Yokogawa AAI835-H00 S1

Complete Product Information

Isolated Analog Input and Output Module

Four isolated current inputs and four isolated current outputs share this HART-capable FIO module. H00 selects the basic environmental execution rather than the H03 option.

4 isolated current inputs → **FIO mixed-I/O conversion** → **4 isolated current outputs**

01 Product summary and native information

Engineering field	Value, condition or decision
Manufacturer part number	AAI835-H00 S1
Manufacturer	Yokogawa
Product Category	DCS Systems
Spare Part Number	AAI835-H00 S1
Shipping	Swift global dispatch
Condition	New, original product
Shipping size (est.)	3.2cm x 10.7cm x 13cm
Country of Origin	Japan
Weight	0.3 kg
Tariff Code	8537101190

02 Selected features

Loop allocation

Four current measurements and four current commands, rather than eight input-only channels.

Isolation boundary

Field/system and interchannel isolation are specified for the applicable connection assembly.

Output monitoring

Open-output detection supplements the commanded current; it does not prove actuator motion.

03 Technical parameters

Parameter	Verified value / condition
Analog inputs	4 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

03 Technical parameters — continued

Parameter	Verified value / condition
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
Analog outputs	4 channels
Output signal	4–20 mA DC
Output accuracy	±48 µA
Output load	0–750 Ω; 200–750 Ω at 60–70°C in a qualified remote node
Open-output threshold	<0.65 mA

Parameter applicability

Legacy AAI835-H00/H03 electrical and suffix specifications apply to the offered AAI835-H00 S1. S1 is retained as the offered style marking; it does not establish compatibility with later H50/H53 styles.

04 Overview

A four-loop input/output allocation provides channel separation on both measurement and command paths.

Selection and adjacent-model differences

AAI835-H00 S1 combines four input and four output circuits, while AAI135 dedicates eight channels to inputs and AAI841 provides eight inputs plus eight outputs without isolation. Choosing between them changes the terminal plan, channel allocation and electrical separation simultaneously. Four inputs and four outputs are independently isolated. The input side has a current-dependent powered burden, while the output side drives a separate receiving resistance; they require different test connections.

Operating relationship

An input circuit supplies the measurement side of a control loop; an output circuit drives its receiving load. These paths have different accuracy and compliance requirements, so successful input calibration cannot be used to accept the output bank or its actuator wiring. Input accuracy is ±16 µA, whereas output accuracy is ±48 µA. Keep these error budgets separate when assessing a transmitter-to-actuator control loop rather than applying the input conversion limit to the complete path.

Interface and installation implications

Output load includes the receiver and series wiring. In a qualified remote node at 60–70°C the documented minimum load rises, making a near-zero-ohm bench load unsuitable for representing every installed condition. The H00 identity itself must also be checked against the host environmental requirement. /B3A00 identifies ATB3A-00 and /K4A00 identifies ATK4A-00. The specified output load is 0–750 Ω under the applicable normal installation conditions; qualified remote operation at 60–70°C changes the minimum to 200 Ω.

Controller platform reference

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

05 Applications / Compatibility

Four isolated input/output loop positions connect through the compatible CENTUM FIO terminal and node arrangement.

Integration boundary

Allocate measurement and command terminals separately, retaining the documented output-load conditions. For the isolated mixed-I/O termination, recover both the input transmitter-power settings and output receiver allocation. AAI841 doubles the input/output count but uses non-isolated circuits, so it changes more than terminal density.

Application decisions

Four-loop control interfaces

Pair current measurements and commands in the project while keeping the input and output assignments distinct.

Separated output receivers

The isolated architecture is relevant where receiver circuits must not share a non-isolated output group.

HART-capable field servicing

Use the documented digital communication execution with a supported local or remote node path.

Redundant combined I/O

A dual-redundant design needs the appropriate paired-module and terminal configuration in addition to this card.

06 Product Precautions

Check the input and output halves independently before releasing a restored loop.

Installation and diagnostic actions

Separate current-source directions

Identify module-driven outputs and transmitter-driven inputs before connecting a calibrator.

Measure total output load

Count receiver resistance and wiring, including the remote-node high-temperature restriction when applicable.

Check an open-output indication

Resolve a disconnected receiver or interrupted wiring before treating the command value as delivered current.

Preserve isolated terminal mapping

A cable’s own electrical specification limits the complete installation withstand.

Check H00 suitability

The basic suffix must match the approved environment rather than borrowing H03 qualification.

Accept the actuator path

Measure delivered current at the receiving load and check its response separately from the input measurement. When an output indicates open circuit, measure the receiving path independently of the inputs. The open-output detection condition is below 0.65 mA; a successful input-current test cannot clear an output wiring fault.

07 Lifecycle Status

Engineering field	Value, condition or decision
Phase information	A confirmed manufacturer phase for AAI835-H00 S1 is not established.
Replacement architecture	AAI841 increases channel count but removes interchannel isolation; AAI135 removes the outputs.

07 Lifecycle Status — continued

Engineering field	Value, condition or decision
Support boundary	Maintain the four-input/four-output terminal allocation during replacement planning.
Supply definition	The quotation identifies the available module and separately supplied connection hardware.

08 Available Unit Details

Engineering field	Value, condition or decision
Combined hardware	AAI835-H00 S1 supplies four input and four output channels in the basic HART execution.
Adapter selection	ATB3A, ATK4A, ATI3S and ATI3D connections are distinct optional assemblies, not implicit contents.
Field boundary	Transmitters, output receivers and any external isolation barriers are separate from the offered card.

09 Alternative Names

Variant	Complete-model spelling
1	Yokogawa AAI835-H00 S1
2	Yokogawa AAI835 H00 S1

10 Engineering FAQ

Full-model technical question	Engineering answer
Why is an eight-input AAI135 not equivalent to AAI835-H00 S1?	The AAI835 splits its capacity between four inputs and four outputs. Reallocate measurement and command functions explicitly; an input-only card cannot replace the output half of this arrangement.
Can a correct input reading prove the output half of AAI835-H00 S1 is healthy?	No. Measure delivered output current into the actual receiver load and check the output circuit indication. The acquisition and command paths have separate electrical functions and tolerances.
How should an open-output indication on AAI835-H00 S1 be investigated?	Check receiver continuity, terminal engagement and series wiring under the approved isolation procedure. A plausible software command is not evidence that current reaches the load.

10 Engineering FAQ — continued

Full-model technical question	Engineering answer
Can the input and output errors of AAI835-H00 S1 simply be assumed to cancel in a loopback test?	No. For an illustrative worst-case electrical budget, ±16 µA input accuracy and ±48 µA output accuracy can add to ±64 µA, or 0.4% of a 16 mA span, before external test uncertainty and other applicable effects. Measure the two paths separately; their agreement alone cannot establish absolute loop accuracy.
Why might a low-resistance test load be unsuitable for AAI835-H00 S1 in a hot remote node?	The documented output-load window changes at 60–70°C in a qualified remote node. Use a representative compliant load and verify the H00 execution and host environment are themselves appropriate.
How can source-versus-sink confusion be avoided when testing AAI835-H00 S1?	Identify whether the test terminal is a module input or a module-driven output, and set the calibrator accordingly. Check the loop drawing before introducing another active current source.
What should be preserved when changing terminal adapters on AAI835-H00 S1?	Retain the four-input/four-output channel map and the required isolation arrangement. Adapter mechanical fit is insufficient evidence of identical pin assignment or circuit function.
Does HART access establish closed-loop operation for AAI835-H00 S1?	No. Digital instrument access is a separate check. Prove measurement scaling, delivered command current and the intended receiver response before accepting the control loop.

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. Allocate measurement and command terminals separately, retaining the documented output-load conditions. 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 AAI835-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 AAI835-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
Output interpretation	The command register and open-circuit status describe different aspects of the output path; use both during fault isolation.
Loop compliance	The receiver and cable must fit the allowed resistance window under the actual node temperature conditions.
Input conversion	The powered input’s protection drop must be included when evaluating a two-wire transmitter supply budget.

16 Before You Order

Information to provide	Selection and acceptance context
Direction-labeled module evidence	Request AAI835-H00 S1 and a drawing that distinguishes four isolated inputs from four isolated outputs.
Mixed-I/O terminal selection	Photograph the ATB3A or ATK4A adapter and identify which terminals lead to transmitters and which lead to receiving devices.
Separate field budgets	Supply transmitter compliance on the input side and total receiver resistance on the output side; the two quantities serve different circuit decisions.
Control-loop acceptance scope	Identify whether the job proves only the module or also the transmitter, controller calculation and final receiver, so input and output tolerances are not conflated.

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 PW401-S2	Node supply reference: verify the complete node power arrangement.
Yokogawa PW404-S1	Node supply reference: verify the complete node power arrangement.
Yokogawa SB311 S1	Node communication reference: qualify the host and interface revision.
Yokogawa EB401-50 S1	Node communication reference: qualify the host and interface revision.

Engineering contact

Discuss the complete unit and installed application with Apter Power.
sales13@apterpower.com | +86 18030235313