Yokogawa AAI841-H00 S1

Complete Product Information

Non-Isolated Analog Input and Output Module

An eight-loop FIO installation can combine measurement and command in this HART-capable module. Its non-isolated field references and external terminal arrangement must suit the connected instruments and receivers.

8 non-isolated current inputs → **FIO shared-reference I/O** → **8 current-output receivers**

01 Product summary and native information

Engineering field	Value, condition or decision
Manufacturer part number	AAI841-H00 S1
Manufacturer	Yokogawa
Product Category	DCS Systems
Spare Part Number	AAI841-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

Combined capacity

Eight measurement inputs plus eight command outputs support up to eight loops.

Response distinction

Input settling and output response are separate timing characteristics.

Exact identity

Retain S1 alongside the HART/basic-type suffix when checking hardware style and node requirements.

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	400 Ω at 20 mA; 1000 Ω at 4 mA
Unpowered input resistance	≥500 kΩ
Transmitter voltage at 20 mA	≥14.8 V
Transmitter voltage at zero current	≤26.4 V
5 V supply consumption	310 mA maximum
24 V supply consumption	500 mA maximum

03 Technical parameters — continued

Parameter	Verified value / condition
Temperature drift	±0.1% / 10°C
Channel isolation	Non-isolated
Input step response	100 ms
Analog outputs	8 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
Output step response	40 ms

Parameter applicability

Legacy AAI841-H00/H03 electrical and suffix specifications apply to the offered AAI841-H00 S1. S1 is retained as the offered style marking; it does not establish compatibility with later H50/H53 styles.

04 Overview

The eight-input/eight-output arrangement consolidates loop interfaces while retaining a non-isolated electrical structure.

Selection and adjacent-model differences

AAI841-H00 S1 offers twice the input/output channel allocation of AAI835, but does not provide that module's isolated-channel structure. The choice affects terminal density, field reference design and the number of loops assigned to one module. AAI841 combines eight current inputs and eight current outputs without channel isolation. AAB841 uses voltage inputs instead, so its input impedance and transmitter connection must not be carried into this current-input execution.

Operating relationship

Input and output processing do not have identical step-response behavior. A loop test must let the measurement settle while also checking the outgoing command at its receiving load; matching the data-update period to a test interval is not sufficient for either acceptance decision. The input step response is 100 ms and the output response is 40 ms, although the data update is 10 ms. A loop test should therefore record direction and settling condition instead of expecting the same timing at both sides.

Interface and installation implications

The input bank supports the documented transmitter power-mode selection, while the output bank must satisfy receiver-load conditions. The two functions share a module identity but retain distinct fault paths, including output open-circuit detection and remote-node HART support. The input terminal offers at least 14.8 V at 20 mA before external losses; the output bank permits 0–750 Ω under its normal qualified conditions. /A4S00, /A4D00 and /K4A00 identify different ATA4S, ATA4D and ATK4A termination routes.

Controller platform reference

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

05 Applications / Compatibility

AAI841-H00 S1 supplies eight non-isolated input/output loop positions in the supported legacy CENTUM FIO node arrangement.

Integration boundary

Keep measurement and command assignments aligned while evaluating field references and receiver compliance separately. A paired transmitter/receiver circuit uses the eight-by-eight mapping and its recorded common references. The 310 mA at 5 V and 500 mA at 24 V maximum module demands belong in the node budget, independently of the receiving load.

Application decisions

Eight-loop FIO control groups

Map each process measurement and its command output to the intended application, rather than assuming physical adjacency establishes a loop pair.

Non-isolated transmitter collections

Use field-reference arrangements suitable for the common module architecture.

Current-command receivers

The output bank drives documented receiver loads; verify current at the receiving end during acceptance.

Dual-redundant combined modules

Implement the supported node and terminal arrangement before treating the combined I/O as a redundant control interface.

06 Product Precautions

Commission this S1 record against its actual eight-input/eight-output terminal assignment.

Installation and diagnostic actions

Keep the S1 identity

Compare the delivered marking with this specific order record rather than accepting a generic H00 label.

Review shared references

Check the non-isolated circuit arrangement before joining grounded field devices.

Use appropriate test dwell

Allow for input step response independently of output response.

Inspect input mode pins

Restore the correct two-wire/four-wire setting on each measurement channel.

Accept outputs under load

Check receiver and cable resistance, including any applicable hot remote-node condition.

Verify dual paths deliberately

Use the approved redundant configuration test rather than assuming both paths from one live indication. Confirm the per-input two-wire/four-wire setting before restoring a powered field transmitter. Keep the input reference and output return assignments visible on the terminal drawing to avoid interpreting a shared-reference fault as two converter failures.

07 Lifecycle Status

Engineering field	Value, condition or decision
Style-specific phase	The manufacturer phase for AAI841-H00 S1 is not confirmed.
Style boundary	The S1 marking does not by itself establish interchangeability with a later hardware style.

07 Lifecycle Status — continued

Engineering field	Value, condition or decision
Replacement assessment	Changing to AAI835 alters isolation and halves the input/output allocation; a later suffix also needs a revision review.
Supply boundary	Quoted availability applies to the identified S1 unit and itemized accessories.

08 Available Unit Details

Engineering field	Value, condition or decision
Offered marking	AAI841-H00 S1, with eight current inputs and eight current outputs.
Terminal scope	No ATK4A, ATA4S, ATA4D or MIL-cover option is selected by the submitted code.
Included-function boundary	The card does not include field transmitters, actuator receivers or an external safety barrier.

09 Alternative Names

Variant	Complete-model spelling
1	Yokogawa AAI841-H00 S1
2	Yokogawa AAI841 H00 S1

10 Engineering FAQ

Full-model technical question	Engineering answer
How should input and output accuracy be assessed during an AAI841-H00 S1 loop test?	Evaluate input conversion and delivered output current as separate error sources, using each applicable tolerance and receiver/reference condition. A combined end-to-end deviation does not identify which path is responsible.
Can AAI835 serve as a channel-for-channel replacement for AAI841-H00 S1?	No. It has four inputs and four outputs with channel isolation, rather than this module’s eight-plus-eight non-isolated arrangement. Rework the channel and terminal plan before considering a change.
Why can the output settle before the input during an AAI841-H00 S1 test?	The two paths have different documented step responses. Test them independently and allow the measurement to settle before judging closed-loop error or adjusting tuning.

10 Engineering FAQ — continued

Full-model technical question	Engineering answer
Can an energized input of AAI841-H00 S1 be assumed to be a suitable loopback load for its output?	Not without checking the test circuit. At 4 mA the powered input burden is specified as 1000 Ω, above the normal 750 Ω output-load ceiling. The input power-mode arrangement also matters. Use a compliant test load and measure input and output separately instead of assuming a direct terminal-to-terminal loopback is valid.
Does one plausible loop prove all channel pairings on AAI841-H00 S1?	No. Project assignment establishes the measurement/command relationship. Exercise each intended pair and check that adjacent loop indications and commands remain correctly mapped.
What should be checked before connecting grounded devices to AAI841-H00 S1?	Review the non-isolated reference arrangement and terminal wiring against the loop drawings. Similar current ranges do not establish acceptable potential relationships between field circuits.
Can AAI841-H00 S1 use the AAI141 overcurrent figure for its input bank?	Use the applicable AAI841 electrical table instead. These related modules have different allowable input-current values, so a shared nominal range does not justify borrowing that limit.
Can an AAB841 1–5 V input circuit be moved directly onto AAI841-H00 S1?	The AAB841 input is a high-impedance voltage interface, while this AAI841 execution measures current through a powered input circuit with an additional protection drop. Preserve the actual field signal type and source capability; use the appropriate voltage-input hardware or an engineered conversion interface rather than treating a similar connector as electrical equivalence.

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. Keep measurement and command assignments aligned while evaluating field references and receiver compliance separately. 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 AAI841-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 AAI841-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
Timing relationship	The faster output step response does not reduce the input path's settling requirement in a closed-loop test.
Fault separation	An open-output indication concerns the receiver current path, while a bad input may arise in its transmitter or power-mode arrangement.
Style control	Retain the full S1 marking in the node maintenance record without assuming equivalence to a later order generation.

16 Before You Order

Information to provide	Selection and acceptance context
Current-input identity	Request AAI841-H00 S1 and distinguish it from the AAB841 voltage-input execution; the similar mixed-I/O description does not establish the same input circuit.
Eight-by-eight field drawing	Provide input/output direction labels and shared reference connections for all sixteen signal circuits.
Terminal and transmitter settings	Photograph the ATA4S/ATA4D or ATK4A termination and per-input two-wire/four-wire setting.
Timing and receiver record	Identify the required input settling, output settling and receiver loads; the two conversion directions have different published step responses.

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 ANT502-5F S1	Node communication reference: qualify the host and interface revision.
Yokogawa ATB5S-00 S2	Termination portfolio: compare the exact adapter and channel mapping.
Yokogawa ATA4S-00 S2	Termination portfolio: compare the exact adapter and channel mapping.
Yokogawa SB401-11 S1	Node communication reference: qualify the host and interface revision.

Engineering contact

Discuss the complete unit and installed application with Apter Power.
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