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Data Sheet: T1F–16RTD–DS

Terminator I/O

T1F–16RTD RTD Input Module (use base T1K–16B or T1K–16B–1)

WARNING: To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and it is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation are in compliance with the latest revision of these codes.

Equipment damage or serious injury to personnel can result from the failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation.

If you have any questions concerning the installation or operation of this equipment, or if you need additional information, please call us at 770–844–4200.

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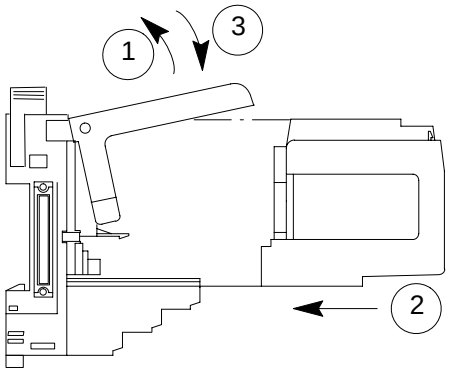
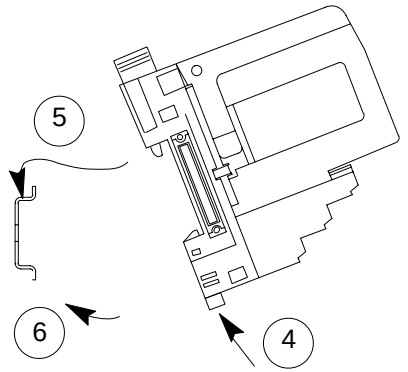


Insert Module into Base

1. Pull base arm back to allow space for module to enter base

2. Align module slides with base track

3. Press module firmly into base

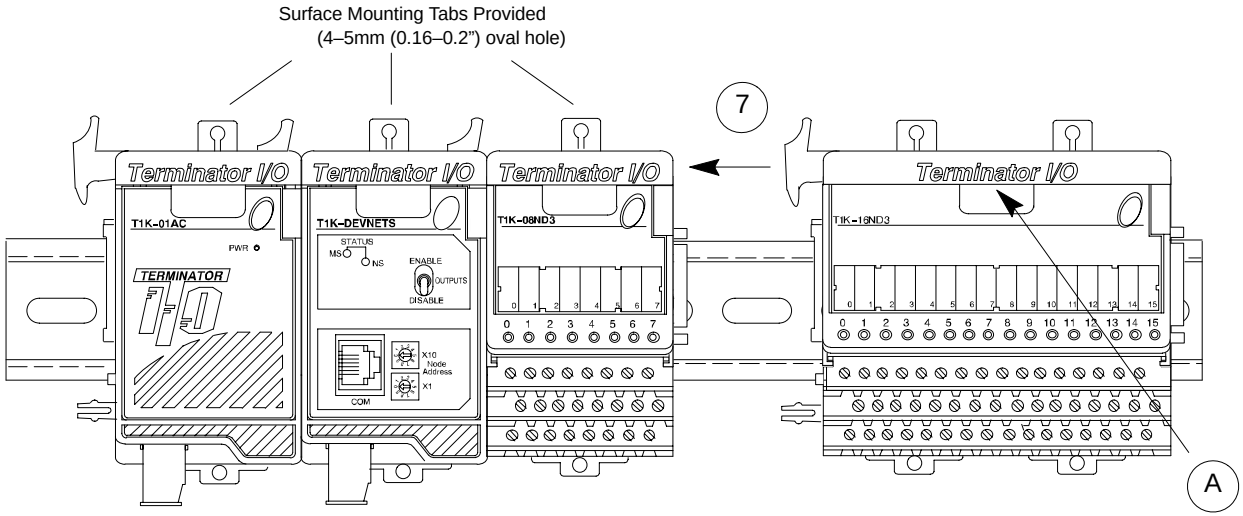


Install Assembly on DIN Rail

4. Make sure the locking tab is in the latched position

5. Hook upper tab over upper flange of DIN rail

6. Tilt assembly toward DIN rail until module snaps securely to DIN rail



Slide Assembly into Position on DIN Rail

7. Slide the module assembly on the DIN rail until the clip arm attaches securely to the adjacent module.

A.To remove the module from the base, lift the center of the base arm slightly outward and upward to release the module. Lifting the base arm further will eject the module.
B.To remove the module assembly from the DIN rail, lift the clip arm up and slide the module assembly away from the adjacent module. Use a small screwdriver to pull the locking tab to the down position.

Rev. B and Higher 8-19-2016

Specifications

T1F–16RTD RTD Input Module

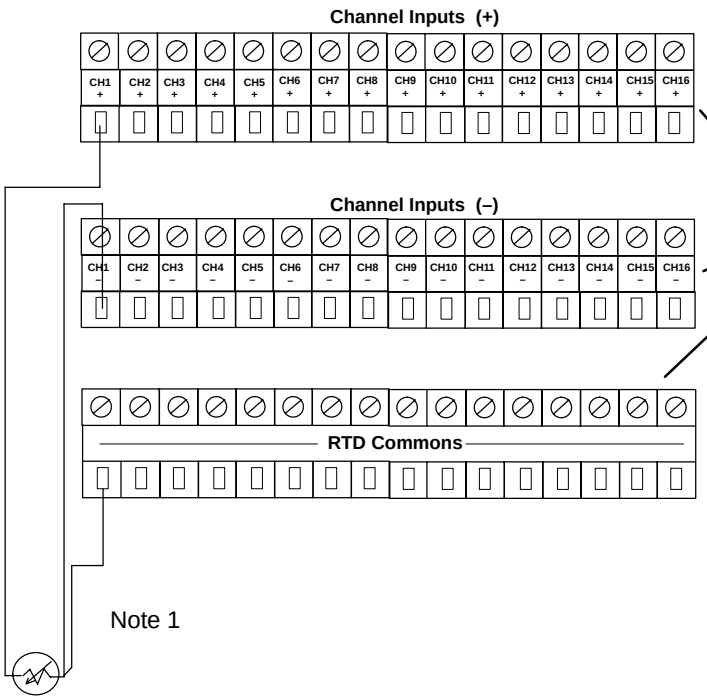
Number of Channels	16
Resolution	+ / – 0.1°C or °F
Common Mode Range	0 – 5VDC
Notch Filter	>50db notches @ 50/60 Hz f – 3db=13.1 Hz
Absolute Max. Ratings	+ / – 50 VDC
Converter Type	Charge balancing, 24–bit
Sampling Rate	140ms / channel
Master Update Rate	16 channels per scan max.
Input Points Required	512 discrete pts. or 16 dwords (d (double) word = 32 bit word) Network Interface dependent
Base Power Required	150mA @ 5VDC
Operating Temperature	0 to 60°C (32 to 140°F)
Storage Temperature	–20 to 70°C (–4 to 158°F)
Temperature Drift	25ppm / °C (max.)
Maximum Inaccuracy	+/-1oC Pt100, Pt1000, jPT100, Ni120, +/-5oC CU10, CU25
RTD Excitation Current	210uA
Relative Humidity	5 to 95% (non–condensing)
Environmental Air	No corrosive gases permitted
Vibration	MIL STD 810C 514.2
Shock	MIL STD 810C 516.2
Noise Immunity	NEMA ICS3–304
Weight	168g

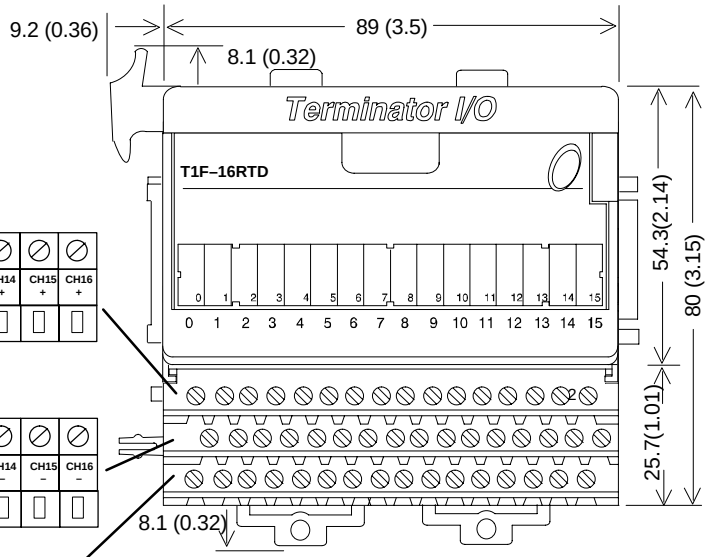
RTD Input Ranges:

Input Ranges	Pt100 –200°C to 850°C –328°F to 1562°F Pt1000 –200°C to 595°C –328°F to 1103°F jPt100 –38°C to 450°C –36°F to 842°F Type CU–10/25 –200°C to 260°C –328°F to 500°F 120Ω Nickel –80°C to 260°C –112°F to 500°F

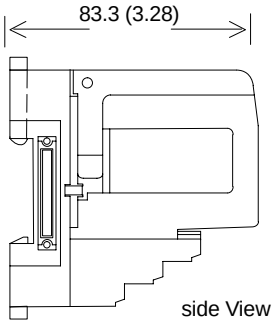
Wiring & Dimensions

Note: Apply the labels that come with the I/O module to the I/O base terminals to properly identify the base terminal points.





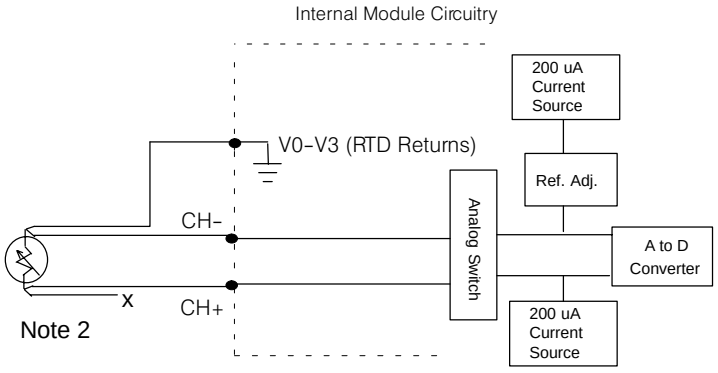
mm (in.)



side View mm (in.)

NOTES:
1: The three wires connecting the RTD to the module must be the same type and length. Do not use the shield or drain wire for the third connection.
2. If an RTD sensor has four wires, the plus sense wire should be left unconnected as shown.

Equivalent Input Circuit



Setting Module Jumpers

Select Input Type (see Note 2)

RTD Input	Jumper		
	RTD–0	**RTD–1**	**RTD–2**
Pt100 Ω	X	X	
Pt1000 Ω			X
jPt100 Ω		X	
Type CU–10 Ω			
Type CU–25 Ω	X		
120Ω Nickel	X		X

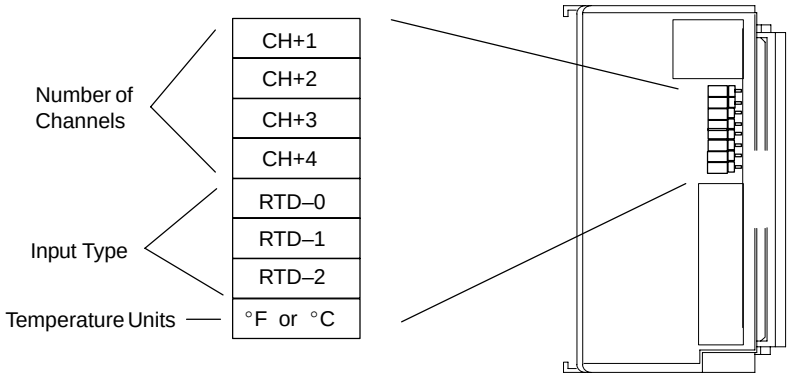
X = Jumper Installed,
Blank Space = Jumper Removed

Select Number of Channels (see Note 1)

Number of Channels	Jumper			
	CH+1	**CH+2**	**CH+3**	**CH+4**
1				
2	X			
3		X		
4	X	X		
5			X	
6	X		X	
7		X	X	
8	X	X	X	
9				X
10	X			X
11		X		X
12	X	X		X
13			X	X
14	X		X	X
15		X	X	X
16	X	X	X	X

X = Jumper Installed,
Blank Space = Jumper Removed

Jumpers Located Under Module Top Cover



NOTES:

Note 1: The module comes from the factory with all of the Number of Channels jumpers installed for sixteen channel operation. Use the table to determine the proper settings.

Note 2: The module comes the factory with the Input Type jumpers selected for Pt100 Ω operation. Use the table to determine the proper settings.

Select Temperature Units

Temperature Units	Jumper
°F	X
°C	

X = Jumper Installed,
Blank Space = Jumper Removed

T1F–RTD Data Format: Data format for each of the 16 RTD input channnels

31	30	29	28	27	26	25	24	23	22	21	20	1 9	1 8	1 7	1 6	1 5	1 4	1 3	1 2	1 1	1 0	9	8	7	6	5	4	3	2	1	0
–	–	–	–	–	–	–	**BO**	–	–	–	–	–	–	–	–	D15	D14	D13	D12	D11	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1	D0

D15 to D0: 16–bit temperature data, D15 is the most significant bit (MSB). The temperature data has one implied decimal, so the readings are in tenths of degrees. Negative temperature readings are represented in 2's complement format.

B0: Channel burn out bit; 1= channel RTD sensor burn out or RTD is disconnected from either input terminal
0= channel OK

– : Unused channel bits are all = 0