The most practical automation products at the industry's lowest prices delivered by 11 a.m.

Data Sheet: T1F–8AD4DA–1–DS RevA

Terminator I/O

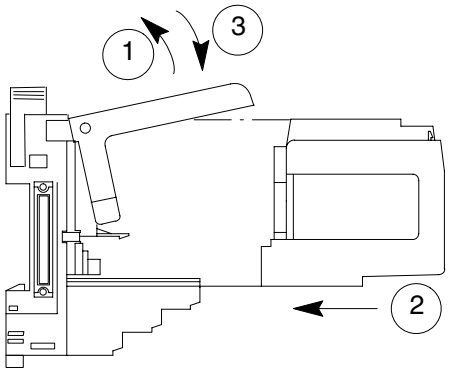
T1F–8AD4DA–1 Current Analog Combination I/O Module
(use base T1K–08B or T1K–08B–1)

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.

This publication is based on information that was available at the time it was printed. At ***Automationdirect.com***™ we constantly strive to improve our products and services, so we reserve the right to make changes to the products and/or publications at any time without notice and without any obligation. This publication may also discuss features that may not be available in certain revisions of the product.

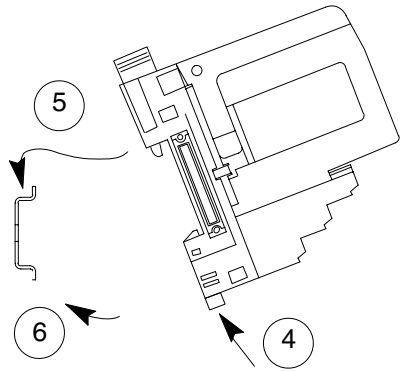


Insert Module into Base

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

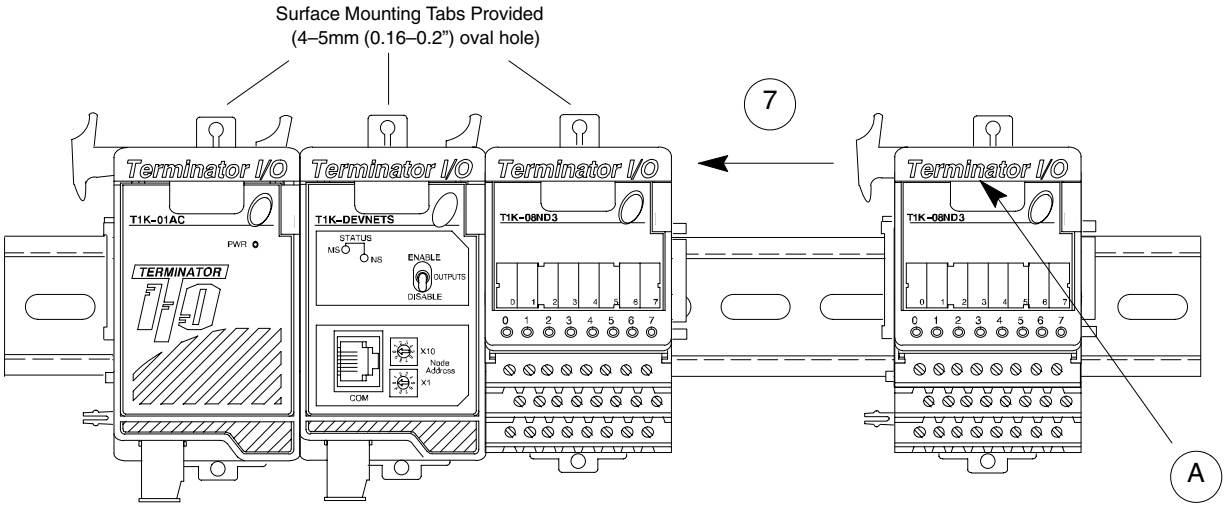


Install Assembly on DIN Rail

4. Make sure the locking tab is in the latched (in) 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.

Specifications

T1F–8AD4DA–1
8 Channel Current Analog Input / 4 Channel Current Analog Output

Rev A

Input Channel Specifications:

Number of Channels	8, single ended (1 common)
Input Points Required	256 discrete pts. or 8 dwords (d (double) word = 32 bit word) Network Interface dependent
Input Ranges	0–20mA, 4–20mA, –20 to 20mA
Resolution	14 bit (13 bit plus sign bit)
Frequency Response Input active low–pass filter	–3db @ 100Hz, –20db/decade
Input Resistance	250 ohm
Absolute Max. Ratings	+/– 8V max. input
Conversion Time	8.5ms per channel
Linearity Error	+ / – 2 count max.
Input Stability	+ / – 1 count
Full Scale Error (Offset Error not included)	16 counts max.
Offset Error	2 counts max.
Max. Full Scale Inaccuracy (% of full scale) all errors included	0.18% @ 25°C 0.36% @ 60°C
Recommended Fuse	0.032A, Series 217 Fast Acting

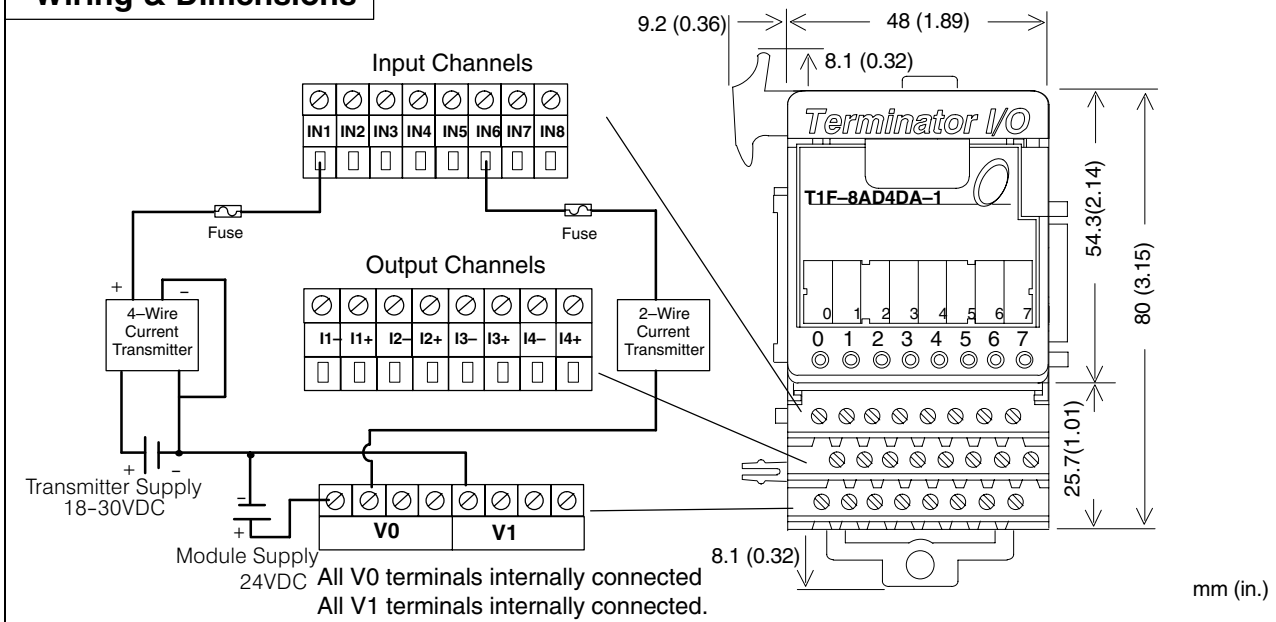
Input Range Resolution:

–20 to 20mA	–8192 to 8191 counts
0 – 20mA	0 – 8191 counts
4 – 20mA	1638 – 8191 counts

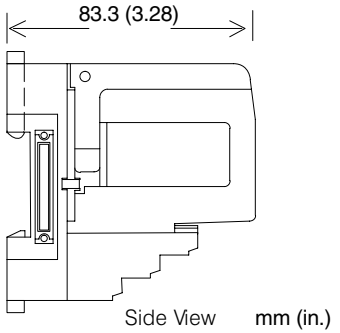
Module General Specifications:

CPU Update Rate	12 channels per scan max.
Base Power Required	75mA @ 5VDC
External Module Power Supply	21.6–26.4VDC, 60mA, class 2 (plus 20mA per output loop)
Operating Temperature	0 to 60°C (32 to 140°F)
Storage Temperature	–20 to 70°C (–4 to 158°F)
Accuracy vs. Temperature	+ / – 50 ppm / °C max. full scale
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	136g

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.



NOTES:

1: Shields should be grounded at the signal source.

2: More than one external power supply can be used, provided all the power supply commons are connected.

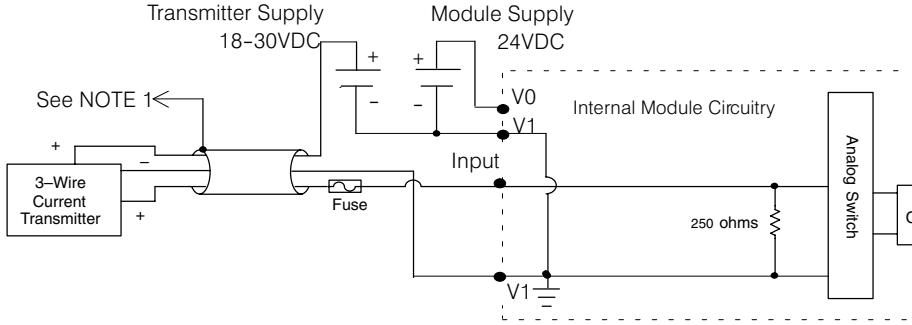
3: A Series 217, 0.032A fast-acting fuse is recommended for 4–20 mA current loops.

4: If the power supply common of an external power supply is not connected to the 0V terminal on the module, then the output of the external transmitter must be isolated. To avoid "ground loop" errors, recommended 4–20 mA transmitter types are:

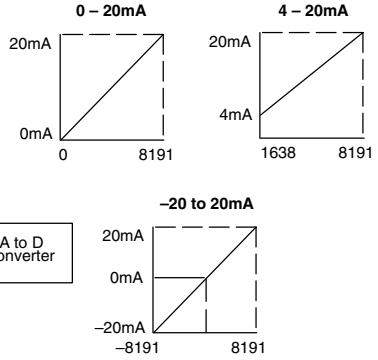
–For 2 or 3 wire connections: Isolation between the input supply signal and the power supply.

–For 4 wire connections: Isolation between the input supply signal, the power supply and the 4–20mA output.

Equivalent Input Circuit



Input Signal Ranges



Specifications

T1F–8AD4DA–1

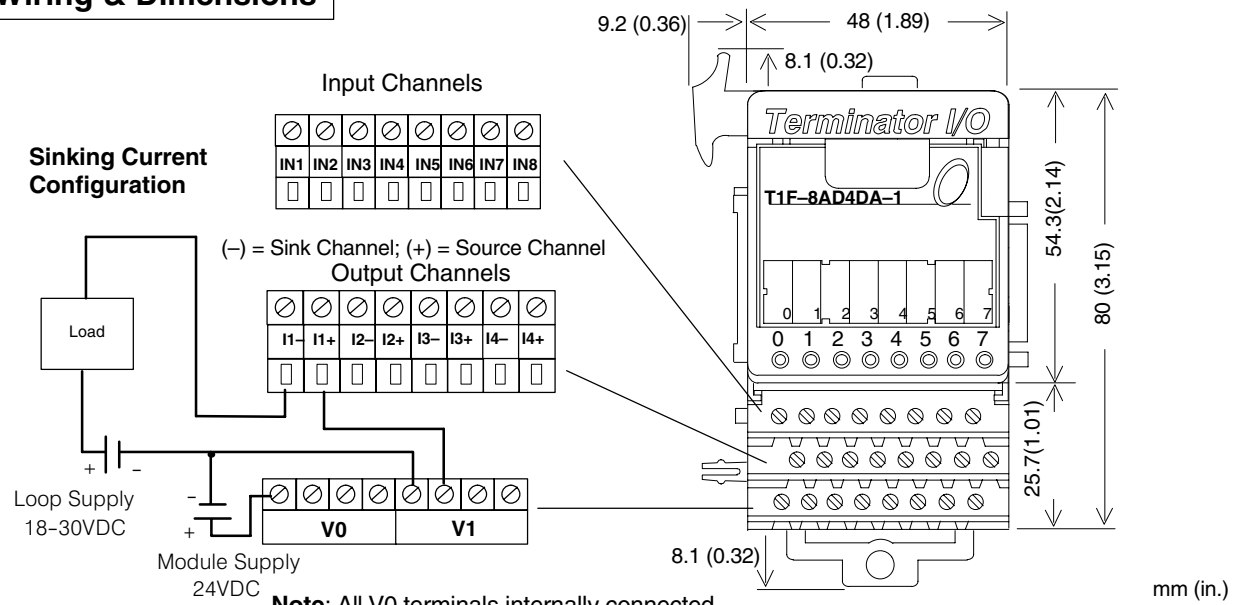
Output Channel Specifications:

Rev A

Number of Channels	4, sink/source; individually configured by wiring
Output Points Required	128 discrete pts. or 4 dwords (d (double) word = 32 bit word) Network Interface dependent
Output Ranges	4–20mA
Output Type	single ended, 1 common
Resolution	12 bit (1 in 4096)
Max. Loop Supply	30 VDC
Source Load (ohms) / Loop Power Supply	0 – 400/18–30V
Sink Load (ohm) / Loop Power Supply	0–600ohm/18V, 0–900ohm/24V 0–1200ohm/30V
Total Load (Sink plus Source)	600Ω/18V, 900Ω/24V, 1200Ω/30V
Linearity Error (end to end)	+ / – 2 count max. + / – 0.050% of full scale max
Conversion Settling Time	400us max. full scale change
Full Scale Calibration Error (Note: source error depends upon the load from source terminal to ground)	SINK: + / – 12 counts max. @ any load SOURCE: + / – 26 counts max.@ 400 ohm load + / – 18 counts max. @ 250 ohm load + / – 12 counts max. @ 125 ohm load
Offset Calibration Error	SINK: + / – 6 counts max. @ (any load) SOURCE: + / – 10 counts max.@ 400 ohm load + / – 8 counts max. @ 250 ohm load + / – 6 counts max. @ 125 ohm load
Max. Full Scale Inaccuracy (% of full scale) all errors included	SINK: (any load) 0.3% @ 25°C (any load) 0.5% @ 60°C SOURCE: 400Ω load 0.63% @ 25°C 400Ω load 0.83% @ 60°C 250Ω load 0.44% @ 25°C 250Ω load 0.64% @ 60°C 125Ω load 0.30% @ 25°C 125Ω load 0.50% @ 60°C

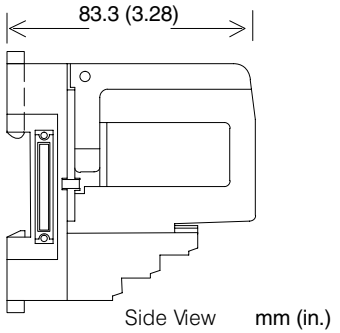
Note: This module requires software setup via the Module Control Byte. Refer to the Memory Map Chapter in the T1K–INST–M Installation and I/O Manual.

Wiring & Dimensions

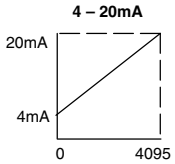


Note: All V0 terminals internally connected
All V1 terminals internally connected.

NOTES:
1: Shields should be connected to the 0V terminal of the module or the 0V of the power supply.
2. Unused current outputs should remain open (no connections) for minimum power consumption.



Output Signal Range



Equivalent Output Circuit