Yokogawa AAI841-H00

Engineering Installation, Diagnostic and Acceptance Guide

Yokogawa AAI841-H00 is a 8-channel HART analog input/output module. Its exact marking, installed interfaces and companion equipment must be verified before replacement or commissioning.

01 Work package

Complete model	AAI841-H00
Product type	8-channel HART analog input/output module
Manufacturer	Yokogawa
Supply condition	New, original product
Technical source	Yokogawa GS 33K50F60-50E Analog Input/Output Modules

Field decisions

1 Establish identity

Capture the full marking, installed companion components and baseline before disconnection.

2 Inspect interfaces

Verify mounting, cable, connector, armor, approval and environmental boundaries.

3 Fit the exact chain

Preserve the documented probe-cable-Proximitor or sensor-monitor relationship.

4 Prove response

Use the approved stopped-machine and operating acceptance procedure.

5 Record as left

Save markings, configuration, test values and operating observations.

02 Interface and configuration map

I/O channel count	8 inputs and 8 outputs
Channel isolation	Non-isolated
Input signal	4 to 20 mA DC
Output signal	4 to 20 mA DC
HART selection	H suffix; HART communication supported
Explosion-protection code	0; no explosion-protection option selected
Environmental suffix	0; basic type

Allowable input current	25 mA
Input resistance, powered	400 Ω at 20 mA to 1000 Ω at 4 mA
Input resistance, power off	500 kΩ or greater
Allowable output load	0 to 750 Ω
Output open-circuit detection	Less than 0.65 mA
Input accuracy	±16 µA
Output accuracy	±48 µA
Data update period	10 ms
Input step response	100 ms
Output step response	40 ms
Maximum consumption	310 mA at 5 V DC and 500 mA at 24 V DC

03 Installation workflow

Confirm H00 marking

Do not substitute a non-HART or different environmental suffix without engineering approval.

Check node firmware

Verify the installed node-unit firmware supports HART operation for this module.

Calculate loop load

Keep every output path within the documented 0 to 750 Ω range.

Review intrinsic-safety interface

Do not connect a Zener barrier where the manufacturer requires an isolation barrier.

Prove analog and digital paths

Test loop current and HART communication independently before release.

Record device revisions

Save field-device revision, DOF/DTM context and module-channel assignment.

Application checks

HART process loops

Communicate with supported HART devices while maintaining 4 to 20 mA control signals.

Analog control I/O

Acquire eight current inputs and drive eight current outputs in one module.

Loop maintenance

Use digital diagnostics together with measured analog current and configured ranges.

System replacement

Preserve slot, suffix, node firmware, cable and database assignments.

04 Diagnostic decision table

How should HART communication be proved on AAI841-H00?	Establish stable analog current, poll the intended device, read identity and diagnostics, then verify that communication does not disturb the control value.

What firmware review is required for AAI841-H00?	Confirm the installed ER bus node and EB401 firmware meet the Yokogawa requirement for HART operation before enabling digital communication.
How can excess loop resistance affect AAI841-H00?	It can limit output compliance and prevent the commanded current. Calculate all receiver, cable and barrier resistance and compare with the 750 Ω limit.
How should input resistance variation of AAI841-H00 be interpreted?	Use the documented 400 Ω at 20 mA to 1000 Ω at 4 mA characteristic when checking transmitter voltage margin and barrier selection.

Release review

Installation relationship	Use the exact model marking and manufacturer wiring or installation information for the delivered hardware.
System boundary	Verify host equipment, companion interfaces, field wiring and configuration before energizing.
Technical reference	Yokogawa GS 33K50F60-50E Analog Input/Output Modules.

Engineering questions

How should HART communication be proved on AAI841-H00?	Establish stable analog current, poll the intended device, read identity and diagnostics, then verify that communication does not disturb the control value.
What firmware review is required for AAI841-H00?	Confirm the installed ER bus node and EB401 firmware meet the Yokogawa requirement for HART operation before enabling digital communication.
How can excess loop resistance affect AAI841-H00?	It can limit output compliance and prevent the commanded current. Calculate all receiver, cable and barrier resistance and compare with the 750 Ω limit.
How should input resistance variation of AAI841-H00 be interpreted?	Use the documented 400 Ω at 20 mA to 1000 Ω at 4 mA characteristic when checking transmitter voltage margin and barrier selection.
What proves open-circuit detection on an AAI841-H00 output?	Use an approved test to open the loop, verify the current falls below the detection threshold and confirm the expected system diagnostic without disturbing other channels.
How should a non-isolated channel problem on AAI841-H00 be diagnosed?	Check common-reference potential, shield termination and cross-channel interaction before replacing the module.
What should be saved before swapping AAI841-H00?	Record full suffix, slot, node firmware, HART device identities, ranges, channel mapping, loop load and baseline input/output values.
How should the replacement AAI841-H00 be accepted?	Calibrate representative low, mid and high points, prove HART polling and open-circuit diagnostics, then compare process response with the saved baseline.

Acceptance and support

Retain the full marking, installed-chain identities, test readings and approved machine configuration. Confirm the exact offered item and included scope in the written quotation.

Discuss the exact marking and installed application with Apter Power.
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Verified related product references

Related product	CP461-10
Related product	S9400UK
Related product	AAB841
Related product	AAI841-H00

Commissioning record template

Installed asset	Machine, bearing, channel or cabinet reference
Companion identities	Probe, cable, sensor, interface or monitor markings
Mechanical datum	Mounting reference, reach, alignment or sealing condition
Electrical datum	Chain length, connector, shield, supply or input assignment
Before-work baseline	Gap, bias, vibration, continuity or channel observation
As-left result	Final measured value and functional proof
Approval basis	Applicable drawing, control requirement or site procedure
Handover	Technician, date, revision and maintenance-record location

Handover note

A replacement is complete only after the installed identity, physical interfaces, measured response and configuration record agree. Escalate any mismatch before the channel returns to protection or monitoring service.

Release checklist

Identity accepted	Complete marking agrees with the order, photographs and installed asset record.
Interfaces accepted	Mechanical fit, connector, wiring and companion components match the approved design.
Environment accepted	Temperature, contamination, vibration and route protection remain inside documented limits.