or  $\pm 0.1$  % of span (the largest apply) R202 offers an outstanding performance in its class.

### Sensor matching for maximum accuracy

A matching to a calibrated temperature sensor can easily be performed by entering the sensor errors in the low and high ends of the measuring range.

### Configuration without external power

Edit or read the configuration off-line, i.e. without power supply, by just connecting the USB-interface to a PC.

### ConSoft, easy-to-use Windows configuration software

The simple and user friendly software, ConSoft, is used for transmitter configuration in seconds. In one window all parameters are set, such as measuring range, sensor failure action, error corrections etc.

## Specifications

### Input RTD

Pt100 (IEC 60751, $\alpha=0.00385$ )	3-wire connection	-200... +850°C / -328...+1562°F
Sensor current		$\leq 0.5$ mA
Maximum sensor wire resistance		20 $\Omega$ /wire

### Monitoring

Sensor break and sensor short circuit monitoring		Upscale ( $\geq 21.0$ mA) or downscale ( $\leq 3.6$ mA) action
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### Adjustments

Zero adjustment		Any value within range limits
Minimum span		20 °C / 36 °F
Sensor error compensation		$\pm 10\%$ of span for span $< 100^\circ\text{C}/180^\circ\text{F}$ , otherwise $\pm 10^\circ\text{C}/\pm 18^\circ\text{F}$

### Output

Output signal		4...20 mA, temperature linear
NAMUR compliance		Current limitations and failure currents acc. to NAMUR NE 43
Adjustable filtering level		0.13 to 54 s, (default 0.9 s)
Permissible load, see load diagram		818 $\Omega$ @ 24 VDC

### General data

Isolation		Not galvanically isolated
Power supply, polarity protected		6...32 VDC

### Environment conditions

Ambient temperature	Storage and operation	-40...+85°C / -40...+185°F
Humidity		0...98% RH (non-condensing)
Vibrations		Acc. to IEC 60068-2-6, test Fc, 10...2000 Hz, 10 g
Shock		Acc. to IEC 60068-2-27, test Ea
Rough Handling		Acc. to IEC 60068-2-31:2008, test Ec
EMC	Standards	Directive: 2014/30/EU Harmonized standards: EN 61326-1, EN 61326-2-3
	Immunity performance	ESD, Radiated EM-field, Magnetic Fields: Criteria A Burst, conducted RF: Criteria A Surge: standard deviation 1% of span

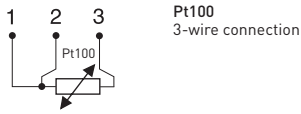
### Accuracy and stability

Basic accuracy		Max of $\pm 0.1\text{K}$ or $\pm 0.1\%$ of span
Temperature influence	Deviation from 20 °C / 68 °F	Max. of $\pm 0.25$ °C/25 °C or $\pm 0.25\%$ of span/25 °C Max. of $\pm 0.5$ °F/50 °F or $\pm 0.28\%$ of span/50 °F
Sensor wire influence		$\pm 0.005^\circ\text{C}/\Omega$ / $\pm 0.009^\circ\text{F}/\Omega$ , with equal wire resistance
Supply voltage influence		Negligible
Long-term stability		$\pm 0.1$ % of span per year

### Housing

Material, Flammability (UL)		PC/ABS + PA, V0/HB
Mounting		Rail acc. to DIN 50022 / EN 60715, 35 mm / 1.38"
Connection	Plug-in terminals	Single/stranded wires, Max. 1.5 mm <sup>2</sup> , AWG 16
Weight		50 g / 0.11 lb
Protection, housing / terminals		IP 20 / IP 00

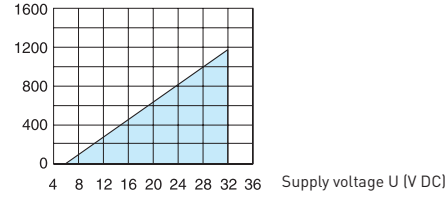
## Input connections



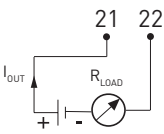
## Output load diagram

### Standard version

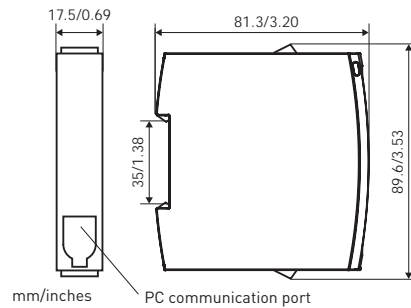
$$R_{LOAD}(\Omega) = (U-6)/0.022$$



## Output connections



## Dimensions



## Ordering information

IPAQ R202	70R2020010
PC configuration kit (USB-conn.)	70CFGUS001