SNAP-AIMA-I

01 / Product identity and system role

Opto 22 SNAP-AIMA-I is a two-channel isolated analog current input module for a compatible SNAP PAC I/O rack. Its channels independently measure bipolar current signals; the installed rack and I/O processor complete the acquisition system.

Baseline capture

Record both installed loop tags and their existing trend values

Wiring review

Trace each field pair and its supply before reconnection

Controller mapping

Preserve the two point assignments in the PAC strategy

Acceptance focus

Challenge both inputs with a controlled current source

Installed-system boundary

The module receives current from two separately wired field circuits while a compatible SNAP PAC brain or rack controller reads the module.

Evidence scope

The electrical figures are from the exact SNAP-AIMA-i section of Opto 22 Form 1182-240326. Mounting and system statements use the same manufacturer document; do not transfer loop-sourcing features of the distinct iSRC model.

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02 / Technical characteristics

Input channels	2, isolated from one another	**Input type**	Analog current
Input range	−20 to +20 mA	**Maximum overrange**	±10%
Resolution	0.8 µA	**Accuracy**	0.05% (10 µA)
Data freshness	11 ms	**Input response**	99.9% / 19.9 µA / 10 ms
Channel isolation	250 V continuous; 1500 V transient	**Optical isolation**	4000 V
Transformer isolation	1500 V	**Input resistance**	200 Ω per channel

Configuration detail

The Opto 22 Form 1182 table specifies a −20 to +20 mA input range, 0.8 µA resolution, 0.05% accuracy and an 11 ms data-freshness value for SNAP-AIMA-i. These values belong to the two-channel current-input model, not to the loop-sourcing SNAP-AIMA-iSRC variant.

Can SNAP-AIMA-I be exchanged for the SNAP-AIMA-iSRC sourcing model without a wiring review?

No. The iSRC has a separate 24 V loop-source arrangement, whereas SNAP-AIMA-I measures current only. Verify the field supply and connector wiring before selecting a replacement variant.

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03 / Interfaces and application

Maximum survivable input	36 mA or 9 VDC	**Rack power**	5 VDC (±0.15 V) at 200 mA
Operating temperature	−20 to +70 °C	**Field wire size**	22 to 14 AWG
Loop excitation	External; this model does not source current		

The datasheet describes optical isolation at 4000 V, transformer isolation at 1500 V and channel-to-channel isolation of 250 V continuous, with a 1500 V transient rating. The module mounts on a SNAP PAC rack; verify rack capacity, I/O processor compatibility and field circuit design before replacement.

Separate field references

Acquire two grounded instruments without tying their signal references together at the module input.

Bipolar signal capture

Use the documented −20 to +20 mA measurement span where an application requires signed current values.

SNAP PAC integration

Place the module on a compatible rack and map both channels through the installed I/O processor and control strategy.

Maintenance replacement

Retain each channel’s source, polarity and scaling while exchanging an exact-model input module.

What test points help verify SNAP-AIMA-I scaling?

Use a calibrated current source at representative negative, zero and positive values within −20 to +20 mA. Compare raw channel values and engineering units in the controller strategy and record as-left results.

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04 / Installation and operating checks

Isolate the field circuits

Remove rack and loop power under the site isolation procedure before wiring the pluggable connector.

Supply the transmitter separately

SNAP-AIMA-I does not source excitation; verify the external loop supply and return path before diagnosing a zero reading.

Observe input limits

Keep normal current within the selected range and avoid exceeding the stated 36 mA or 9 VDC survivability limit.

Preserve isolation

Do not bridge the two channel returns or defeat the designed field grounding solely to simplify wiring.

Seat the module correctly

Align the 20-pin module connector with the keyed 24-pin rack position and use the specified retention hardware.

Prove both channels

Apply known signed-current test points and compare processor readings with the original engineering scale.

Commissioning decisions

Why might SNAP-AIMA-I show zero for a healthy two-wire transmitter?

The module does not furnish loop excitation. Check the external supply, loop continuity, polarity and transmitter demand, then read the channel value and fault state through the rack processor.

How should the two SNAP-AIMA-I channels be grounded?

Treat the channels as separately isolated measurement paths. Follow each instrument loop drawing and rack grounding design; do not add a common bridge between channel returns simply because the signals share one module.

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05 / Service and acceptance

What rack conditions should be checked before fitting SNAP-AIMA-I?

Confirm the rack and I/O processor are compatible and the 5 V supply budget includes 200 mA for this module. Align the keyed connector and secure the retention hardware without forcing the pins.

What does the SNAP-AIMA-I 250 V channel-isolation figure represent?

It is the documented continuous channel-to-channel isolation rating; the datasheet separately lists a 1500 V transient value. Assess the complete field circuit and safety requirements rather than using the module rating as a substitute for installation design.

How can a noisy SNAP-AIMA-I reading be traced?

Compare both channels separately, inspect shield routing and field grounding, and inject a stable current at the terminal connector. The isolated inputs reduce ground-loop coupling but do not correct an unstable source or bad wiring.

Is field calibration needed after replacing SNAP-AIMA-I?

The module is factory calibrated and has no user adjustment. Still verify both channels using known currents and confirm that the controller scaling, alarm thresholds and recorded values match the installed application.

Handover evidence

The module uses a 5 VDC rack supply at 200 mA, has 200 Ω input resistance per channel and survives an input of 36 mA or 9 VDC. Its factory calibration removes field adjustment, but the controller strategy must still scale the raw current correctly for each instrument.

Technical enquiry

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