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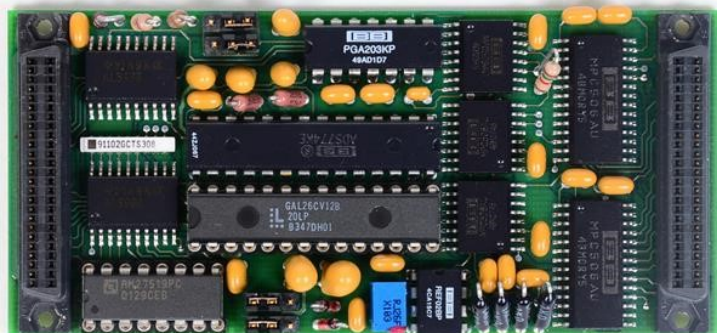
Data Sheet

August 15, 2026

ACROMAG

Acromag IP320 12-Bit A/D Analog Input Module

Acromag IP320A 12-Bit Analog Input Industry Pack Module 40/20 Channels The Acromag IP320A (queue listing IP320) is a multiplexed 12-bit analog input Industry Pack module. OEM IP320A datasheet rates 40 single-ended or 20 differential channels, programmable gains of 1/2/4/8, up to 200 kHz system throughput, and on-board calibration references. Dense voltage acquisition on IP carriers for industrial monitoring, test fixtures, and multi-sensor instrumentation. On-board precision calibration references The Acromag IP320A (queue listing IP320) is a multiplexed 12-bit analog input Industry Pack module. OEM IP320A datasheet rates 40 single-ended or 20 differential channels, programmable gains of 1/2/4/8, up to 200 kHz system throughput, and on-board calibration references. Dense voltage acquisition on IP carriers for industrial monitoring, test fixtures, and multi-sensor instrumentation. On-board precision calibration references Instrument Type: 12-bit multiplexed analog input Industry Pack module



MODEL

Acromag IP320

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

IP320

LISTING

<https://aumictechlabs.com/products/ip320-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Acromag IP320 is a 12-bit analog-to-digital input module engineered for high-density data acquisition in industrial process control, monitoring, and automation systems. It combines 40 single-ended or 20 differential input channels with successive approximation conversion at 8.5 μ S per sample, delivering up to 100K samples per second. Four modules can cascade on a single

carrier board for up to 160 single-ended inputs, making it ideal for distributed I/O applications requiring precision analog measurement across multiple voltage ranges and gain settings.

Technical Specifications

Analog Input Channels 40 single-ended or 20 differential channels per module Up to four modules per carrier board: 160 single-ended or 80 differential inputs

Programmable channel selection via control register

ADC Performance 12-bit resolution Successive approximation architecture 8.5 μ S conversion time 100K samples per second maximum throughput

Programmable input gains: $\times 1$, $\times 2$, $\times 4$, $\times 8$

Input Voltage Ranges -5 V to $+5$ V -10 V to $+10$ V (requires ± 15 V external supply; ± 12 V supplies clip to ± 9 V) 0 V to $+10$ V

Calibration & References On-board precision voltage references Software-calibrated via built-in calibration references

Power Consumption $+5$ V: 350 mA maximum ± 12 V or ± 15 V rails: 20 mA maximum each

Environmental Operating temperature: 0 $^{\circ}$ C to 70 $^{\circ}$ C Storage temperature: -40 $^{\circ}$ C to 100 $^{\circ}$ C Relative humidity: 5 % to 95 % non-condensing MTBF: 564,198 hours at 25 $^{\circ}$ C (MIL-HDBK-217F)

Physical Single-size Industry Pack form factor ANSI/VITA 4-1995 compliant 8 MHz clock; 250 nS cycle (0 wait states) for most operations; 375 nS for control register write; 625 nS for ADC read

Key Features External hardware trigger input for event synchronization Software-initiated A/D conversion Supports IOSel* and IDSel* cycle types Multiple gain settings accommodate low-level and high-level signals without external conditioning

Typical Applications Industrial process monitoring and control Multi-channel data acquisition systems Sensor signal conditioning and digitization Distributed I/O in automated manufacturing

Compatibility & Integration The IP320 integrates into any Industry Pack carrier board supporting ANSI/VITA 4-1995 modules. Stacking up to four units provides dense analog input capability within a single system slot, simplifying board-level integration for space-constrained applications.

IP320 Characteristics / Specifications

PARAMETER	VALUE
Model	IP320A
Alternate Queue Model	IP320
Instrument Type	12-bit multiplexed analog input Industry Pack module
Input Configuration	40 single-ended or 20 differential
Ad Resolution	12 bits
Input Range Bipolar	-5 to plus 5 V or -10 to plus 10 V
Input Range Unipolar	0 to plus 10 V
Maximum Throughput	200 kHz (5 us per conversion)
Programmable Gains	x1 ×2 ×4 ×8
Max Error 0 To 10 V Gain	plus or minus 3.2 LSB (0.078 percent span)
Data Format	straight binary left-justified
Input Overvoltage Protection Powered	plus or minus 32 V
Input Overvoltage Protection Unpowered	-35 to plus 55 V
Common Mode Rejection 60 Hz	71 dB
Channel To Channel Rejection 60 Hz	71 dB
Ip Standard	ANSI/VITA 4-1995
Most Access Cycles	0 wait states 250 ns at 8 MHz
Adc Data Read Access	2 wait states 500 ns at 8 MHz
Operating Temperature Standard	0 to 70 C
Operating TemperatureEModel	-40 to 85 C
Storage Temperature Standard	-40 to 125 C
Relative Humidity	5 to 95 percent non-condensing
Mtbf	719999 hours at 25 C MIL-HDBK-217F notice 2
Power Plus 5 V	210 mA maximum
Power Plus 12 Or 15 V	25 mA maximum

PARAMETER	VALUE
Power Minus 12 Or 15 V	25 mA maximum
Carrier Density	up to 160 inputs with four modules on one carrier
Storage temperature	Standard: -40 to 125 C
Operating temperature	Standard: 0 to 70 C
Humidity	5 to 95 percent non-condensing

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	Standard: -40 to 125 C
Operating temperature	Standard: 0 to 70 C
Operating Temperature	Standard: 0 to 70 C
Humidity	5 to 95 percent non-condensing
Operating Temperature Standard	0 to 70 C
Operating TemperatureEModel	-40 to 85 C
Storage Temperature Standard	-40 to 125 C
Relative Humidity	5 to 95 percent non-condensing
Mtbf	719999 hours at 25 C MIL-HDBK-217F notice 2
Power Plus 5 V	210 mA maximum
Power Plus 12 Or 15 V	25 mA maximum
Power Minus 12 Or 15 V	25 mA maximum
Carrier Density	up to 160 inputs with four modules on one carrier Notes From Acromag IP320A Industry Pack 12-bit A/D Analog Input datasheet. Ranges requiring plus or minus 15 V external supplies can clip with plus or minus 12 V supplies typically to about plus or minus 9 V per OEM note.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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PARAMETER	VALUE
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Alternate Queue Model	IP320
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Input Configuration	40 single-ended or 20 differential
Ad Resolution	12 bits
Input Range Bipolar	-5 to plus 5 V or -10 to plus 10 V
Input Range Unipolar	0 to plus 10 V
Maximum Throughput	200 kHz (5 us per conversion)
Programmable Gains	x1 x2 x4 x8
Max Error 0 To 10 V Gain 1: plus or minus 3.2 LSB (0.078 percent span)	
Max Error -5 To Plus 5 V Gain 1: plus or minus 1.8 LSB (0.044 percent span)	
Max Error -10 To Plus 10 V Gain 1: plus or minus 2.8 LSB (0.069 percent span)	
Specifications	
PARAMETER	VALUE
Data Format	straight binary left-justified
Input Overvoltage Protection Powered	plus or minus 32 V
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Notes
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Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.