MINIPAQ®-HLP

MINIPAQ-HLP
Low Profile
Programmable 2-wire Transmitter for RTD and T/C

YEAR WARRANTY

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

Reduced hight simplifies mounting in low connection heads.

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

MINIPAQ-HLP is programmable for RTD's in 3- and 4-wire connection 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-HLP accepts inputs from a number of standardized RTD's such as Pt100, Pt500 and Pt1000 acc. to IEC 60751 (α=0.00385), Pt100 acc. to JIS C 1604 (α=0.003916) and US standards (α=0.003902), Ni100 and Ni1000 acc. to DIN 43760 as well as Ni120 and Cu10 acc. to Edison curves. 3- and 4-wire connection can be selected.

Measurements with Thermocouples
MINIPAQ-HLP 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.

Designed for harsh conditions
Rugged design tested for 10 g vibrations.

NAMUR compliant
Output limitations and fail currents according to NAMUR recommendations.

Sensor matching and error corrections for maximum accuracy
A matching to a calibrated temperature sensor can easily be performed with the *Sensor Error Compensation* function.
The *System Error Compensation* is a convenient way to adjust the sensor/transmitter combination (or just the transmitter) for highest accuracy in a certain measuring range.

Mounting, wiring and testing
MINIPAQ-HLP is designed to fit inside connection heads type DIN B or larger.
The large center hole, dia. 7 mm / 0.28 inch, the robust terminals with test connections and the low hight greatly simplify the mounting, wiring and testing procedure.

Configuration without external power
Edit or read the configuration off-line by just connecting to the USB port of 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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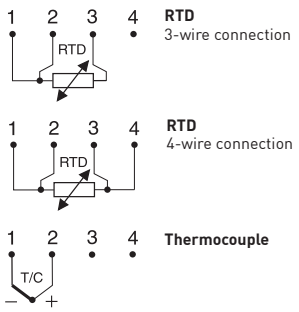
Specifications

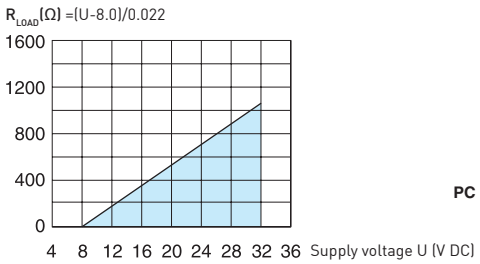
Input RTD		
Pt100 (IEC 60751, α = 0.00385)	3-, 4-wire connection	-200 to + 1000 °C / -328 to + 1832 °F
Pt 100 (JIS C 1604, α = 0.003916)	3-, 4-wire connection	-200 to + 1000 °C / -328 to + 1832 °F
Pt 100 (US, α = 0.003902)	3-, 4-wire connection	-200 to + 1000 °C / -328 to + 1832 °F
Pt1000 (IEC 60751, α = 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 (IEC 60751, α = 0.00385)	3-, 4-wire connection	Any Pt function between Pt10- Pt1000
Ni120 (Edison No.7)	3-, 4-wire connection	-70 to + 300 °C / -94 to + 572 °F
Cu10 (Edison No.15)	3-, 4-wire connection	-200 to + 260 °C / -328 to + 500 °F
Sensor current		~ 0.4 mA
Maximum sensor wire resistance		25 Ω/wire
Input Thermocouples		
Range	Type: B, C, 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
Adjustments		
Zero adjustment	All inputs	Any value within range limits
Minimum spans	Pt and Ni input	10 °C / 18 °F
	Cu10	100 °C / 180 °F
	T/C	2 mV
Output		
Analog		4-20 mA, temperature linear
Resolution		5 µA
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
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
Vibration		Acc. to IEC 60068-2-6, test Fc, 60-500 Hz, 10 g
Power supply,polarity protected		
Supply voltage		8 to 32 VDC
Permissible ripple		4 V p-p @ 50/60 Hz
Accuracy		
Linearity	RTD	±0.1 % [1]
	T/C	±0.2 % [1]
Calibration	RTD	Max. of ±0.2 °C/ ±0.4 °F or ±0.1 % [1]
	T/C	Max. of ±20 µV 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 ±0.25%/25 °C [1] [2]
		Max. of ±0.5 °F/50 °F or ±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 + PA, V0
Mounting		DIN B-head or larger, DIN rail (with mounting kit)
Connection	Single/stranded wires	Max. 1.5 mm², AWG 16
Weight		32 g
Protection, housing / terminals		IP 65 / IP 00

[1] Of input span
[3] Reference temperature 20 °C / 68 °F
[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

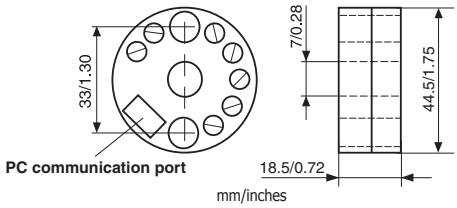
Input connections



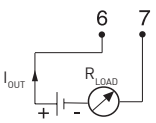
Output load diagram



Dimensions



Output connections



Ordering information

MINIPAQ-HLP	70MQHLP002
PC Configuration Kit (USB conn.)	70CFGUS001
Configuration	70CAL00001
Head mounting kit	70ADA00017
Rail mounting kit	70ADA00013

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