

# General Specifications

GS 32P06K20-01EN

Model S2BN1D  
Base Plate (for N-IO)



System Model: S2ZN1D  
N-IO I/O Unit

## ■ GENERAL

This General Specifications (GS) provides the hardware specifications of the Base plate (S2BN1D) that configures N-IO I/O unit used in ProSafe-RS system.

## ■ STANDARD SPECIFICATIONS

The Base plate (for N-IO) is provided with a field interface function to connect a signal from a field device to the I/O module. This base plate also has a function to connect the F-SB bus, a communication bus with the Node interface unit, and a function to supply field power to the I/O module.

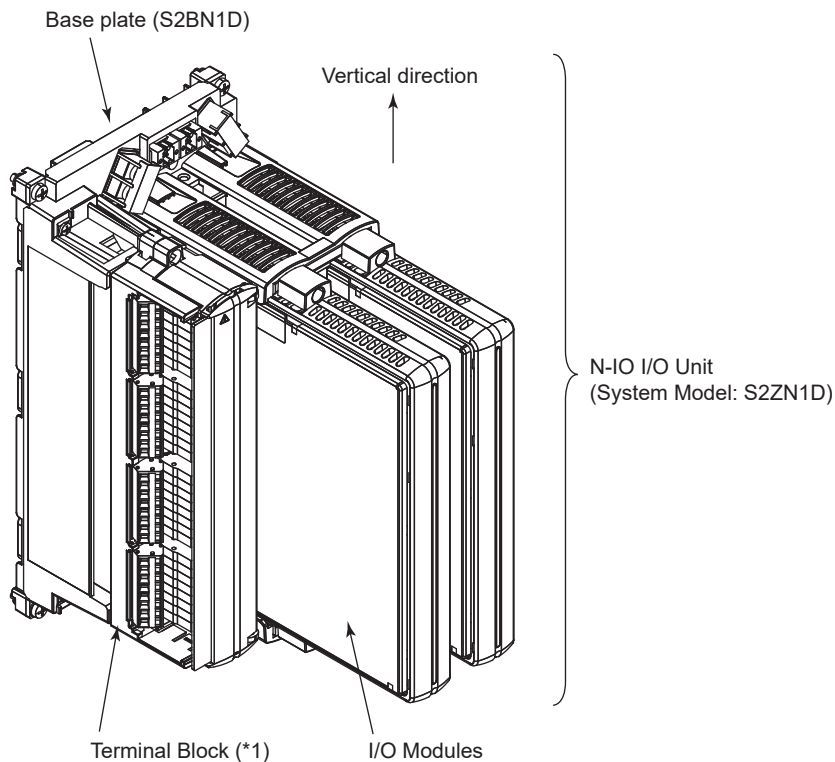
### ● Base Plate with disconnecting terminal (S2BN1D)

The N-IO I/O unit (system model: S2ZN1D) is configured by installing I/O modules in the Base Plate with disconnecting terminal (S2BN1D). The I/O modules can be configured to single or dual-redundant.

Each channel of the base plate is equipped with a disconnecting terminal to disconnect the I/O module from the field terminal. The following table shows the I/O module that can be mounted on the base plate with disconnecting terminal. S2BN1D-□9□□□ (Cable connector interface) is not equipped with any disconnecting terminals.

Table I/O Module

Model	Name
S2MMM843	Analog Digital I/O Module (16 channels, Isolated)
S2MDV843	Digital I/O Module (16 channels, Isolated)



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\*1: For S2BN1D-□9□□□, there is a cable connector, instead of a terminal block.

Figure Hardware Configuration (Base Plate: S2BN1D)

**Basic Specifications**

Item		Specification
<b>Mounting (*1)</b>		DIN rail mount type Wall mount type (with M4 × 4 screws)
<b>Configuration of I/O module</b>		Redundant or Single (*5)
<b>Number of channels</b>		16 channels
<b>Connection</b>	<b>Field signal</b>	Pressure Clamp Terminal (S2BN1D-□1□□□) Spring Clamp Terminal (S2BN1D-□2□□□) Cable connector (S2BN1D-□9□□□) (*6)
	<b>F-SB bus</b>	Connected by F-SB Bus Cable (S2KLF10)
	<b>System power supply</b>	Connected by the Power supply cable for base plate (S2KPB10)
	<b>Grounding</b>	M3 screw terminal
<b>Withstanding voltage (*2) (*3)</b>		Between input/output and system : 1500 V AC for 1 minute 42 V DC, continuous
<b>Insulation resistance</b>		100 MΩ or more (500 V DC)
<b>Weight</b>		Approx. 1.4 kg
<b>Field power supply (*4) (*9) (*10)</b>	<b>Rating</b>	24 V DC +20%/-10%, up to 11.0 A
	<b>Connection</b>	Connected by the cable to the field power supply terminal (EP+, EP-) (*7)
	<b>Over voltage protection (OVP) detection level</b>	32 V or lower
	<b>Withstanding voltage between the output and the ground</b>	500 V AC or higher for 1minute
	<b>capacitance between the output and the ground</b>	0.4 μF or less (*8)

\*1: Vertical mounting only.

\*2: When using the digital output function or 3-wire analog input function with S2BN1D-□9□□□, a field power supply is required. These voltages show the case using the field power supply floating. When the field power supply is grounded, the system (functional) ground is connected to the field ground, which is not isolated. For the higher noise immunity, floating the field power supply is recommended.

\*3: When the withstanding voltage of the field power supply between the output and the ground is lower than the value shown in the table above, these voltages are adopted as the withstanding voltage of the field power supply.

\*4: When using the digital output function or 3-wire analog input function with S2BN1D-□9□□□, a field power supply is necessary. Use the field power supply that meets the specifications on the right.

\*5: A Dummy Cover (S2DCV02) must be attached to any unused slot of the I/O module.

\*6: For S2BN1D-□9□□□, a signal cable (AKB331 or AKB651) and a terminal board (A2BM4) must be prepared separately. For the details of the connection, please refer to "Field Device Connection (for N-IO)" (GS 32P06K10-01EN).

\*7: A cable must be prepared separately.

\*8: When using multiple power supplies connected in parallel, the total capacitance must meet this condition.

\*9: The rated current of the power supply when connecting the 3-wire device is as follows.

When using AKB651: 1A / channel (inrush current 2A or less)

When using AKB331: 0.5A / channel (inrush current 2A or less)

For the load current of DO device, please refer to "S2MMM843 I/O module (for N-IO)" (GS 32P06K30-01EN) or "S2MDV843 I/O module (for N-IO)" (GS 32P06K31-01EN).

\*10: When using the digital output function or 3-wire analog input function, the total load current of all channels is limited according to the derating specifications due to the ambient temperature of modules. For the details, please refer to "S2MMM843 I/O module (for N-IO)" (GS 32P06K30-01EN).

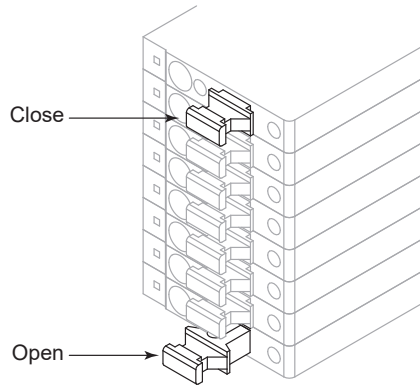
**Precautions on using the Disconnecting Terminal**

In case the I/O module channel is set to output (AO or DO), ensure to disable the output signal prior to open or close the disconnecting terminal. While the I/O module is not used for a long period of time, keep the disconnecting terminal closed is recommended. Or, open/close the disconnecting terminal once prior to using, if it is kept open for a while.

The figure below shows open and close statuses of the disconnecting terminal.

Close : An I/O module and a field terminal are connected.

Open : An I/O module and a field terminal are disconnected.



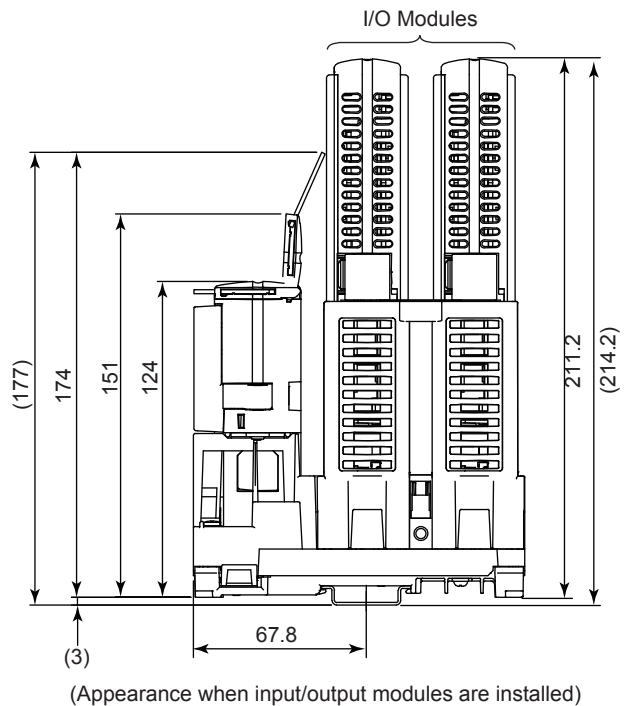
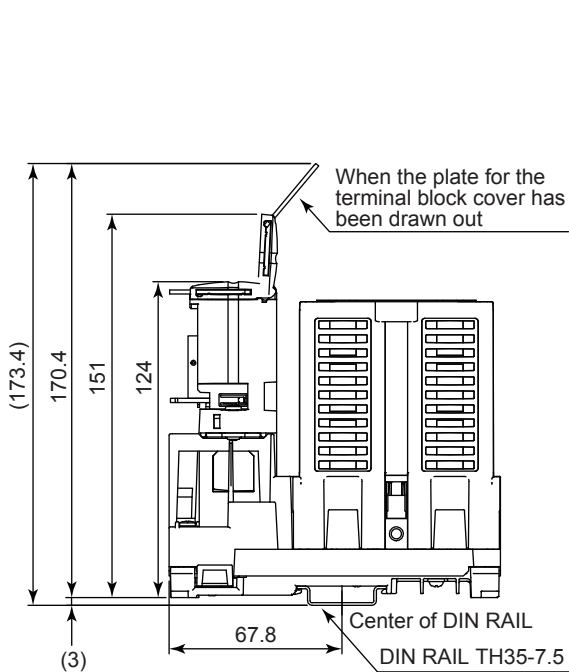
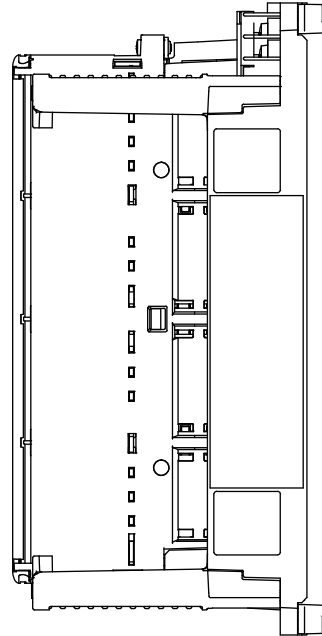
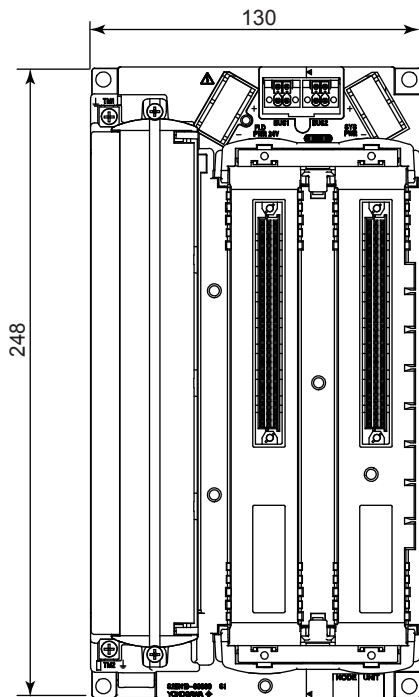
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**Figure Open or Close state of the Disconnecting Terminal**

■ EXTERNAL DIMENSION

- Base Plate with disconnecting terminal, DIN rail mount type (S2BN1D-01□□□ and -02□□□)

Unit: mm



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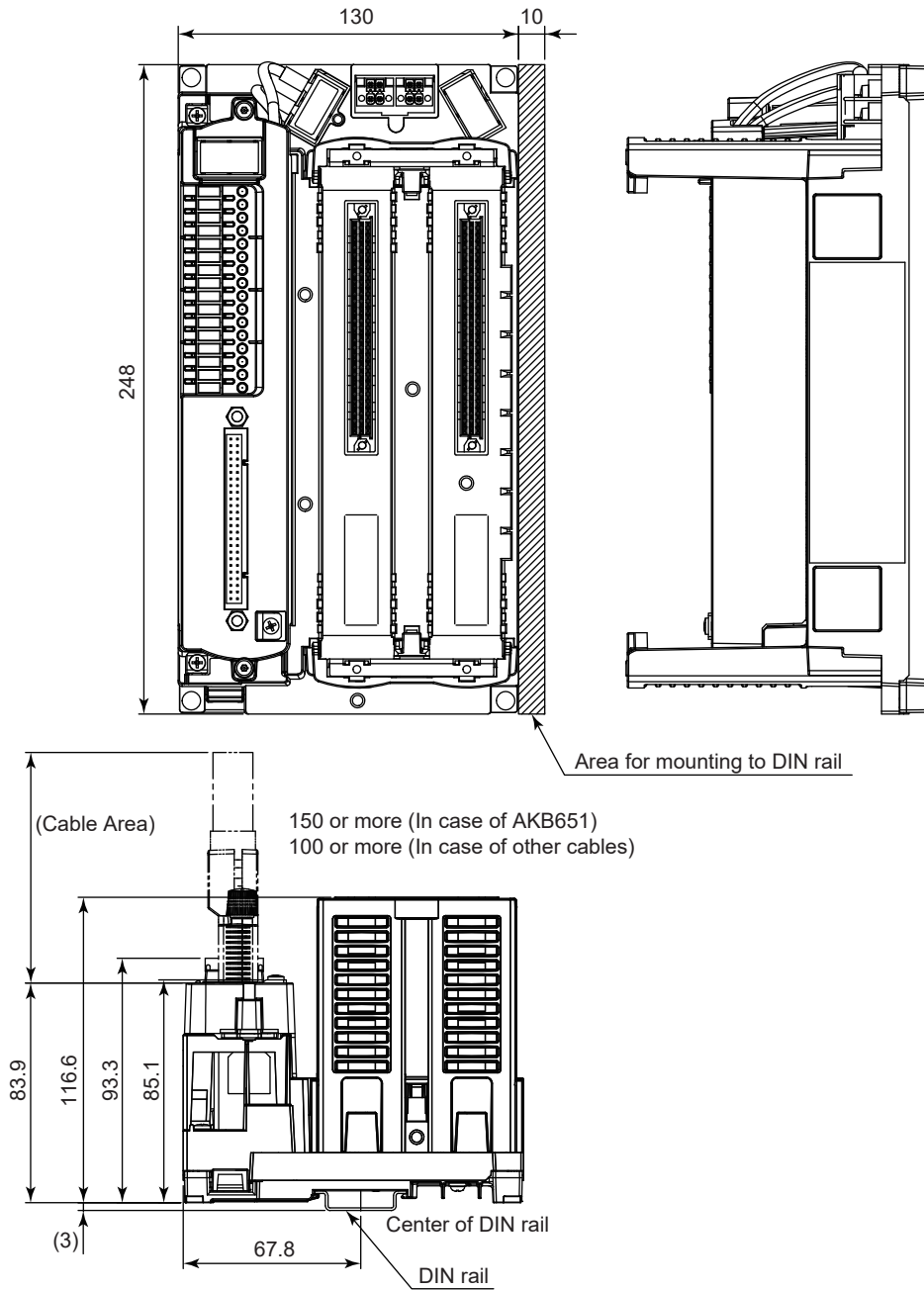
Nominal tolerance:

Nominal tolerance is  $\pm 0.8$  mm for the dimensions of 0.5 mm or more and 120 mm or less, and the combined nominal tolerance is  $\pm 1.5$  mm.

The nominal tolerance is in accordance with JEM 1459 for the dimensions over 120 mm.

● Base Plate, DIN rail mount type (S2BN1D-09□□□)

Unit: mm



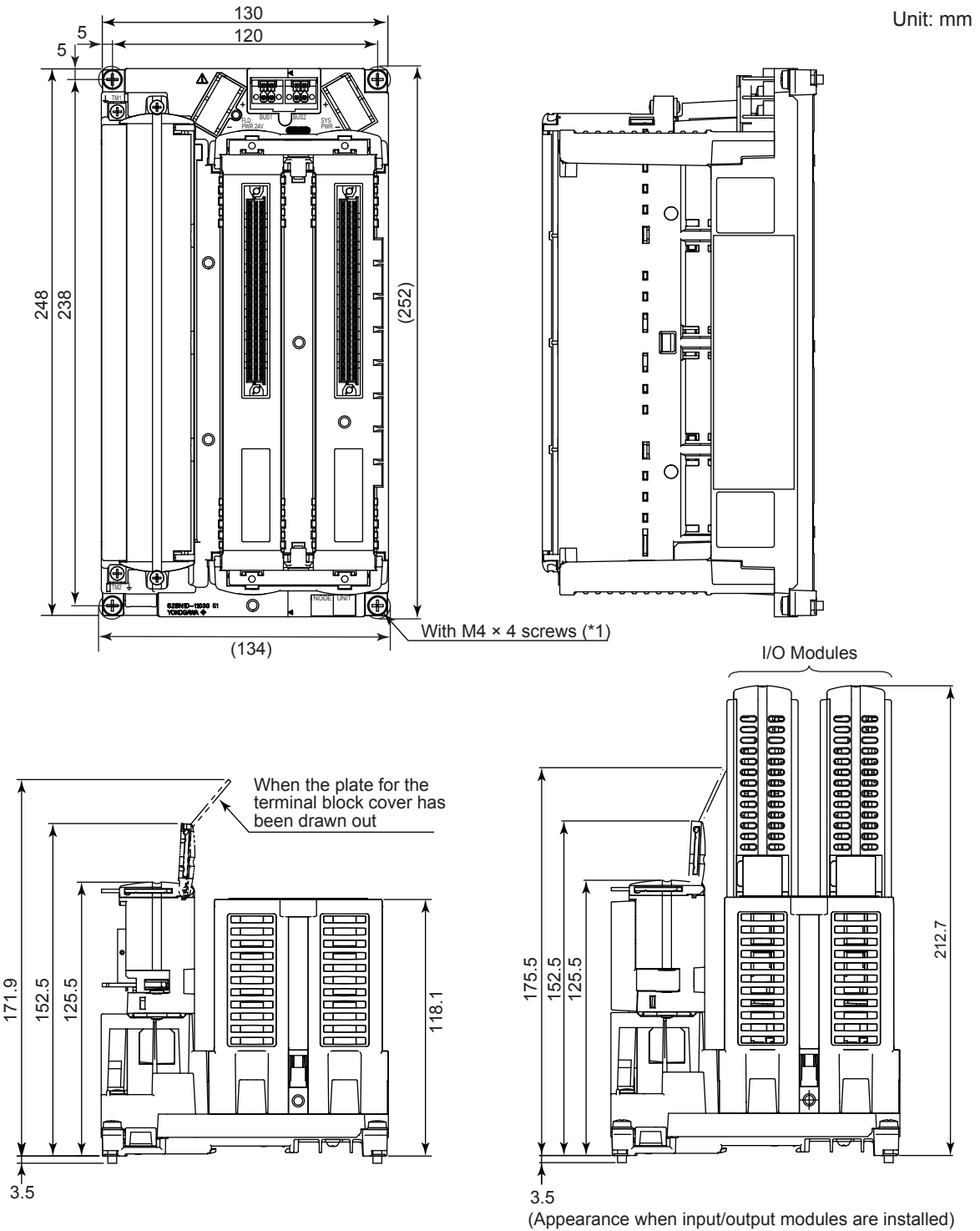
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Nominal tolerance:

Nominal tolerance is  $\pm 0.8$  mm for the dimensions of 0.5 mm or more and 120 mm or less, and the combined nominal tolerance is  $\pm 1.5$  mm.

The nominal tolerance is in accordance with JEM 1459 for the dimensions over 120 mm.

● Base Plate with disconnecting terminal, Wall mount type (S2BN1D-11□□□ and -12□□□)



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Nominal tolerance:

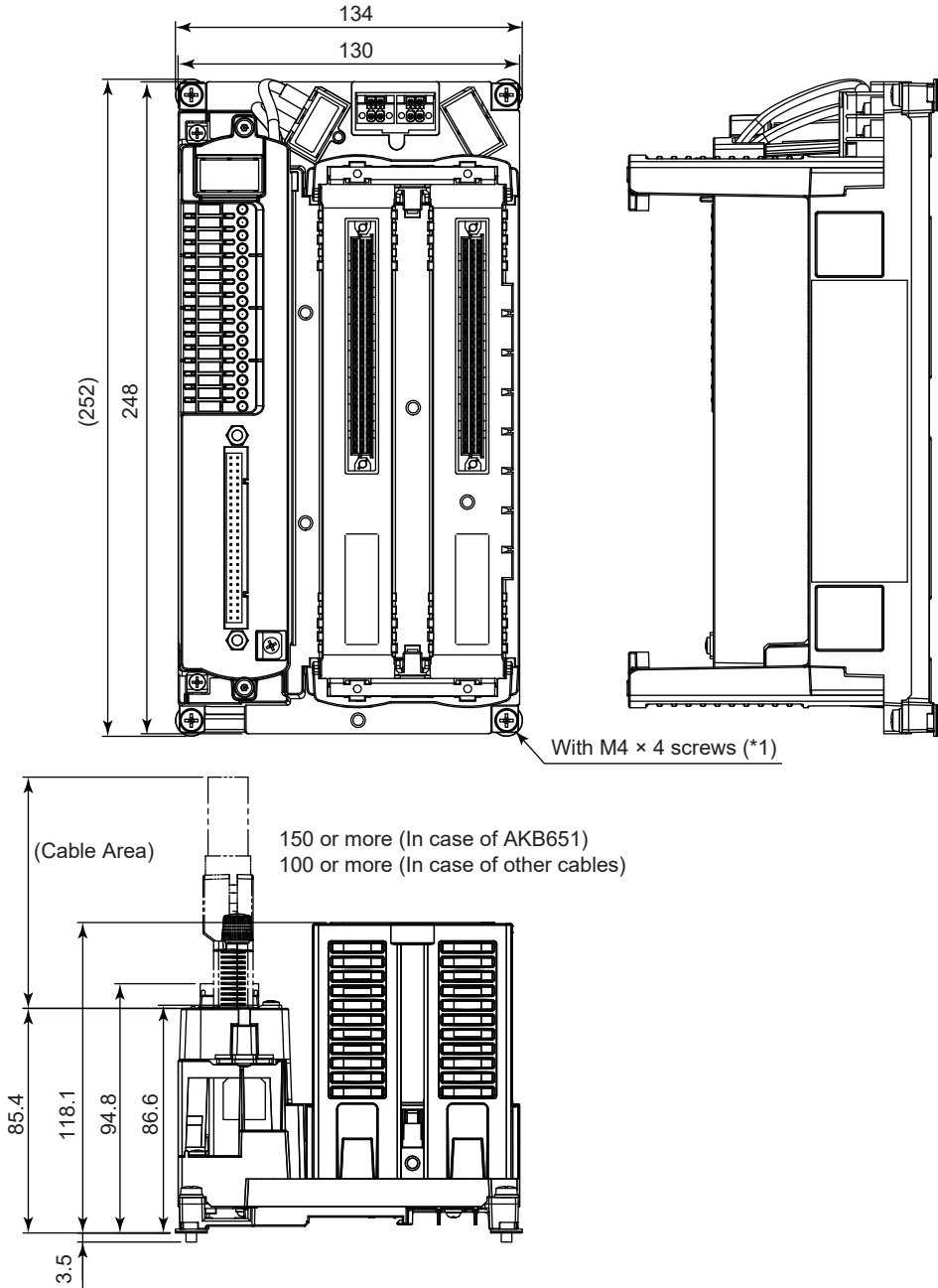
Nominal tolerance is ± 0.8 mm for the dimensions of 0.5 mm or more and 120 mm or less, and the combined nominal tolerance is ± 1.5 mm.

The nominal tolerance is in accordance with JEM 1459 for the dimensions over 120 mm.

\*1: With M4 screws: effective screw length 3.5 mm.

● Base Plate, Wall mount type (S2BN1D-19□□□)

Unit: mm



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Nominal tolerance:

Nominal tolerance is  $\pm 0.8$  mm for the dimensions of 0.5 mm or more and 120 mm or less, and the combined nominal tolerance is  $\pm 1.5$  mm.

The nominal tolerance is in accordance with JEM 1459 for the dimensions over 120 mm.

\*1: With M4 screws: effective screw length 3.5 mm.

## ■ MODEL AND SUFFIX CODES

### Base Plate with disconnecting terminal (for N-I/O)

		Description
<b>Model</b>	S2BN1D	Base Plate with disconnecting terminal (for N-I/O, 16 channels)
<b>Suffix Codes</b>	-0	DIN rail mount type
	-1	Wall mount type
	0	With no terminal block (only for N-I/O field enclosure maintenance) (*1)
	1	Pressure clamp terminal for field wiring
	2	Spring clamp terminal for field wiring
	9	Cable connector interface (for AKB cable) (*2) (*3)
	0	With no explosion protection
	1	With explosion protection
	3	With ISA Standard G3 and wide range temperature (-40 to 70 °C) (*2)
<b>Option Codes</b>	/L	With TAG label (*3) (*4)
	/T	With printed TAG label (*3) (*5)

\*1: This suffix code is dedicated to the base plate (S2BN1D-10□30) constituting the following N-I/O field enclosure related products.

S2NN70D (system model: S2ZN70D)

S2NN60D (system model: S2ZN60D)

This suffix code can not be processed in standard order.

\*2: When "Cable connector interface" is selected, operation temperature range of suitable cable (AKB331 and AKB651) is -20 to 70 °C.

\*3: When "Cable connector interface" is selected, "With tag label", and "With printed tag label" cannot be selected.

\*4: The tag label (Part No. T9043VH) is affixed to the plate of the terminal block cover.

\*5: The tag label (Part No. T9043VH) with a tag number is affixed to the plate of the terminal block cover.

### Dummy Cover

		Description
<b>Model</b>	S2DCV02	Dummy Cover (for N-I/O IO module)
<b>Suffix Codes</b>	-0	Always 0

Note: A Dummy Cover must be attached to any unused slot of the I/O module.

## ■ SOFTWARE

S2BN1D is supported by R4.01 or later.

## ■ CONFORMITY STANDARDS

Refer to "ProSafe-RS Standards Compliant Models" (GS 32P01B60-01EN).

The following shows the CE conformity models for each of the base plates.

Table CE Conformity Model

System model	Components
S2ZN1D	S2BN1D, S2MMM843, S2MDV843, S9990FA(*1), AKB331(*2), AKB651(*2), A2BM4(*2)

Note: S2ZN1D does not have suffix or option codes.

\*1: The pressure clamp terminal block (S9990FA) is dedicated to the terminal block constituting the following N-I/O field enclosure related products.

S2NN70D (system model: S2ZN70D)

S2NN60D (system model: S2ZN60D).

This part is used in combination with S2BN1D-10□30, and it can not be processed in standard order.

The combination of S2BN1D-10□30 and S9990FA is equivalent to S2BN1D-11□30.

\*2: These models are used in combination with S2BN1D-□9□□□.



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## ■ STANDARD ACCESSORIES

The following accessory is supplied with the product.

Parts Name	Part No.	Quantity
FG Cable	S9905UV	1

## ■ ORDERING INFORMATION

Specify the model, suffix code(s), and option code(s).

For selecting the right products for explosion protection, please refer to TI 32S01J30-01E without fail.

## ■ TRADEMARK ACKNOWLEDGMENT

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