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Data Sheet
5100-G Analog Input Module
Four ±20 mVDC Analog Inputs

AI ±20mVDC G
4 Analog Inputs

Description

- Four 13-bit, ±20 mVDC bipolar analog inputs
- Three differential-ended inputs and one single-ended input
- Analog input circuitry is electrically isolated.
- On-board input averaging, 64 samples per digital input

5100-G Specifications

Parameter	Value	Description
General		
Number of inputs	4	Three differential-ended inputs and one single-ended input
Connection type	Screw terminal	Screw terminal spring clamp accepts #14-22 AWG wire. Terminated connector may also be unplugged.
Input type	±20 mVDC	
Resolution	13-bit	1 in 8192 counts; 4.88 uV/LSB
Engineering units (Channel Configurable)	 ±20,000 ±10,000 ±10,000,000	Integer numbers used by the 5100 to represent an input value. +20.000 mVDC = 20,000 (±99,999,999 = over/under range) +20.000 mVDC = 10,000 (Default) 20.000 mVDC = 10,000,000
Signal type Analog inputs #1-3 Analog input #4	 Diff.-ended Single-ended	The input reading is the current difference between +AINx and -AINx. One input terminal is referenced to analog common (ACOM).
Common mode voltage	±15 VDC	The maximum input voltage in reference to analog common (ACOM).
Isolation rating	500 VDC	Isolation voltage between any input and other sensitive 5100 circuitry.
Input protection	±40 VDC	Absolute maximum input voltage
Input impedance: +Ain to –Ain +Ain to ACOM - Ain to ACOM (Ain#1-3)	 10^{12} Ω 10^{12} Ω 1.5MΩ	 The impedance between the positive and negative inputs. The impedance between the input and analog common. The impedance between the positive input and analog common.
+5 VDC supply current	0.2 mA	Current requirements from the 5100's +5 VDC power supply.
Model type	5131	Identifier for the hardware and software type
Performance		
Full scale calibration error Ta=25°C Ta=Full range	 ±2 LSB ±4 LSB	The error between the measured input voltage and a true +10.000000 VDC.
Offset calibration error Ta=25°C Ta=Full range	 ±2 LSB ±4 LSB	The error between the measured input voltage and a true 0.000000 VDC.
Integral linearity error Ta=25°C Ta=Full range	 ±3 LSB ±6 LSB	The maximum error in the measured input voltage across the entire input range.
Digital input filter size	64 samples	The number of samples used in an input's average calculation.
Filter sample rate	400 µSec	The rate at which all analog input channels are sampled.
Environmental		
Temperature Operating Storage	0 to 50°C -25 to 85°C	Refer to the 5100 Controller Data Sheet for proper mounting instructions.

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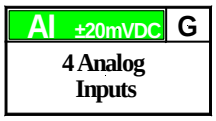
Doc. No. 950-513102-0001.doc
Minimum Hardware Revision: A
Minimum Module Firmware Revision: 1.01
Minimum 5100 Operating System Revision: 4.04.12



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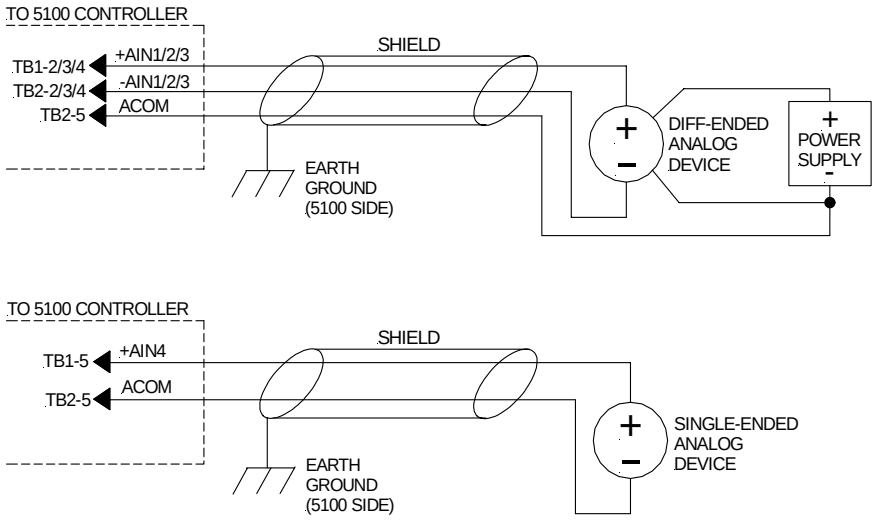
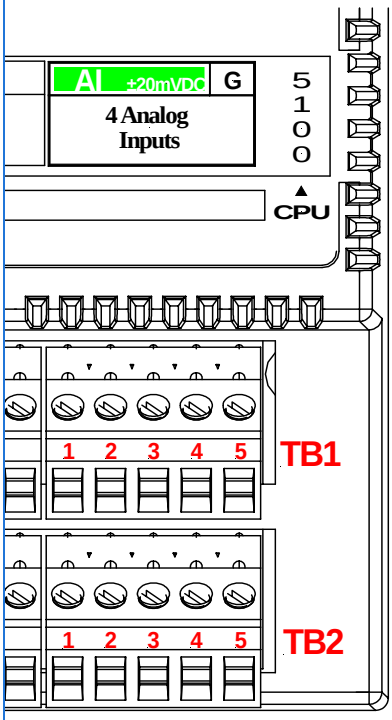
Application Information

Typical Application



Module Identification



I/O Terminations

TB1-1	VS_OUT
TB1-2	+Ain #1
TB1-3	+Ain #2
TB1-4	+Ain #3
TB1-5	+Ain #4 (S.E.)
TB2-1	VS_RTN
TB2-2	-Ain #1
TB2-3	-Ain #2
TB2-4	-Ain #3
TB2-5	ACOM

Notes

1. Shield grounds must be terminated on the 5100-controller side of the cable.
2. When an analog device is powered via an external power source, it may be necessary to tie the ground of this power source to the module's analog common (ACOM) to limit common mode voltages.
3. For register and programming information, refer to the Model 5100 Applications Guide.
4. VS refers to the voltage supply of the controller.