XR-RTD8

DEWETRON

- Amplifier with integrated A/D conversion
- 8 isolated resistance temperature detector channels
- RS-485 or highspeed CAN (2.0B) interface programmable
- Dust tight and waterproof (IP 68)



Module specifications

XR-RTD8 module			
Input channels	8 isolated resistance temperature detector channels		
Input ranges	Resistor: 0 to 5000 Ω Pt100(385); Pt200(385); Pt500(385); Pt1000(385); Pt2000(385); PT100(3961)		
Accuracy[1)]	**Pt100 a = 0.00385** ±0.25 °C @ -200 to 100 °C ±0.4 °C @ 100 to 400 °C ±0.8 °C @ 400 to 800 °C	**Pt100 a = 0.003916** ±0.25 °C @ -200 to 100 °C ±0.4 °C @ 100 to 400 °C ±0.8 °C @ 400 to 800 °C	**Pt200 a = 0.00385** ±0.25 °C @ -200 to 100 °C ±0.4 °C @ 100 to 400 °C ±0.5 °C @ 400 to 630 °C
	Pt500 a = 0.00385 ±0.25 °C @ -200 to 100 °C ±0.4 °C @ 100 to 250 °C	**Pt1000 a = 0.00385** ±0.25 °C @ -200 to 100 °C ±0.4 °C @ 100 to 400 °C ±0.8 °C @ 400 to 600 °C	**Pt2000 a = 0.00385** ±0.25 °C @ -200 to 100 °C ±0.4 °C @ 100 to 200 °C
	Resistance accuracy: 0.03 % of reading ±0.1 Ω		
Sampling rate	Max. 200 S/s per channel for CAN Max. 10 S/s per channel for RS-485		
Bandwidth (-3 dB)	48 Hz		
ADC type	20-bit Delta Sigma Converter		
Input connector	HCP.1S.304.CLNP		
Connection type	2-wire, 3-wire jumper selectable, 4-wire		
Noise	Typ. 0.02 °C (Pt100 @ 1 Hz readout)		
Resolution	0.01 °C for all types		
Constant current	390 µA		
Input impedance	Typ. >100 MΩ		
Bias current	Typ. 10 nA		
Sensor fault detection	Module indicates fullscale if input is open		
Interface	**RS-485**	**CAN 2.0B**	
– Communication speed	9600 bps (2400–115 200 programmable)	50 kBd to 1000 kBd	
– Standard settings	9600 bps, 8 data bits, 1 stop bit, no parity, module address 00 hex	500 kBd, Intel format	
– Readout speed	Depending on baudrate and number of channels (typ. 80 ch/s @ 9600 bps)	200 Hz[2)], 100 Hz, 50 Hz, 20 Hz, 10 Hz, 5 Hz, 2 Hz, 1 Hz, 0.5 Hz, 0.2 Hz or 0.1 Hz, 0.05 Hz, 0.02 Hz, 0.01 Hz, programmable	
– Data format	-	16-bit Intel or Motorola	
– Identifier types	-	Standard, extended	

Tab. 1: Module specifications XR-RTD8 module

XR-RTD8 module	
Max. gain drift	25 ppm/°C
Max. offset drift	25 ppm of range /°C
Isolation[3] voltage	350 V_{DC} (channel to channel and channel to bus, power and chassis)
Rated input voltage to earth according to IEC/EN 61010-2-30	70 V_{DC} (46.7 V_{PEAK})
Overvoltage protection	15 V_{DC}
CMRR (50/60 Hz)	130 dB
MTBF[4]	315,418 h
IP rating	IP 68; immersion depth 3 m
Bus/power connector	LEMO HEG.1B.304.CLNP
Power supply voltage	7 to 40 V
Power consumption	
– Sample rate ≤ 10 S/s	0.7 W
– Sample rate 20 to 100 S/s	0.9 W
– Sample rate 200 S/s	1.1 W
Weight	Typ. 560 g (~1.23 lbs)
Dimensions	
– Base module (W x D x H)	129 x 72 x 50.2 mm (5.1 x 2.8 x 2 in.) incl. mounting holes
– Mounting holes distance	119 x 7 mm (4.7 x 0.3 in.), 4.2 mm (0.165 in.) diameter
Environmental	
– Storage temperature	-40 °C to +85 °C (-40 °F to +185 °F)
– Operating temperature	-40°C to +85 °C (-40 °F to +185 °F)
– Relative humidity (MIL202)	0 to 100 % at 60 °C

Tab. 1: Module specifications XR-RTD8 module

1) 1 year, 23 °C ±5 °C
2) At 200 S/s the accuracy is reduced; multiply accuracy values with 3
3) For safety reasons maximum allowed voltage: 70 V_{DC} (46.7 V_{PEAK})
4) Mean time between failure