Yokogawa AAI841-H00

8-Input 8-Output HART Analog I/O Module

Yokogawa AAI841-H00 combines eight analog inputs and eight analog outputs in one CENTUM FIO module, supporting up to eight process loops. Both sides use 4–20 mA signals, so it can receive transmitter measurements and deliver current commands within the same module footprint. The H version supports HART communication and the module can operate in a dual-redundant arrangement. AAI841-H00 is non-isolated, making signal isolation and the exact legacy H00 suffix essential checks for a replacement purchase.



Technical Specifications

Product Identity	
Manufacturer	Yokogawa
Complete model	AAI841-H00
Dimensions (W × H × D)	32.8 × 130 × 107.5 mm; module only
Functional Configuration	
Function	Combined analog input/output with HART
Channels	8 inputs and 8 outputs; up to 8 loops
Isolation	Non-isolated
Signals	Input: 4–20 mA DC; output: 4–20 mA DC
Performance & Power	
Allowable input current	25 mA
Accuracy	Input ±16 µA; output ±48 µA
Data update period	10 ms
Output load resistance	0–750 Ω; 200–750 Ω for the specified 60–70 °C node environment
Maximum current consumption	310 mA at 5 V DC; 500 mA at 24 V DC
Environment	
Conditional ambient/output load	200–750 Ω at 60–70 °C when installed in the specified high-temperature node

Selected original manufacturer pages follow on pages 3–5.

Compatibility & Selection Guide

System compatibility. AAI841-H00 is covered by the legacy CENTUM VP FIO specification for ANB10, ANR10, AFF50 and AFV10 arrangements. HART operation in an ER-bus remote node requires EB401 firmware Rev. 2 or later. Match the installed release, node, hardware Style and terminal option; later H50 ordering tables must not be used to redefine this H00 product.

Wiring & Installation Reference

Signal and connection checks

Input. 4–20 mA DC · Select two-wire/four-wire per channel

Output. 4–20 mA DC · 0–750 Ω; temperature condition applies

Remote HART. EB401 Rev. 2 or later · Verify the installed remote-node firmware

Module fit and configuration

Confirm the system position.. Match the field control unit, node type, complete module code and existing configuration before replacement.

Match termination and dimensions.. Use the specified terminal/cable interface and check the module envelope against the installed assembly.

Verify the configured function.. Confirm the legacy -H00 code, hardware Style, node and terminal option; HART in an ER-bus remote node requires EB401 Rev. 2 or later.

Installation precautions. Do not connect a Zener barrier; use a suitable isolation barrier for intrinsically safe applications. Use the 200–750 Ω output-load range when the specified node temperature condition is 60–70 °C.

View connection specifications (PDF) · PDF page 3 | View mounting dimensions (PDF) · PDF page 4

Manufacturer sources: CENTUM VP Analog I/O Modules (for FIO).

● **Current/Voltage I/O Modules (Non-Isolated)**

These modules provide eight inputs and eight outputs to support up to eight loops.

They can be used in dual redundant configuration.

Items		Specifications			
Model		**AAI841 (*1)**		**AAB841 (*6)**	
Number of I/O channels		8-channel input/8-channel output, non-isolated		8-channel input/8-channel output, non-isolated (differential input)	
I/O signal		Input: 4 to 20 mA	Output: 4 to 20 mA	Input: 1 to 5 V (allowable common mode voltage ±1 V or more)	Output: 4 to 20 mA
Allowable input current/voltage		25 mA	—	±7.5 V	—
Withstanding voltage		—		—	
Input resistance	**Power ON**	400 Ω (at 20 mA) to 1000 Ω (at 4 mA) (*2)	—	1 MΩ or more	—
	Power OFF	500 kΩ or more	—	340 kΩ or more	—
Allowable load resistance		—	0 to 750 Ω (*3)	—	0 to 750 Ω
Circuit-open detection		—	Less than 0.65 mA	—	Less than 0.65 mA
Accuracy		Input: ±16 μA	output: ±48 μA	Input: ±4 mV	output: ±48 μA
Data update period		10 ms			
Input step response time		100 ms			
Output step response time		40 ms			
Transmitter power supply		14.8 V or more (at 20 mA) 26.4 V or less (at 0 mA) (*4)		—	
Setting of 2-wire or 4-wire transmitter		For each channel by setting pin		—	
Temperature drift		±0.1 %/10 °C			
Maximum current consumption		310 mA (5 V DC), 500 mA (24 V DC)		310 mA (5 V DC), 250 mA (24 V DC)	
Weight		0.3 kg			
External connection		Pressure clamp terminal, KS cable, MIL connector cable			
HART communication (*5)		Available		—	

*1: This module does not allow a Zener barrier to be connected. If the module is to be used in intrinsically safe applications, use an isolation barrier.

*2: Viewed from the terminals, module input resistance is, depending on the current flowing:

$$250\ \Omega + \frac{\text{voltage drop (3 V maximum) in the input protection circuit}}{\text{current value}}$$

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*3: When installing to a remote node that conforms to the temperature environment and using it under the temperature environment (60 to 70 ˚C), the allowable load resistance is 200 to 750 Ω.

*4: This voltage is developed between connecting terminals for this module's 2-wire transmitter. When calculating if transmitter minimum operating voltage requirement will be satisfied, remember to allow for voltage drop in external wiring.

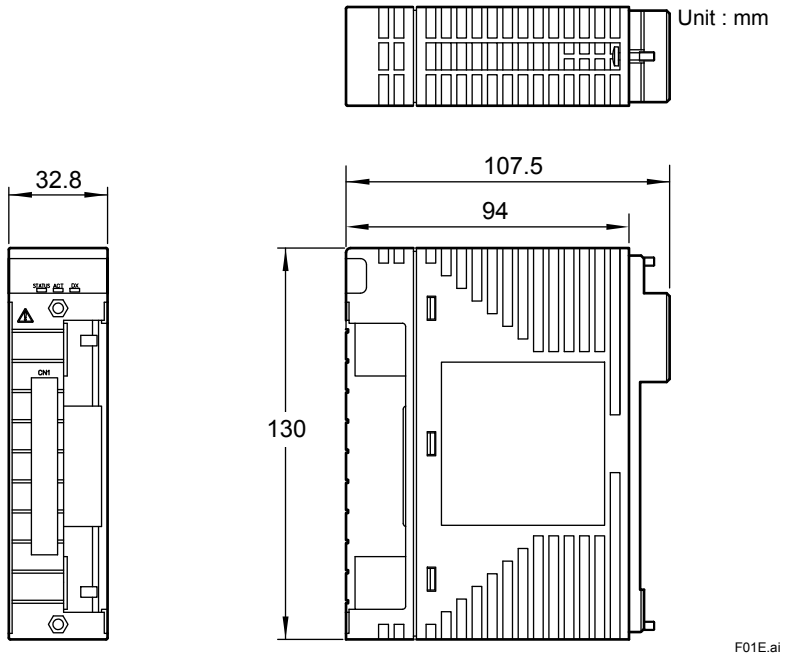
*5: When installing the module with HART function to a remote node, the firmware of EB401 must be Rev 2 or later.
For HART function specifications, refer to" HART Communication Package (for A□I□□□-H) (GS 33M15F30-40E)."

*6: The module current output does not allow a Zener barrier to be connected. If the module is to be used in intrinsically safe applications, use an isolation barrier.

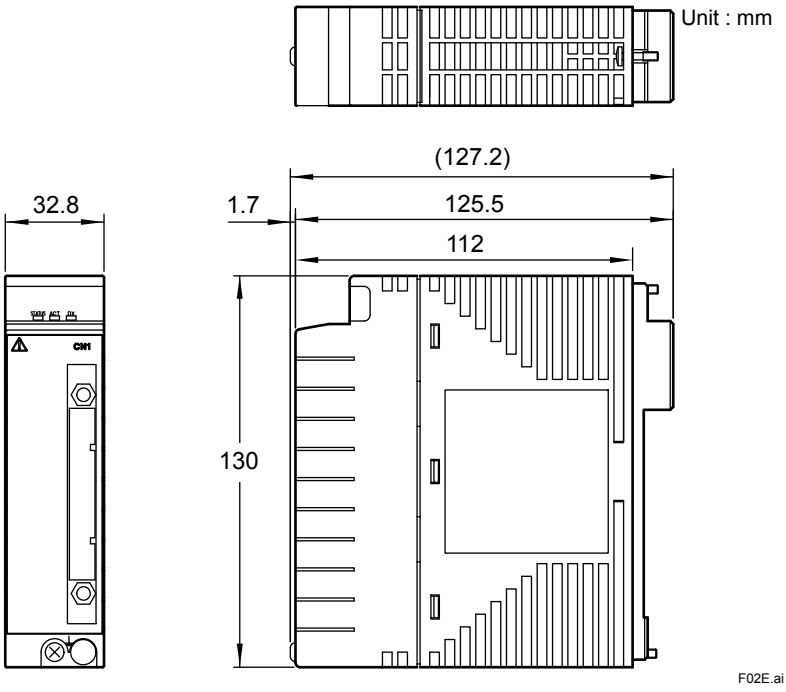
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■ EXTERNAL DIMENSIONS

● **AAI141, AAV141, AAV142, AAV144, AAI841, AAB841, AAV542, AAV544, AAI143, AAI543, AAT141, AAR181, AAI135, AAI835, AAP135**



● **AAT145, AAP849**



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		Description
Model	AAI841	Analog I/O Module (4 to 20 mA input , 4 to 20 mA output, 8-channel input/8-channel output, Non-Isolated)
Suffix Codes	-S	Standard type
	-H	With digital communication (HART protocol)
	0	Always 0
	0	Basic type
	3	With ISA Standard G3 option and temperature (-20 to 70 °C) option
Option Codes	/K4A00	With KS Cable Interface Adapter [Model : ATK4A-00]
	/A4S00	With Pressure Clamp Terminal Block for Analog [Model : ATA4S-00]
	/A4S10	With Pressure Clamp Terminal Block for Analog (surge absorber) [Model : ATA4S-10]
	/A4D00	With Dual Pressure Clamp Terminal Block for Analog [Model : ATA4D-00]
	/A4D10	With Dual Pressure Clamp Terminal Block for Analog (surge absorber) [Model : ATA4D-10]
	/CCC01	With Connector Cover for MIL Cable [Model : ACCC01]

		Description
Model	AAB841	Analog I/O Module (1 to 5 V input, 4 to 20 mA output, 8-channel input/8-channel output, Non-Isolated)
Suffix Codes	-S	Standard type
	0	Always 0
	0	Basic type
	3	With ISA Standard G3 option and temperature (-20 to 70 °C) option
Option Codes	/K4A00	With KS Cable Interface Adapter [Model : ATK4A-00]
	/M4A00	With MAC2 Compatible Adapter [Model : ATM4A-00]
	/V4A00	With VM2 Compatible Adapter [Model : ATV4A-00] (*1)
	/A4S00	With Pressure Clamp Terminal Block for Analog [Model : ATA4S-00]
	/A4S10	With Pressure Clamp Terminal Block for Analog (surge absorber) [Model : ATA4S-10]
	/A4D00	With Dual Pressure Clamp Terminal Block for Analog [Model : ATA4D-00]
	/A4D10	With Dual Pressure Clamp Terminal Block for Analog (surge absorber) [Model : ATA4D-10]
	/CCC01	With Connector Cover for MIL Cable [Model : ACCC01]

*1: When using this adapter, 4 to 20 mA output (8-channel) of AAB841 varies to 1 to 5 V output.

		Description
Model	AAP149	Pulse Input Module PM1 compatible (16-channel, Pulse count, 0 to 6 kHz, Non-Isolated)
Suffix Codes	-S	Standard type
	0	Always 0
	0	Basic type
	1	With ISA Standard G3 option

		Description
Model	AAP849	Pulse Input Module/ Analog Output Module for compatible PAC (Pulse count Input, 4 to 20 mA output, 8-channel input / 8-channel output, Non-Isolated)
Suffix Codes	-S	Standard type
	0	Always 0
	0	Basic type
	1	With ISA Standard G3 option

■ ORDERING INFORMATION

Specify models and suffis codes.

■ TRADEMARK

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