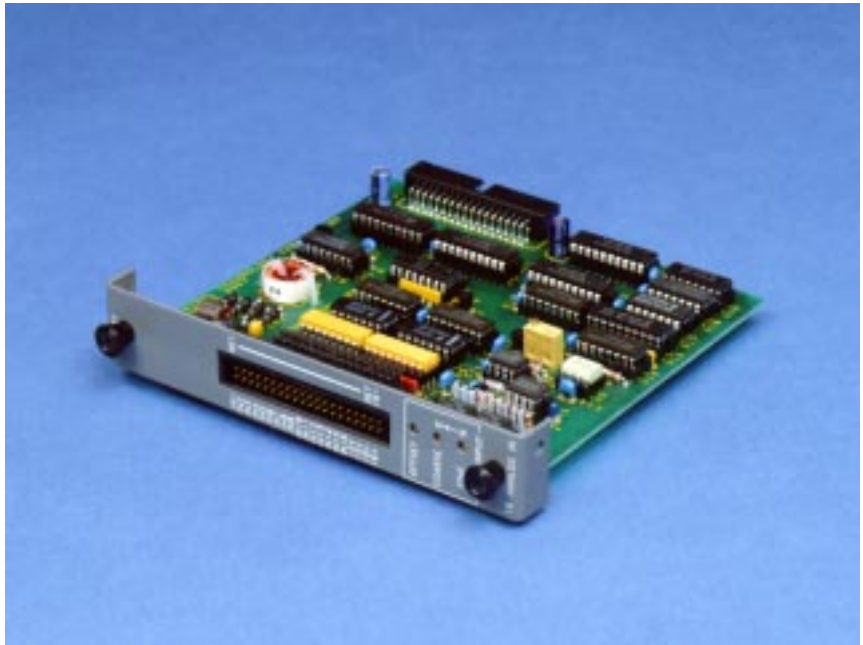


Model 2207 16-Channel Analog Input Module

Low-Cost, High-Density Analog Inputs



For applications requiring one or more medium-resolution analog inputs, the model 2207 represents a low cost solution. This module provides 16 analog inputs, each with a resolution of 0.1% (1 part in 1000 or, nominally, 10-bit resolution) – more than adequate for most industrial automation applications. Additionally, several features of the model 2207 greatly enhance its flexibility, allowing current-loop devices and even a low-level signal to be accommodated without adding external components.

Voltage-to-Frequency Conversion for Increased Accuracy

Industrial environments present particular challenges to the accurate sensing of analog signals. Not only are electrical grounds often “noisy”, but radiated and conducted noise seems to find its way into any electrical wiring, no matter how carefully shielded it may be.

The model 2207 uses two effective techniques for combating these problems. First, the analog inputs are completely optoisolated from the controller’s logic circuitry – and from the power line ground – greatly decreasing the chances of an unintended ground loop which could otherwise inject considerable noise into your readings.

Secondly, all conversions are integrated over a period of time (approximately 5 mS), creating a natural filtration effect to reduce the impact of high-frequency transients. The net result is a module which assists your efforts to create an optimal analog data acquisition system.

Reduced System Complexity

For interfacing to sensors which provide 4-to-20 mA current loop signals, the model 2207 contains integral dropping resistors which may be jumper selected independently for each channel. These, in conjunction with the on-board 15 VDC power supply, allow up to five such sensors to be accommodated with no external circuitry required.

The model 2207 also provides a single differential amplifier, allowing one channel (channel #16) to be used for low-level “strain gauge” signals. This amplifier may be adjusted for a gain of 280 to 575, allowing direct connection to many types of pressure transducers and load cells. Course and fine gain adjustments are provided, as well as an offset adjustment, for tailoring this amplifier to a specific transducer. An on-board precision 10.00 V. reference supply may be used as the excitation source for the transducer, eliminating the need for external interfacing components.



The model 2207 Analog Input Module may be used in any Control Tech. controller with a type 2200 bus.

Jumpers on the model 2207 may be used to configure any combination of the 16 inputs for current loop operation, or to convert channel 16 to differential operation with gain.

For More Information

Further detailed connection and application information may be found in Control Tech. publication IG2207; this is the Installation Guide for the model 2207.

Selection and applications assistance may be obtained from our staff of Systems Specialists – call the number below for further information.

Control Technology Corporation

25 South Street
Hopkinton, MA 01748

Telephone (508) 435-9595
Toll Free (800) 282-5008
Facsimile (508) 435-2373
email help@control.com

See us on the World Wide Web:
<http://www.control.com/>

Absolute Maximum Ratings

	Min	Max	
Applied Input Voltage (Note 1)	0	27.0	V.D.C.
Power Supply Capacity (+15 VDC)		100	mA
Reference Output Current (10.00 V)		26	mA
Ambient Temperature	0	50	°C

Specifications

	Min	Typ	Max	
Input Characteristics - normal mode				
Nominal sensing range	0		+10.00	V.D.C.
Resolution		0.01		V.D.C.
Accuracy		±0.01	±0.03	V.D.C.
Input Current		0.01	1.0	µA
Input Characteristics - differential mode				
Common-mode voltage range	0		6.00	V.D.C.
Nominal gain range	280		575	
Input offset voltage adjust.		±4.5		mV
Input impedance		10		kΩ
Reference Voltage				
Nominal output voltage		+10.000		V.D.C.
Accuracy		±5	±10	mV

Power Requirements (from controller)

Logic Supply (5 V)	240	300	mA
Auxiliary Supply (24 V)	25	150	mA

Notes:

1. Application of a negative voltage will result in erroneous readings.
2. Specifications shown above are at 25° C., unless otherwise noted.