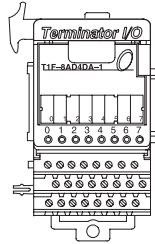


Analog Current Combination Module

T1F-8AD4DA-1 <--->

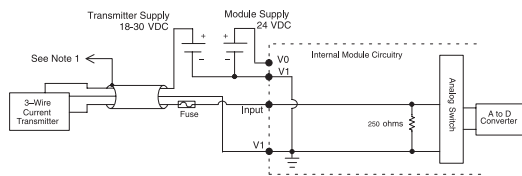
8-channel analog current input
4-channel analog current output

The combination 8-in and 4-out current module uses a T1K-8B or T1K-8B-1 base, which is purchased separately.



T1F-8AD4DA-1 Analog Input Specification	
Number of Channels	8, single-ended (1 common)
Input Ranges	-20 to 20 mA, 0-20 mA, 4-20 mA
Resolution	14 bit (13 bit plus sign bit)
Frequency Response	-3db @ 500Hz, -20db/decade
Input Resistance	250Ω
Absolute Max. Ratings	8V max. input
Conversion Time	5ms per channel
Linearity Error	± 2 counts 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
Master Update Rate	8 channels per scan max.
Input Points Required	256 discrete pts. or 8 Dwords (32-bit words) (Network Interface Dependent)
Base Power Required	75mA @ 5 VDC
External Power Required	21.6-26.4 VDC, 60mA, class 2 (plus 20mA per output loop)
Recommended Fuse	0.032 A, Series 217 Fast Acting
Weight	136 g

Equivalent Input Circuit

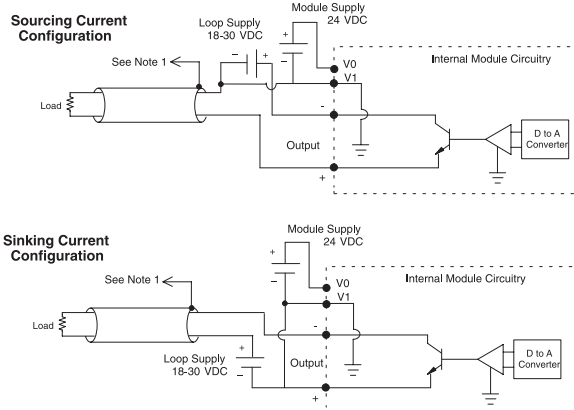


NOTES:

- 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 4-20 mA output.

Analog Output Specification	
Channels Per Module	4, sink/source by wiring
Output Ranges	4-20 mA
Output Type	Single-ended, 1 common
Resolution	12 bit (1 in 4096)
Max. Loop Supply	30 VDC
Source Load / Loop Power Supply	0-400 Ω / 18-30 VDC
Sink Load / Loop Power Supply	0-600 Ω / 18 VDC 0-900 Ω / 24 VDC 0-1200 Ω / 30 VDC
Total Load (Sink + Source)	600 Ω/18V, 900 Ω/24V, 1200 Ω/30V
Linearity Error (End to End)	± 2 counts max. ± 0.05% of full scale max.
Conversion Settling Time	400 μs max. full scale change
Full Scale Calibration Error (Note: source error depends upon the load from the source terminal to ground)	SINK: ± 12 counts max. @ any load SOURCE: ± 26 counts max. @ 400 Ω ± 18 counts max. @ 250 Ω ± 12 counts max. @ 125 Ω
Offset Calibration Error	SINK: ± 6 counts max. @ any load SOURCE: ± 10 counts max. @ 400 Ω ± 8 counts max. @ 250 Ω ± 6 counts max. @ 125 Ω
Max. Full Scale Inaccuracy (% of Full Scale) All Errors Included	SINK: (any load) 0.3% @ 25°C (any load) 0.5% @ 60°C SOURCE: 400 Ω load 0.63% @ 25°C 400 Ω 0.83% @ 60°C 250 Ω 0.44% @ 25°C 250 Ω load 0.64% @ 60°C 125 Ω load 0.30% @ 25°C 125 Ω load 0.50% @ 60°C
Master Update Rate	4 channels per scan max.
Output Points Required	128 discrete pts. or 4 Dwords (32-bit words) (network interface dependent)

Equivalent Output Circuit



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.