MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

YOKOGAWA

AAI835-S00 S2

ISOLATED ANALOG INPUT-OUTPUT MODULE

Used with the applicable CENTUM analog FIO AAI835 configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Yokogawa GS 33K50F60-50E, 4th Edition, December 2013; AAI835 common hardware specifications.

General Specifications

Analog I/O Modules (for FIO)

CENTUM VP

GS 33K50F60-50E

[Release 5]

■ GENERAL

*This document describes about hardware specifications of Analog I/O Modules (for FIO) to be installed in the ESB bus node units (ANB10S and ANB10D), Optical ESB bus node units (ANB11S and ANB11D), ER bus node units (ANR10S and ANR10D) (*1), and field control units (for FIO) (AFV30S, AFV30D, AFV40S, AFV40D, AFV10S, AFV10D, AFF50S, and AFF50D).*

These analog I/O modules function as signal converters; by inputting field analog signals into these modules, it converts them to internal data for field control stations (FCS), or the FCS's internal data to analog signals for outputs.

*1: Field control units (AFV30☐ and AFV40☐) do not support ER bus node unit (ANR10☐).

YOKOGAWA

Yokogawa Electric Corporation
2-9-32, Nakacho, Musashino-shi, Tokyo, 180-8750 Japan
Tel.: 81-422-52-5634 Fax.: 81-422-52-9802

GS 33K50F60-50E
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● Current Input Module and Current I/O Module (Isolated Channels)

The current input module receives signal of 4 to 20 mA, and the current I/O module sends and receives signals of 4 to 20 mA. These modules are isolated between the field and the system as well as in between each channel. They can be used in dual-redundant configuration.

Items		Specifications		
Model		**AAI135 (*1)**	**AAI835 (*1)**	
Number of I/O channels		8-channel input, isolated channels	4-channel input/4-channel output, isolated channels	
I/O signal		4 to 20 mA	Input: 4 to 20 mA	Output: 4 to 20 mA
Allowable input current		25 mA	25 mA	—
Withstanding voltage		Between input and system: 500 V AC, for 1 minute Between input channels: 500 V AC, for 1 minute (*2)	Between input/output and system: 500 V AC, for 1 minute Between input/output channels: 500 V AC, for 1 minute (*2)	
Input resistance	**Power ON**	290 Ω (at 20 mA) to 450 Ω (at 4 mA) (*3)		
	Power OFF	500 kΩ or larger		
Allowable load resistance		—	—	0 to 750 Ω (*4)
Circuit-open detection		—	—	Less than 0.65 mA
Accuracy		±16 μA	Input: ±16 μA	Output: ±48 μA
Data update period		10 ms		
Transmitter power supply		15.0 V or higher (at 20 mA) 29.3 V or less (at 0 mA) (*5)	15.0 V or higher (at 20 mA) 29.3 V or less (at 0 mA) (*5)	—
Temperature drift		±16 μA/10 °C		
Maximum current consumption		360 mA (5 V DC), 450 mA (24 V DC)	360 mA (5 V DC), 450 mA (24 V DC)	
Weight		0.3 kg		
External connection		Pressure clamp terminal, MIL connector cable, dedicated cable (KS1)		
HART communication (*6)		Available	Available	

*1: A Zener barrier is not allowed to be connected with this module. Use an isolation barrier when the module is used in intrinsically safe applications.
*2: When the ML connector cable is used, the withstanding voltage depends on the electrical specifications of the cable.
*3: The module input resistance viewed from the terminals depends on the current strength as calculated as below:

$$250\ \Omega + \frac{\text{voltage drop in the input protection circuit}}{\text{current value}}$$

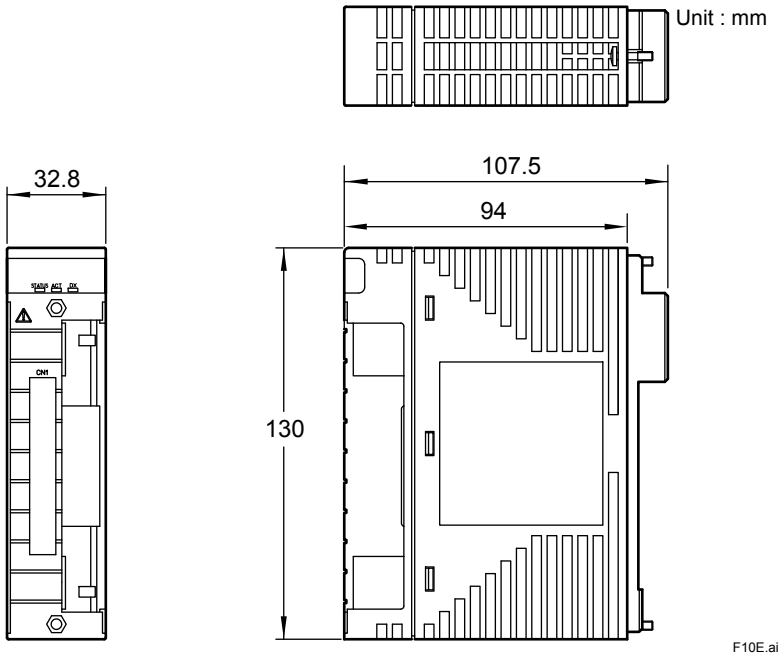
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*4: When this module is used in the ambient temperature of 60 to 70 ºC by being installed in a ER bus node unit that conforms to the temperature environment, the allowable load resistance is 200 to 750 Ω.
*5: This voltage is generated between the connecting terminals for 2-wire transmitters for this module. When calculating the minimum operating voltage for transmitters, consider to allow margins for voltage drop in external wiring.
*6: When this module is installed to a ER bus node unit with HART function, the EB401 firmware must be rev. 2 or later.

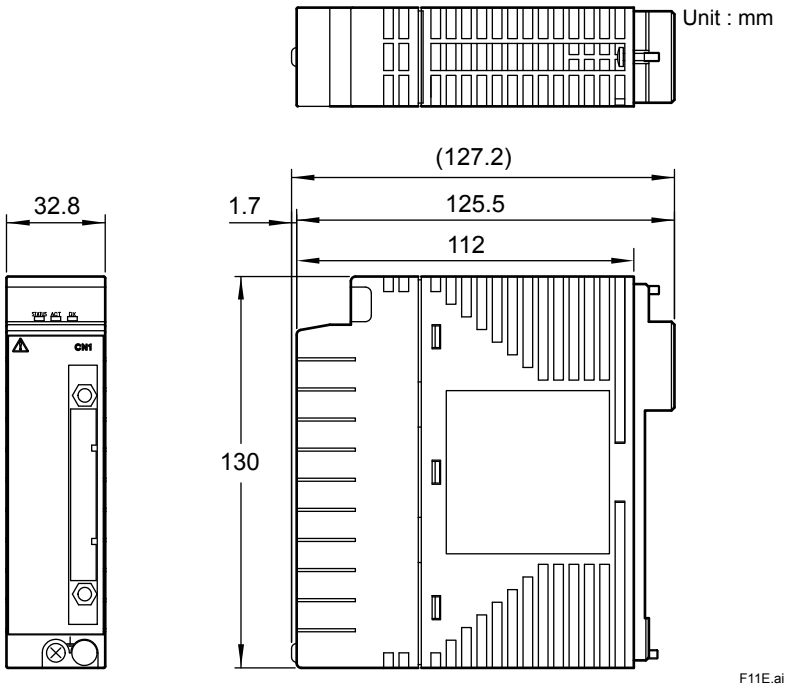
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■ EXTERNAL DIMENSIONS

● **AAI141, AAV141, AAV142, AAV144, AAI841, AAB841, AAV542, AAV544, AAI143, AAI543, AAT141, AAR181, AAI135, AAI835, AAP135, AAB141, AAB842**



● **AAT145, AAP849**



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