

General Specifications

A2NN70D, A2NN60D, A2CB60
N-IO field enclosure
(System Models: A2ZN70D, A2ZN60D)



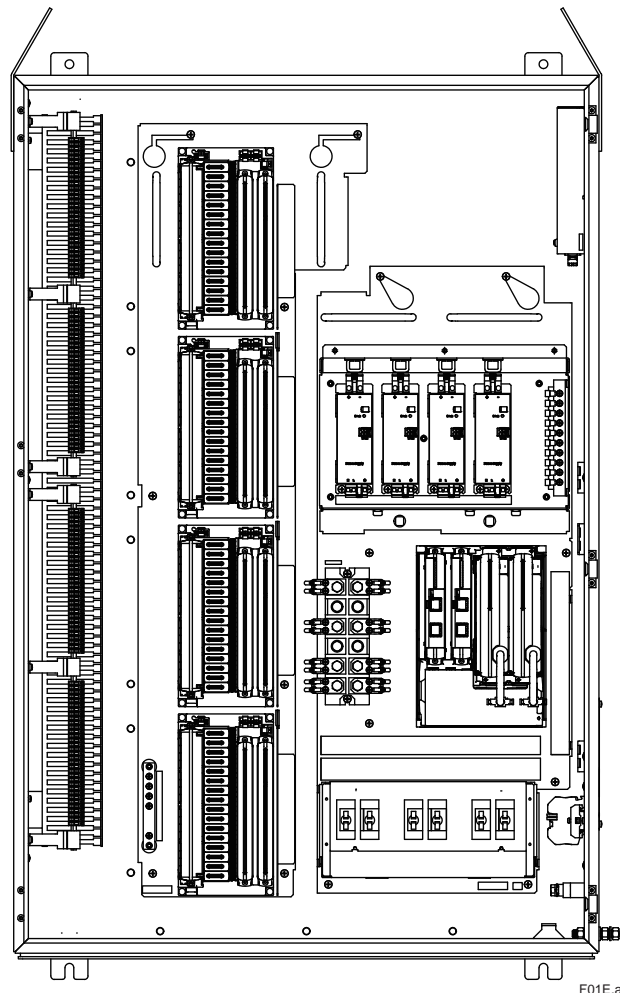
GS 33J62R10-01EN

[Release 6]

■ GENERAL

This General Specifications (GS) covers the hardware specifications of an N-IO field enclosure and its related products (A2NN70D style S3, A2NN60D style S2, A2CB60 style S3, and A2CX100). The N-IO field enclosure (A2NN70D) [System model (*1): A2ZN70D] is a standardized remote I/O enclosure for outdoor use, which provides the accessories including field power supply units with optimized design. The N-IO field enclosure consists of two components, one is a dedicated enclosure with terminal blocks and the other is a base unit with an N-IO node including field power supply units. It is possible to order the enclosure (A2CB60) and the base unit (A2NN60D) [System model (*1): A2ZN60D] individually. In the individual orders, the base unit can be shipped separately from the enclosure. Then this enables the user to install the base unit into the enclosure at a suitable timing. This is defined as "Flexible installation". The flexible installation allows a project to perform the acceptance test using the base unit at factory in parallel with field wiring work to the enclosure at the customer site. And the flexible installation minimizes the exposure of the base unit to the harsh environment such as dust, water, and electromagnetic noise by keeping the base unit in the warehouse during field wiring work to the enclosure.

*1: For the system model, refer to "■ SYSTEM MODEL" in this document.

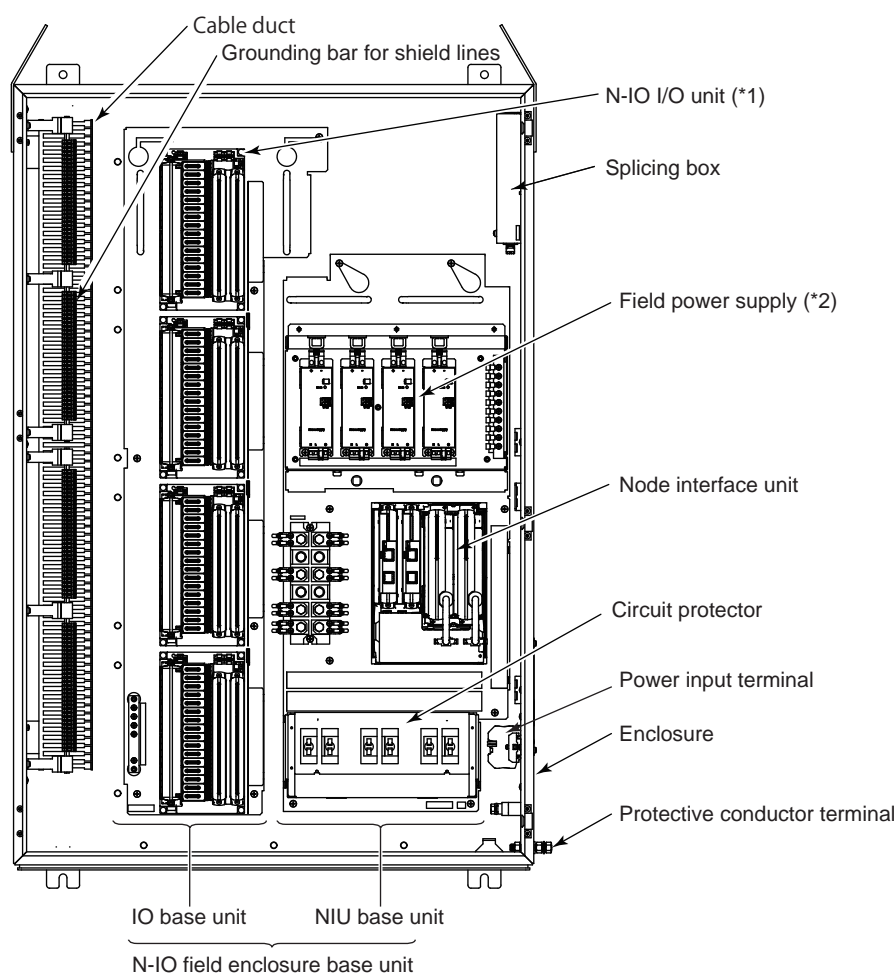


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Figure N-IO field enclosure

■ HARDWARE CONFIGURATION

● A2NN70D (N-IO field enclosure)

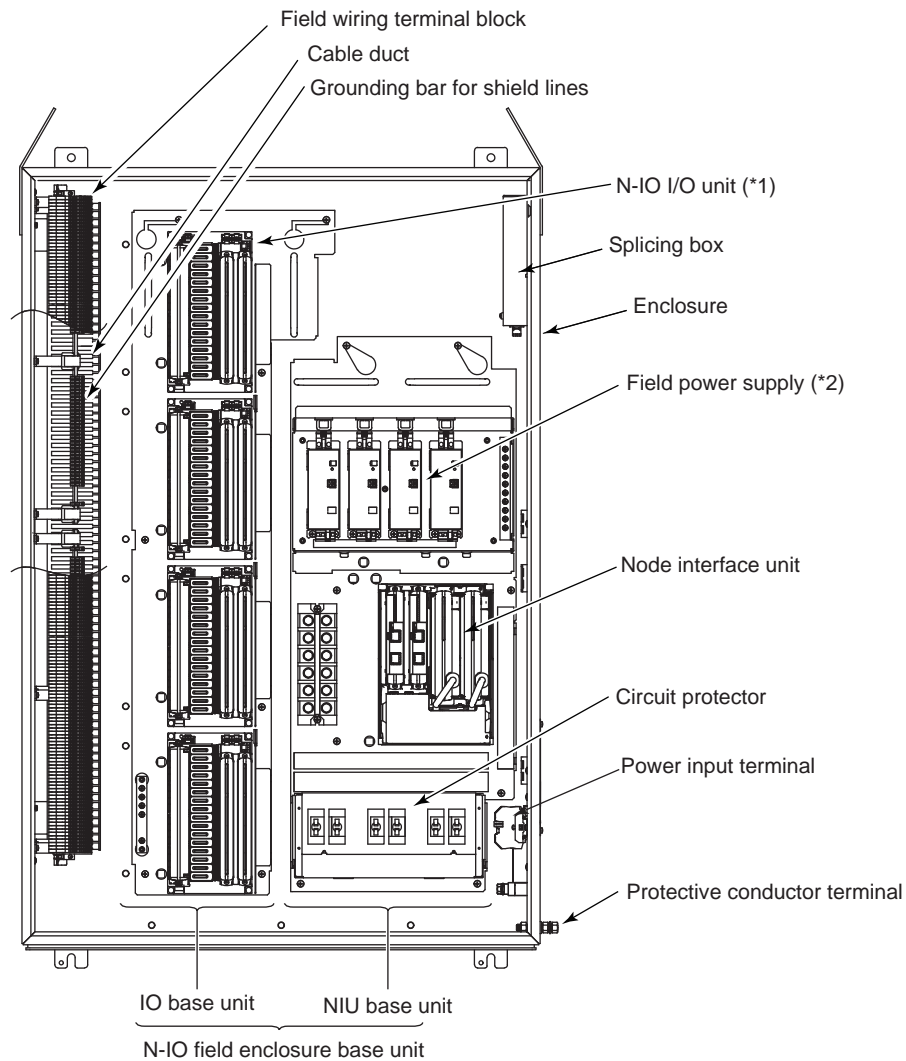


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*1: I/O module and I/O adaptor can be selected by the option codes.

*2: When the suffix codes for "With 40 A field power supply" (A2NN70D-□□Q□□□□□□□□□□□□) are selected, the four field power supply supplies power to the field devices through N-IO I/O unit.
When the suffix codes for "With 20 A field power supply" (A2NN70D-□□R□□□□□□□□□□□□) are selected, the two field power supply supplies power to the field devices through N-IO I/O unit, and the other two power supply supplies power to power supply units of the node interface unit.

Figure A2NN70D configuration (When the suffix codes for "With no field wiring terminal block" (A2NN70D-□□□□□□□□□□0□□□□□□) is selected.)



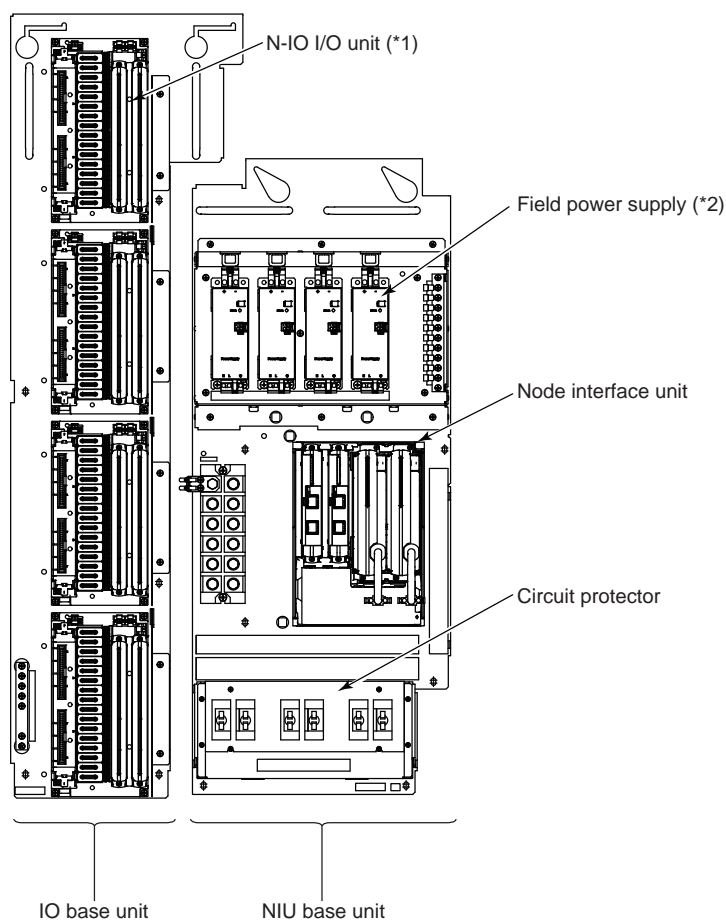
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*1: I/O module and I/O adaptor can be selected by the option codes.

*2: When the suffix codes for "With 20 A field power supply" (A2NN70D-□□R□□□□□□□□□□□□□□) is selected, the two field power supply supplies power to the field devices through N-IO I/O unit, and the other two power supply supplies power to power supply units of the node interface unit.

Figure A2NN70D configuration (When the suffix codes for "With field wiring terminal block" (A2NN70D-□□□□□□□□□1□□□□□□□□) is selected.)

● A2NN60D (N-IO field enclosure base unit)



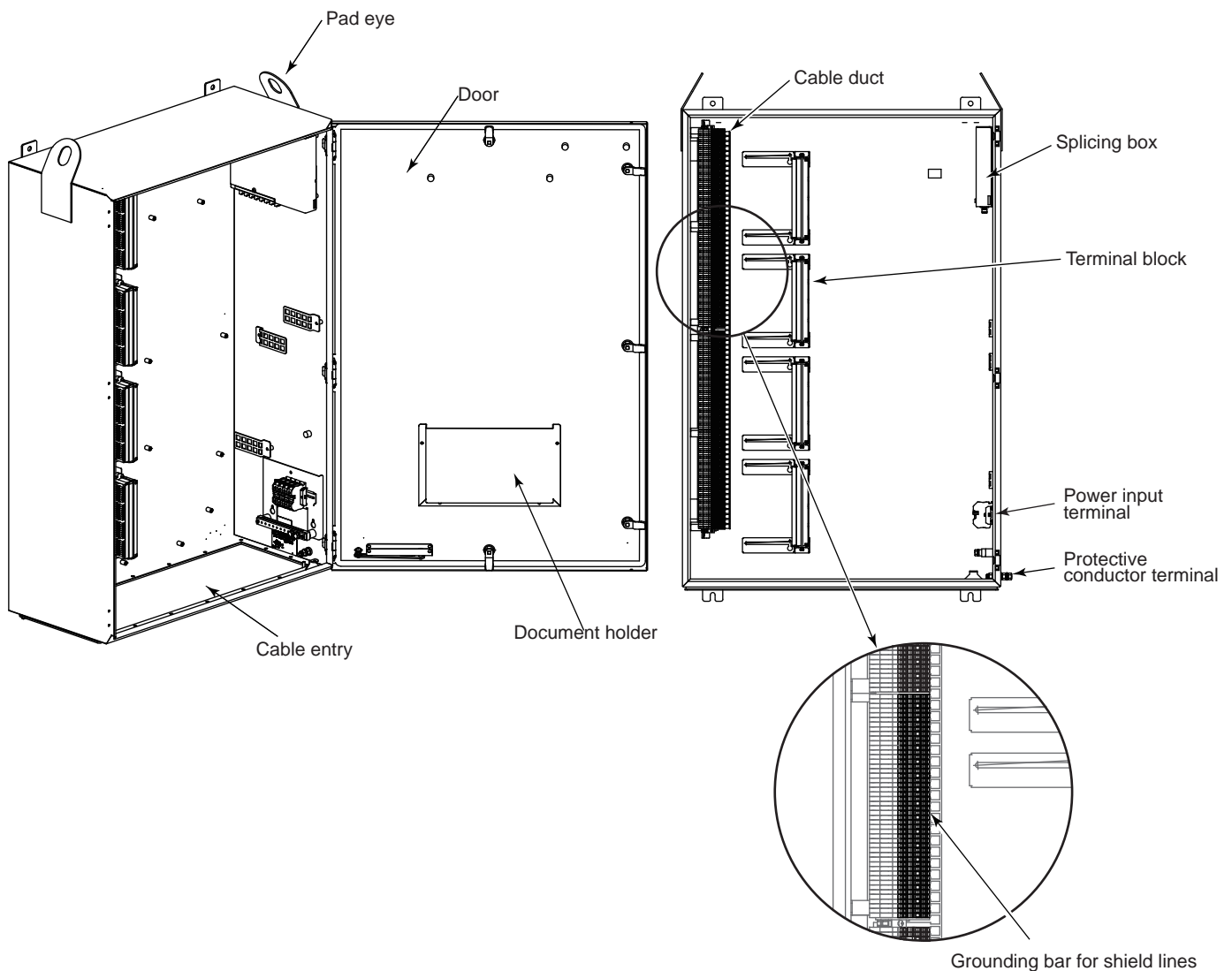
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*1: I/O module and I/O adaptor can be selected by the option codes.

*2: When the suffix codes for "With 40 A field power supply" (A2NN60D-□□Q□□□□□□□) are selected, the four field power supply supplies power to the field devices through N-IO I/O unit.
When the suffix codes for "With 20 A field power supply" (A2NN60D-□□R□□□□□□□) are selected, the two field power supply supplies power to the field devices through N-IO I/O unit, and the other two power supply supplies power to power supply units of the node interface unit.

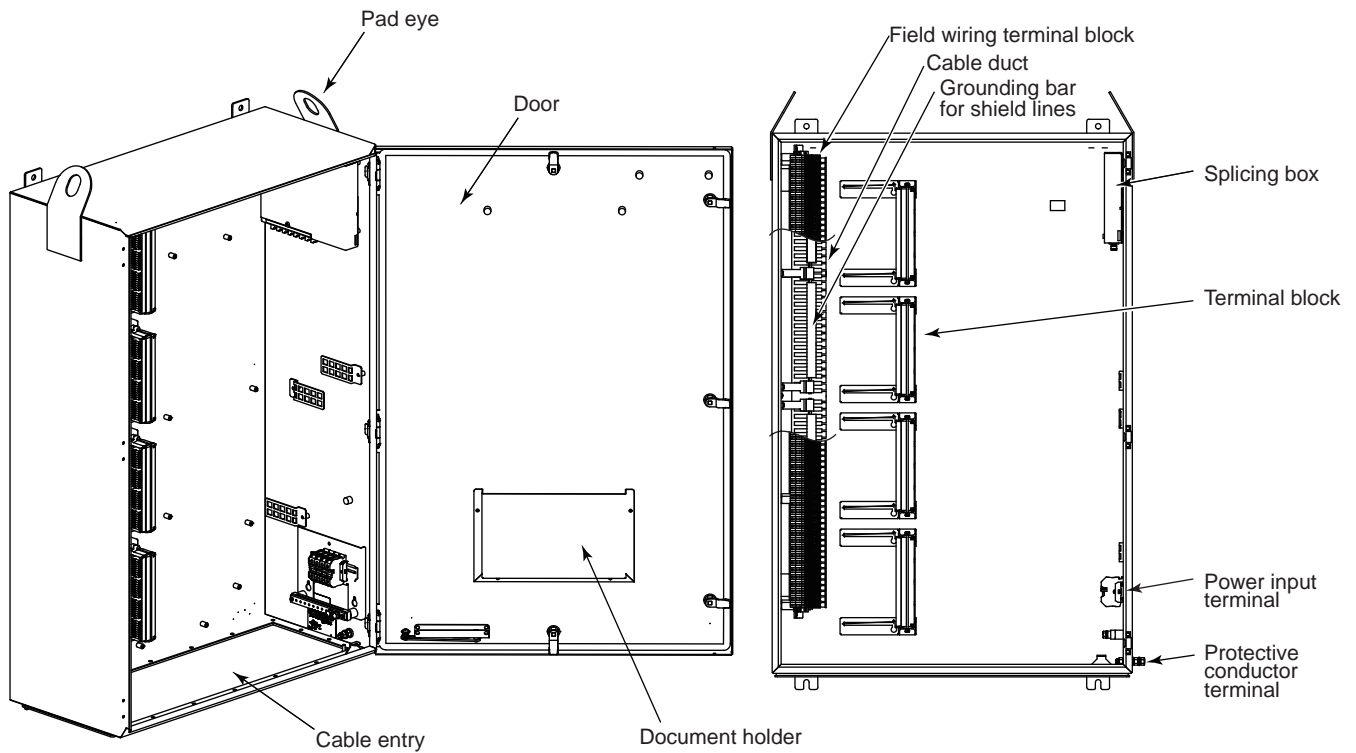
Figure A2NN60D configuration

● A2CB60 (Enclosure for A2NN60D)



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Figure A2CB60 configuration
 (When the suffix codes for “With no field wiring terminal block” (A2CB60-□□□□0□□□□□) is selected.)



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Figure A2CB60 configuration
 (When the suffix codes for “With field wiring terminal block” (A2CB60-□□□□1□□□□□□) is selected.)

■ STANDARD SPECIFICATIONS

Item		Specifications
Number of channels		Max. 64ch universal I/O
Power consumption		100 V system: Max. 980 VA (*8), Max. 660 VA (*9) 220 V system: Max. 1180 VA (*8), Max. 850 VA (*9)
Withstanding voltage		Between input/output and system: 500 V AC for 1 minute
Weight (when the base unit is mounted)		Max. approx. 130 kg (*13)
Enclosure specification	External dimensions	800 mm (W) x 1200 mm (H) x 380 mm (D) (excluding protrusions) 835 mm (W) x 1330 mm (H) x 380 mm (D) (max. external dimensions) (*6) 835 mm (W) x 1330 mm (H) x 410 mm (D) (max. external dimensions) (*7)
	Enclosure weight	Max. approx. 90 kg (*13)
	Material	SUS316L (*10)
	Plate thickness	2 mm
	Surface treatment	No coating, hairline finishing
	Door	Right hinge: Single swing Lock mechanism: Available (5 locations at the front of the door) Stay mechanism: Available Padlocked mechanism: Available (*7)
	Document holder	Available inside the door
	Ingress protection	IP66, NEMA Type 4X
	Cable entry	Plate type: Plate without drill pattern for no explosion protection Plate with cable gland hole for explosion protection Plate for sealing module of explosion protection
		Number and diameter of incoming cables: (*2)
	Breather drain	Available
	Installation method	Wall mount type (M10 x 4 screws) (*3)
	Lifting lug	Padeye (2 locations at the top of the enclosure)
Connection (*1)	Power	Power input terminal: M5 screw terminal connection Power supply method: Dual or single power supply (*4)
	Grounding	Protective conductor terminal: M10 bolt terminal connection
	Field signal	Signal line: Pressure clamp terminal (*11) Spring clamp terminal Push-in terminal (*12) Shield line: Pressure clamp terminal
	Communication	In case of N-ESB bus (Connect a cable to NIU.) Uplink: 1 port/ RJ45 connector (ISO/IEC 8877 compliant) Downlink: 1 port / RJ45 connector (ISO/IEC 8877 compliant)
		In case of optical ESB bus (Connect a cable to splicing box.) Uplink: 1 port/ LC (compliant with IEC 61754-20), or Fusion splicing Downlink: 1 port / LC (compliant with IEC 61754-20), or Fusion splicing
Splicing box specification	Optical fiber type	Quartz single-mode optical fiber
	Lead-in trunk cable outer diameter	Max. ϕ 16 mm (*5)
	Number of lead-in trunk cables	Max. 4
	Optical adaptor connector type	LC (compliant with IEC 61754-20), or Fusion splicing
	Number of optical adaptor cores	16 (2 cores x 8 pairs)

*1: A cable must be prepared separately. For details, refer to the TI "N-IO field enclosure Installation Guidance" (TI 30A30A10-01EN).

*2: Refer to "■ Cable entry".

*3: The mounting surface shall be flat and vertical and the mounting support shall be capable of withstanding a load of approx. 4 times the product weight or more.

*4: Single power supply is set at the time of delivery. Dual power supply is set by removing the short bar of the power input terminal.

*5: When the outer diameter is 15 mm or less, adjust the outer diameter to 15 to 21 mm using the cable diameter-adjusting rubber to prevent rotation in the cable clamp portion in the splicing box.

- *6: When the suffix codes for "Non padlock type" (A2NN70D-□□□□□□□□□□□□□□□□, A2CB60-□□□□□□□□□□□□) are selected.
- *7: When the suffix codes for "Padlock type" (A2NN70D-□□□□□□□□□□□□1□□□□□□, A2CB60-□□□□□□1□□□□□□) are selected.
- *8: When the suffix codes for "With 40 A field power supply" are selected.
- *9: When the suffix codes for "With 20 A field power supply" are selected.
- *10: When the suffix codes for "Padlock type" are selected, the padlocked mechanism contains SUS304.
- *11: It can be selected when the suffix codes for "With no field wiring terminal block" are selected.
- *12: It can be selected when the suffix codes for "With field wiring terminal block" are selected.
- *13: When each suffix code except for "Wood packaging" (/WDPKG) is included.
Refer to "Installation Guidance for N-IO field enclosure" (TI 30A30A10-01EN) for the wood packaging.

● Flexible installation

Base units can be shipped separately from the enclosure and installed into the enclosure at a suitable timing. This allows a project to perform the acceptance test using the base unit at factory in parallel with field wiring work to the enclosure at the customer site. And this minimizes the exposure of the base unit to the harsh environment such as dust, water, and electromagnetic noise by keeping the base unit in the warehouse during field wiring work to the enclosure.

● N-ESB / Optical ESB bus interface function

This function allows for communicating with the upper-level field control unit and N-IO node. It also allows for communicating with the lower-level N-IO node.

Uplink:	1 port /N-ESB bus module (N-ESB bus or optical ESB bus)
Downlink:	1 port /N-ESB bus module (N-ESB bus or optical ESB bus)

● Splicing box

This is installed in the enclosure as standard. Connect the optical fiber cable of the optical ESB bus from outside to the splicing box.

● House keeping (HK) function

Monitors the temperature in the enclosure, the system power and field power output.

● Maintenance function

The node interface unit (NIU) has a Micro-USB maintenance port for maintenance.

The setting of the node address is possible with a NIU Node Number Setting tool. (*1)

- *1: NIU Node Number Setting Tool is included in the CENTUM VP R6 software media.

● Nameplate (Option)

When the option of "/NMPL1" or "/NMPL2" is selected, the nameplate is attached to the enclosure surface with screws. "/NMPL1" is the nameplate for a single-line character string, and "/NMPL2" is the nameplate for two-line character strings. Character string can be specified at the time of ordering.

Background color:	White
Character color:	Black (Laser engraving)
Character type:	Alphanumeric character and hyphen
Character height:	30 mm (In case of "/NMPL1"), 20 mm (In case of "/NMPL2")
Number of characters:	10 characters per line (In case of "/NMPL1"), 17 characters per line (In case of "/NMPL2")
Number of lines:	1 or 2

■ INSTALLATION ENVIRONMENT SPECIFICATIONS

	Item	Specification
Ambient temperature (*1)	Normal operation	−40 to 55 °C
	In transport/storage	−40 to 85 °C
Ambient humidity	Normal operation	5 to 100 %RH (no condensation)
	In transport/storage	5 to 95 %RH (no condensation)
Ambient temperature change rate	Normal operation	Within ±10 °C/h
	In transport/storage	Within ±20 °C/h
Power supply	Voltage range	100 to 120 V AC ±10 %
		220 to 240 V AC ±10 %
	Frequency	50/60 ±3 Hz
	Distortion factor	10 % or less
	Peak value	128 V or larger (100 V system) 258 V or larger (220 V system)
	Instantaneous power failure	20 ms or lower (when receiving rated AC voltage)
Withstanding voltage	Between power input terminal and protective conductor terminal	1500 V AC for 1 minute
Insulation resistance	Between power input terminal and protective conductor terminal	20 MΩ or more / 500 V DC
Grounding		Apply the grounding system which is defined by the rules and standards of the country or the region.
Shock (*2)	Transport shock	Horizontal 48 m/s ² or less
Noise	Electric field	10 V/m or less (80 MHz to 1.0 GHz) 3 V/m or less (1.4 to 2.0 GHz) 1 V/m or less (2.0 to 2.7 GHz)
	Magnetic field	30 A/m or less (AC), 400 A/m or less (DC)
	Static electricity	4 kV or less (contact discharge), 8 kV or less (aerial discharge)
Altitude		2000 m or less

*1: Avoid direct sunlight. For outdoor installation, protect the enclosure against direct sunlight with a sun shield.

*2: When transporting the enclosure in a truck, use a truck equipped with an air cushion between the truck bed and body. Also, when loading, load the enclosure horizontally and keep it in a horizontal position.

■ N-IO SYSTEM SPECIFICATIONS

The following shows the N-IO products used in the N-IO field enclosure. For details, refer to the GS of each product. For the specifications related to the N-IO system, refer to the GS “N-IO System Overview” (GS 33J62A10-01EN).

Category	Part numbers (*1)	Description	GS No.
I/O modules	A2MMM843-SS1□30	Analog digital I/O module (16-channel, Isolated)	GS 33J62F20-01EN
	A2MDV843-OS1□30	Digital I/O module (16-channel, Isolated)	
Node units	A2NN30D-43010□□□3 (*2) A2NN30D-44010□□□13 (*3)	Node Interface Unit (for N-IO)	GS 33J62F10-01EN
Base plates	A2BN3D-10□31	Base plate for adaptor (for N-IO, 16-channel, Pressure clamp terminal or spring clamp terminal)	GS 33J62F40-01EN
I/O adaptors	A2SMX801-S□31	Pass-through I/O signal adaptor	GS 33J62F30-01EN
	A2SMX802-S□30	Pass-through I/O signal adaptor (With field power output)	
Dummy covers	A2DCV01-0	Dummy cover (for N-IO IO module)	GS 33J62F40-01EN

*1: Specify the appropriate code in □ according to the suffix codes of the N-IO field enclosure.

*2: When the suffix codes for “With 40 A field power supply” are selected.

*3: When the suffix codes for “With 20 A field power supply” are selected.

■ SIGNAL TYPES

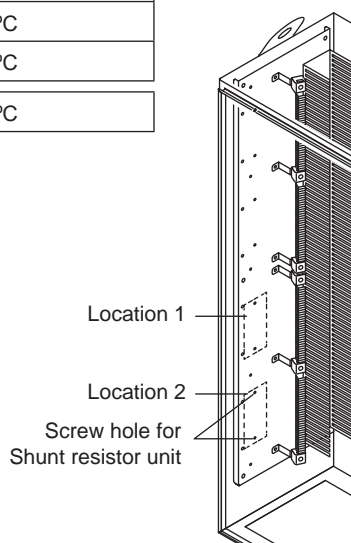
The following shows the signal types supported by the N-IO field enclosure.

I/O signal	Supported I/O adaptors	Isolation	Remarks
AI: Current input (2-wire) 4-20 mA (Support for HART7)	A2SMX801	Isolated	—
	A2SAM105	Isolated channels	—
AI: Current input (3-wire or 4-wire) 4-20 mA (Support for HART7)	A2SMX802	Isolated	—
AO: Current output 4-20 mA (Support for HART7)	A2SMX801	Isolated	—
	A2SAM505	Isolated channels	—
AI: Voltage input 0-10 V	A2SAM105	Isolated channels	—
AO: Voltage output 0-10 V	A2SAM505	Isolated channels	—
AI: mV/ Thermocouple/ RTD (3-wire type)/ 3-wire potentiometer	A2SAT105	Isolated channels	(*1) (*3)
AI: Pulse input	A2SAP105	Isolated channels	In case of receiving a dry contact signal of 0 to 10kHz or current pulse signal, order a shunt resistor unit (model: A2EXR001) separately. (*2)
DI: Dry contact input	A2SMX801	Isolated	—
	A2SDV105		—
DI: Voltage input	A2SDV105	Isolated	—
DI: NAMUR	A2SMX801	Isolated	—
DO: Current sink	A2SMX801	Isolated	—
DO: Current source Max. 20 mA	A2SMX801	Isolated	—
DO: Current source Max. 500 mA	A2SDV505	Isolated	—
DO: Dry contact output (Relay output)	A2SDV506	Isolated channels	—

*1: The following shows the reference junction temperature compensation accuracy of the N-IO field enclosure in TC mode. The reference junction temperature compensation accuracy varies depending on the ambient temperature of the enclosure. For other restrictions, refer to the GS "I/O Adaptors (for N-IO)" (GS 33J62F30-01EN).

Ambient temperature of enclosure	Reference junction temperature compensation accuracy
$-40\text{ }^{\circ}\text{C} < T_a \leq 0\text{ }^{\circ}\text{C}$	$\pm 1.5\text{ }^{\circ}\text{C}$
$0\text{ }^{\circ}\text{C} < T_a \leq 30\text{ }^{\circ}\text{C}$	$\pm 1.0\text{ }^{\circ}\text{C}$
$30\text{ }^{\circ}\text{C} < T_a \leq 55\text{ }^{\circ}\text{C}$	$\pm 1.5\text{ }^{\circ}\text{C}$

- (Ta: Ambient temperature of the enclosure)
- *2: When the suffix codes for "With no field wiring terminal block" are selected, a shunt resistor unit (A2EXR001, sold separately) can be installed in the 2 positions on the left side surface in the enclosure. The maximum number of shunt resistors which can be mounted on A2EXR001 is four (A2EXR001 can support up to four A2SAP105). For details of a shunt resistor unit, refer to the GS "I/O Adaptors (for N-IO)" (GS 33J62F30-01EN).
- *3: When the suffix codes for "With no field wiring terminal block" are selected.



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Figure Mounting position of a shunt resistor unit (A2EXR001)

■ SUPPORT MODULES (SOLD SEPARATELY)

The following shows the I/O modules and I/O adaptors supported by the N-IO field enclosure. For details, refer to the GS of each product. Select support modules in compliance with the restrictions described in the next page.

● I/O modules

Part numbers (*1)	Description	GS No.
A2MMM843-SS1□30	Analog digital I/O module (16-channel, Isolated)	GS 33J62F20-01EN
A2MDV843-OS1□30	Digital I/O module (16-channel, Isolated)	

*1: Specify the appropriate code in □ according to the suffix codes of the N-IO field enclosure.

● I/O adaptors

Part numbers (*1)	Description	GS No.
A2SMX801-S□31	Pass-through I/O signal adaptor	GS 33J62F30-01EN
A2SMX802-S□30 (*2)	Pass-through I/O signal adaptor (With field power output)	
A2SAM105-H□30	Current input/voltage input adaptor	
A2SAM505-H□30	Current output/voltage output adaptor	
A2SAT105-S□30 (*4)	mV/TC/RTD input adaptor	
A2SAP105-S□30	Pulse input signal adaptor (0 to 10 kHz)	
A2SDV105-S□30	Digital input adaptor (24 V DC voltage input, dry contact input)	
A2SDV505-S□30 (*3)	Digital output adaptor (24 V DC, current source: 0.5 A)	
A2SDV506-S□30	Relay output adaptor (24 V DC, dry contact output: 0.5 A)	

*1: Specify the appropriate code in □ according to the suffix codes of the N-IO field enclosure.

*2: A2SMX802 Style S2 or later must be used.

*3: A2SDV505 Style S2 or later must be used.

*4: When the suffix codes for "With no field wiring terminal block" are selected.

● Shunt resistor unit

Part numbers (*1) (*2)	Description	GS No.
A2EXR001-S000□30 or A2EXR001-S001□30	Shunt resistor unit (For A2SAP105)	GS 33J62F30-01EN

*1: Specify the appropriate code in □ according to the suffix codes of the N-IO field enclosure.

*2: When the suffix codes for "With no field wiring terminal block" are selected, A2EXR001 can be installed.

■ MOUNTING RESTRICTIONS

There is no restriction for the shipping condition that only I/O modules and pass-through I/O signal adaptors A2SMX801 are mounted on the base plate. When changing to other I/O adaptors other than A2SMX801, there are following three restrictions for the combination of I/O modules and I/O adaptors.

Restriction on the total output current of I/O adaptors

When using A2SDV505 and A2SMX802 with power supply, there is a restriction on their total output current depending on the enclosure's ambient temperature.

Table Judgement value for the total output current of I/O adaptors

Enclosure's ambient temperature	Total output current of A2SDV505 and A2SMX802
50 < Ta ≤ 55 °C	16 A or less (per enclosure) (*1), 15A or less (per enclosure) (*2)
Ta ≤ 50 °C	30 A or less (per enclosure) (*1), 16A or less (per enclosure) (*2)

Ta: Ambient temperature of the enclosure

*1: When the suffix codes for "With 40 A field power supply" are selected.

*2: When the suffix codes for "With 20 A field power supply" are selected.

Restriction in terms of the power supply capacity

Obtain the total sum of the power consumption factors per the enclosure (up to 64 channels) from the number of the factors per I/O channel in the following table. And the judgement value in the following table must be satisfied. Assign the factors of "Unused" in the table to the unused channels of the I/O modules. The total sum of factors cannot be calculated accurately if a zero factor is assigned to an unused channel.

Table Judgement value for the power consumption factors

Enclosure's ambient temperature	Total sum of the factors for high consumption adaptors (*1)	Total sum of the factors for all adaptors
50 < Ta ≤ 55 °C	67.2 or less (per enclosure) (*2) (*6), 63 or less (per enclosure) (*4) (*7)	100 or less (per enclosure) (*2) (*6), 88.3 or less (per enclosure) (*4) (*7)
Ta ≤ 50 °C	120 or less (per enclosure) (*3) (*6), 67.2 or less (per enclosure) (*5) (*7)	130 or less (per enclosure) (*3) (*6), 122 or less (per enclosure) (*5) (*7)

Note: Ta: Ambient temperature of the enclosure

*1: These refer to the I/O adaptors that power consumption type is "High" in the following table.

*2: This corresponds to 32 ch or less of DO/ AI/ AO adaptors.

*3: This corresponds to 60 ch or less of DO/ AI/ AO adaptors.

*4: This corresponds to 30 ch or less of DO/ AI/ AO adaptors.

*5: This corresponds to 32 ch or less of DO/ AI/ AO adaptors.

*6: When the suffix codes for "With 40 A field power supply" are selected.

*7: When the suffix codes for "With 20 A field power supply" are selected.

Table Power consumption factors per I/O channel

I/O adaptor	I/O module function	Power consumption type	Factor (per CH)
A2SMX801	Analog input 2-wire	Standard	1.19
	Analog input 4-wire	Standard	0.52
	Analog output	Standard	1.56
	Digital input 24 V	Standard	1.02
	Digital input NAMUR	Standard	0.74
	Digital output current sink	Standard	0.49
	Digital output current source	Standard	1.32
	Unused	Standard	0.49
A2SAM105	Analog input	High	2.10
A2SAM505	Analog output	High	2.10
A2SAT105	Sensor input	Standard	1.03
A2SAP105	Pulse input	High	2.10
A2SDV105	Digital input	Standard	1.38
A2SDV505	Digital output	High	2.10
A2SDV506	Relay output	Standard	1.85
A2SMX802	Analog input 3-wire or 4-wire	High	2.10
	Digital output	High	2.10

Other restrictions

- Total number of A2SAP105 adaptors ≤ 8 ch (per enclosure)
- Mount A2SDV506 on the bottom base plate in the enclosure.

■ CABLES AND CABLE TERMINATION

Refer to the TI “N-IO field enclosure Installation Guidance” (TI 30A30A10-01EN).

■ CONNECTION SPECIFICATIONS

● Communication interface

Refer to the GS “N-IO System Overview” (GS 33J62A10-01EN).

● Field interface

For the suffix codes for “With no field wiring terminal block”

Terminal blocks of A2BN3D in the N-IO field enclosure interfaces with the field devices. For details, refer to “Field Connection Specifications (for N-IO)” (GS 33J62A20-01EN) and “CENTUM VP Installation Guidance” (TI 33J01J10-01EN).

For the suffix codes for “With field wiring terminal block”

The field wiring terminal blocks in the enclosure interface with the field devices. The field wiring terminal blocks in the enclosure are wired to terminal blocks of A2BN3D in the N-IO field enclosure when it is shipped from the factory.

There are no field wiring terminal blocks wired to Terminal-C and Terminal-D for A2BN3D of the first and second from the top in the N-IO field enclosure. Terminal-C and Terminal-D for A2BN3D of the first and second from the top in the N-IO field enclosure cannot be used.

The support modules and their terminal numbers and signal types are shown in a below table. Also refer to GS “Field Connection Specifications (for N-IO)” (GS 33J62A20-01EN) and TI “CENTUM VP Installation Guidance” (TI 33J01J10-01EN).

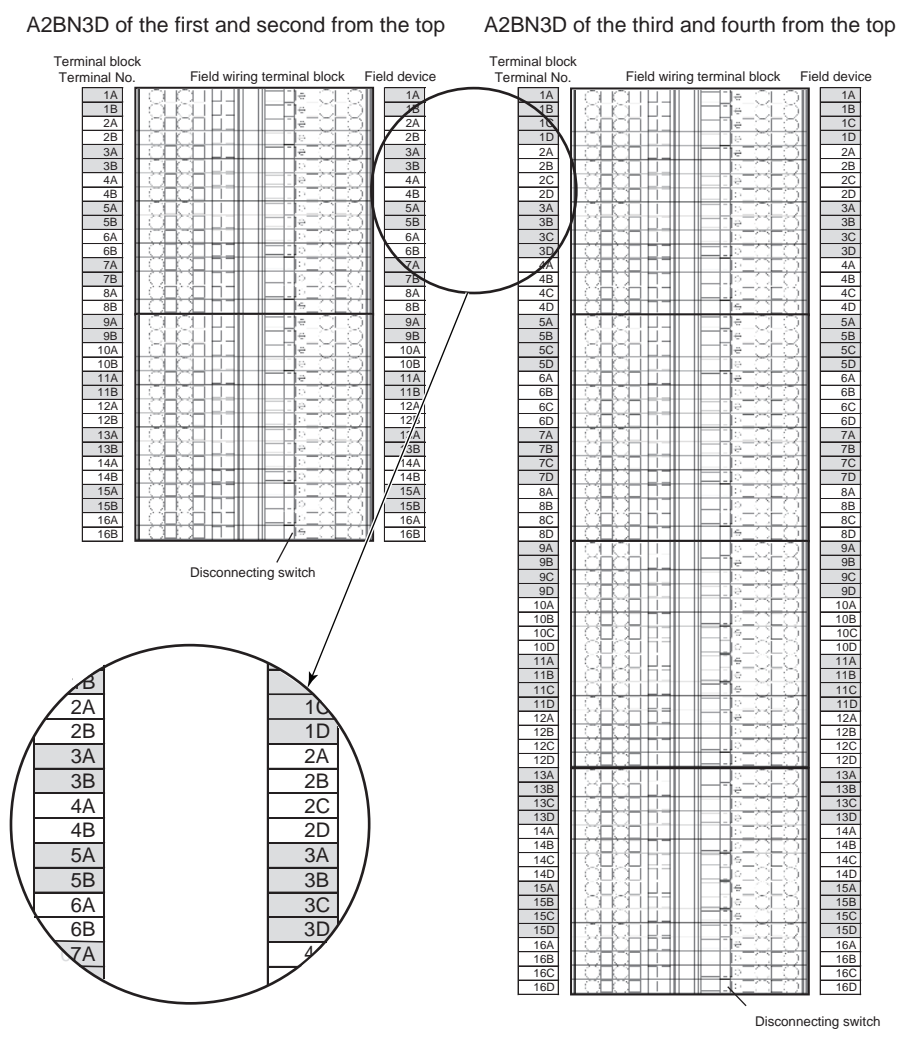


Figure Part names and terminal numbers of the field wiring terminal block

Table Terminal numbers and signal types for A2MMM843 (A2BN3D of the first and second from the top)

Adaptor (model)	Terminal number	Signal type		
Current input/voltage input adaptor (A2SAM105) (*1)	□A	2-wire transmitter input +	4-wire transmitter Current input +	Voltage input +
	□B	2-wire transmitter input –	4-wire transmitter Current input –	Voltage input –
Current output/voltage output adaptor (A2SAM505)	□A	Current output +	Voltage output +	–
	□B	Current output –	Voltage output –	
Pulse input signal adaptor (A2SAP105) (*4)	□A	Dry contact input + (*2)	–	–
	□B	Dry contact input – (*2)		
Digital input adaptor (A2SDV105) (*5)	□A	Voltage input +	–	–
	□B	Voltage input –		
Digital output adaptor (A2SDV505)	□A	Digital output + (*3)	–	–
	□B	Digital output – (*3)		
Pass- through I/O signal adaptor (A2SMX801)	□A	I/O pass-through +	–	–
	□B	I/O pass-through –		

□: represents channel number (1 to 16).

–: Means that the terminal is not used. Do not connect any signal it.

Note: For details on the connection configuration, refer to the TI "CENTUM VP Installation guidance" (TI 33J01J10-01EN).

Note: A2SDV506, A2SAT105, and A2SMX802 cannot be used.

*1: When the power supply is turned off or overcurrent is detected, the current input loop becomes a high impedance state.

*2: Used when the frequency is 0 to 5 kHz.

*3: Connect the field power supply to the base plate.

*4: The following input signal types for A2SAP105 cannot be used: voltage pulse, current pulse, and dry contact signal (0 to 800 Hz and 0 to 10 kHz).

*5: Dry contact input for A2SDV105 cannot be used.

Table Terminal numbers and signal types for A2MDV843 (A2BN3D of the first and second from the top)

Adaptor (model)	Terminal number	Signal type
Digital input adaptor (A2SDV105) (*2)	□A	Voltage input +
	□B	Voltage input –
Digital output adaptor (A2SDV505)	□A	Digital output + (*1)
	□B	Digital output – (*1)
Pass- through I/O signal adaptor (A2SMX801)	□A	I/O pass-through +
	□B	I/O pass-through –

□: represents channel number (1 to 16).

Note: For details on the connection configuration, refer to the TI "CENTUM VP Installation guidance" (TI 33J01J10-01EN).

Note: A2SDV506 and A2SMX802 cannot be used.

*1: Connect the field power supply to the base plate.

*2: Dry contact input for A2SDV105 cannot be used.

Table Terminal numbers and signal types for A2MMM843 (A2BN3D of the third and fourth from the top)

Adaptor (model)	Terminal number	Signal type			
Current input/voltage input adaptor (A2SAM105) (*2)	□A	2-wire transmitter input +	4-wire transmitter Current input +	Voltage input +	–
	□B	2-wire transmitter input –	4-wire transmitter Current input –	Voltage input –	
	□C	–	–	–	
	□D	–	–	–	
Current output/voltage output adaptor (A2SAM505)	□A	Current output +	Voltage output +	–	–
	□B	Current output –	Voltage output –		
	□C	–	–		
	□D	–	–		
Pulse input signal adaptor (A2SAP105)	□A	–	Power supply type 3-wire power supply	Dry contact input + (*4)	–
	□B	2-wire (voltage) +	Power supply type 3-wire +	Dry contact input - (*4)	Dry contact input + (*5)
	□C	2-wire (voltage) –	Power supply type 3-wire –	–	Dry contact input – (*5)
	□D	–	–	–	–
Digital input adaptor (A2SDV105)	□A	Voltage input +	–	–	–
	□B	Voltage input –	–		
	□C	–	Dry contact input + (*7)		
	□D	–	Dry contact input – (*7)		
Digital output adaptor (A2SDV505)	□A	Digital output + (*7)	–	–	–
	□B	Digital output – (*7)			
	□C	–			
	□D	–			
Relay output adaptor (A2SDV506) (*1)	□A	Relay output (NO) + (*3)	–	–	–
	□B	Relay output (COM) –	Relay output (COM) –		
	□C	–	Relay output (NC) + (*3)		
	□D	–	–		
Pass-through I/O signal adaptor (A2SMX801)	□A	I/O pass-through +	–	–	–
	□B	I/O pass-through –			
	□C	–			
	□D	–			
Pass-through I/O signal adaptor (A2SMX802)	□A	3-wire transmitter Current input +	4-wire transmitter Current input +	Open drain (DO sink)	–
	□B	3-wire transmitter Current input – (*7)	4-wire transmitter Current input – (*6)	–	
	□C	Field power supply + (*7)	Field power supply + (*7)	Field power supply + (*7)	
	□D	–	Field power supply – (*6) (*7)	–	

□: represents channel number (1 to 16).

–: Means that the terminal is not used. Do not connect any signal it.

Note: For details on the connection configuration, refer to the TI "CENTUM VP Installation guidance" (TI 33J01J10-01EN).

Note: A2SAT105 cannot be used.

*1: A2SDV506 can be used only in A2BN3D of the fourth from the top.

*2: When the power supply is turned off or overcurrent is detected, the current input loop becomes a high impedance state.

*3: Normal state, the status output is OFF.

*4: Used when the frequency is 0 to 5 kHz.

*5: Used when the frequency is 0 to 800 Hz.

*6: In the internal circuit, terminals B and D have a common potential

*7: Connect the field power supply to the base plate.

Table Terminal numbers and signal types for A2MDV843 (A2BN3D of the first and second from the top)

Adaptor (model)	Terminal number	Signal type	
Digital input adaptor (A2SDV105)	□A	Voltage input +	–
	□B	Voltage input –	–
	□C	–	Dry contact input + (*2)
	□D	–	Dry contact input – (*2)
Digital output adaptor (A2SDV505)	□A	Digital output + (*2)	–
	□B	Digital output – (*2)	
	□C	–	
	□D	–	
Relay output adaptor (A2SDV506) (*3)	□A	Relay output (NO) + (*1)	–
	□B	Relay output (COM) –	Relay output (COM) –
	□C	–	Relay output (NC) + (*1)
	□D	–	–
Pass- through I/O signal adaptor (A2SMX801)	□A	I/O pass-through +	–
	□B	I/O pass-through –	
	□C	–	
	□D	–	
Pass- through I/O signal adaptor (A2SMX802)	□A	Open drain (DO sink)	–
	□B	–	
	□C	Field power supply + (*2)	
	□D	–	

□: represents channel number (1 to 16).

–: Means that the terminal is not used. Do not connect any signal it.

Note: For details on the connection configuration, refer to the TI “CENTUM VP Installation guidance” (TI 33J01J10-01EN).

*1: Normal state, the status output is OFF

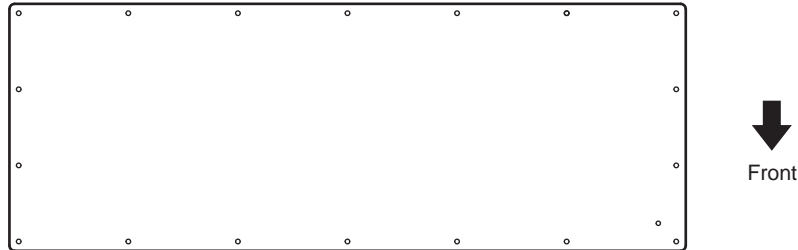
*2: Connect the field power supply to the base plate.

*3: A2SDV506 can be used only in A2BN3D of the fourth from the top.

■ CABLE ENTRY

● Plate without drill pattern

A hole for passing a cable through is not pre-drilled. The user drills a hole for passing a cable through to suit the application before use. A hole for breather drain is also not pre-drilled. Drill a hole (φ26 mm) for breather drain and install the supplied breather drain to the plate.



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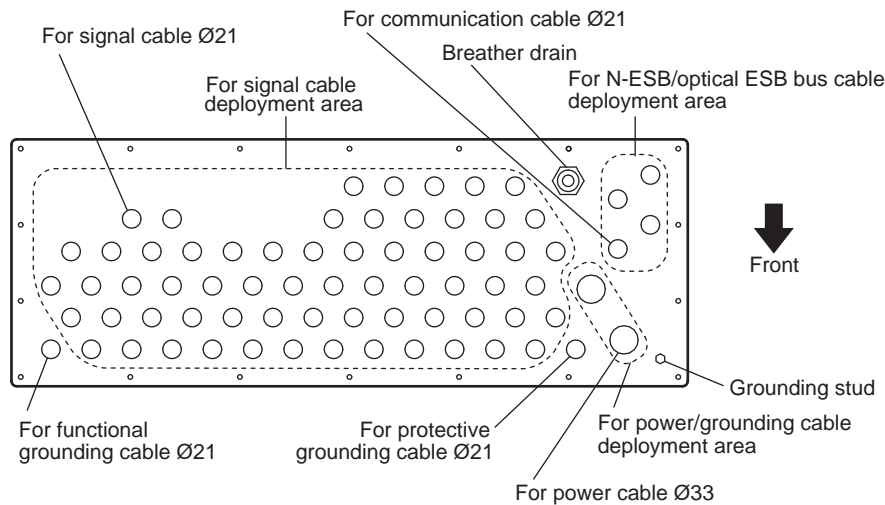
Figure Plate without drill pattern (Plate thickness: 3 mm)

Notes for drilling a hole

- 30 mm from the edge of the plate is prohibition area for drilling.
- This plate is connected to the grounding bar in the enclosure with a cable at the time of delivery. Disconnect the cable before drilling a hole and connect it again after finishing with drilling. At that time, it should be confirmed by using the calibrated equipment that the resistance value between the grounding stud of the plate and the protective conductor terminal of the grounding bar is lower than 0.1Ω.

● Plate for cable gland

A hole for passing a cable through is pre-drilled. Use a commercially available cable gland to connect the cable to the plate. Select an appropriate cable gland yourself. The breather drain is pre-mounted. When the option of /SEAL is selected, hole seals are attached to all holes at the time of delivery. Replace them with cable glands before use.



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Figure Plate for cable gland (Plate thickness: 3 mm)

Selecting cable glands

Size:

For power cable: M32

For communication/ signal/ grounding cables: M20

Example of cable glands:

For power cable: CMP TMCX100SS (Diameter of incoming cables: 24.1 – 29.2 mm) (*1)

For communication/ signal/ grounding cables: CMP TMCX050SS
(Diameter of incoming cables: 13 – 17 mm) (*1)

Note: To maintain IP66 of the enclosure, use cable glands compliant with IP66 and attach them appropriately.

Note: To maintain NEMA Type 4X of the enclosure, use cable glands compliant with NEMA Type 4X and attach them appropriately.

- Note: In case of explosion protection, install and wire the device in compliance with the NEC (National Electrical Code: ANSI/NFPA-70) requirements to meet the FM Nonincendive requirements.
- Note: In case of explosion protection, install and wire the device in compliance with the CEC (Canadian Electrical Code) requirements to meet the CSA Non-Incendive requirements.
- Note: In case of explosion protection, install and wire the device in compliance with EN 60079-14 requirements to meet the ATEX requirements.
- Note: In case of explosion protection, install and wire the device in compliance with IEC 60079-14 requirements to meet the IEC requirements.
- Note: In case of explosion protection, install and wire the device in compliance with EN 60079-14 requirements to meet the UKEX requirements.
- Note: In case of explosion protection, install and wire the device in compliance with KS C IEC 60079-14 requirements to meet the KCs requirements.
- Note: In case of explosion protection, install and wire the device in compliance with GB 3836.13, GB/T 3836.15, GB/T 3836.16 and GB 50257 requirements to meet the CCC-Ex/NEPSI requirements.

*1: When the compliance with the standards for hazardous location equipment for KCs, CCC-Ex/NEPSI are required, the cable glands cannot be used.

● Plate for sealing module

The plate uses a sealing system of Roxtec for multi-cable transit (MCT).

Each frame is pre-mounted on the plate.

Connect the cable to the plate using the sealing module. When the option "/CX100" is selected, the sealing module basic set is supplied. It is possible to order the sealing module set for N-IO field enclosure (A2CX100) individually. It is also possible to obtain the sealing module from Roxtec individually.

The breather drain is pre-mounted.

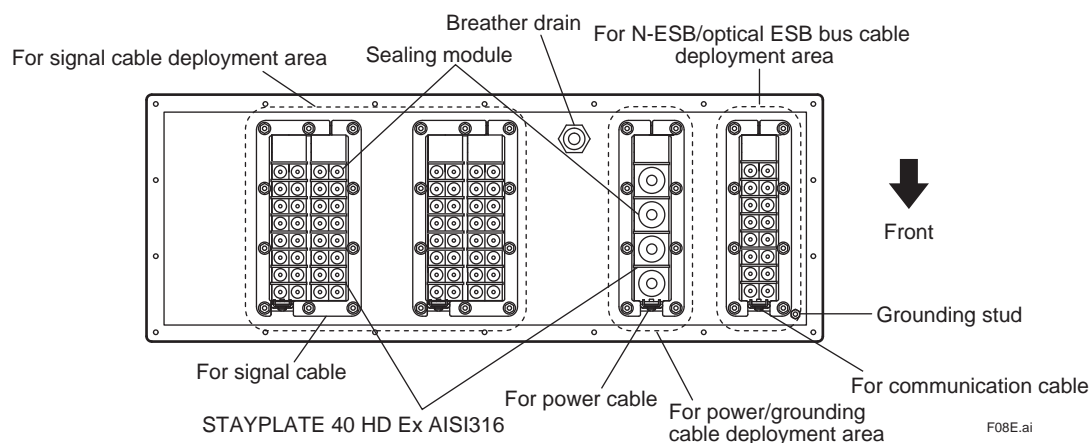


Figure Plate for sealing module
installed with the sealing module (frame for power cable: A2CX100-20 1 set,
frame for communication cable: A2CX100-10 1 set, frames for signal cable: A2CX100-10 4 sets)

Roxtec's sealing system frame

For power cable: HD 16 type 1 set

For communication cable: HD 16 type 1 set

For signal cable: HD 32 type 2 sets

The sealing modules mentioned in the following table can be combined and installed in one frame to maintain the module height H of 160 mm.

Description	Roxtec Part number	Product name	Cable outside diameter ϕ	Number of cables/module	Module height H
Module	152743	CX 20w40 BG	4 - 15.5 mm	2 cables	20 mm
Module	152745	CX 40 10-31 BG	9.5 - 31 mm	1 cable	40 mm
Module	152568	CX 40 BG	21.5 - 33.5 mm	1 cable	40 mm

Note: Mount multiple "STAYPLATE 40 HD Ex AISI316 (Roxtec Part number: 158781)" pieces corresponding to the number of the sealing modules in one frame. When the suffix codes for "Plate for sealing module of explosion protection" (A2NN70D-□□□□□□□□□□□□□□□□, A2CB60-D□□□□□□□□□□□□) are selected, six pieces of STAYPLATE 40 HD Ex AISI316 are supplied. When the option "/CX100" or A2CX100 are selected, STAYPLATE 40 HD Ex AISI316 corresponding to the number of the sealing modules are supplied additionally. It is possible to obtain STAYPLATE 40 HD Ex AISI316 from Roxtec individually.

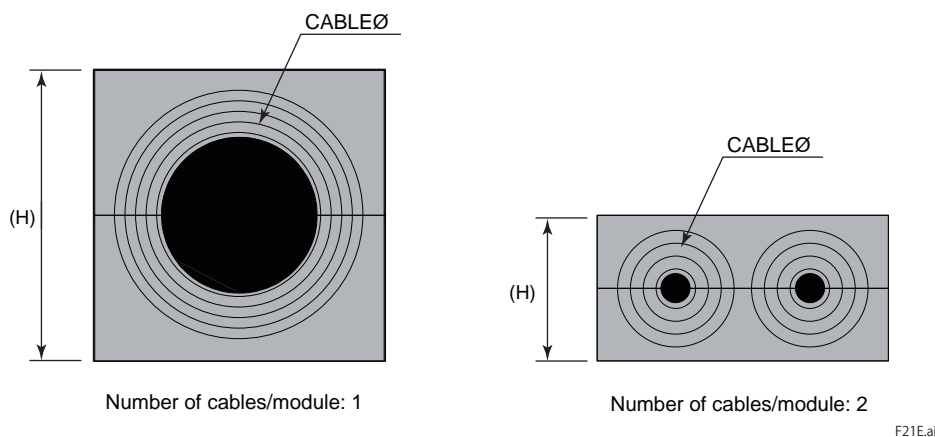


Figure Sealing module

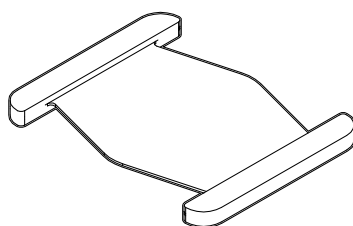


Figure STAYPLATE 40 HD Ex AISI316

Sealing module set for N-IO field enclosure (A2CX100) configuration

Model	Configuration
A2CX100-10	With CX 20w40 BG x 8 and STAYPLATE 40 HD Ex AISI316 x 7
A2CX100-20	With CX 40 10-31 BG x 4 and STAYPLATE 40 HD Ex AISI316 x 3
A2CX100-30	With CX 40 BG x 4 and STAYPLATE 40 HD Ex AISI316 x 3

The option “Sealing module basic set (/CX100)” configuration

Configuration and quantity	Remarks
With CX 20w40 BG x 40 and STAYPLATE 40 HD Ex AISI316 x 35 (A2CX100-10 5 sets)	For signal cable and communication cable
With CX 40 10-31 BG x 4 and STAYPLATE 40 HD Ex AISI316 x 3 (A2CX100-20 1 set)	For power cable

Note: Refer to the manuals by Roxtec to install sealing modules in the frame.

Note: In case of explosion protection, install and wire the device in compliance with the NEC (National Electrical Code: ANSI/NFPA-70) requirements to meet the FM Nonincendive requirements.

Note: In case of explosion protection, install and wire the device in compliance with the CEC (Canadian Electrical Code) requirements to meet the CSA Non-Incendive requirements.

Note: In case of explosion protection, install and wire the device in compliance with EN 60079-14 requirements to meet the ATEX requirements.

Note: In case of explosion protection, install and wire the device in compliance with IEC 60079-14 requirements to meet the IEC requirements.

Note: In case of explosion protection, install and wire the device in compliance with EN 60079-14 requirements to meet the UKEX requirements.

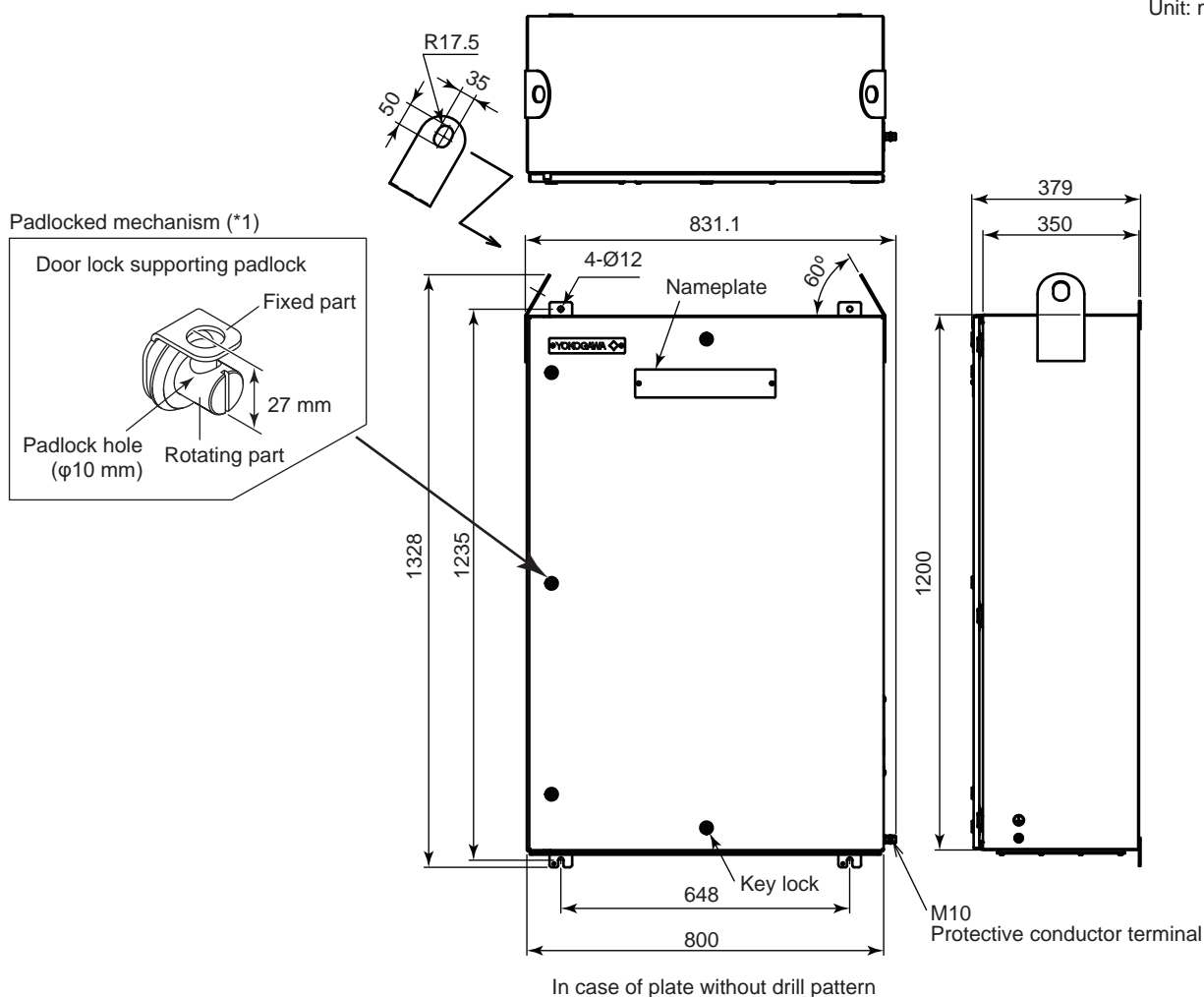
Note: In case of explosion protection, install and wire the device in compliance with KS C IEC 60079-14 requirements to meet the KCs requirements.

Note: In case of explosion protection, install and wire the device in compliance with GB 3836.13, GB/T 3836.15, GB/T 3836.16 and GB 50257 requirements to meet the CCC-Ex/NEPSI requirements.

EXTERNAL DIMENSIONS

● A2NN70D (Also applies to A2CB60)

Unit: mm



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*1: When the suffix codes for "Padlock type" are selected.

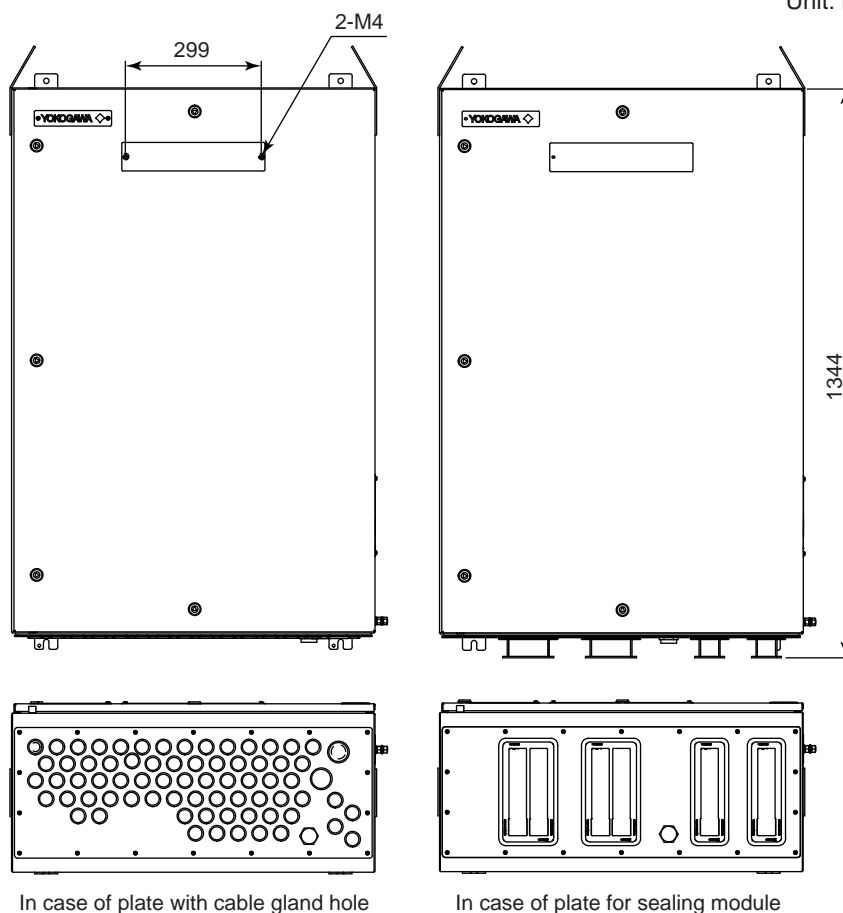
Figure Padlocked mechanism will be inserted here.

Nominal tolerances :

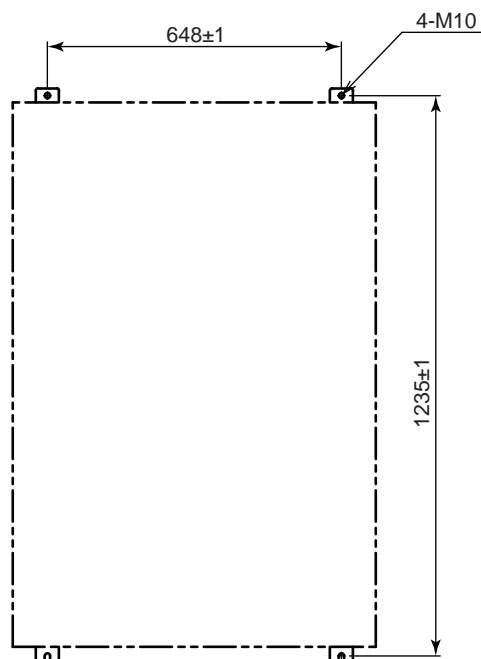
Nominal tolerance is ± 0.8 mm for the dimensions of 0.5 mm or more and 120 mm or less, and the combined nominal tolerance is ± 1.5 mm.

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

Unit: mm

**[Mounting dimensions]**

Unit:mm



Nominal tolerances :

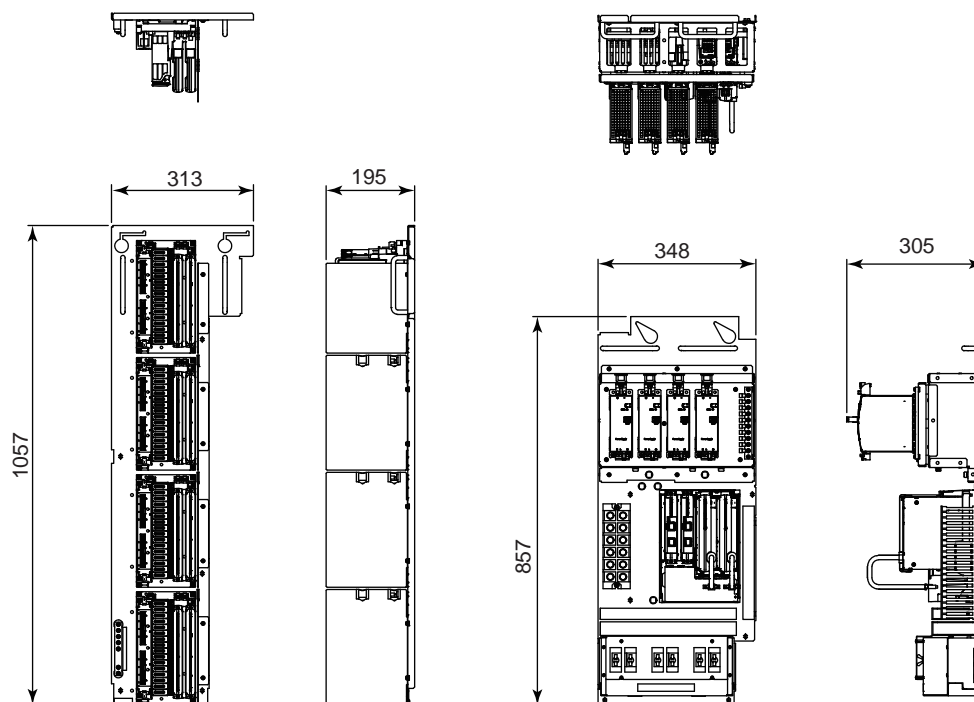
Nominal tolerance is ± 0.8 mm for the dimensions of 0.5 mm or more and 120 mm or less, and the combined nominal tolerance is ± 1.5 mm.

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

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● A2NN60D

Unit: mm



IO base unit

NIU base unit

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Nominal tolerances :

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.

■ MODEL AND SUFFIX CODES

		Description
Model	A2NN70D	N-IO field enclosure
Suffix codes	-4	Dual-redundant power supply, dual-redundant communication
	3	100 - 120 V or 220 - 240 V AC input
	Q	With 40 A field power supply (*2)
	R	With 20 A field power supply (*8)
	0	N-ESB bus for uplink
	1	Optical ESB bus (0-5 km) for uplink
	2	Optical ESB bus (5-50 km) for uplink
	0	N-ESB bus for downlink
	1	Optical ESB bus (0-5 km) for downlink
	2	Optical ESB bus (5-50 km) for downlink
	A	Plate without drill pattern for no explosion protection
	B	Plate with cable gland hole for explosion protection (*1)
	D	Plate for sealing module of explosion protection (*9)
	1	For pressure clamp terminal (*15)
	2	For spring clamp terminal
	3	For push-in terminal (*16)
	0	With no explosion protection (*15)
	1	With explosion protection (CSA, FM) (*11) (*15)
	2	With explosion protection (IECEX, ATEX) (*12)
	2	With temperature (-40 to 55 °C)
	0	With no field wiring terminal block
	1	With field wiring terminal block
	0	Non padlock type
	1	Padlock type (*3)
	0	Always 0
	0	Always 0
	0	Always 0
	0	Always 0
	0	Always 0

		Description
Model	A2NN70D	N-IO field enclosure
Option codes	/MDV0D	With digital I/O module x 8 [Model: A2MDV843-0S1030] (dual with no explosion protection) (*4)
	/MDV1D	With digital I/O module x 8 [Model: A2MDV843-0S1130] (dual with explosion protection) (*4)
	/MDV0S	With digital I/O module x 4 [Model: A2MDV843-0S1030] (single with no explosion protection) (*4) (*5)
	/MDV1S	With digital I/O module x 4 [Model: A2MDV843-0S1130] (single with explosion protection) (*4) (*5)
	/MMM0D	With analog digital I/O module x 8 [Model: A2MMM843-SS1030] (dual with no explosion protection) (*4)
	/MMM1D	With analog digital I/O module x 8 [Model: A2MMM843-SS1130] (dual with explosion protection) (*4)
	/MMM0S	With analog digital I/O module x 4 [Model: A2MMM843-SS1030] (single with no explosion protection) (*4) (*5)
	/MMM1S	With analog digital I/O module x 4 [Model: A2MMM843-SS1130] (single with explosion protection) (*4) (*5)
	/NMPL1	Enclosure name plate 1 line
	/NMPL2	Enclosure name plate 2 line
	/SEAL	Hole seal for cable gland (*6)
	/CX100	Sealing module basic set (*7)
	/ATDOC	Explosion protection manual (*10)
	/KCDC	Explosion protection manual (KCs) (*13)
	/WDPKG	Wood packaging (*14)

- *1: The standards for hazardous location equipment for CSA, FM, ATEX, IECEx, UKEX, KCs, CCC-Ex/NEPSI are applied. Conformable cable gland should be used, in case of explosion protection.
- *2: It can be selected when the suffix code for "With no explosion protection" or "With explosion protection (CSA, FM)".
- *3: A padlock is not supplied. Obtain a padlock separately.
- *4: With pass-through I/O signal adaptor (A2SMX801-S□31) x 64. (□ depends on explosion protection specification.)
- *5: With dummy cover (A2DCV01-0) x 4.
- *6: It can be selected when the suffix code for "Plate with cable gland hole".
With hole seal for M20 [Part No.: B1036HZ] x 70, with hole seal for M32 [Part No.: B1037HZ] x 2.
- *7: It can be selected when the suffix code for "Plate for sealing module of explosion protection"(A2NN70D-□□□□□□□□□□□□□□□□). For details of the configuration, refer to "■ CABLE ENTRY ● Plate for sealing module".
- *8: It can be selected when the suffix code for "With explosion protection (IECEx, ATEX)".
- *9: The standards for hazardous location equipment for CSA, FM, IECEx, ATEX, UKEX, KCs, CCC-Ex/NEPSI are applied. For details about ordering the sealing modules, refer to "■ CABLE ENTRY ● Plate for sealing module".
- *10: Select the option code "/ATDOC" to follow the ATEX Directive and UKEX Regulation for use in potentially explosive atmospheres.
- *11: The standards for hazardous location equipment for CSA and FM are applied.
- *12: When the suffix codes for "With no field wiring terminal block" is selected, the standards for hazardous location equipment for ATEX, IECEx, UKEX, KCs, CCC-Ex/NEPSI are applied. When the suffix codes for "With field wiring terminal block" is selected, the standards for hazardous location equipment for ATEX, IECEx, UKEX are applied.
- *13: Select the option code "/KCDC" to follow the KCs for use in potentially explosive atmospheres.
- *14: Refer to "Installation Guidance for N-IO field enclosure" (T1 30A30A10-01EN) for the wood packaging.
When the option of /WDPKG is not selected, the packaging material cannot be selected.
- *15: It can be selected when the suffix code for "With no field wiring terminal block".
- *16: It can be selected when the suffix code for "With field wiring terminal block".

N-IO field enclosure base unit

		Description
Model	A2NN60D	N-IO field enclosure base unit
Suffix codes	-4	Dual-redundant power supply, dual-redundant communication
	3	100 - 120 V or 220 - 240 V AC input
	Q	With 40 A field power supply (*1)
	R	With 20 A field power supply (*4)
	0	N-ESB bus for uplink
	1	Optical ESB bus (0-5 km) for uplink
	2	Optical ESB bus (5-50 km) for uplink
	0	N-ESB bus for downlink
	1	Optical ESB bus (0-5 km) for downlink
	2	Optical ESB bus (5-50 km) for downlink
	0	With no explosion protection
	1	With explosion protection (CSA, FM) (*6)
	2	With explosion protection (IECEX, ATEX) (*7)
	2	With temperature (-40 to 70 °C)
	0	Always 0
	0	Always 0
	0	Always 0
Option codes	/MDV0D	With digital I/O module x 8 [Model: A2MDV843-0S1030] (dual with no explosion protection) (*2)
	/MDV1D	With digital I/O module x 8 [Model: A2MDV843-0S1130] (dual with explosion protection) (*2)
	/MDV0S	With digital I/O module x 4 [Model: A2MDV843-0S1030] (single with no explosion protection) (*2) (*3)
	/MDV1S	With digital I/O module x 4 [Model: A2MDV843-0S1130] (single with explosion protection) (*2) (*3)
	/MMM0D	With analog digital I/O module x 8 [Model: A2MMM843-SS1030] (dual with no explosion protection) (*2)
	/MMM1D	With analog digital I/O module x 8 [Model: A2MMM843-SS1130] (dual with explosion protection) (*2)
	/MMM0S	With analog digital I/O module x 4 [Model: A2MMM843-SS1030] (single with no explosion protection) (*2) (*3)
	/MMM1S	With analog digital I/O module x 4 [Model: A2MMM843-SS1130] (single with explosion protection) (*2) (*3)
	/ATDOC	Explosion protection manual (*5)
	/WDPKG	Wood packaging (*8)

Note: A2NN60D style S1 can be installed only into A2CB60 style S1.

A2NN60D style S2 or later can be installed only into A2CB60 style S2 or later.

*1: It can be selected when the suffix code for "With no explosion protection" or "With explosion protection (CSA, FM)".

*2: With pass-through I/O signal adaptor (A2SMX801-S□31) x 64. (□ depends on explosion protection specification.)

*3: With dummy cover (A2DCV01-0) x 4.

*4: It can be selected when the suffix code for "With explosion protection (IECEX, ATEX)".

*5: Select the option code "/ATDOC" to follow the ATEX Directive and UKEX Regulation for use in potentially explosive atmospheres.

*6: The standards for hazardous location equipment for CSA and FM are applied.

*7: The standards for hazardous location equipment for ATEX, IECEX, UKEX, CCC-Ex/NEPSI are applied.

*8: Refer to "Installation Guidance for N-IO field enclosure" (TI 30A30A10-01EN) for the wood packaging.

When the option of /WDPKG is not selected, the packaging material cannot be selected.

Enclosure for A2NN60D

		Description
Model	A2CB60	Enclosure for A2NN60D
Suffix codes	-A	Plate without drill pattern for no explosion protection
	-B	Plate with cable gland hole for explosion protection (*1)
	-D	Plate for sealing module of explosion protection (*3)
	1	For pressure clamp terminal (*9)
	2	For spring clamp terminal
	3	For push-in terminal (*10)
	0	With no explosion protection (*9)
	1	With explosion protection (CSA, FM) (*6) (*9)
	2	With explosion protection (IECEX, ATEX) (*7)
	2	With temperature (-40 to 55 °C)
	0	With no field wiring terminal block
	1	With field wiring terminal block
	0	Non padlock type
	1	Padlock type (*2)
	0	Always 0
	0	Always 0
	0	Always 0
	0	Always 0
	0	Always 0
Option codes	/NMPL1	Enclosure name plate 1 line
	/NMPL2	Enclosure name plate 2 line
	/SEAL	Hole seal for cable gland (*4)
	/CX100	Sealing module basic set (*5)
	/WDPKG	Wood packaging (*8)

Note: These products are subject to the Export Administration Regulations (EAR) by the United States Department of Commerce, Bureau of Industry and Security (BIS).

- *1: The standards for hazardous location equipment for CSA, FM, ATEX, IECEX, UKEX, CCC-Ex/NEPSI are applied. Conformable cable gland should be used, in case of explosion protection.
- *2: A padlock is not supplied. Obtain a padlock separately.
- *3: The standards for hazardous location equipment for CSA, FM, IECEX, ATEX, UKEX, CCC-Ex/NEPSI are applied. For details about ordering for the sealing modules, refer to "■ CABLE ENTRY ● Plate for sealing module".
- *4: It can be selected when the suffix code for "Plate with cable gland hole".
With hole seal for M20 [Part No.: B1036HZ] x70, with hole seal for M32 [Part No.: B1037HZ] x 2.
- *5: It can be selected when the suffix code for "Plate for sealing module of explosion protection". For details of the configuration, refer to "■ CABLE ENTRY ● Plate for sealing module".
- *6: The standards for hazardous location equipment for CSA and FM are applied.
- *7: When the suffix codes for "With no field wiring terminal block" is selected, the standards for hazardous location equipment for ATEX, IECEX, UKEX, CCC-Ex/NEPSI are applied. When the suffix codes for "With field wiring terminal block" is selected, the standards for hazardous location equipment for ATEX, IECEX, UKEX are applied.
- *8: Refer to "Installation Guidance for N-IO field enclosure" (TI 30A30A10-01EN) for the wood packaging.
When the option of /WDPKG is not selected, the packaging material cannot be selected.
- *9: It can be selected when the suffix code for "With no field wiring terminal block".
- *10: It can be selected when the suffix code for "With field wiring terminal block".

Sealing module set for N-IO field enclosure

		Description
Model	A2CX100	Sealing module set for N-IO field enclosure
Suffix codes	-1	Set 1, 16 Cables [Diameter of incoming cables: 4 - 15.5 mm] (*1)
	-2	Set 2, 4 Cables [Diameter of incoming cables: 9.5 - 31 mm] (*2)
	-3	Set 3, 4 Cables [Diameter of incoming cables: 21.5 - 33.5 mm] (*3)
	0	Always 0

Note: These products are subject to the Export Administration Regulations (EAR) by the United States Department of Commerce, Bureau of Industry and Security (BIS).

*1: With CX 20w40 BG x 8 and STAYPLATE 40 HD Ex AISI316 x 7

*2: With CX 40 10-31 BG x 4 and STAYPLATE 40 HD Ex AISI316 x 3

*3: With CX 40 BG x 4 and STAYPLATE 40 HD Ex AISI316 x 3

■ SOFTWARE

Supported by CENTUM VP R6.05 and later.

■ STANDARD ACCESSORIES

Part name	Quantity	Remarks
Key	1	This is used to unlock and lock the door lock of the enclosure.
Cable diameter-adjusting rubber	2	They are used to fix the cable inside the splicing box.
Cable tie for cable clamp	8	They are used to fix the cable inside the splicing box.
Pigtail cable	16	They are used to relay the cable inside the splicing box. [Part No.: A1116PW]
Optical patch cord	4	They are used to connect the splicing box with the node interface unit. [Part No.: S9552UW]
Sealing module	1 unit	Sealing modules are supplied when A2CX100 or the option code "/CX100" is selected. (*1) When the suffix codes for "Plate for sealing module of explosion protection" are selected, essentials for the installation of the sealing modules (Ex MEASUREMENT KIT x 4, C WEDGE 40 Ex AISI 316 x 6, Roxtec's manuals x 4, Roxtec's certificates x 4, ASSEMBLY GEL Ex x 4, and STAYPLATE 40 HD Ex x 6) except for tools are supplied. (*1) (*2) When A2CX100 is selected, Roxtec's manuals x 1, Roxtec's certificates x 1, ASSEMBLY GEL Ex x 1, and STAYPLATE 40 HD Ex x 3 or x 7 are also supplied. (*1)
Breather drain	1	It is already attached to the plates for cable entries other than the plate without drill pattern. [Part No.: B1000EH]
Mounting screw	15	These screws are used to fasten the base unit to the enclosure. Screws are already used in A2NN70D. [Part No.: Y9410LB]
Cable tie	4 (A2NN70D) 8 (A2CB60)	They are used to fix the cable in the enclosure. [Part No.: B1032JB]
Label set	1 (A2NN70D) 1 (A2CB60)	It is used for identifying the cable passing through the cable entry. Paste it on the cable entry.

*1: For the configuration, refer to "■ Cable entry ● Plate for sealing module".

*2: Refer to "Installation Guidance for N-IO field enclosure" (TI 30A30A10-01EN) for the tools for installing the sealing modules.

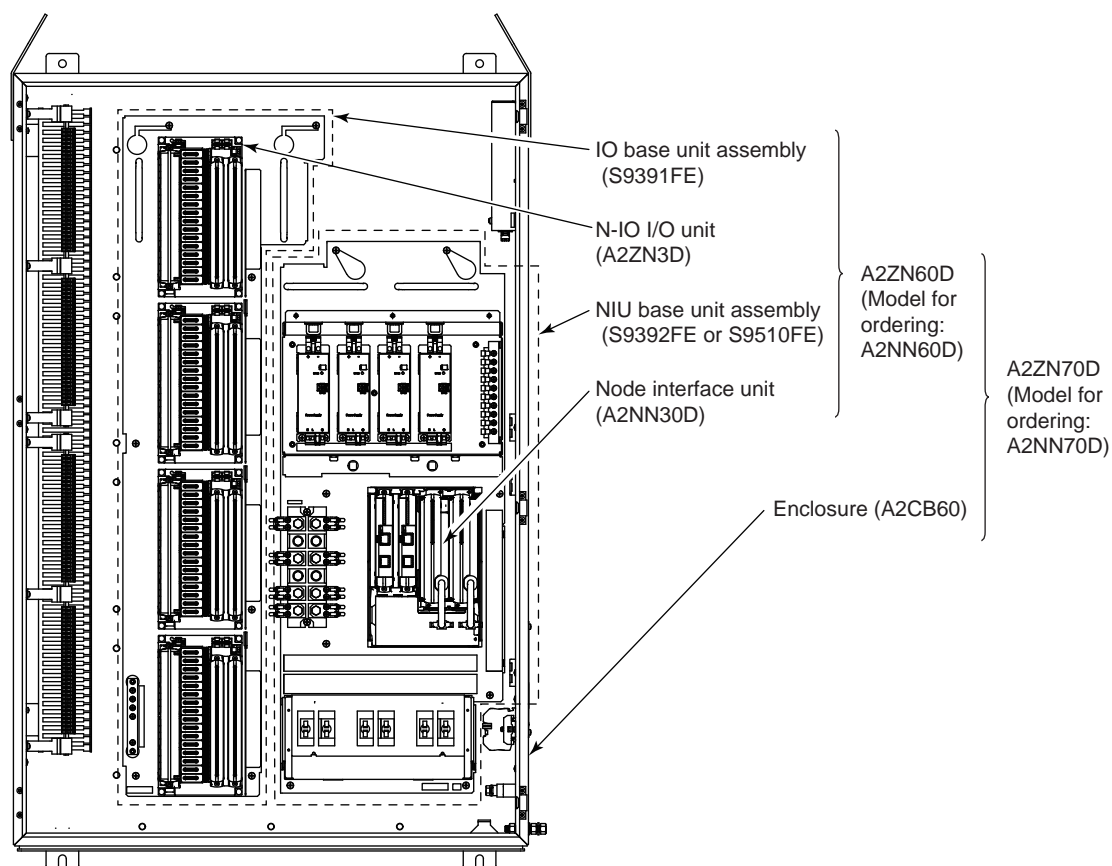
■ SYSTEM MODEL

Yokogawa defines the "system model" for products that provide an intended function by combining multiple selectable system components and declares compliance with the CE Marking and the UKCA Marking for this system model. This compliance system guarantees the compliance with EU legislations and UK legislations in the form in which used and allows you to confirm the compliance with individual system components to EU legislations and UK legislations by the compliance declaration for the system model. As for products such as an N-IO field enclosure, the combination of system components is supposed to be changed (for example, I/O modules are added) after the system is delivered to the customer. The system model based compliance system enables the combination of system components to be changed flexibly while ensuring the compliance with EU legislations and UK legislations.

The system model differs from the model used for ordering a product. Use the model for ordering when ordering a product.

● A2ZN60D/ A2ZN70D configuration

As for the N-IO field enclosure, system models A2ZN60D and A2ZN70D comply with the CE Marking and the UKCA Marking. The following shows the configuration of the system models.



F13E.ai

Figure A2ZN60D/A2ZN70D configuration

Table System models and system components

System model	System component
A2ZN60D	A2ZN3D (*1), A2NN30D, S9391FE (*2), S9392FE (*2), S9510FE(*2)
A2ZN70D	A2ZN60D, A2CB60, B1036HZ (*3), B1037HZ (*3)

*1: For details on the system model A2ZN3D configuration, refer to the GS "Base Plates (for N-IO)" (GS 33J62F40-01EN).

*2: This is not sold by itself.

*3: Hole seal for M20 [Part No.: B1036HZ], Hole seal for M32 [Part No.: B1037HZ].

■ APPLICABLE STANDARDS

The N-IO field enclosure complies with the standards in the table below.

Category	Conformity standards	
Safety standard (*1)	CSA	CAN/CSA-C22.2 No.61010-1 CAN/CSA-C22.2 No.61010-2-201 CAN/CSA-C22.2 No.61010-2-030
	CE Marking Low voltage directive (*4)	EN 61010-1 EN IEC 61010-2-201 EN IEC 61010-2-030 EN 60825-1
	Morocco Compliance Marking (C _r Marking) Low voltage directive (*4)	NM EN 61010 1 NM EN 61010 2 201 NM EN 61010 2 030 NM EN 60825 1
	UKCA Marking Safety Regulation (*4)	EN 61010-1 EN IEC 61010-2-201 EN IEC 61010-2-030 EN 60825-1
EMC standard	CE Marking EMC directive (*4)	EN 55011 Class A Group 1 (*2) EN 61000-6-2 EN 61000-3-2 EN 61000-3-3 (*3)
	RCM (*4)	EN 55011 Class A Group 1 (*2)
	Morocco Compliance Marking (C _r Marking) EMC directive (*4)	NM EN 55011 Class A Group 1 (*2) NM EN 61000 6 2 NM EN 61000 3 2 NM EN 61000 3 3 (*3)
	UKCA Marking EMC Regulation (*4)	EN 55011 Class A Group 1 (*2) EN 61000-6-2 EN 61000-3-2 EN 61000-3-3 (*3)
	KC Marking	Korea Electromagnetic Conformity Standard
Standards for hazardous location equipment	FM Nonincendive (*5)	FM 3600: 2018 FM 3611: 2018 FM 3810: 2018 ANSI/UL 121201 Ed. 9 (2019) ANSI/UL 61010-1 Ed. 3 (2012) ANSI/UL 61010-2-030 Ed. 1 (2012) ANSI/UL 61010-2-201 Ed. 1 (2014)
	CSA Non-Incendive (*6)	C22.2 No. 213-17 CAN/CSA-C22.2 No. 61010-1-12 CAN/CSA-C22.2 No. 61010-2-030-12 CAN/CSA-IEC 61010-2-201:14
	IECEx (*7) (*10)	IEC 60079-0 Ed. 7.0 (2017) IEC 60079-7 Ed. 5.1 (2017) IEC 60079-15 Ed. 5.0 (2017)
	CE Marking ATEX (*4) (*8) (*14)	EN IEC 60079-0:2018 EN IEC 60079-7:2015 + A1:2018 EN 60079-15:2010 EN IEC 60079-15:2019
	UKEX (*4) (*11) (*14)	EN IEC 60079-0:2018 EN IEC 60079-7:2015 + A1:2018 EN 60079-15:2010 EN IEC 60079-15:2019
	KCs (*12) (*15)	Notice of Ministry Labor No. 2021-22 IEC 60079-0 Ed. 7.0 (2017) IEC 60079-7 Ed. 5.1 (2017) IEC 60079-15 Ed. 5.0 (2017)
	CCC-Ex/NEPSI (*13) (*16)	GB/T 3836.1-2021 GB/T 3836.3-2021 GB/T 3836.8-2021

Category	Conformity standards	
Environmental standard	CE Marking RoHS directive (4)	
	UAE Cabinet Decision No. 10 of 2017 (UAE RoHS) (*4)	
	"Administration on the Control of Pollution Caused by Electrical and Electronic Products" in the People's Republic of China (China RoHS) (*9)	
	UK RoHS Regulation (*4)	
NEMA/ IP standard	NEMA	NEMA Type 4X
	IP	IP66

- *1: Measurement inputs of this equipment are applied to O (Other).
- *2: A Class A hardware device is designed for use in the industrial environment. Please use this device in the industrial environment only."
- *3: The specified limits of voltage drop across wiring must be satisfied to meet this standard.
- *4: A2ZN60D and A2ZN70D are compliant to the CE Marking, C_{PL} Marking, RCM, UAE RoHS, and UKCA Marking.
- *5: Explosion protection specification for FM NI : Class I, Division 2, Groups A, B, C and D Temperature code T4
- *6: Explosion protection specification for CSA NI: Class I, Division 2, Groups A, B, C and D Temperature code T4
- *7: Explosion-proof specification:
IECEX FMG 20.0021X Ex ec nC IIC T4 Gc
A2NN70D and A2NN60D are compliant.
IECEX FMG 20.0021X Ex ec IIC T4 Gc
A2CB60 is compliant.
- *8: Explosion-proof specification:
⊕ II 3G Ex ec nC IIC T4 Gc X
A2ZN70D and A2ZN60D are compliant.
⊕ II 3G Ex ec IIC T4 Gc X
A2CB60 is compliant.
- *9: The product information required by the law is disclosed on the Yokogawa's website. Please refer to the following web site.
<http://www.yokogawa.com/dcs/CNRoHS/>
- *10: If A2CB60 and A2NN60D are provided as individual products, the Ex marking on the outside of the enclosure shows the information about A2CB60 only. Information about A2NN60D is not included.
- *11: Explosion-proof specification:
⊕ II 3G Ex ec nC IIC T4 Gc X
A2ZN70D and A2ZN60D are compliant.
⊕ II 3G Ex ec IIC T4 Gc X
A2CB60 is compliant.
- *12: Ex ec nC IIC T4 Gc
A2NN70D is compliant.
- *13: Ex ec nC IIC T4 Gc
A2NN70D and A2NN60D are compliant.
Ex ec IIC T4 Gc
A2CB60 is compliant.
- *14: To follow the ATEX Directive or UKEX Regulation for use in potentially explosive atmospheres, at least one copy of explosion protection manual (IM 33K01J30-50E) is required.
This IM can be delivered by specifying option code "/ATDOC".
When ordering, select an option code of "/ATDOC" for one of models with "/ATDOC" adopted for the project.
- *15: To follow the KCs for use in potentially explosive atmospheres, at least one copy of explosion protection manual for KCs "N-IO 필드 인클로저 KCs" (IM30A30A10-08KO) is required.
This IM can be delivered by specifying option code "/KCDC".
When ordering, select an option code of "/KCDC" for one of models with "/KCDC" adopted for the project.
- *16: In the People's Republic of China, to comply with the CCC-Ex/NEPSI, provide explosion protection manual for these standards "N-IO 现场机箱 CCC-Ex/NEPSI" (IM 30A30A10-07ZH).
This document can be found at the following web site:
<https://myportal.yokogawa.com/>

■ LIST OF CONFORMITY STANDARDS

The following table shows the conformity standards of the products.

Model	Remarks					Safety Standards				EMC Conformity Standards				Environmental Standards				
	Explosion protection	Field power supply	Cable entry (*6)	Signal line (*6)	Field wiring terminal blocks	CSA	CE	UKCA	C _F	CE	UKCA	RCM	KC	C _F	CE	UKCA	UAE RoHS	China RoHS
A2NN70D-□□Q□□A10□0□□□□□□□□ A2NN70D-□□Q□□A20□0□□□□□□□□ A2NN70D-□□Q□□B10□0□□□□□□□□ A2NN70D-□□Q□□B20□0□□□□□□□□ A2NN70D-□□Q□□D10□0□□□□□□□□ A2NN70D-□□Q□□D20□0□□□□□□□□	With no explosion protection	With 40 A field power supply	Plate without drill pattern for no explosion protection, Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For pressure clamp terminal, For spring clamp terminal	With no field wiring terminal block	X	X	X	X	X	X	X	X	X	X	X	X	X
A2NN70D-□□Q□□B11□0□□□□□□□□ A2NN70D-□□Q□□B21□0□□□□□□□□ A2NN70D-□□Q□□D11□0□□□□□□□□ A2NN70D-□□Q□□D21□0□□□□□□□□	With explosion protection (CSA, FM)	With 40 A field power supply	Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For pressure clamp terminal, For spring clamp terminal	With no field wiring terminal block	X	X	X	X	X	X	–	–	X	X	X	X	X
A2NN70D-□□R□□B12□0□□□□□□□□ A2NN70D-□□R□□B22□0□□□□□□□□ A2NN70D-□□R□□D12□0□□□□□□□□ A2NN70D-□□R□□D22□0□□□□□□□□	With explosion protection (IECEx, ATEX)	With 20 A field power supply	Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For pressure clamp terminal, For spring clamp terminal	With no field wiring terminal block	–	X	X	X	X	X	X	X	X	X	X	X	X
A2NN70D-□□R□□B22□1□□□□□□□□ A2NN70D-□□R□□B32□1□□□□□□□□ A2NN70D-□□R□□D22□1□□□□□□□□ A2NN70D-□□R□□D32□1□□□□□□□□	With explosion protection (IECEx, ATEX)	With 20 A field power supply	Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For push-in terminal, For spring clamp terminal	With field wiring terminal block	–	X	X	X	X	X	–	–	X	X	X	X	X
A2NN60D-□□Q□□0□□□□□□	With no explosion protection	With 40 A field power supply				X	X	X	X	X	X	X	X	X	X	X	X	X
A2NN60D-□□Q□□1□□□□□□	With explosion protection (CSA, FM)	With 40 A field power supply				X	X	X	X	X	X	–	–	X	X	X	X	X
A2NN60D-□□R□□2□□□□□□	With explosion protection (IECEx, ATEX)	With 20 A field power supply				–	X	X	X	X	X	X	–	X	X	X	X	X
A2CB60-A10□0□□□□□□□□ A2CB60-A20□0□□□□□□□□ A2CB60-B10□0□□□□□□□□ A2CB60-B20□0□□□□□□□□ A2CB60-D10□0□□□□□□□□ A2CB60-D20□0□□□□□□□□	With no explosion protection		Plate without drill pattern for no explosion protection, Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For pressure clamp terminal, For spring clamp terminal	With no field wiring terminal block	X	X	X	X	X	X	X	NA	X	X	X	X	X
A2CB60-B11□0□□□□□□□□ A2CB60-B21□0□□□□□□□□ A2CB60-D11□0□□□□□□□□ A2CB60-D21□0□□□□□□□□	With explosion protection (CSA, FM)		Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For pressure clamp terminal, For spring clamp terminal	With no field wiring terminal block	X	X	X	X	X	X	–	–	X	X	X	X	X
A2CB60-B12□0□□□□□□□□ A2CB60-B22□0□□□□□□□□ A2CB60-D12□0□□□□□□□□ A2CB60-D22□0□□□□□□□□	With explosion protection (IECEx, ATEX)		Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For pressure clamp terminal, For spring clamp terminal	With no field wiring terminal block	–	X	X	X	X	X	X	–	X	X	X	X	X
A2CB60-B22□1□□□□□□□□ A2CB60-B32□1□□□□□□□□ A2CB60-D22□1□□□□□□□□ A2CB60-D32□1□□□□□□□□	With explosion protection (IECEx, ATEX)		Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For push-in terminal, For spring clamp terminal	With field wiring terminal block	–	X	X	X	X	X	–	–	X	X	X	X	X
A2CX100-□□						(*1)	(*1)	(*1)	(*1)	(*1)	(*1)	(*1)	(*1)	(*1)	(*1)	(*1)	(*5)	(*5)

X: Compliant – : Non-compliant NA: Not Applicable

Note: The N-I/O field enclosure complies with the CE Marking, C_F Marking, RCM, UAE RoHS, and UKCA Marking as system models A2ZN60D and A2ZN70D.

Model	Remarks					Standard for Hazardous Location Equipment						
	Explosion protection	Field power supply	Cable entry (*6)	Signal line (*6)	Field wiring terminal blocks	CSA NI	FM NI	IECEX	ATEX	UKEX	KCs	CCC-Ex/NEPSI
A2NN70D-□□Q□□A10□□□□□□ A2NN70D-□□Q□□A20□□□□□□ A2NN70D-□□Q□□B10□□□□□□ A2NN70D-□□Q□□B20□□□□□□ A2NN70D-□□Q□□D10□□□□□□ A2NN70D-□□Q□□D20□□□□□□	With no explosion protection	With 40 A field power supply	Plate without drill pattern for no explosion protection, Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For pressure clamp terminal, For spring clamp terminal	With no field wiring terminal block	-	-	-	-	-	-	-
A2NN70D-□□Q□□B11□□□□□□ A2NN70D-□□Q□□B21□□□□□□ A2NN70D-□□Q□□D11□□□□□□ A2NN70D-□□Q□□D21□□□□□□	With explosion protection (CSA, FM)	With 40 A field power supply	Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For pressure clamp terminal, For spring clamp terminal	With no field wiring terminal block	X	X	-	-	-	-	-
A2NN70D-□□R□□B12□□□□□□ A2NN70D-□□R□□B22□□□□□□ A2NN70D-□□R□□D12□□□□□□ A2NN70D-□□R□□D22□□□□□□	With explosion protection (IECEX, ATEX)	With 20 A field power supply	Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For pressure clamp terminal, For spring clamp terminal	With no field wiring terminal block	-	-	X	X	X	X	X
A2NN70D-□□R□□B22□1□□□□□□ A2NN70D-□□R□□B32□1□□□□□□ A2NN70D-□□R□□D22□1□□□□□□ A2NN70D-□□R□□D32□1□□□□□□	With explosion protection (IECEX, ATEX)	With 20 A field power supply	Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For push-in terminal, For spring clamp terminal	With field wiring terminal block	-	-	X	X	X	-	-
A2NN60D-□□Q□□□□□□□	With no explosion protection	With 40 A field power supply				-	-	-	-	-	-	-
A2NN60D-□□Q□□□1□□□□	With explosion protection (CSA, FM)	With 40 A field power supply				X	X	-	-	-	-	-
A2NN60D-□□R□□□2□□□□	With explosion protection (IECEX, ATEX)	With 20 A field power supply				-	-	X	X	X	-	X
A2CB60-A10□□□□□□□□ A2CB60-A20□□□□□□□□ A2CB60-B10□□□□□□□□ A2CB60-B20□□□□□□□□ A2CB60-D10□□□□□□□□ A2CB60-D20□□□□□□□□	With no explosion protection		Plate without drill pattern for no explosion protection, Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For pressure clamp terminal, For spring clamp terminal	With no field wiring terminal block	-	-	-	-	-	-	-
A2CB60-B11□□□□□□□□ A2CB60-B21□□□□□□□□ A2CB60-D11□□□□□□□□ A2CB60-D21□□□□□□□□	With explosion protection (CSA, FM)		Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For pressure clamp terminal, For spring clamp terminal	With no field wiring terminal block	X	X	-	-	-	-	-
A2CB60-B12□□□□□□□□ A2CB60-B22□□□□□□□□ A2CB60-D12□□□□□□□□ A2CB60-D22□□□□□□□□	With explosion protection (IECEX, ATEX)		Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For pressure clamp terminal, For spring clamp terminal	With no field wiring terminal block	-	-	X	X	X	-	X
A2CB60-B22□1□□□□□□ A2CB60-B32□1□□□□□□ A2CB60-D22□1□□□□□□ A2CB60-D32□1□□□□□□	With explosion protection (IECEX, ATEX)		Plate with cable gland hole for explosion protection, Plate for sealing module of explosion protection	For push-in terminal, For spring clamp terminal	With field wiring terminal block	-	-	X	X	X	-	-
A2CX100-□□						(*4)	(*4)	(*2)	(*3)	(*3)	(*3)	(*3)

X: Compliant

- : Non-compliant

NA: Not Applicable

Note: The N-IO field enclosure complies with the CE Marking, C_p Marking, RCM, UAE RoHS, and UKCA Marking as system models A2ZN60D and A2ZN70D.

- *1: A certification standard under the model code of A2CX100 is not available. For details of conformity standards for each configuration that is associated with A2CX100, refer to Roxtec's website.
- *2: Each configuration that is associated with A2CX100 mounted in the Roxtec's sealing system frame complies with IECEx. To view certificates of the configuration that is associated with A2CX100, refer to Roxtec's website as Certificate No.: IECEx PRE 15.0021X.
- *3: Each configuration that is associated with A2CX100 mounted in the Roxtec's sealing system frame complies these standards. To view certificates of the configuration that is associated with A2CX100, refer to Roxtec's website.
- *4: A2CX100 used in the N-IO field enclosure complies with CSA NI and FM NI.
- *5: A certification standard under the model code of A2CX100 is not available. Each configuration that is associated with A2CX100 complies with the standards as a part of A2NN70D and A2CB60.
- *6: “,” written in suffix codes means “or”.

■ ORDERING INFORMATION

Specify the following at the time of ordering. For the supplementary explanation of “IDENTIFICATION NO. OF JUNCTION BOX” and “COMPONENT NO. (FOR JB)”, refer to the “Supplementary explanation for ordering information”.

● Ordering information for A2NN70D

- Model, suffix codes, and option codes
- DOMAIN NO., STATION NO., COMPONENT NO., and NODE NO. (*1)
- IDENTIFICATION NO. OF JUNCTION BOX
- COMPONENT NO. (FOR JB)
- LETTERS ON NAMEPLATE (*2)
- LETTERS ON NAMEPLATE (1ST LINE) (*3)
- LETTERS ON NAMEPLATE (2ND LINE) (*3)

● Ordering information for A2NN60D

- Model, suffix codes, and option codes
- DOMAIN NO., STATION NO., COMPONENT NO., and NODE NO. (*1)
- IDENTIFICATION NO. OF JUNCTION BOX
- COMPONENT NO. (FOR JB)

● Ordering information for A2CB60

- Model, suffix codes, and option codes
 - IDENTIFICATION NO. OF JUNCTION BOX
 - COMPONENT NO. (FOR JB)
 - LETTERS ON NAMEPLATE (*2)
 - LETTERS ON NAMEPLATE (1ST LINE) (*3)
 - LETTERS ON NAMEPLATE (2ND LINE) (*3)
- *1: These ordering information are for the node interface unit and the base plate which are the components of the base unit. The label on which DOMAIN NO., STATION NO., COMPONENT NO., and NODE NO. are printed is affixed to the node interface unit. The label on which NODE NO. and UNIT NO. are printed is affixed to the base plate. UNIT NO. is the fixed value of 1 to 4, so it is unnecessary to specify UNIT NO. when ordering.
 - *2: When the option of / NMPL1 is selected, specify the letters to be engraved on nameplate.
When the blank (without engraving) is required, enter “*BLANK”.
 - *3: When the option of / NMPL2 is selected, specify the letters to be engraved on nameplate.
When the blank (without engraving) is required, enter “*BLANK”.

[Supplementary explanation for ordering information]

● IDENTIFICATION NO. OF JUNCTION BOX

“IDENTIFICATION NO. OF JUNCTION BOX” is a character string of up to 17 alphanumeric characters. A label with the character string which is specified at the time of ordering is affixed to the position shown in the figure below. The following two applications are assumed for this label.

Application 1) Identify the combination when assembling the enclosure and base unit.

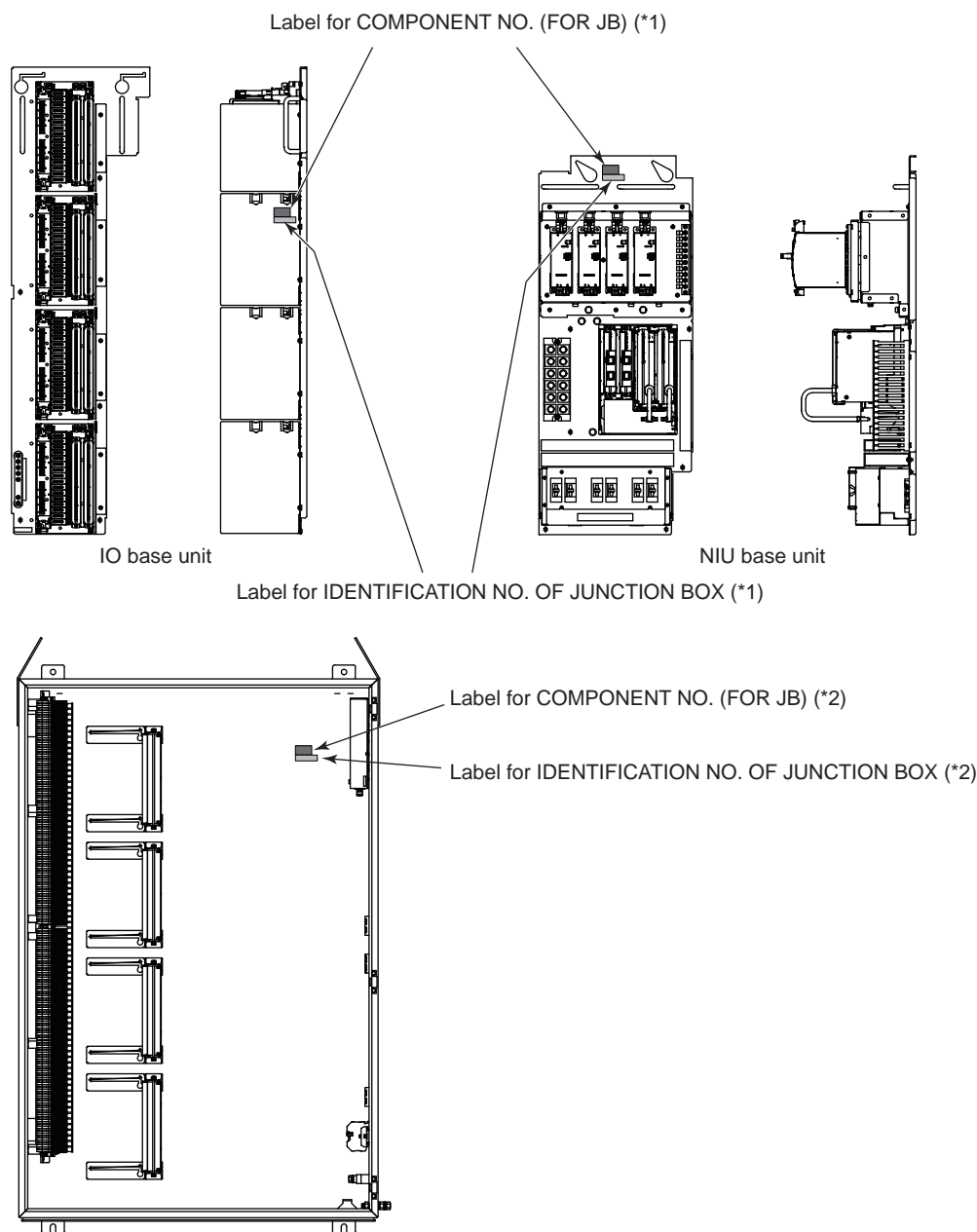
When an enclosure and base unit are ordered individually, these will be assembled at the customer site. At the time, by using the label of “IDENTIFICATION NO. OF JUNCTION BOX” affixed to each enclosure and base unit as a marker, these can be assembled in the correct combination. In this case, it is recommended to set the same character string on the label of the enclosure and the one of base unit.

Application 2) Identify the hardware individuals.

For identifying the hardware individuals, the label of “IDENTIFICATION NO. OF JUNCTION BOX” can be used for displaying the character string for hardware's ID. At the time, it is recommended to set the same ID string with the one that is displayed on the nameplate of the enclosure's surface. As an operation of the nameplate in the existing system, there are many examples of displaying the ID string on the first line of the name plate and the explanatory notes on the second line.

● COMPONENT NO. (FOR JB)

“COMPONENT NO. (FOR JB)” is a number of up to 4 digits. A label with the number string which is specified at the time of ordering is affixed to the position shown in the figure below. The applications for this label is same as the one of “IDENTIFICATION NO. OF JUNCTION BOX”. Please select the label of “IDENTIFICATION NO. OF JUNCTION BOX” or the one of “COMPONENT NO. (FOR JB)” depending on the required number of character strings.



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*1: When ordering A2NN60D, it will be affixed.

*2: When ordering A2CB60 or A2NN70D, it will be affixed.

Figure Affixed position of labels

■ TRADEMARK ACKNOWLEDGMENT

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