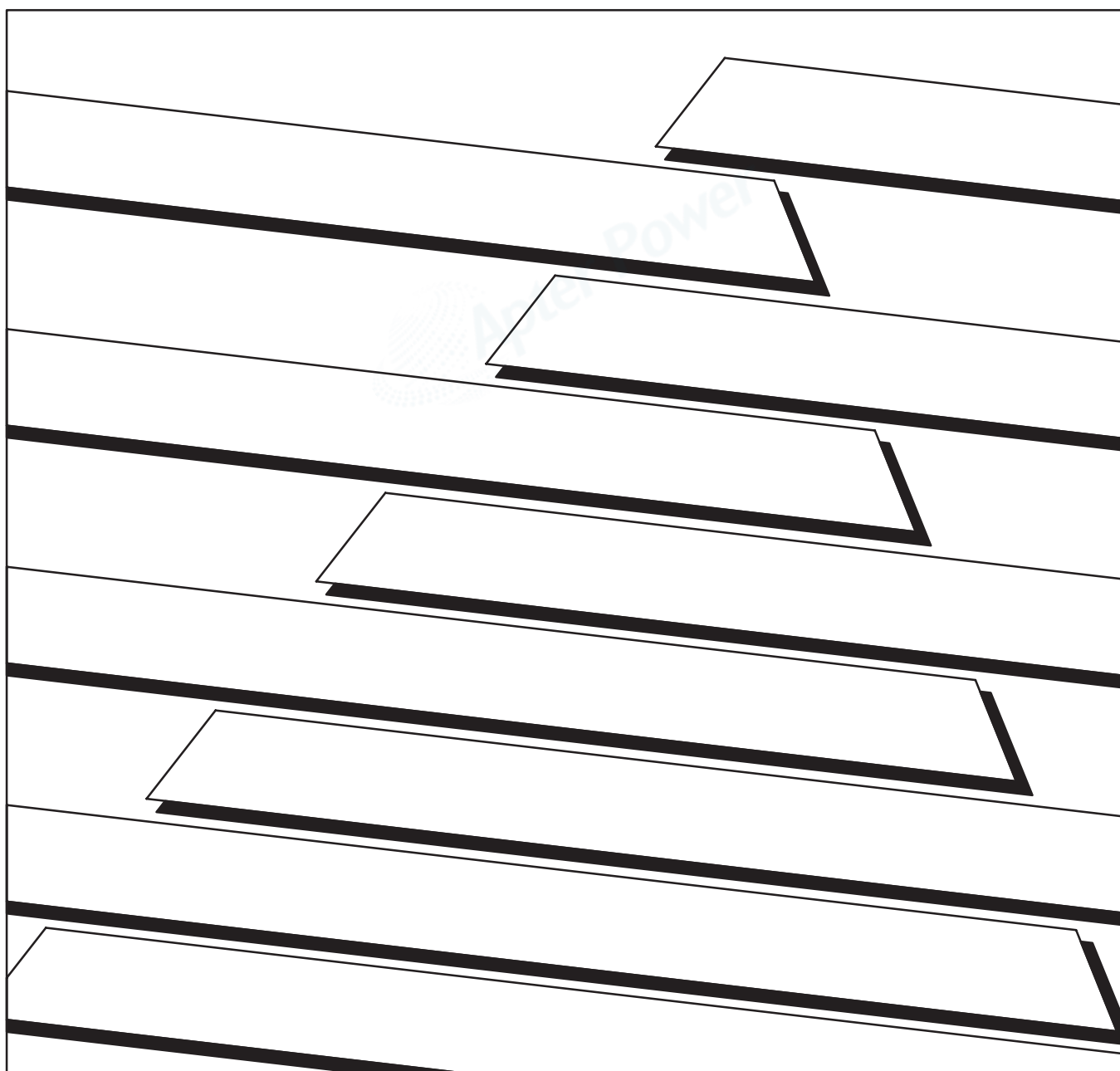




ALLEN-BRADLEY

Isolated Analog Input Module Cat. No. 1771-IL Series B

User Manual



Preface Using This Manual

Appendix	Title	Topics Covered
A	Specifications	
B	Configuration Example	
C	Data Formats	Information on BCD, 2s complement binary, signed magnitude
D	Block transfer with Mini-PLC-2 and PLC-2/20 processors	How to use GET-GET instructions

Related Products

You can install your input module in any system that uses Allen-Bradley programmable controllers with block transfer capability and the 1771 I/O structure.

Contact your nearest Allen-Bradley office for more information about your programmable controllers.

Product Compatibility

The 1771-IL series B module can be used with any 1771 I/O chassis. Communication between the analog module and the processor is bidirectional; the processor block-transfers output data through the output image table to the module and block-transfers input data from the module through the input image table. The module also requires an area in the data table to store the read block and write block. I/O image table use is an important factor in module placement and addressing selection. The module's data table use is listed in Table P.A.

Table P.A
Compatibility and Use of Data Table

Catalog Number	Use of Data Table				Compatibility			
	Input Image Bits	Output Image Bits	Read-Blocks Words	Write-Block Words	Addressing			Chassis Series
					1/2-Slot	1-Slot	2-slot	
1771-IL/B	8	8	15	37	Y	Y	Y	A, B

A = Compatible with 1771-A1, -A2, -A4
 B = Compatible with 1771-A1B, -A2B, -A3B, -A4B
 Y = Compatible without restriction.

Appendix

A

Specifications

Inputs per module	8 fully isolated differential
Module Location	1771 I/O rack - 1 slot
Input voltage ranges (nominal)	+1 to +5V DC 0 to 5V DC -5 to +5V DC -10 to +10V DC
Input current ranges (nominal)	+4 to +20mA 0 to +20mA -20 to +20mA
Resolution	16-bit binary over full range
Accuracy	Voltage: Typical - 0.01% of full scale range @ 25°C Maximum - 0.05% of full scale range @ 25°C Current: Typical - 0.06% of full scale range @ 25°C Maximum - 0.1% of full scale range @ 25°C (Includes 0.05% when using internal current resistor)
Linearity	±1 LSB
Repeatability	±1 LSB
Isolation Voltage	±1000V peak, channel to channel, channel to ground for 1s
Input overvoltage protection	voltage mode: 140V ac (rms) continuous; current mode: 8V dc continuous
Unscaled BCD and binary output data to the processor	0000 to +4095 ₁₀ for unipolar ranges (0 to 5V, +1 to +5V, 0 to +20mA, and +4 to +20mA) -4095 ₁₀ to 4095 ₁₀ for bipolar ranges ±5V, ±10V, ±20mA input ranges
Input impedance	>10 megohms for voltage ranges; 250 ohms for current ranges
Common mode rejection	>120 db @ 60Hz and 1K ohm source imbalance
Common mode impedance	>50 megohms shunted by <5 nF
Normal mode rejection	>120 db @ 60Hz
Current Requirements	1.0A @ +5V from I/O chassis backplane
Open Circuit Detection	Voltage mode: Open input produces upscale reading. Current mode: Open input produces zero reading.
Time to Detect Open Circuit	10 seconds maximum
Calibration	Auto-calibration (offset and gain) Zero offset and gain adjustment for each channel via programming terminal Verify every six months for maintaining absolute accuracy
Power Dissipation	6.5 Watts maximum
Thermal Dissipation	22.2 BTU/hr maximum
Engineering units sent to processor	±9999 BCD with selectable scaling ±32767 binary

Continued on next page

Appendix A Specifications

Specifications continued	
Calibration Interval	calibration should be checked at 6 month intervals to maintain specified accuracy
Internal scan rate	50 milliseconds for 8 channels
Environmental conditions operational temperature: storage temperature: relative humidity	0 to 60°C (32 to 140°F) -40 to 85°C (-40 to 185°F) Operating: 5 to 95% (without condensation) Non-operating: 5 to 80% (without condensation)
Conductors Wiring Category	14 gauge stranded (max.) 3/64 inch insulation (max.) Category 2 ¹
Keying	between 10 and 12 between 32 and 34
Wiring Arm	Cat. No. 1771-WF

¹ Refer to publication 1770-4.1, "Programmable Controller Wiring and Grounding Guidelines."