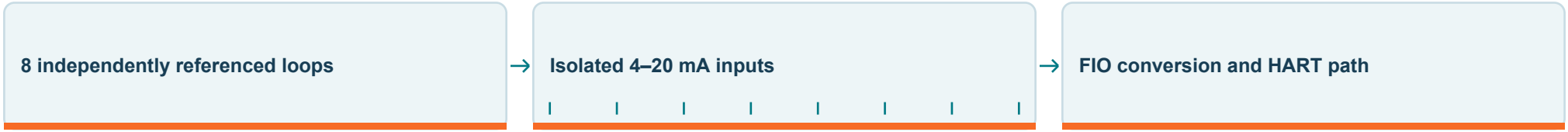
Yokogawa AAI135-H00 S1

Complete Product Information

Isolated Analog Input Module

An eight-channel current-input module separates the field circuits from the FIO system and from one another. Its HART-equipped H00 execution is the basic environmental selection.



01 Product summary and native information

Engineering field	Value, condition or decision
Manufacturer part number	AAI135-H00 S1
Manufacturer	Yokogawa
Product Category	DCS Systems
Spare Part Number	AAI135-H00 S1
Shipping	Swift global dispatch
Condition	New, original product
Shipping size (est.)	3.2cm x 10.6cm x 13cm
Country of Origin	Japan

01 Product summary and native information — continued

Engineering field	Value, condition or decision
Weight	0.25 kg
Tariff Code	8537101190

02 Selected features

Channel structure

Eight isolated current inputs, with no analog output bank.

Communication choice

H specifies digital HART communication alongside the current measurement.

Environmental selection

H00 is the basic type; the H03 G3/temperature option is a different order selection.

03 Technical parameters

Parameter	Verified value / condition
Analog inputs	8 channels
Input signal	4–20 mA DC
Input current limit	25 mA
Input accuracy	±16 µA
Data update	10 ms
Powered input resistance	290 Ω at 20 mA; 450 Ω at 4 mA
Unpowered input resistance	≥500 kΩ
Transmitter voltage at 20 mA	≥15.0 V

03 Technical parameters — continued

Parameter	Verified value / condition
Transmitter voltage at zero current	≤29.3 V
5 V supply consumption	360 mA maximum
24 V supply consumption	450 mA maximum
Temperature drift	±16 µA / 10°C
Field/system withstand	500 V AC, 1 minute
Channel/channel withstand	500 V AC, 1 minute; complete MIL cable assembly subject to cable rating

Parameter applicability

Legacy AAI135-H00/H03 electrical and suffix specifications apply to the offered AAI135-H00 S1. S1 is retained as the offered style marking; it does not establish compatibility with later H50/H53 styles.

04 Overview

Independently referenced transmitters can share one FIO slot without making their channel circuits a common electrical group.

Selection and adjacent-model differences

AAI135-H00 S1 is an input-only choice where channel separation matters more than the sixteen-channel density of AAI141. AAI835 adds outputs but reduces the input count to four; that substitution changes the loop allocation rather than simply adding a spare function. The eight-channel isolation is useful when field returns must remain separate; the module boundary is tested at 500 V AC for one minute, while the connected MIL harness retains its own insulation limit.

Operating relationship

The powered input includes a protection-circuit voltage drop in addition to its sensing resistance. A two-wire transmitter must retain its minimum terminal voltage after the cable drop is deducted from the available module supply; a correct current range alone does not establish a workable loop. With a two-wire transmitter at 20 mA the module provides at least 15.0 V at the transmitter terminals before external wire loss. The corresponding zero-current maximum is 29.3 V, so both minimum compliance and maximum permissible instrument voltage matter.

Interface and installation implications

Pressure-clamp, MIL and KS1 connections are alternative termination arrangements. The external cable can become the limiting insulation element, so the module withstand test cannot be treated as an unconditional rating for the entire installed harness. For the pressure-clamp route, /13A00 denotes ATI3A-00 and /K4A00 denotes ATK4A-00. ATI3S and ATI3D selections distinguish simplex and dual-redundant terminal arrangements; the bare H00 S1 marking does not include one of these adapters.

Controller platform reference

CENTUM FIO analog I/O. Match node, termination and loop design.

05 Applications / Compatibility

Eight analog measurements enter the CENTUM FIO node through isolated AAI135 channels; terminal assemblies and field transmitters are separate components.

Integration boundary

Use the HART-capable legacy node configuration and the termination specified for the actual eight-input assignment. The isolated-input family is used in ESB, ER and compact FIO arrangements with the applicable node. A remote HART path additionally requires EB401 Rev 2 or later; a local current reading does not establish that remote digital path.

Application decisions

Mixed transmitter references

Separate channel circuits support measurements whose field references cannot be combined into a non-isolated input group.

Two-wire field instruments

The module can feed a transmitter when the channel setting and full-current voltage budget are correct.

Independently powered instruments

A four-wire transmitter requires the corresponding channel arrangement rather than a second unintended loop supply.

Redundant FIO input design

The family permits dual redundancy; the node and terminal configuration must implement it rather than relying on one module.

06 Product Precautions

Plan the work around eight incoming current loops and the channel-isolation boundary.

Installation and diagnostic actions

Record channel power mode

Identify two-wire and four-wire circuits before removing the existing terminal connection.

Budget the transmitter voltage

Include field-wire loss at maximum operating current, not just at the midrange reading.

Inspect the complete harness

Check cable insulation specifications before assigning a channel-to-channel withstand level.

Separate barrier functions

For intrinsically safe applications use the specified isolation-barrier architecture; do not connect a Zener barrier directly.

Check remote HART support

A remote-node installation needs EB401 firmware Rev 2 or later for the documented HART function.

Prove each input independently

Inject a known current on one loop and confirm both its value and its channel identity. Read the terminal adapter marking as well as its connector shape. Preserve the eight input assignments when transferring an ATI3A, ATK4A or KS1 route; an output terminal block from AAI835 is a different allocation.

07 Lifecycle Status

Engineering field	Value, condition or decision
Model phase	A manufacturer lifecycle phase for AAI135-H00 S1 has not been confirmed.
Replacement boundary	An AAI141 changes isolation and input density; an AAI835 changes the input/output allocation.
Service planning	Retain the eight-loop termination and legacy HART configuration when selecting a replacement.
Supply scope	Apter Power availability for this style is established in the quotation.

08 Available Unit Details

Engineering field	Value, condition or decision
Offered identity	AAI135-H00 S1, including the HART suffix and S1 style marking.

08 Available Unit Details — continued

Engineering field	Value, condition or decision
Connection execution	No /13A00, /K4A00, /13S or /13D terminal option is included in the stated order code.
Hardware boundary	The offered module is separate from node carriers, transmitters and isolation barriers.

09 Alternative Names

Variant	Complete-model spelling
1	Yokogawa AAI135-H00 S1
2	Yokogawa AAI135 H00 S1

10 Engineering FAQ

Full-model technical question	Engineering answer
Can AAI135-H00 S1 replace an AAI141 without changing the field grouping?	No direct equivalence follows from the current range. Check the eight-versus-sixteen input allocation and the isolated-versus-non-isolated circuit design before assigning the node channels.
Why can AAI135-H00 S1 read correctly on a bench but fail with the field transmitter connected?	A current calibrator may have more compliance voltage than the transmitter loop. Measure transmitter voltage at the high-current end, including cable loss and the powered input burden.
Does AAI135-H00 S1 need the same channel setting for two-wire and four-wire devices?	No. Identify whether the field instrument needs module power, then use the corresponding channel setting and verify that two supplies are not connected against one another.
Can the cable defeat the isolation expected from AAI135-H00 S1?	Yes. The complete assembly is limited by the MIL cable electrical specification. Check the actual harness rating and common connections before accepting the isolated-channel arrangement.
What should be checked when AAI135-H00 S1 passes current signals but HART is absent at a remote node?	Check the HART-enabled module execution and the remote EB401 firmware revision before changing the analog calibration. The documented remote path requires Rev 2 or later.

10 Engineering FAQ — continued

Full-model technical question	Engineering answer
Can AAI135-H00 S1 be connected directly to a Zener safety barrier?	The applicable FIO specification excludes that connection. Use an isolation-barrier design approved for the intended intrinsically safe loop and verify its separate compliance-voltage requirement.
How should the input accuracy of AAI135-H00 S1 be expressed on a 4–20 mA process span?	The ±16 µA input limit corresponds to ±0.1% of the 16 mA signal span, rather than ±0.1% of the instantaneous reading. Convert it using the configured process span and include calibrator uncertainty and the applicable temperature contribution when defining a loop-test acceptance limit.
Can eight transmitter currents alone determine the node power budget for AAI135-H00 S1?	No. Field-loop demand is not the complete module load. Budget the published 5 V and 24 V rail maxima separately, together with the other fitted node modules. Do not add currents from different voltage rails or treat eight times the loop current as a complete node-supply calculation.

11 Downloads

Engineering field	Value, condition or decision
Technical reference	Original legacy electrical data and H00/H03 suffix selection for the applicable FIO module. PDF, 2 pages.
Engineering guide	Apter Power engineering guide for CENTUM FIO analog I/O. Use the HART-capable legacy node configuration and the termination specified for the actual eight-input assignment. PDF, 3 pages.

12 What happens after you enquire

Engineering field	Value, condition or decision
1 Review your reference	Send the full marking, quantity and label photos. We review the item and any version details that need clarification.
2 Confirm the offer	Check the quoted reference, condition, included items and expected dispatch date before approving your order.
3 Arrange dispatch	Confirm delivery details and receive the tracking number when it becomes available.

13 Ordering checks

Engineering field	Value, condition or decision
Match the complete marking	Include AAI135-H00 S1 and every revision or approval marking visible on the item. Keep the exact reference on your enquiry and quotation.
Check the offered item before ordering	Request available label and interface photos. Have your maintenance team compare the offered AAI135-H00 S1 reference with the installed equipment and applicable Yokogawa documentation.

14 Sourcing and service information

Engineering field	Value, condition or decision
Title-area support	Sourcing Support; 12-Month Warranty
Dispatch Confirmation	Quantity and dispatch date confirmed in quotation.
Dedicated Manager	Personalized one-to-one VIP service
ISO 9001:2015 Certified	Trusted quality management
Warranty Policy	Review the applicable warranty coverage and claim process.
Return Notice	Obtain return approval before sending an item back.
Shipping Method	Worldwide shipping; freight and timing confirmed in quotation.
Parts Availability	Quantity, dispatch date and lead-time start confirmed in quotation.

15 Technical notes

Engineering field	Value, condition or decision
Input protection	The legacy input-burden calculation includes a protection drop of up to 0.8 V, which changes the source compliance needed at low current.
Remote digital access	EB401 revision is part of a remote HART path; analog conversion alone does not prove digital access.
Terminal selection	ATI3A and ATK4A adapter choices have distinct ordering identities; retain the installed terminal mapping.

16 Before You Order

Information to provide	Selection and acceptance context
Eight independent field references	For AAI135-H00 S1, provide the eight transmitter tags and identify field returns that must remain electrically separate.
Input-only termination	Photograph the ATI3A, ATK4A or ATI3S/ATI3D assembly and its mapping; confirm that no output loops are expected from this input-only spare.
Transmitter compliance evidence	Record each two-wire instrument minimum voltage and the cable/barrier losses at 20 mA against the module terminal supply.
Legacy HART execution	Supply the H00 S1 label and installed node type; include EB401 revision if the digital path uses an ER remote node.

Technical basis

Yokogawa Analog I/O Modules (for FIO), GS 33M50F30-40E, 5th Edition

Related product navigation

Compare the separate system, revision and interface requirements on each linked product page. These portfolio references do not establish interchangeability.

Yokogawa AAB841	Analog I/O portfolio: compare signal direction, isolation and style.
Yokogawa AAI141-S00 S2	Analog I/O portfolio: compare signal direction, isolation and style.
Yokogawa AAI143-S00 S1	Analog I/O portfolio: compare signal direction, isolation and style.
Yokogawa AAT141-S00	Analog I/O portfolio: compare signal direction, isolation and style.

Engineering contact

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