

General Specifications

Analog I/O Modules (for ProSafe-RS)



GS 32S06K30-21E

■ GENERAL

This GS describes the hardware specifications of the analog I/O modules that can be mounted on the safety node unit (SNB10D) and the safety control unit (SSC10□ or SSC50□).

■ STANDARD SPECIFICATIONS

● Current Input Module

This module inputs 4 to 20 mA signals from the field.

The SAI143 can be made dual redundant.

Item	Specifications
Model	SAI143 (*1)
Number of input channels	16-channel, module isolation
Rated input range	4 to 20 mA
Permissible input range	0 to 25 mA
Input impedance during P-ON	272.5 Ω (20 mA) to 362.5 Ω (4 mA)
Input impedance during P-OFF	500 kΩ minimum
Rated accuracy	±16 μA
Data update frequency	40 ms
Temperature drift	±16 μA/10 °C
Transmitter power supply	16.15 V minimum (at 20 mA) 26.4 V maximum (at 0 mA) (Output current limit: 25 mA)
2/4-wire setting	Individual channel setting Changed by setting pins
Withstand voltage	1.5 kV AC between input signal and system (*2)
Maximum current consumption	5 V system: 320 mA, 24 V system: 550 mA
Weight	0.34 kg (For pressure clamp terminal block or MIL cable) 0.39 kg (With signal cable interface adapter)
External connection	Pressure clamp terminal MIL cable Dedicated signal cable
Support PRM	Available (SAI143-H)

*1: No Zener barriers can be connected to this module. An isolation barrier should be used when an intrinsic safety instrumented system is used.

*2: 500 V AC when dedicated signal cable is used.

● **Voltage Input Module**

This module inputs 1 to 5 V/1 to 10 V signals from the field.

The SAV144 can be made dual redundant.

Item	Specifications
Model	SAV144
Number of input channels	16-channel, module isolation
Rated input range	1 to 5 V/1 to 10 V
Permissible input range	±30 V
Input impedance during P-ON	1 MΩ
Input impedance during P-OFF	100 kΩ
Rated accuracy	1 to 5 V: ±4 mV 1 to 10 V: ±9 mV
Data update frequency	40 ms
Temperature drift	1 to 5 V: ±4 mV/10 °C 1 to 10 V: ±9 mV/10 °C
Withstand voltage	1.5 kV AC between input signal and system (*1)
Maximum current consumption	5 V system: 300 mA 24 V system: 140 mA
Weight	0.24 kg (For pressure clamp terminal block or MIL cable) 0.29 kg (With signal cable interface adapter)
External connection	Pressure clamp terminal MIL cable Dedicated signal cable

*1: 500 V AC when dedicated signal cable is used.

● **Current Output Module**

This module outputs 4 to 20 mA signals to the field.

The SAI533 can be made dual redundant.

Item	Specifications
Model	SAI533
Number of output channels	8 channel, module isolation
Rated output range	4 to 20 mA
Maximum range of guaranteed precision	1.25 to 23 mA
Output range	1.25 to 23 mA
Allowable load resistance @ rated range	230 to 600 Ω
Accuracy	±48 μA
Data update frequency	40 ms
Temperature drift	±16 μA/10 °C
Withstand voltage	1.5 kV AC between output signal and system (*1)
Maximum current consumption	5 V system: 320 mA 24 V system: 300 mA
Weight	0.26 kg (For pressure clamp terminal block or MIL cable) 0.33 kg (With signal cable interface adapter)
External connection	Pressure clamp terminal MIL cable Dedicated cable
Support PST(*2)	Available

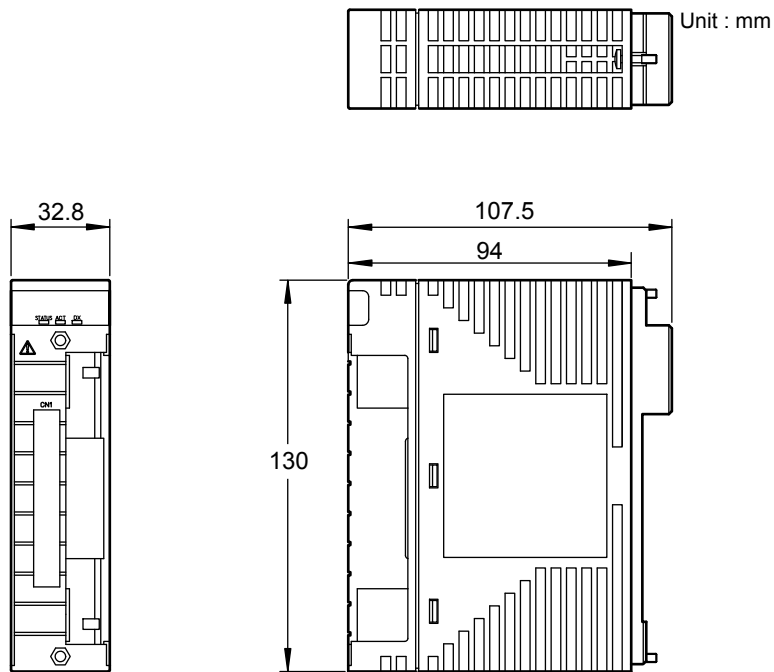
*1: 500 V AC when dedicated signal cable is used.

*2: Diagnosis in operation of PST(Partial Stroke Test)

EXTERNAL DIMENSIONS

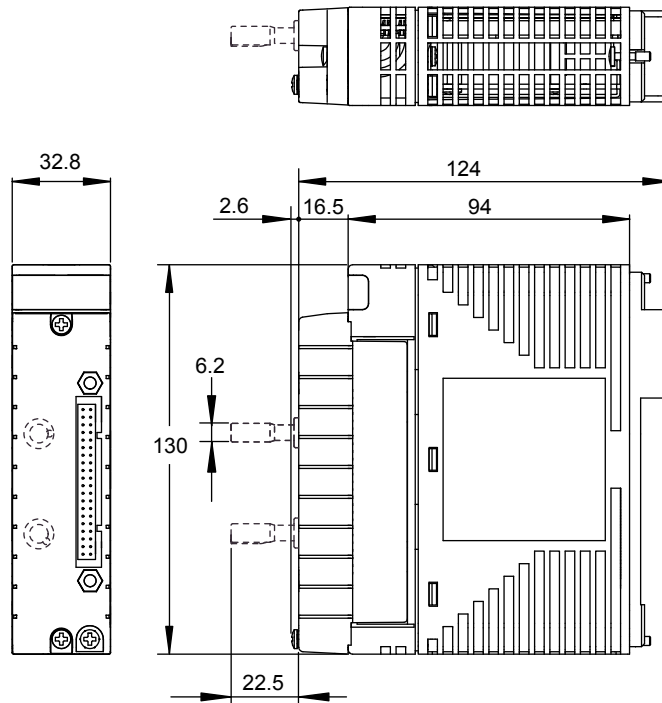
SAI143, SAV144 and SAI533 Analog Input/Output Modules

For pressure clamp and MIL cable



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With signal cable interface adapter



Note: Dash line expresses prevention pin of false insertion.
This pin is added if option code /PRP is specified.

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■ MODEL AND SUFFIX CODES

		Description
Model	SAI143	Analog Input Module (4 to 20 mA, 16-channel, module isolation)
Suffix Codes	-S	Standard type
	-H	With HART communication [Release: R1.02.00] (*1)
	0	For pressure clamp terminal block or MIL cable
	3	With signal cable interface adapter (*2)
Option Codes	/A4S00	With pressure clamp terminal block for analog [Model: STA4S-00]
	/A4S10	With pressure clamp terminal block for analog (with surge absorber) [Model: STA4S-10]
	/A4D00	With dual-redundant pressure clamp terminal block for analog (*3) [Model: STA4D-00]
	/A4D10	With dual-redundant pressure clamp terminal block for analog (with surge absorber) (*3) [Part name: STA4D-10]
	/PRP	With prevention pin of false insertion (*4)
	/CCC01	With connector cover for MIL cable (for flat ribbon cable) [Model: SCCC01]

*1: For dual-redundant pressure clamp terminal block, please do not use STA4D-□0 S1.

*2: When selecting SAI143-□33, you can not choose the option code of pressure clamp terminal block and MIL cable connector.

*3: When using this module in a dual-redundant configuration, order an additional module with the same specifications but without option codes.

*4: A mechanism to prevent wrong type I/O module insertion is supported with signal cable. The signal cable used with this I/O module must have option code /SAI143-S33/H33.

		Description
Model	SAV144	Analog input module (1 to 5 V/1 to 10 V, 16-channel, module isolation)
Suffix Codes	-S	Standard type
	0	For pressure clamp terminal block or MIL cable
	3	With signal cable interface adapter (*1)
	3	With ISA Standard G3 and temperature (-20 to 70 °C)
Option Codes	/A4S00	With pressure clamp terminal block for analog [Model: STA4S-00]
	/A4S10	With pressure clamp terminal block for analog (with surge absorber) [Model: STA4S-10]
	/A4D00	With dual-redundant pressure clamp terminal block for analog (*2) [Model: STA4D-00]
	/A4D10	With dual-redundant pressure clamp terminal block for analog (with surge absorber) (*2) [Part name: STA4D-10]
	/PRP	With prevention pin of false insertion (*3)
	/CCC01	With connector cover for MIL cable (for flat ribbon cable) [Model: SCCC01]

*1: When selecting SAV144-S33, you can not choose the option code of pressure clamp terminal block and MIL cable connector.

*2: When using this module in a dual-redundant configuration, order an additional module with the same specifications but without option codes.

*3: A mechanism to prevent wrong type I/O module insertion is supported with signal cable. The signal cable used with this I/O module must have option code /SAV144-S33.

		Description
Model	SAI533	Analog Output Module (4 to 20 mA, 8-channel, module isolation)
Suffix Codes	-H	With HART communication
	0	For pressure clamp terminal block or MIL cable
	3	With signal cable interface adapter (*1)
	3	With ISA Standard G3 and temperature (-20 to 70 °C)
Option Codes	/A4S00	With pressure clamp terminal block for analog [Model: STA4S-00]
	/A4S10	With pressure clamp terminal block for analog (with surge absorber) [Model: STA4S-10]
	/A4D00	With dual-redundant pressure clamp terminal block for analog (*2) [Model: STA4D-00]
	/A4D10	With dual-redundant pressure clamp terminal block for analog (with surge absorber) (*2) [Model: STA4D-10]
	/PRP	With prevention pin of false insertion (*3)
	/CCC01	With connector cover for MIL cable (for flat ribbon cable) [Model: SCCC01]

- *1: When selecting SAI533-H33, you can not choose the option code of pressure clamp terminal block and MIL cable connector.
- *2: When using this module in a dual-redundant configuration, order an additional module with the same specifications but without option codes.
- *3: A mechanism to prevent wrong type I/O module insertion is supported with signal cable. The signal cable used with this I/O module must have option code /SAI533-H33.

■ APPLICABLE STANDARDS

Refer to the GS “ProSafe-RS Safety Instrumented Systems Overview.”

■ ORDERING INFORMATION

Specify the model and suffix codes.

■ TRADEMARKS

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