PT evo CAN MM Series

Product description

The **PT evo** modules are a further development of the PT series . They are available in two versions with four or eight measurement channels and with extended operating temperature range of -40 °C to +125 °C.

Last but not least, the power consumption of the modules could be further reduced. Thanks to a measurement data rate of 100 Hz per channel, **PT evo** modules are a perfect choice for measurement applications using sensors with short response times.

To achieve best possible accuracy results, **PT evo** modules can be parameterized by means of individual PT coefficients (R0, A, B and C). This allows the use of low-accuracy PT sensors if required.

Key features

- 4 or 8 inputs for PT100 and PT1000 sensors
- High measurement data rate of 100 Hz for the acquisition of fast temperature gradients
- Individual PT coefficients can be entered for best possible sensor adjustment
- TEDS ready: Prepared for TEDS-capable PT sensors
- Operating temperature range from -40° C to +125° C
- Low power consumption, typ. 0.85 W (PT4 evo)

Scope of delivery

- Measurement module PT4 evo or PT8 evo
- Configuration software CSMconfig
- Documentation
- Calibration certificate in accordance with DIN EN ISO/IEC 17025

Maintenance

- Calibration every 12 months recommended

Accessories

- See datasheet "CAN Accessories"

Technical data

Type designation	**PT4 evo**	**PT8 evo**
		
Technical data valid as of revision	D000	
Measurement inputs	4	8
	for PT100/PT1000 sensors, configurable via CSMconfig	
Measurement range	-50 °C to +500 °C	
Internal resolution	16 bit	
Internal sampling rate per ch.	10 kHz	5 kHz
Measurement data rate/sending rate per channel	1, 2, 5, 10, 20, 50, 100 Hz	
HW input filter	low-pass filter, 3rd order, approx. 2.5 kHz	low-pass filter, 3rd order, approx. 500 Hz
SW input filter	FIR filter (Finite Impulse Response) threshold frequency automatically adjusted to measurement data rate median11 filter, single or double internal clock rate	
Linearization	via individual PT coefficients R0, A, B and C	
TEDS support [1]	according to standard IEEE 1451.4 (Class 2)	
Broken sensor detection	yes	
Measurement current	PT100: 1 mA, PT1000: 100 µA	
Measurement deviation [2]		
Gain error at 25 °C	max. ±0.1 % of measured value	
Offset and scaling error	max. ±0.2 K	
Gain drift	max. ±10 ppm/K of measured value	
Zero drift	max. ±5 mK/K	
Galvanic isolation [3]	no safety isolation in terms of high-voltage applications	
CAN/channel	500 V	
CAN/power supply	500 V	
CAN interface	CAN 2.0B (active), High Speed (ISO 11898-2:2016) 125 kbit/s to 1 Mbit/s, up to 2 Mbit/s with suitable CAN interface, data transfer rate is free running	
Configuration	via CAN bus with CSMconfig settings and configuration data stored in the device alternatively: configuration and data transfer via CANopen protocol [4]	
Power supply		
Minimum	6 V DC (-10 %)	
Maximum	50 V DC (+10 %)	
Power consumption	typ. 0.85 W	typ. 1.25 W
LED indicator	power/status	

Type designation	PT4 evo	PT8 evo
Housing [5]	aluminum, gold anodized	
Protection class	IP67	
Weight (device)	approx. 300 g	approx. 500 g
Dimensions (w × h × d)	approx. 120 × 32 × 50 mm approx. 120 × 37 × 50 mm (Slide Case)	approx. 200 × 35 × 50 mm approx. 200 × 40 × 50 mm (Slide Case)
Sockets [5]		
CAN/power supply	LEMO 0B, 5-pole, code G	
Signal inputs	LEMO 0B, 6-pole, code A	
Operating and storage conditions		
Operating temperature range	-40 °C to +125 °C	
Relative humidity	5 % to 95 % (non-condensing)	
Pollution degree	3	
Storage temperature	-55 °C to +150 °C	
Conformity	CE	

[1] Hardware prepared for TEDS support. In order to make use of TEDS sensors, the measurement module has to be equipped with 6-pole measurement inputs.

[2] In interference-polluted environments or at operating temperatures above +110 °C, additional measurement errors can occur. Further information can be found in the Technical Information document on the subject of “Deviation of Measurement”.

[3] These MiniModules are designed for measurements in vehicles with 12 V, 24 V, or 48 V on-board power supply systems. The maximum operating voltage at the measurement inputs is 60 V. Not suitable to be directly connected to systems with higher operating voltages, e.g. high-voltage batteries of hybrid or electric vehicles.

[4] The only CANopen version currently available is PT4 evo.

[5] Optionally available in other variants

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