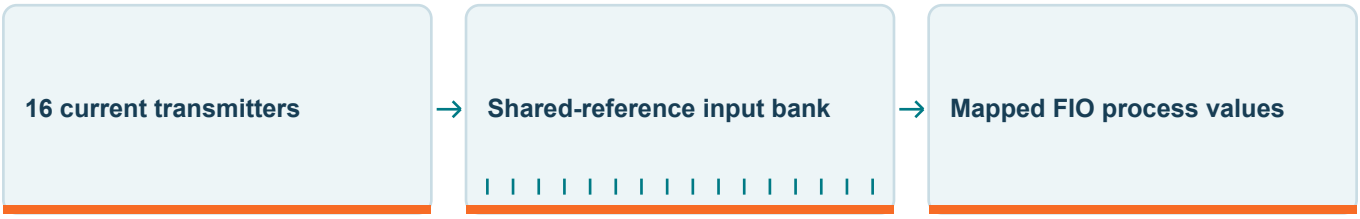
Yokogawa AAI141-H00 S1

Installation, Diagnostics and Acceptance

Work scope

Group sixteen signals only where their field electrical references are compatible with a non-isolated input module. A /K4A00 selection uses ATK4A-00, while /A4S00 and /A4D00 use the corresponding ATA4S and ATA4D pressure-clamp routes. Check the selected terminal mapping before changing a sixteen-loop bank.



01 Before You Order

Evidence to provide	Exact-model selection decision
Sixteen-loop mapping	Provide the complete AAI141-H00 S1 label and the terminal-to-channel drawing for all sixteen non-isolated inputs.
Bank common and power-mode settings	Photograph the field common and per-channel two-wire/four-wire selections before the terminal bank is disturbed.
Pressure-clamp or MIL route	Identify the fitted ATA4S/ATA4D execution, including any surge option, or the /K4A00 ATK4A route.
Endpoint loop evidence	Supply transmitter compliance requirements at the 4 mA and 20 mA endpoints; powered input burden changes with current.

02 Sixteen-channel common-reference plan

Establish the input allocation

The AAI141 provides sixteen non-isolated current inputs. Document every field tag and channel number before moving the high-density termination.

Recover the common-reference design

Identify the actual common connections and transmitter powering arrangement. Do not transfer an AAI135 isolated-loop grounding scheme without reviewing the field circuit.

Select the matching terminal route

Identify the installed ATA4S/ATA4D or ATK4A arrangement and cable mapping. Preserve the terminal-to-channel correspondence through the replacement.

Allow for input burden

Calculate loop compliance using the documented burden relationship, including the protective drop. The effective burden at 4 mA differs from the burden at 20 mA.

03 Dense input-bank proof

Observed condition / stage	Action and acceptance interpretation
Verify one circuit at a time	Apply a controlled current to the intended channel and confirm that no adjacent input is being read. Keep the reference connection consistent with the non-isolated bank.
Wait for the relevant response	The published input step-response figure is 100 ms under its stated conditions. Include application filtering and transmitter dynamics when deciding whether a response is abnormal.
Treat overrange separately	A high but finite current indication is different from an open loop. Use the applicable allowable-input limit and controller diagnostics rather than testing beyond the documented module range.
Validate the engineered range	Compare low, intermediate and high signal points with the controller engineering units. Sixteen plausible values do not prove that the terminal bank is in the intended order.

04 Common-reference fault investigation

Observed condition / stage	Action and acceptance interpretation
Several inputs shift together	Examine the shared field reference and supply path before replacing multiple transmitters. A bank-wide error can originate outside the conversion circuits.
Only one channel disagrees	Compare that channel at the actual termination, then inspect its field loop and scaling. Preserve evidence from the affected channel rather than relying on a successful neighbor.
Communication requires review	If HART is part of the installation, confirm its compatible node and revision conditions independently of analog continuity.
Bank restoration record	Retain all sixteen assignments, common-reference connections, input test pairs and the measured response condition. This is the evidence needed for a subsequent replacement.

05 Quantitative field checkpoints

Check	Verified condition	Practical evidence
Powered-input burden	400 Ω at 20 mA; 1000 Ω at 4 mA	Check source compliance at both signal endpoints; use the protective-drop relationship instead of a fixed-resistor approximation.
Common-reference test	16 non-isolated current inputs	Inject into the intended terminal and verify its exact channel while retaining the approved bank reference.
Transmitter setting	Per-input two-wire/four-wire selection	Compare the field source type with its channel setting before reconnecting the bank.

06 Terminal and field-circuit selection map

Order option / circuit	Applicable legacy selection
/A4S00 / /A4S10	ATA4S-00 / ATA4S-10 simplex pressure-clamp selections
/A4D00 / /A4D10	ATA4D-00 / ATA4D-10 dual-redundant selections
/K4A00	ATK4A-00 MIL adapter
Input transmitter power	≥14.8 V at 20 mA; ≤26.4 V at zero current, before field-wire loss

Bare-module supply boundary

The offered AAI141-H00 S1 identity has no terminal-adapter option appended. Recover the installed terminal identity from its own label before assigning one of these selections to the replacement job.

Technical applicability

Legacy AAI141-H00/H03 electrical and suffix specifications apply to the offered AAI141-H00 S1. S1 is retained as the offered style marking; it does not establish compatibility with later H50/H53 styles.

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 SPW482-13	Node supply reference: verify the complete node power arrangement.
Yokogawa CP451-10	CENTUM system reference: retain its own host and configuration boundary.
Yokogawa SB401-10	Node communication reference: qualify the host and interface revision.
Yokogawa ADV151-P00 S2 ATD5A-00	Discrete I/O portfolio: use its own signal and channel specification.

Engineering contact

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