



PTAI216 Temperature recording module

The temperature recording module PTAI216 has 4 analog input channels and 12 inputs for Pt100/Pt1000 sensors.

Features

- 4 analog inputs $\pm 10\text{ V}$ / $\pm 1\text{ V}$ / 0 mA to 20 mA
- 12 inputs for Pt100/Pt1000 sensors
- Single-ended or differential inputs for analog signals
- 2-wire inputs for Pt100/Pt1000 sensors
- Resolution 14 bit (AI) / 12 bit (Pt100/Pt1000)
- Sample time 2.5 ms (AI) / 480 ms (Pt100/Pt1000)
- Channels galvanically isolated from system
- Wire break detection for the inputs
- Monitoring of the external power supply

Part type designation	Part number
PTAI216	00010708-00
PTAI216 CC	00017456-00

PTAI216

Voltage inputs	
Quantity	Max. 4
Connection type	Single ended or differential
Input voltage	±1 V or ±10 V
Input impedance	> 33 k Ω
Input filter	170 Hz (low-pass filter 1st order)
Digital resolution	14 bit
Permitted common mode voltage	Max. ±1 V
Error at operating temperature	±1 V: 25 °C → ±0.5 % ±1 V: 0 °C to +60 °C → ±0.5 % ±1 V: -30 °C to +60 °C → ±0.5 % ±10 V: 25 °C → ±0.1 % ±10 V: 0 °C to +60 °C → ±0.15 % ±10 V: -30 °C to +60 °C → ±0.3 %
Common-mode rejection	> 60 dB
Sample time	2.5 ms
Current inputs	
Quantity	Max. 4
Input current	0 mA to 20 mA
Input impedance	243 Ω
Digital resolution	14 bit
Maximum input current	35 mA (destruction limit)
Error at operating temperature	0 mA to 20 mA: 25 °C → ±0.2 % ¹⁾ 0 mA to 20 mA: 0 °C to +60 °C → ±0.2 % ¹⁾ 0 mA to 20 mA: -30 °C to +60 °C → ±0.3 % ¹⁾
Sample time	2.5 ms
¹⁾ Applies only for DC in the input current range 20 mA	
Pt100/Pt1000 inputs	
Quantity	12
Connection type	2-wire technology
Temperature range	-100 °C to +300 °C
Constant current through sensor	Pt100: 3 mA Pt1000: 0.3 mA
Digital resolution	12 bit
Value of LSB	0.1 K
Averaging	Over 16 values per 480 ms
External power supply	
Galvanic isolation for the system	500 V
Voltage range	18 V DC to 34 V DC
Current consumption	Typ. 70 mA at 24 V DC
Approvals/Certificates	
General	CE, UKCA, cULus
Marine	ABS, BV, DNV, KR, LR, NK, RINA
Environmental conditions	
Operating temperature	-30 °C to +60 °C
Relative humidity, operation	5 % to 95 % noncondensing
	ColdClimate (❄️) 5 % to 95 % with condensation

Environmental conditions	Standard	ColdClimate (❄)
Storage temperature	-40 °C to +85 °C	
Relative humidity, storage	5 % to 95 % with condensation	
Pollution degree acc. IEC 60664-1	2 (noncondensing)	2

Order data

Part type designation	Part number	Description
PTAI216	00010708-00	Temp.-recording module; 12x Pt100/1000; 4x In ± 10 V, ± 1 V, 20 m A; 14 bit; 0.25 %; isolated
PTAI216 CC	00017456-00	Like PTAI216 ColdClimate (❄)

Accessories

Part type designation	Part number	Description
KS-PTAI216 B+C ¹⁾	00012599-50	Terminal set cage clamp small (1x KZ 51/02; 4x KS 35/14) with labeling strip and coding elements → not for new developments
KZ-PTAI216 B+C	00026126-00	Terminal set Phoenix cage clamp (1x KZ 51/02; 4x KZ 35/14) with labeling strips and coding elements
SS-PTAI216 B+C	00012010-50	Terminal set Phoenix screw side (1x KZ 51/02; 4x SS 35/14) with labeling strips and coding elements
SV-PTAI216 B+C	00010870-50	Terminal set Phoenix screw frontside (1x SV 51/02; 4x SS 35/14) with labeling strips and coding elements

¹⁾ Item is discontinued and replaced by KZ-AIO288 B+C (00026126-00)