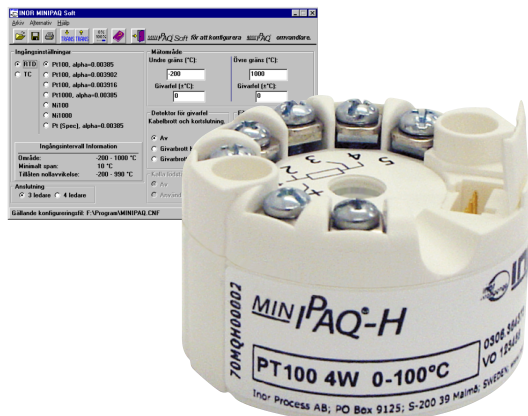




## Basic Programmable 2-wire Transmitter for RTD and T/C

**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: <sup>MIN</sup>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 $\Omega$ /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 $\Omega$ (total loop) |

### Monitoring

|                           |  |                             |
|---------------------------|--|-----------------------------|
| Sensor failure monitoring |  | Upscale or downscale action |
|---------------------------|--|-----------------------------|

### Adjustments

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

### Output

|                                    |                     |                              |
|------------------------------------|---------------------|------------------------------|
| Analogue                           |                     | 4-20 mA, temperature linear  |
| Resolution                         |                     | 5 $\mu$ 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 $\Omega$ @ 24 VDC, 22 mA |

### Temperature

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

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

### Housing

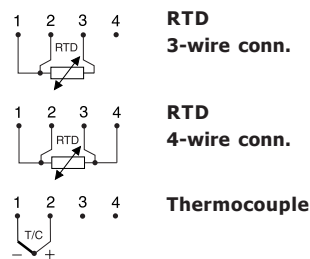
|                                 |                       |                                                    |
|---------------------------------|-----------------------|----------------------------------------------------|
| Material, Flammability (UL)     |                       | PC/ABS, V0    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

<sup>1)</sup> Of input span

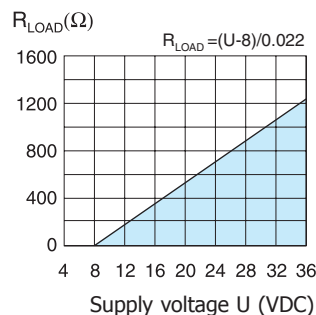
<sup>2)</sup> If zero-deflection > 100% of input span: add 0.125% of input span/25 °C or 0.14% of input span/50 °F per 100% zero-deflection

<sup>3)</sup> Reference temperature 23 °C / 73 °F

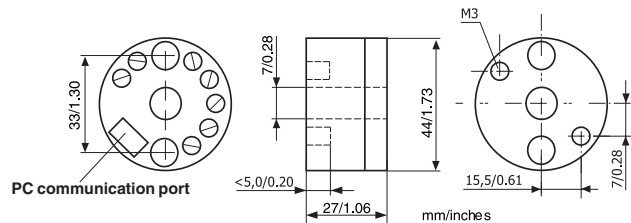
### Input connections



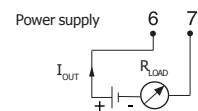
### Output load diagram



### Dimensions



### Output connections



### Ordering information

|                       |            |
|-----------------------|------------|
| <sup>MIN</sup> IPAQ-H | 70MQH00002 |
| PC configuration kit  | 70CFG00092 |
| Configuration         | 70CAL00001 |
| Head mounting kit     | 70ADA00017 |
| Rail mounting kit     | 70ADA00013 |