Technical Information

CENTUM VP
Installation Guidance

CENTUM VP

TI 33J01J10-01EN

YOKOGAWA ◆

Table   G3 Environment-compatible Products (2/3)

No.	Product	Model	Description
5	Analog I/O modules	AAI835-□□3	Analog I/O module (4 to 20 mA, 4-channel/4-channel, isolated channels)
		AAT145-□□3	Thermocouple/mV input module (16-channel, isolated channels)
		AAR145-□□3	Resistance temperature detector/potentiometer input module (16-channel, isolated channels)
		AAP135-□□3	Pulse input module (8-channel, 0 to 10 kHz, isolated channels)
		AAP149-□□1	Pulse input module for compatible PM1 (16-channel, pulse count, 0 to 6 kHz, non-isolated)
		AAP849-□□1	Pulse input/Analog output module for compatible PAC (Pulse count input, 4 to 20mA output, 8-channel/8-channel, non-isolated)
6	Digital I/O modules	ADV151-□□3	Digital input module (32-channel, 24 V DC, isolated)
		ADV551-□□3	Digital output module (32-channel, 24 V DC, isolated)
		ADV161-□□1	Digital input module (64-channel, 24 V DC, isolated)
		ADV561-□□1	Digital output module (64-channel, isolated)
		ADV859-□□1	Digital I/O module for compatible ST2 (16-channel input/16-channel output, isolated channels)
		ADV159-□□1	Digital input module for compatible ST3 (32-channel, isolated channels)
		ADV559-□□1	Digital output module for compatible ST4 (32-channel, isolated channels)
		ADV869-□□1	Digital I/O module for compatible ST5 (32-channel input/32-channel output, isolated, common minus side every 16-channel)
		ADV169-□□1	Digital input module for compatible ST6 (64-channel, isolated, common minus side every 16-channel)
		ADV569-□□1	Digital output module for compatible ST7 (64-channel, isolated, common minus side every 16-channel)
7	Communication modules	ALR111-□□1	RS-232C Communication Module (2-Port, 1200 bps to 115.2 kbps)
		ALR121-□□1 -□□3	RS-422/RS-485 Communication Module (2-Port, 1200 bps to 115.2 kbps)
		ALE111-□□1 -□□3	Ethernet Communication Module (1-Port, 10 Mbps)
		ALF111-□□1	Foundation Fieldbus (FF-H1) Communication Module (4-Port, 31.25 kbps)
		ALP111-□□1	PROFIBUS-DP Communication Module (1-Port, 9600 bps to 12 Mbps)
		ALP121-□□1	PROFIBUS-DP Communication Module (1-Port, 9600 bps to 12 Mbps)
8	Router	AVR10D-□□□□1	Duplexed V net Router
		AW810D-□□□□□6	Wide Area Communication Router
9	Turbomachinery I/O Modules	AGS813-□□1	Servo Module (Isolated)
		AGP813-□□1	High Speed Protection Module (Isolated)
10	Node Interface Unit	A2NN10D -□□□□□□□1	Node Interface Unit (for RIO System Upgrade)
		A2NN30D -□□□□□□□1 -□□□□□□□3	Node Interface Unit
11	Base Plate	A2BN3D -□□□□1□ -□□□□3□	Base Plate for Adaptor
		A2BN4D	Base Plate for Barrier (MTL)
		A2BN5D	Base Plate for Barrier (P+F)
12	Nest	A2BA3D -□□□1□	Nest for I/O Adaptor (for RIO System Upgrade)

3.6.2　List of Signal Cables for Connection with FIO

The following table shows the list of signal cables connections with FIO.

Table　Signal Cables for Connection with FIO (1/3)

| Module	Name	I/O channels per Module	Connection Signal		
			Pressure Clamp Terminal	Yokogawa-specific Cable (*1)	MIL Cable
Analog I/O Modules					
AAI141	Analog Input Module (4 to 20 mA, Non-Isolated)	16	x	x	x
AAV141	Analog Input Module (1 to 5 V, Non-Isolated)	16	x	x	x
AAB141	Analog Input Module (1 to 5 V / 4 to 20 mA, Non-Isolated)	16	–	x	–
AAI841	Analog I/O Module (4 to 20 mA Input, 4 to 20 mA Output, Non-Isolated)	8 input/8 output	x	x	x
AAB841	Analog I/O Module (1 to 5 V Input, 4 to 20 mA Output, Non-Isolated)	8 input/8 output	x	x	x
AAB842	Analog I/O Module (1 to 5 V / 4 to 20 mA Input, 4 to 20 mA Output, Non-Isolated)	8 input/8 output	–	x	–
AAI143	Analog Input Module (4 to 20 mA, Isolated)	16	x	x	x
AAI543	Analog Output Module (4 to 20 mA, Isolated)	16	x	x	x
AAV144	Analog Input Module (-10 to +10 V, Non-Isolated)	16	x	x	x
AAV544	Analog Output Module (-10 to +10 V, Non-Isolated)	16	x	x	x
AAI135	Analog Input Module (4 to 20 mA, Isolated Channels)	8	x	x	x
AAI835	Analog I/O Module (4 to 20 mA, Isolated Channels)	4 input/4 output	x	x	x
AAT145	TC/mV Input Module (TC: R, J, K, E, T, B, S, N /mV: -100 to 150 mV, Isolated Channels)	16	–	x (*2)	–
AAR145	RTD/POT Input Module (RTD: Pt100 Ω / POT: 0 to 10 kΩ, Isolated Channels)	16	–	x (*2)	–
AAP135	Pulse Input Module (Pulse Count, 0 to 10 kHz, Isolated Channels)	8	x	x	x
AAP149	Pulse Input Module for compatible PM1 (Pulse Count, 0 to 6 kHz, Non-Isolated)	16	–	x	–
AAP849	Pulse Input/Analog Output module for compatible PAC (Pulse Count input, 4 to 20 mA output, Non-Isolated)	8 input/8 output	–	x	–

x :　Can be connected.
– :　Cannot be connected.
*1:　Yokogawa-specific cable for connecting I/O Module and a terminal board, etc.
*2:　Can be connected directly with a Yokogawa-specific cable, without a terminal block.

■ KS Cable Interface Adaptor
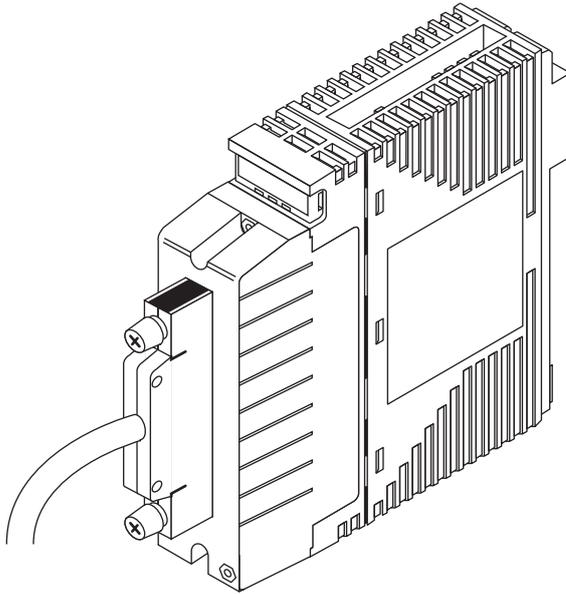
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Figure   I/O Module with KS Cable Interface Adaptor

The I/O modules are arranged in a dual-redundant configuration on the terminal board.

■ Connecting Signal Cables with Analog I/O Module

Signal cables are connected to different terminals according to the devices to be connected as listed below:

Table   Signal Names and I/O Signals of Analog I/O Module

Model Name	Single Name	I/O Signal		
AAI141 AAI841 AAI143	IN□A	2-wire transmitter input +	Current input -	–
	IN□B	2-wire transmitter input -	Current input +	
AAI135 AAI835 (*1)	IN□A	2-wire transmitter input +	–	–
	IN□B	2-wire transmitter input -	Current input +	
	IN□C	–	Current input -	
AAR145 (*2)	IN□A	Resistance temperature detector input A	Potentiometer input, 100%	–
	IN□B	Resistance temperature detector input B	Potentiometer input, 0%	
	IN□C	Resistance temperature detector input B	Potentiometer input, variable	
AAP135	IN□A	2-wire power supply source	–	3-wire power supply source
	IN□B	2-wire power supply signal	2-wire voltage, contact +	3-wire power supply +
	IN□C	–	2-wire voltage, contact -	3-wire power supply -

□ is channel number.
*1:   If the power to models AAI141, AAI841, AAI135 and AAI835 is off or abnormal, the current input loop is in the open state. Do not use current signals with other receiving devices. When in use, also use an external receiver resistance in the voltage mode (Shunt resistant module part no. A1080RZ 250 ohm).
*2:   Wiring resistance for the signal cables of IN□A and IN□B must be identical.

Maximum Power Consumption of FIO

Table   Maximum Power Consumption of FIO (1/3)

Model name	Name	Max. current consumption 5 V DC (mA)	Max. current consumption 24 V DC (mA)
Bus Interface Module (FIO system) (N-IO system)			
EB401	ER Bus Interface Master Module	700	–
EC401	ESB Bus Coupler Module	500	–
EC402	ESB Bus Coupler Module (for AFV30□/AFV40□, 2-Port)	500	–
A2EN402	N-ESB Bus Coupler Module (for N-IO, 2-Port)	500	–
A2EN404	N-ESB Bus Coupler Module (for N-IO, 4-Port)	500	–
ANT401	Optical ESB Bus Repeater Master Module 5 km (for AFV30□/AFV40□)	500	–
ANT411	Optical ESB Bus Repeater Master Module 5 - 50 km (for AFV30□/AFV40□)	500	–
ANT502	Optical ESB Bus Repeater Slave Module 5 km (for AFV30□/AFV40□)	500	–
ANT512	Optical ESB Bus Repeater Slave Module 5 - 50 km (for AFV30□/AFV40□)	500	–
Analog I/O Modules (FIO system) (*1)			
AAI141	Analog Input Module (4 to 20 mA, 16-channel, Non-Isolated)	310	450
AAV141	Analog Input Module (1 to 5 V, 16-channel, Non-Isolated)	350	–
AAB141	Analog Input Module (1 to 5 V / 4 to 20 mA, 16-channel, Non-Isolated)	480	120
AAI841	Analog I/O Module (4 to 20 mA, 8-channel Input / 8-channel Output, Non-Isolated)	310	500
AAB841	Analog I/O Module (1 to 5 V Input, 4 to 20 mA Output, 8-channel Input / 8-channel Output, Non-Isolated)	310	250
AAB842	Analog I/O Module (1 to 5 V / 4 to 20 mA Input, 4 to 20 mA Output, 8-channel Input / 8-channel Output, Non-Isolated)	410	290
AAI143	Analog Input Module (4 to 20 mA, 16-channel, Isolated)	230	540
AAI543	Analog Output Module (4 to 20 mA, 16-channel, Isolated)	230	540
AAV144	Analog Input Module (-10 to +10 V, 16-channel, Isolated)	500	–
AAV544	Analog Output Module (-10 to +10 V, 16-channel, Isolated)	860	–
AAI135	Analog Input Module (4 to 20 mA, 8-channel, Isolated Channels)	360	450
AAI835	Analog I/O Module (4 to 20 mA, 4-channel Input/4-channel Output, Isolated Channels)	360	450
AAT145	TC/mV Input Module (TC: R, J, K, E, T, B, S, N/mV: -100 to 150 mV, 16-channel, Isolated Channels)	350	–
AAR145	RTD/POT Input Module (RTD: Pt100 ohm/POT: 0 to 10 kohm, 16-channel, Isolated Channels)	350	–
AAP135	Pulse Input Module (8-channel, Pulse Count, 0 to 10 kHz, Isolated Channels)	300	400
AAP149	Pulse Input Module for Compatible PM1 (16-channel, Pulse Count, 0 to 6 kHz, Non-Isolated)	400	–
AAP849	Pulse Input/Analog Output Module for compatible PAC (Pulse count Input, 4 to 20mA Output, 8-channel Input/8-channel Output, Non-Isolated)	310	250

*1:   Except for suffix code of -□K□, and -□M□.