

● **TC/RTD Input Modules (Isolated Channels)**

These modules receive signals from mV, thermocouple (TC), RTD, and potentiometer (POT), and they 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		AAT145	AAR145
<b>Number of input channels</b>		16, isolated channels	16, isolated channels
<b>Input signal</b>		TC: JIS C1602:1995 (*1), IEC584:1995 Type J, K, E, B (*2), R, S, T, N mV: -100 to 150 mV, -20 to 80 mV	RTD: JIS C1604:1997 (*3), IEC751:1995 Pt100 (3-wire type) POT: Total resistance 100 Ω to 10 kΩ Span resistance: 50 % or larger of total resistance
<b>Switching input signals</b>		TC/mV can be set individually for CH1 to CH16.	RTD/POT can be selected individually for CH1 to CH16.
<b>Allowable input voltage</b>		±5 V	±5 V
<b>Withstanding voltage</b>		Between input and system: 500 V AC (for single card: 1500 V AC), For 1 minute Between input channels: 200 V AC, For 1 minute	
<b>Input resistance</b>	<b>Power ON</b>	1 MΩ or larger	
	<b>Power OFF</b>	1 MΩ or larger	
<b>Accuracy</b>		±40 μV	RTD: ±150 mΩ POT: ±0.2 %/FS
<b>Allowable total resistance of signal source plus wiring</b>		1000 Ω or less	150 Ω or less (wiring resistance per wire) (*4)
<b>Effect of allowable signal source resistance (1000 Ω)</b>		±20 μV	—
<b>Reference junction compensation accuracy</b>		±1 °C (*5) (6)	—
<b>Measurement current</b>		—	RTD: 1 mA
<b>Data update period</b>		1 s	
<b>Burn-out</b>		All channels can be set together. Setting: not available/available (UP/DOWN) Detection time: 60 s	
<b>Temperature drift</b>		±80 μV/10 °C	RTD: ±0.3 Ω/10 °C POT: ±0.4 %/10 °C
<b>Maximum current consumption</b>		350 mA (5 V DC)	350 mA (5 V DC)
<b>Weight</b>		0.3 kg	
<b>External connection</b>		Dedicated cable (KS1)	Dedicated cable (KS8/AKB335)

- \*1: AAT145 also complies with JIS C1602:1981.
- \*2: Type B does not carry out temperature compensation and temperature under 44 °C is not measurable.
- \*3: AAR145 also complies with JIS C1604:1989 (Pt100, JPt100).
- \*4: Wiring resistance for the signal cables of IN□A and IN□C must be identical.
- \*5: This figure varies depending on the installation conditions.  
When the measured temperature is below 0 °C, multiply the following coefficient (K) with the above value.

$$K = \frac{\text{Thermoelectromotive force per degree at } 0\text{ }^{\circ}\text{C}}{\text{Thermoelectromotive force per degree at measured temperature}}$$

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- \*5: The reference junction compensation accuracy varies depending on the ambient temperature of the terminal board (AET4D).

**By the Terminal Board Only**

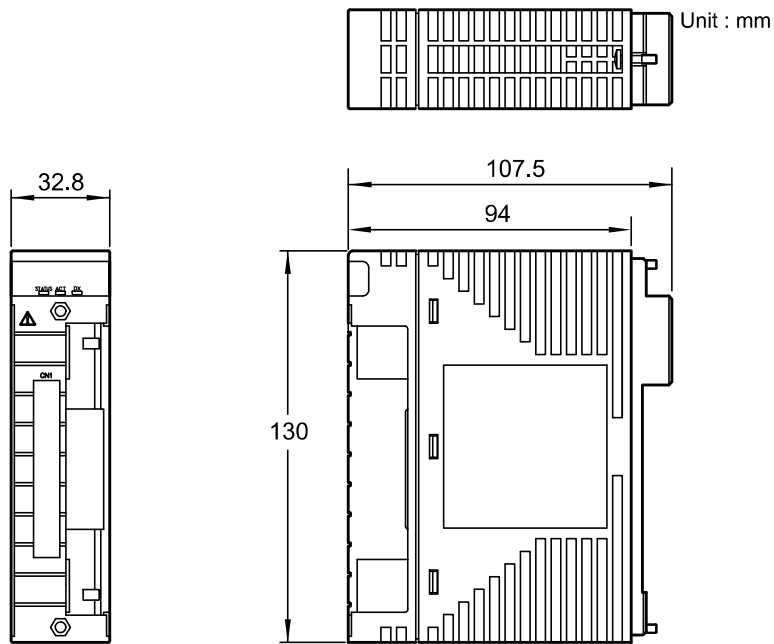
Temperature Environment	Reference Junction Compensation Accuracy
-20 to 0 °C	±1.5 °C
0 to 30 °C	±1.0 °C
30 to 70 °C	±1.5 °C

**Installing in the Standard Cabinet**

Temperature Environment	Reference Junction Compensation Accuracy
0 to 30 °C	±1.0 °C
30 to 50 °C	±1.5 °C

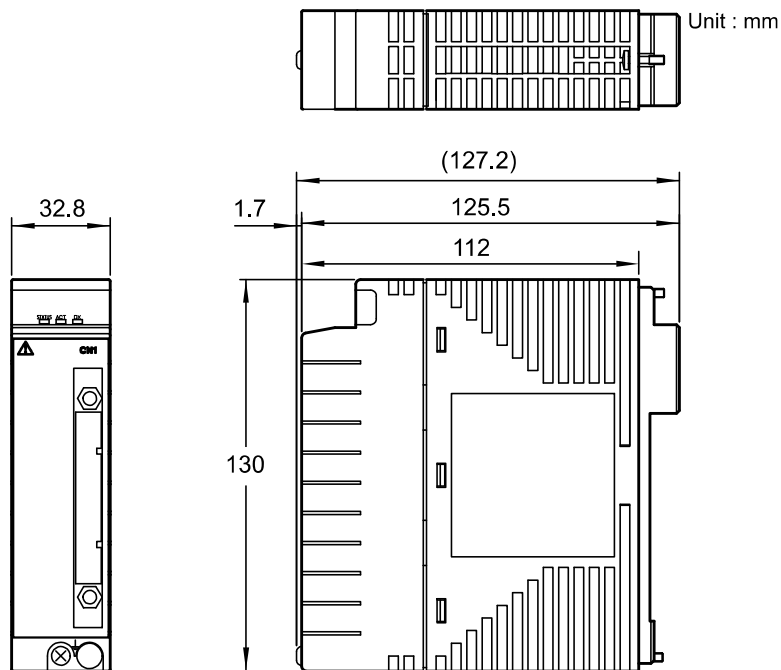
## EXTERNAL DIMENSIONS

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



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- AAT145, AAP849



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		Description
<b>Model</b>	AAI835	Analog I/O Module (4 to 20 mA, 4-channel input/4-channel output, Isolated channels)
<b>Suffix Codes</b>	-S	Standard type
	-H	With digital communication (HART protocol)
	5	With no explosion protection
	E	With explosion protection
	0	Basic type
	3	With ISA Standard G3 option and temperature (-20 to 70 °C) option
<b>Option Codes</b>	/B3A00	With KS Cable Interface Adapter [Model: ATB3A-00]
	/K4A00	With KS Cable Interface Adapter [Model: ATK4A-00]
	/I3S00	With Pressure Clamp Terminal Block for Isolated Analog [Model: ATI3S-00]
	/I3S10	With Pressure Clamp Terminal Block for Isolated Analog (surge absorber) [Model: ATI3S-10]
	/I3D00	With Dual Pressure Clamp Terminal Block for Isolated Analog [Model: ATI3D-00]
	/I3D10	With Dual Pressure Clamp Terminal Block for Isolated Analog (surge absorber) [Model: ATI3D-10]
	/CCC01	With Connector Cover for MIL Cable [Model: ACCC01]

		Description
<b>Model</b>	AAT145	TC/mV Input Module (16-channel, Isolated channels)
<b>Suffix Codes</b>	-S	Standard type
	5	With no explosion protection
	E	With explosion protection
	0	Basic type
	3	With ISA Standard G3 option and temperature (-20 to 70 °C) option

		Description
<b>Model</b>	AAR145	RTD/POT Input Module (16-channel, Isolated channels)
<b>Suffix Codes</b>	-S	Standard type
	5	With no explosion protection
	E	With explosion protection
	0	Basic type
	3	With ISA Standard G3 option and temperature (-20 to 70 °C) option

		Description
<b>Model</b>	AAP135	Pulse Input Module (8-channel, Pulse count, 0 to 10 kHz, Isolated channels)
<b>Suffix Codes</b>	-S	Standard type
	5	With no explosion protection
	E	With explosion protection
	0	Basic type
	3	With ISA Standard G3 option and temperature (-20 to 70 °C) option
<b>Option Codes</b>	/I3A00	With KS Cable Interface Adapter [Model: ATI3A-00]
	/K4A00	With KS Cable Interface Adapter [Model: ATK4A-00]
	/I3S00	With Pressure Clamp Terminal Block for Pulse [Model: ATI3S-00]
	/I3S10	With Pressure Clamp Terminal Block for Pulse (surge absorber) [Model: ATI3S-10]
	/I3D00	With Dual Pressure Clamp Terminal Block for Pulse [Model: ATI3D-00]
	/I3D10	With Dual Pressure Clamp Terminal Block for Pulse (surge absorber) [Model: ATI3D-10]
	/CCC01	With Connector Cover for MIL Cable [Model: ACCC01]

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