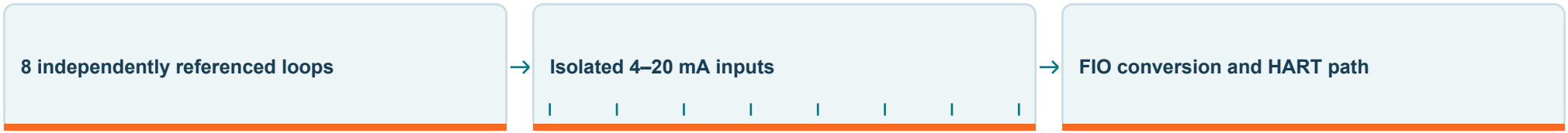
Yokogawa AAI135-H03 S1

Complete Product Information

Isolated Analog Input Module

This HART-capable eight-input FIO module combines isolated current channels with the G3 and extended-temperature order option. The environmental suffix applies to the selected hardware execution within a compatible node installation.



01 Product summary and native information

Engineering field	Value, condition or decision
Manufacturer part number	AAI135-H03 S1
Manufacturer	Yokogawa
Product Category	DCS Systems
Spare Part Number	AAI135-H03 S1
Shipping	Swift global dispatch
Condition	New, original product
Shipping size (est.)	3.2cm x 10.6cm x 13cm
Country of Origin	Japan
Weight	0.25 kg
Tariff Code	8537101190

02 Selected features

Exposure option

ISA Standard G3 and the −20 to +70°C temperature option are selected.

Signal architecture

Eight field inputs remain separately isolated; H03 does not add output channels.

Installation scope

The compatible node and external cable retain their own environmental and insulation limits.

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
Transmitter voltage at zero current	≤29.3 V
5 V supply consumption	360 mA maximum
24 V supply consumption	450 mA maximum

03 Technical parameters — continued

Parameter	Verified value / condition
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
Temperature option	−20 to +70°C; compatible host/node required
Atmosphere option	ISA Standard G3

Parameter applicability

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

04 Overview

H03 selects the environmental execution needed when the basic AAI135 input arrangement must be used under the documented extended conditions.

Selection and adjacent-model differences

AAI135-H03 S1 retains the eight-input topology of H00 while selecting the documented G3 and temperature option. An H00 spare should therefore not be accepted solely because it fits the slot and passes a room-temperature current test. H03 specifies the G3 and extended-temperature selection, with a -20 to +70°C module envelope in the qualified installation. This does not extend the ratings of terminal assemblies, node supplies or field instruments.

Operating relationship

Environmental qualification and electrical isolation solve different problems. G3 addresses the selected atmospheric option; the isolated input construction separates channel circuits. Neither removes the need to account for field-cable insulation, external barrier design or transmitter supply headroom. The input temperature influence is ±16 µA per 10°C. Evaluate that influence over the actual cabinet temperature change, separately from the ±16 µA reference input accuracy and the calibrator contribution.

Interface and installation implications

HART communication shares the current-input installation but relies on the supported digital path through the FIO node. On a remote node, the EB401 firmware requirement must be met before the analogue and digital portions can be accepted as one commissioned channel. The 500 V AC, one-minute field/system and channel/channel withstand figures describe module isolation. Keep external returns separate and check the actual MIL cable rating before treating the complete harness as equally isolated.

Controller platform reference

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

05 Applications / Compatibility

The H03 execution is intended for an eligible FIO node using eight isolated current inputs and HART-enabled field instruments.

Integration boundary

Qualify the environmental chain from the module through its node, termination and cable, rather than assigning the module option to the whole cabinet. Choose the H03 execution for the documented environmental duty while retaining the legacy HART node route. The EB401 Rev 2-or-later remote condition and the exact S1 terminal execution are separate acceptance checks.

Application decisions

Extended-temperature analog acquisition

Use the selected temperature option only with a host/node arrangement qualified for that environment.

G3-specified FIO locations

Match the H03 execution to the cabinet environmental requirement while retaining separate enclosure protection.

Separated instrument circuits

Channel isolation serves independently referenced transmitters without converting the module into a field safety barrier.

Remote HART maintenance

Digital instrument access can coexist with analog input after the EB401 revision and channel configuration are checked.

06 Product Precautions

Treat environmental suffix verification as a separate acceptance gate from current-channel operation.

Installation and diagnostic actions

Reject a basic-type substitution

Check the H03 marking before accepting an H00 unit as an environmental replacement.

Check the node rating

Confirm that the installed remote/local node supports the required ambient conditions.

Keep enclosure protection

The G3 option does not establish a cabinet ingress-protection rating.

Review cable temperature limits

A qualified module does not extend the rating of an existing terminal cable.

Verify power-mode pins

Restore the correct per-channel transmitter arrangement after any terminal work.

Test analog and HART paths

Record both current accuracy and digital communication from the intended maintenance station. Record cabinet ambient beside the channel test results. The 5 V and 24 V loads remain separate node-supply demands; the wider environmental option does not provide additional supply capacity.

07 Lifecycle Status

Engineering field	Value, condition or decision
Execution status	The manufacturer phase of AAI135-H03 S1 remains unconfirmed.
Environmental replacement	A spare must retain the H03 G3/temperature option when that option is required by the installation.
System continuity	Preserve the isolated eight-input channel allocation and compatible legacy node support.
Availability boundary	Quoted Apter Power supply does not establish continued manufacturer production.

08 Available Unit Details

Engineering field	Value, condition or decision
Selected execution	AAI135-H03 S1 with HART and the H03 environmental option.

08 Available Unit Details — continued

Engineering field	Value, condition or decision
Terminal hardware	The submitted identity has no terminal-block or adapter option suffix; any supplied connection hardware must be separately itemized.
Style acceptance	Retain S1 in the order comparison and installation record; do not infer a later-style firmware relationship.

09 Alternative Names

Variant	Complete-model spelling
1	Yokogawa AAI135-H03 S1
2	Yokogawa AAI135 H03 S1

10 Engineering FAQ

Full-model technical question	Engineering answer
Is a successful room-temperature test enough to accept AAI135-H03 S1 for an H03 installation?	No. A loop test checks electrical behavior at the test condition. Separately verify the H03 marking, qualified node and environmental requirements that motivated that option.
Does the G3 option on AAI135-H03 S1 replace cabinet sealing or environmental control?	No enclosure rating follows from the G3 suffix. Compare the cabinet’s protection and atmosphere requirements with the module’s selected environmental option.
Can AAI135-H03 S1 share its extended-temperature rating with any attached MIL harness?	The cable has its own temperature and insulation specification. Verify the actual assembly limits before relying on the module rating at the installation ambient.
How should a 20°C ambient change be considered when checking AAI135-H03 S1?	The stated drift of ±16 µA per 10°C gives a ±32 µA drift contribution for a 20°C change. It is separate from the initial accuracy and test-equipment uncertainty. Record the calibration and operating temperatures rather than accepting a room-temperature result as an unchanged error budget across the H03 operating envelope.

10 Engineering FAQ — continued

Full-model technical question	Engineering answer
Does the one-minute insulation test for AAI135-H03 S1 define a continuous working voltage?	No. A 500 V AC withstand test for one minute is a dielectric test condition, not permission to operate a field circuit continuously at that voltage. Check the actual loop voltage and the insulation limits of its termination and cable; the H03 environmental selection does not turn that test figure into an operating rating.
Does the 10 ms update of AAI135-H03 S1 guarantee 100 HART transactions per second?	No. The 10 ms figure describes the analog data-update period, not a HART transaction-time rating or an end-to-end control-loop bandwidth. Test analog acquisition and digital instrument access as separate functions. Include the actual host scan, filtering and communication configuration before assigning an application response-time requirement.
Why is a fixed 290-ohm substitute load incomplete for testing AAI135-H03 S1?	The powered input includes a protection-circuit voltage drop, so its terminal burden varies with current. The published endpoints correspond to approximately 1.8 V at 4 mA and 5.8 V at 20 mA. Use the actual module or a justified burden model; one fixed resistor cannot reproduce both endpoint conditions.
How can the independent channels of AAI135-H03 S1 be checked after rewiring?	Exercise inputs one at a time and compare the intended channel with adjacent indications. Also inspect unwanted common connections in the termination; an individual current reading does not verify circuit separation.

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. Qualify the environmental chain from the module through its node, termination and cable, rather than assigning the module option to the whole cabinet. 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-H03 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-H03 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
Environmental chain	Module ambient capability must be checked alongside the node and termination ratings, not used as a blanket cabinet rating.
Field isolation	The interchannel withstand specification assumes the applicable external cable electrical limits.
Transmitter headroom	The guaranteed module-terminal voltage still needs a deduction for field wiring and any external isolation interface.

16 Before You Order

Information to provide	Selection and acceptance context
H03 environmental duty	Request the AAI135-H03 S1 marking and identify the cabinet G3 requirement, qualified node and expected operating ambient.
Thermal acceptance record	Provide the input test temperature and expected service temperature interval so the ±16 µA per 10°C influence can be evaluated.
Isolation in the installed harness	Include the MIL cable rating and any external common links between the eight circuits; the module isolation alone does not describe the whole harness.
Node supply and remote interface	Identify the available 5 V/24 V node budget and any EB401 remote HART path before substituting a legacy S1 spare.

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 ANB10D-S1	CENTUM system reference: retain its own host and configuration boundary.
Yokogawa AAI143-H00 S1	Analog I/O portfolio: compare signal direction, isolation and style.
Yokogawa ADV551-P00 S2	Discrete I/O portfolio: use its own signal and channel specification.
Yokogawa PW482-10 S2	Node supply reference: verify the complete node power arrangement.

Engineering contact

Discuss the complete unit and installed application with Apter Power.
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