



R-9019

16-ch Thermocouple Input Redundant Module

Features

- 16 thermocouple input channels
- User defined up/down scale
- 16-bit A/D Converter
- Channel disconnection detection
- Termination board disconnection detection
- Redundant switching time (<1 ms)



Introduction

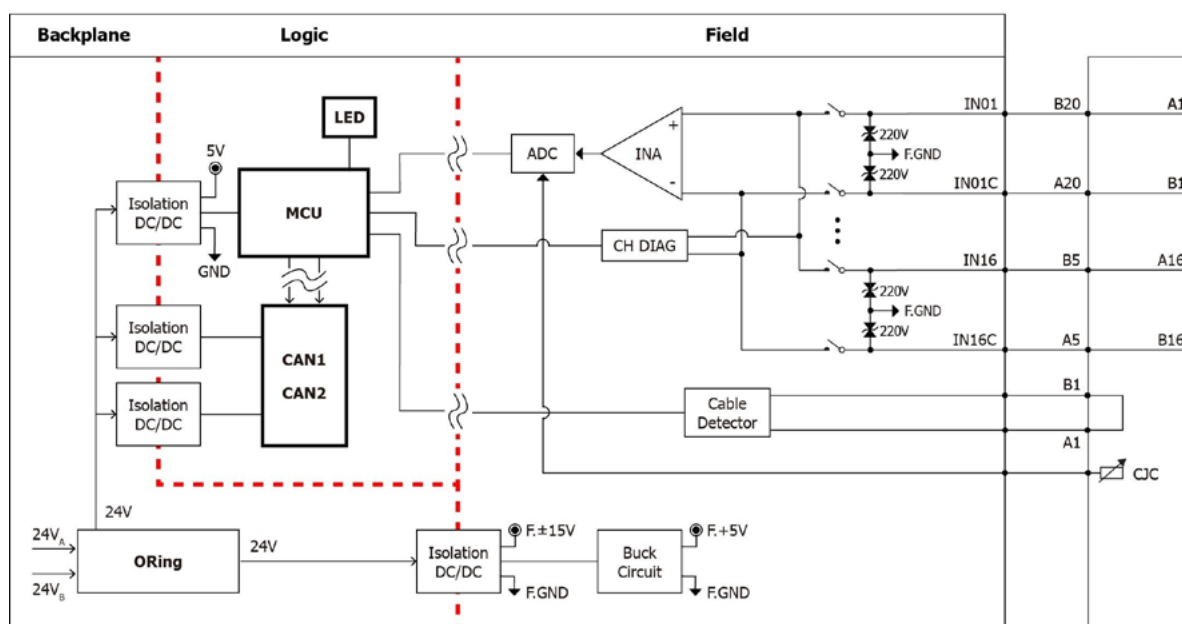
R-9019 is a 16-bit 16-channel thermocouple input module. The channels can all program their own input ranges and can thermocouple inputs (J, K, T, E, R, S, B, N, C). The R-9019 supports the use of an external CJC to accurately measure temperature, with an accuracy of $\pm 0.05\%$, enabling high accuracy applications. It also provides 3000 VDC isolation between the power supply and the backplane bus, making it better able to prevent noise interference in industrial environments without affecting the RIO-98x0 system.

Specifications

Features		
Redundant		Yes (Switching time < 1ms)
Disconnection Detection		Yes
Over-Current Protection		Yes
LED Indicator		1 PWR, 1 MOD, 1 ACT, 1 DX, 1 ERR
		LED 0~15 for CH Hi/Lo Alarm LED 16~31 for CH Break Line
Analog Input		
Number of Channels		16
Type		J, K, T, E, R, S, B, N, C
Range	J	-210 ~ +1200 °C
	K	-270 ~ +1372 °C
	T	-270 ~ +400 °C
	E	-270 ~ +1000 °C
	R	-50 ~ +1765 °C
	S	-50 ~ +1765 °C
	B	0 ~ +1820 °C
	N	-270 ~ +1300 °C
C	0 ~ +2320 °C	
Resolution		16 bit
Sampling Rate		1 Samples/Sec.
Accuracy		±0.05% FSR

Analog Input	
Zero Drift	$\pm 20 \mu\text{V}/^\circ\text{C}$
Span Drift	$\pm 25 \mu\text{V}/^\circ\text{C}$
Common Mode Rejection	106 dB
Normal Mode Rejection	100 dB
Input Impedance	20M Ω
Date Range	-2500~12500
Isolation	3000 VDC
HART	
Mode	Master, Monodrop (Point-to-Point)
Certification	
EMC	EN 61000-6-2 (EMS) EN 61000-6-4 (EMI) IEC/EN 61000-4-2 (ESD) IEC/EN 61000-4-4 (EFT)
General	
Termination Board	RDB-S02 / RDB-D02
Max. Power Consumption	2.2 W
Operating Temp.	-25 ~ 70 °C
Storage Temp.	-30 ~ 75 °C
Humidity	5 ~ 95 % RH, Non-condensing
Weight	200 g
Dimensions (WxLxH)	33 mm x 129 mm x 130 mm

I/O Structure

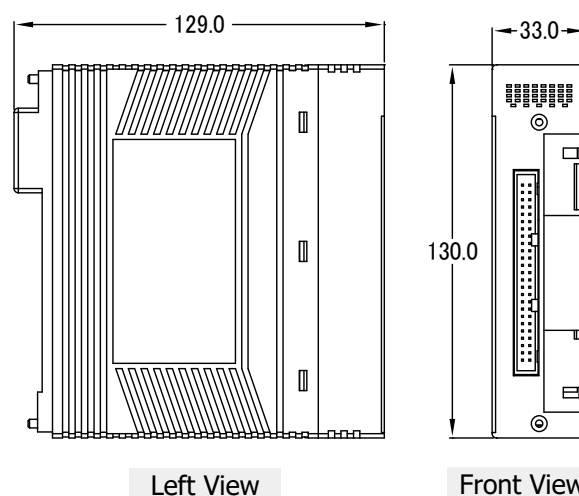


Pin Assignment



Pin Assignment Name	Terminal No	Pin Assignment Name
IN01	A1	B1
IN02	A2	B2
IN03	A3	B3
IN04	A4	B4
IN05	A5	B5
IN06	A6	B6
IN07	A7	B7
IN08	A8	B8
IN09	A9	B9
IN10	A10	B10
IN11	A11	B11
IN12	A12	B12
IN13	A13	B13
IN14	A14	B14
IN15	A15	B15
IN16	A16	B16
CJC	A17	B17
CJC	A18	B18
CJC	A19	B19
BK	A20	B20

Dimensions (Units: mm)



Ordering Information

R-9019 CR	16-ch Thermocouple Input Redundant Module (RoHS)
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Accessories

RDB-S02 CR	Termination board for single thermocouple I/O modules (RoHS)
RDB-D02 CR	Termination board for duplex thermocouple I/O modules (RoHS)