



Basic Programmable 2-wire Transmitter for RTD and T/C

MINIPAQ-H is a basic, non-isolated, easy-to-use 2-wire transmitter for in-head mounting in DIN B and similar heads.

Configuration is made in seconds with the user friendly Windows software, MINIPAQ Soft. No external power is needed.

MINIPAQ-H is programmable for RTD's in 3- and 4-wire connection according to different standards as well as for 11 T/C types.

Useful error correction functions improve the accuracy.

- **Measurements with RTD's in 3- and 4-wire connection**

MINIPAQ-H accepts inputs from a number of standardized RTD's such as Pt100, Pt500 and Pt1000 acc. to IEC 60751 ($\alpha=0.00385$), Pt100 acc. to JIS C 1604 ($\alpha=0.003916$) and US standards ($\alpha=0.003902$) as well as Ni100 and Ni1000 acc. to DIN 43760.

3- and 4-wire connection can be selected.

- **Measurements with thermocouples**

MINIPAQ-H accepts inputs from 11 types of standardized thermocouples. For T/C input, the CJC (Cold Junction Compensation) is fully automatic, by means of an accurate measurement of the terminal temperature. Alternatively, the CJC can be disabled.

- **Temperature linear output**

Fully temperature linear 4-20 mA output for RTD's and thermocouples.

- **Sensor matching and error corrections for maximum accuracy**

A matching to a calibrated temperature sensor can easily be performed with the *Sensor Error Correction* function.

The *System Error Correction* is a convenient way to adjust the sensor/transmitter combination (or just the transmitter) for highest accuracy in a certain measuring range.

- **NAMUR compliant**

Output limitations and fail currents according to NAMUR recommendations.

- **Designed for harsh conditions**

Rugged design tested for 5 g vibrations.

- **Mounting and wiring**

MINIPAQ-H is designed to fit inside connection heads type DIN B or larger.

The large center hole, dia. 7 mm / 0.28 inch, and the robust terminals greatly simplify the mounting and wiring procedure.

- **Configuration without external power**

Edit or read the configuration off-line by just connecting a PC.

- **MINIPAQ Soft, easy-to-use Windows configuration software**

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

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Specifications: ^{MIN}IPAQ-H

Input RTD's

Pt100 (IEC60751, $\alpha = 0.00385$)	3-, 4-wire connection	-200 to +1000 °C / -328 to +1832 °F
Pt 100 (JIS1604, $\alpha = 0.003916$)	3-, 4-wire connection	-200 to +1000 °C / -328 to +1832 °F
Pt 100 (US, $\alpha = 0.003902$)	3-, 4-wire connection	-200 to +1000 °C / -328 to +1832 °F
Pt1000 (IEC60751, $\alpha = 0.00385$)	3-, 4-wire connection	-200 to +200 °C / -328 to +392 °F
Ni100 (DIN 43760)	3-, 4-wire connection	-60 to +250 °C / -76 to +482 °F
Ni1000 (DIN 43760)	3-, 4-wire connection	-100 to +150 °C / -148 to +302 °F
PtX (IEC60751, $\alpha = 0.00385$)	3-, 4-wire connection	Any Pt function between Pt10- Pt1000
Sensor current		~ 0.4 mA
Maximum sensor wire resistance		25 Ω /wire

Input Thermocouples

Range	Type: AE, B, E, J, K, L, N, R, S, T, U	Acc. to T/C standards
Maximum sensor wire resistance		500 Ω (total loop)

Monitoring

Sensor failure monitoring		Upscale or downscale action
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Adjustments

Zero adjustment	All inputs	Any value within range limits
Minimum spans	Pt100 T/C	10 °C / 18 °F 2 mV

Output

Analog		4-20 mA, temperature linear
Resolution		5 μ A
Minimum output signal	Measurement/Failure	3.8 mA / 3.5 mA
Maximum output signal	Measurement/Failure	20.5 mA / 21.6 mA
Permissible load, see load diagram		725 Ω @ 24 VDC, 22 mA

Temperature

Ambient, storage and operation		-40 to +85 °C / -40 to +185 °F
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General data

Selectable dampening time		~ 2 s
Update time		~ 1.5 s
Isolation In - Out		Non-isolated
Humidity		0 to 100 %RH

Power supply, polarity protected

Supply voltage		8 to 36 VDC 2-wire
Permissible ripple		4 V p-p @ 50/60 Hz

Accuracy

Linearity	RTD T/C	± 0.1 % ¹⁾ ± 0.2 % ¹⁾
Calibration	RTD T/C	Max. of ± 0.2 °C / ± 0.4 °F or ± 0.1 % ¹⁾ Max. of ± 20 μ V or ± 0.1 % ¹⁾
Cold Junction Compensation (CJC)	T/C	± 0.5 °C / ± 0.9 °F
Temperature influence ³⁾	All inputs	Max. of ± 0.25 °C/25 °C or $\pm 0.25\%/25$ °C ^{1) 2)} Max. of ± 0.5 °F/50 °F or $\pm 0.28\%/50$ °F ^{1) 2)}
Temperature influence CJC ³⁾	T/C	± 0.5 °C/25 °C / ± 1.0 °F/50 °F
RFI influence, 0.15 to 1000 MHz, 10 V or V/m		± 0.5 % ¹⁾ (typical)
Long-term stability		± 0.2 % ¹⁾ /year

Housing

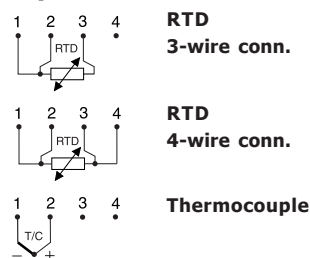
Material, Flammability (UL)		PC/ABS, V0
Mounting		DIN B-head or larger, DIN rail (with mounting kit)
Connection	Single/stranded wires	Max. 1.5 mm ² , AWG 16
Weight		50 g
Protection, housing / terminals		IP 54 / IP 00

¹⁾ Of input span

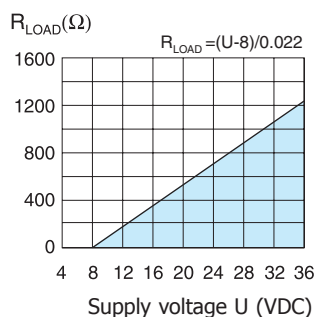
²⁾ If zero-deflection > 100% of input span: add 0.125% of input span/25 °C or 0.14% of input span/50 °F per 100% zero-deflection

³⁾ Reference temperature 23 °C / 73 °F

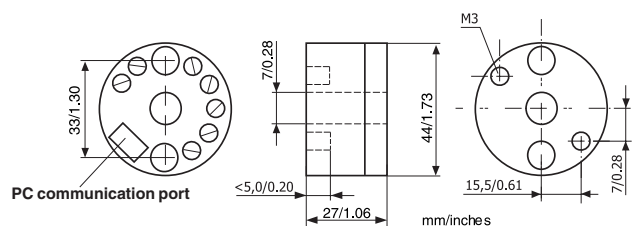
Input connections



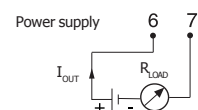
Output load diagram



Dimensions



Output connections



Ordering information

^{MIN} IPAQ-H	70MQH00002
PC configuration kit	70CFG00092
Configuration	70CAL00001
Head mounting kit	70ADA00017
Rail mounting kit	70ADA00013