01 / Identity and functional architecture

OPTO 22

SNAP-AIV-8

Voltage Input Module

Product role

Opto 22 SNAP-AIV-8 is an eight-channel analog voltage input module for SNAP PAC I/O, with individually selectable ±10 VDC or ±5 VDC ranges.

Voltage sources
Eight shared returns

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SNAP-AIV-8
Configured input ranges

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SNAP PAC
I/O processing

Input channels
Eight analog voltage inputs

Selectable ranges
±10 VDC or ±5 VDC per channel

Selection boundary
SNAP-AIV-8 has eight shared-reference voltage channels. SNAP PAC brain or rack-mounted controller compatibility is required; channel-to-channel isolation is not provided.

02 / Electrical and measurement characteristics

Item	Verified design fact
Product type	Analog voltage input module
Input channels	8
Channel range	±10 VDC or ±5 VDC, individually selected
Over-range limits	±11 V / ±5.5 V for ±10 V / ±5 V ranges
Resolution	0.4 mV at ±10 V; 0.2 mV at ±5 V
Input filtering	-3 dB at 64 Hz
Maximum data freshness	0.28 s
Input resistance	1 MΩ; common reference
Accuracy	0.05%; 5 mV at 10 VDC / 2.5 mV at 5 VDC
Module isolation	1500 V; no channel-to-channel isolation

How to use these limits

Configure every channel for its actual ±10 VDC or ±5 VDC signal before checking readings. The over-range and survivable-input values do not extend the normal measurement range.

Functional context

SNAP-AIV-8 provides eight analog voltage inputs, each configurable for -10 to +10 VDC or -5 to +5 VDC. The corresponding over-range limits are ±11 V and ±5.5 V, while resolution is 0.4 mV on the ±10 V range and 0.2 mV on the ±5 V range. Its -3 dB input-filter point is 64 Hz and maximum data freshness is 0.28 seconds. These characteristics describe voltage measurement performance, not a high-speed event capture function.

03 / Integration and environmental limits

Item	Verified design fact
Maximum common-mode voltage	250 V operating
Maximum survivable input	220 VAC or 300 VDC; not a measuring range
Power requirement	5 VDC ±0.15 V, 170 mA
Operating temperature	-20 to +70 °C
Storage temperature	-40 to +85 °C
Humidity	5–95%, non-condensing
Hold-down screw torque	Maximum 0.11 N·m
Connector screw torque	0.19 N·m

Installation relationship

Keep module hold-down torque at or below 0.11 N·m and tighten connector screws to 0.19 N·m. Support and identify field wiring before replacement.

Host and environmental context

SNAP-AIV-8 is used with SNAP PAC brains and rack-mounted controllers. The module requires 5 VDC ±0.15 V at 170 mA and supports operation from -20 to +70 °C, storage from -40 to +85 °C, and 5–95% non-condensing humidity. Accuracy is 0.05%, expressed as 5 mV at 10 VDC or 2.5 mV at 5 VDC. Apply the specified hold-down torque limit of 0.11 N·m and connector screw torque of 0.19 N·m when installing the module and field wiring.

04 / Engineering decisions

Signal and circuit relationship

All channels share the same reference point, with a 1 MΩ input resistance. The even-numbered terminals on both connectors are internally connected, so separate signal returns must be electrically compatible before wiring. Module isolation is rated at 1500 V; this does not provide isolation between individual channels. Maximum operating common-mode voltage is 250 V. The 220 VAC or 300 VDC maximum survivable input is a protection limit, not the configured measurement range.

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Review	Technical consequence
Multi-channel voltage acquisition	Acquire eight voltage signals with individual ±10 VDC or ±5 VDC range selection. Match each configured range to its connected source.
SNAP PAC rack integration	Use the module with a SNAP PAC brain or rack-mounted controller and the appropriate SNAP rack. Include its 170 mA requirement in the 5 V supply budget.

05 / Technical questions and reference basis

Are SNAP-AIV-8 input channels isolated from each other?

No. All eight channels share a common reference. The 1500 V module isolation rating does not imply channel-to-channel isolation.

Which processors support SNAP-AIV-8?

The module is intended for SNAP PAC brains and rack-mounted controllers. Verify the actual rack and processor configuration before installing it.

Reference basis

Opto 22 SNAP Analog Input Modules Data Sheet, Form 1065-240702.

Apter Power technical summary; not a manufacturer-issued manual. Apply the original instructions for the actual installation.

Related industrial automation products

Navigation only; no substitution or compatibility claim.

Opto 22 SNAP-AIMA-4

Allen-Bradley 1756-IRT8I

Honeywell TC-IAH161

Discuss your installed configuration

Send the full unit marking and connection details.

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