General Specifications

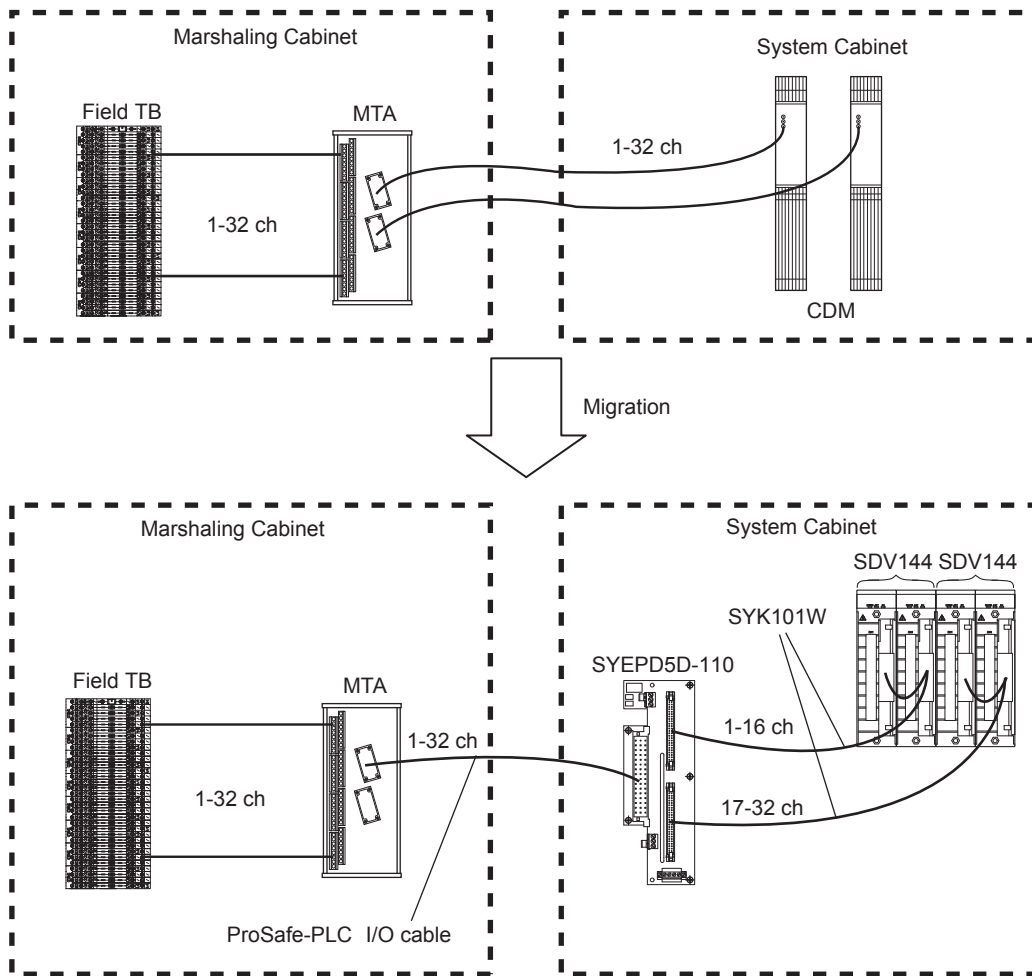## ProSafe-PLC to ProSafe-RS Migration

ProSafe-RS

GS 32Q06W10-31E

■ GENERAL

These General Specifications provides the hardware of the Migration Product that is used to replace the ProSafe-PLC controller with the ProSafe-RS Safety Control Station (SCS) in a short construction period using the existing ProSafe-PLC I/O cable, terminal board (MTA), and field wiring.

The figure below shows a configuration example of replacing the Critical Discrete Module (CDM) of ProSafe-PLC with the Digital Input Module (SDV144) of ProSafe-RS.

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The following ProSafe-PLC I/O modules can be migrated.

   CDM: Critical Discrete Module
   SDM: Standard Discrete module
   CDO: Critical Discrete Output Module
   CAI: Critical Analog Input Module
   VIM: Voltage Input Module

For the migration of modules other than the above, please consult with Yokogawa Sales Dept.

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■ MIGRATION PRODUCT CONFIGURATION

The Migration Product can be used to migrate the module rack to ProSafe-RS while remaining the existing field interface hardware, such as the ProSafe-PLC terminal board. The Migration Product consists of the following components.

- Migration Adapter for signal distribution
- Migration Cable for connecting migration adapter and I/O module of ProSafe-RS
- Dedicated frame for installing migration adapter

● Migration Adapter

The Migration Adapter is used to connect signals from the existing ProSafe-PLC terminal board (MTA) to the ProSafe-RS I/O module via the ProSafe-PLC I/O cable.

Table Migration Adapter

Name	Model	Suffix Code	Applicable Channel	Migration Object
Adapter for CDM	SYEPD5D	-110 -150 -510 -550	DI (1 to 16 ch), DI (17 to 32 ch) DI (1 to 16 ch), DO (17 to 32 ch) DO (1 to 16 ch), DI (17 to 32 ch) DO (1 to 16 ch), DO (17 to 32 ch)	Convert CDM (32 points)/SDM (32 points) to SDV144 (16 points), SDV541 (16 points), and SDV531 (8 points). (*1)
Adapter for CDO	SYEPD4D	-550	DO (1 to 8 ch), DO (9 to 16 ch)	Convert CDO (16 points) to SDV531 (8 points).
Adapter for CAI	SYEPA5D	-110	AI (1 to 16 ch), AI (17 to 32 ch)	Convert CAI (32 points) to SAV144 (16 points).
Adapter for VIM	SYEPA4D	-100	AI (1 to 16 ch)	Convert VIM (16 points) to SAV144 (16 points).
Adapter for Digital Output Branch	SYEPD4B	-550	DO (1 to 8 ch), DO (9 to 16 ch)	Used to connect Migration Adapter SYEPD5D (16 points) to SDV531 (8 points).

*1:   In case of conversion to SDV531 (8 points), SYEPD4B is required.

● Migration Cable

The Migration Cable is used to connect the ProSafe-RS I/O module and migration adapter.

Table Migration Cable

Name	Model	Migration Object
Cable for Digital Input	SYK101W	Dual-redundant, for SDV144 Connect SYEPD5D and SDV144.
Cable for Digital Input	SYK101	Single, for SDV144 Connect SYEPD5D and SDV144.
Cable for Digital Output	SYK501W	Dual-redundant, for SDV541/SDV531 Connect SYEPD5D and SDV541, SYEPD4B and SDV531, or SYEPD4D and SDV531.
Cable for Digital Output	SYK501	Single, for SDV541/SDV531 Connect SYEPD5D and SDV541, SYEPD4B and SDV531, or SYEPD4D and SDV531.
Cable for Analog	SYK301	Used for both dual-redundant and single, for SAV144 Connect SYEPA5D/SYEPA4D and SAV144.
Cable for Digital Output Branch	SYK502	Connect SYEPD5D (16 points) and SYEPD4B (8 points).

● Fitting Frame

The Fitting Frame is used as a base frame to install the migration adapter.

Table Adapter Fitting Frame

| Name	Model
Adapter Fitting Frame	SYPP10

◾ ADAPTER INSTALLATION

Up to 5 migration adapters (up to 10 adapters for digital output branch) can be installed in the adapter fitting frame. Also a ProSafe-RS safety control unit and safety node unit can be installed using the mounting holes at the front of the adapter fitting frame.
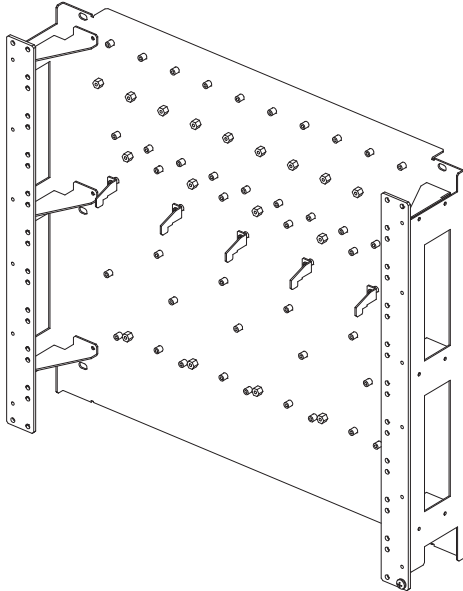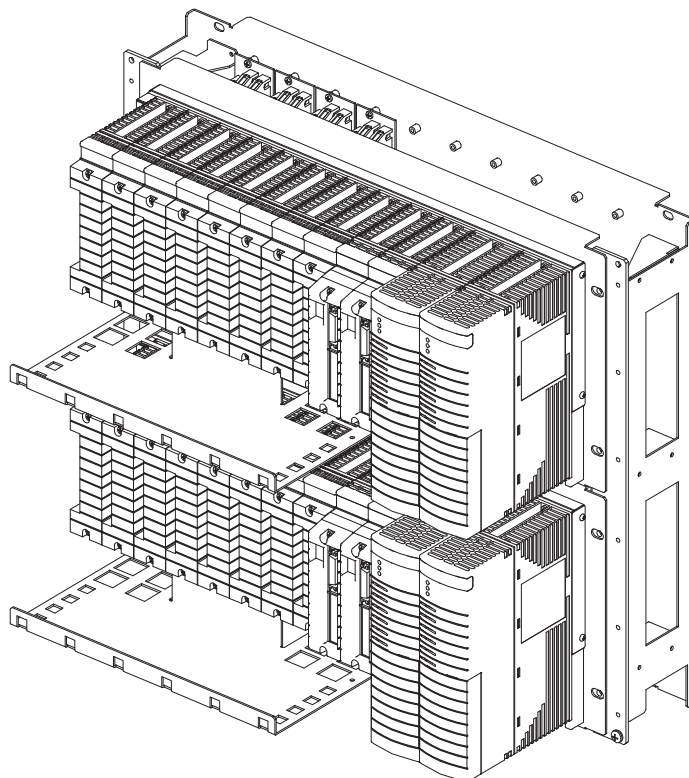
Adapter Fitting Frame   After installing migration adapter
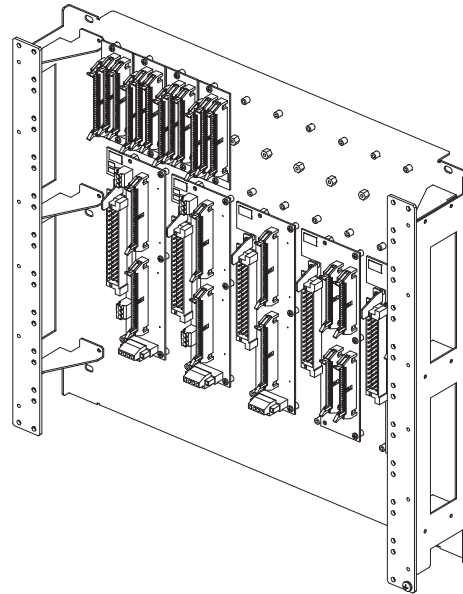
When installing 2 safety node units

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● Relation between Migration Adapter and Migration Cable

The following tables show the relation between the migration adapter and migration cable that are used to replace the ProSafe-PLC I/O module with the ProSafe-RS I/O module.

Table Relation between CDM/SDM Migration Adapters and Migration Cables

ProSafe-PLC I/O module	ProSafe-RS I/O module		Migration Adapter						Migration Cable		
	1-16 ch	17-32 ch	SYEPD5D-110	SYEPD5D-150	SYEPD5D-510	SYEPD5D-550	SYEPD4D-550	SYEPD4B-550	SYK101W or SYK101	SYK501W or SYK501	SYK502
CDM/ SDM (32 points)	SDV144	SDV144	1						2		
	SDV144	SDV541		1					1	1	
	SDV541	SDV144			1				1	1	
	SDV541	SDV541				1				2	
	SDV144	SDV531 ×2		1				1	1	2	1
	SDV531 ×2	SDV144			1			1	1	2	1
	SDV541	SDV531 ×2				1		1		3	1
	SDV531 ×2	SDV541				1		1		3	1
	SDV531 ×2	SDV531 ×2				1		2		4	2

Note: Please make sure to specity the suffix codes for each ProSafe-RS I/O modules as shown below.
SDV144-S53/CCC01 or SDV144-SE3/CCC01
SDV531-□53/CCC01 or SDV531-□E3/CCC01
SDV541-S53/CCC01 or SDV541-SE3/CCC01
Other modules than listed above can not be connected with migration cables.

Table Relation between CDO Migration Adapters and Migration Cables

ProSafe-PLC I/O module	ProSafe-RS I/O module		Migration Adapter						Migration Cable		
	1-8 ch	9-16 ch	SYEPD5D-110	SYEPD5D-150	SYEPD5D-510	SYEPD5D-550	SYEPD4D-550	SYEPD4B-550	SYK101W or SYK101	SYK501W or SYK501	SYK502
CDO (16 points)	SDV531	SDV531					1			2	

Note: Please make sure to specity the suffix codes for each ProSafe-RS I/O modules as shown below.
SDV531-□53/CCC01 or SDV531-□E3/CCC01
Other modules than listed above can not be connected with migration cables.

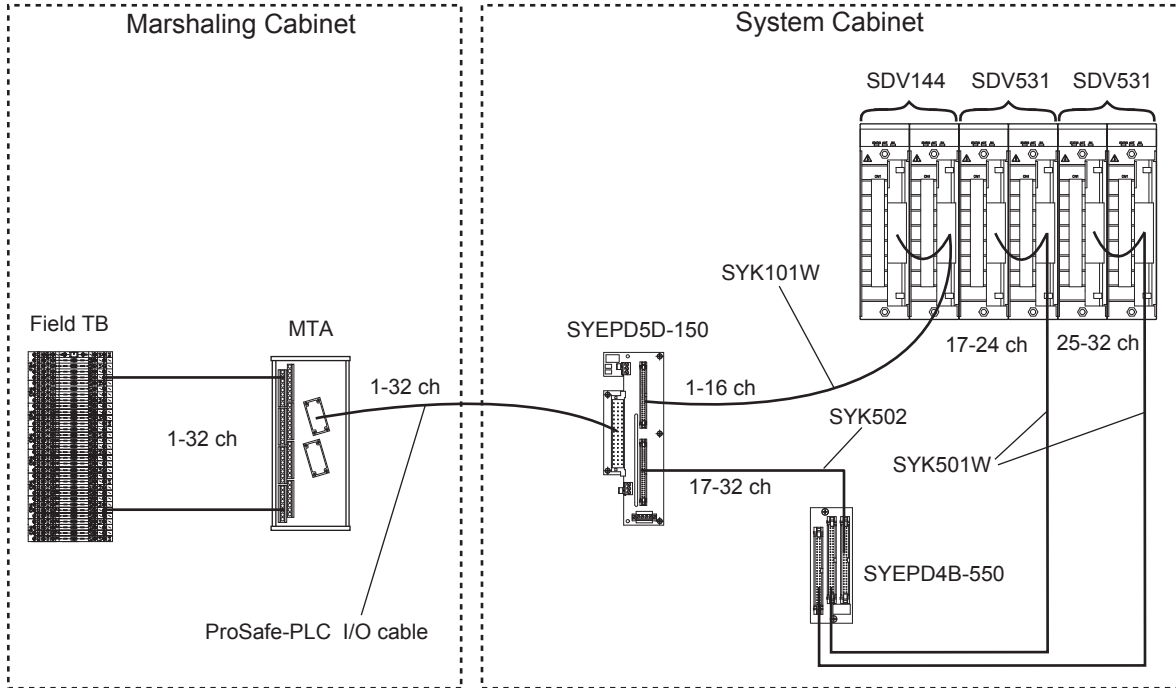### Table Relation between CAI/VIM Migration Adapters and Migration Cables

ProSafe-PLC I/O module	ProSafe-RS I/O module		Migration Adapter		Migration Cable
	1-16 ch	17-32 ch	SYEPA5D-110	SYEPA4D-100	SYK301
CAI (32 points)	SAV144	SAV144	1		2 (*1)
VIM (16 points)	SAV144			1	1 (*2)

Note: Please make sure to specity the suffix codes for each ProSafe-RS I/O modules as shown below.
SAV144-S53/CCC01 or SAV144-SE3/CCC01
Other modules than listed above can not be connected with migration cables.

*1:   Four migration cables are required for the dual-redundant configuration.
*2:   Two migration cables are required for the dual-redundant configuration.

Example: To replace 1- to 16-channel of CDM with SDV144 and 17- to 32-channel of CDM with SDV531 using two sets, use the following adapters and cables.

- Adapter for CDM:
    SYEPD5D-150   1 pc
- Adapter for Digital Output branch:
    SYEPD4B-550   1 pc
- Migration Cable:
    SYK101W   1 pc
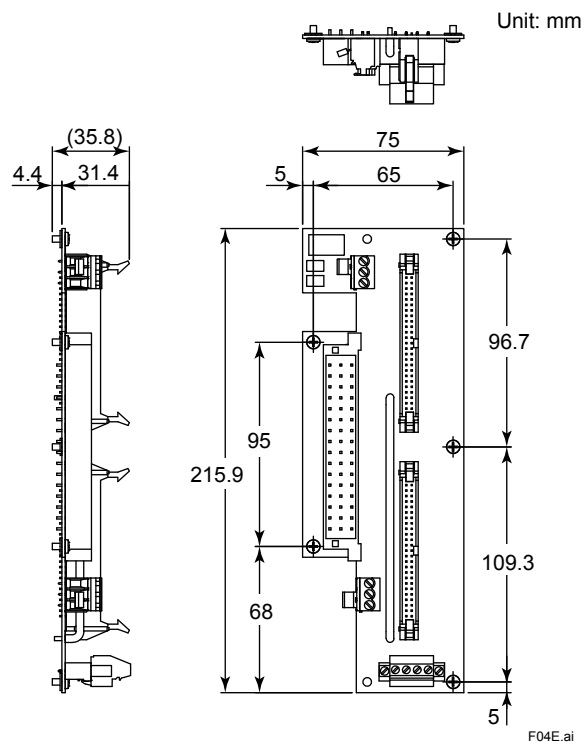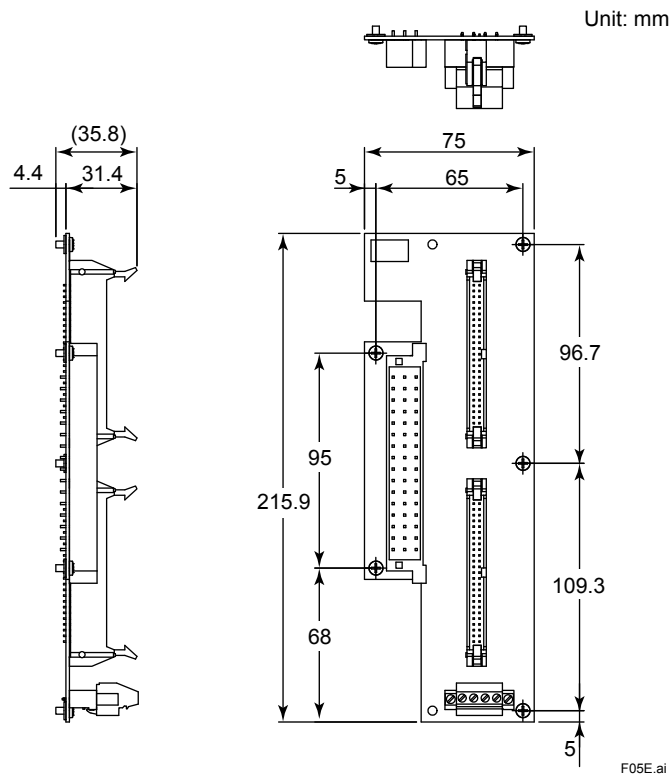   SYK501W   2 pcs
    SYK502   1 pc

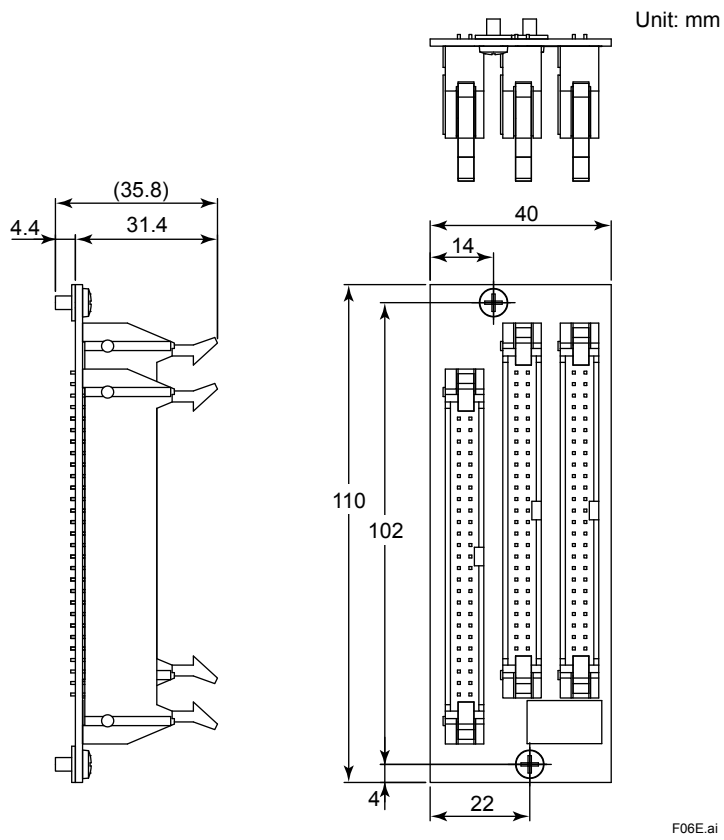F03E.ai

■ EXTERNAL DIMENSIONS

● **Migration Adapter**

SYEPD5D

Unit: mm

(35.8)
4.4 31.4
75
5 65
96.7
95
215.9
109.3
68
5

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SYEPD4D

Unit: mm

(35.8)

4.4 | 31.4

75

5 | 65

96.7

95

215.9

68

109.3

5

F05E.ai

SYEPD4B

Unit: mm

(35.8)

4.4 | 31.4

40

14

110

102

4

22

F06E.ai

SYEPA5D

Unit: mm

F07E.ai

SYEPA4D

Unit: mm

F08E.ai
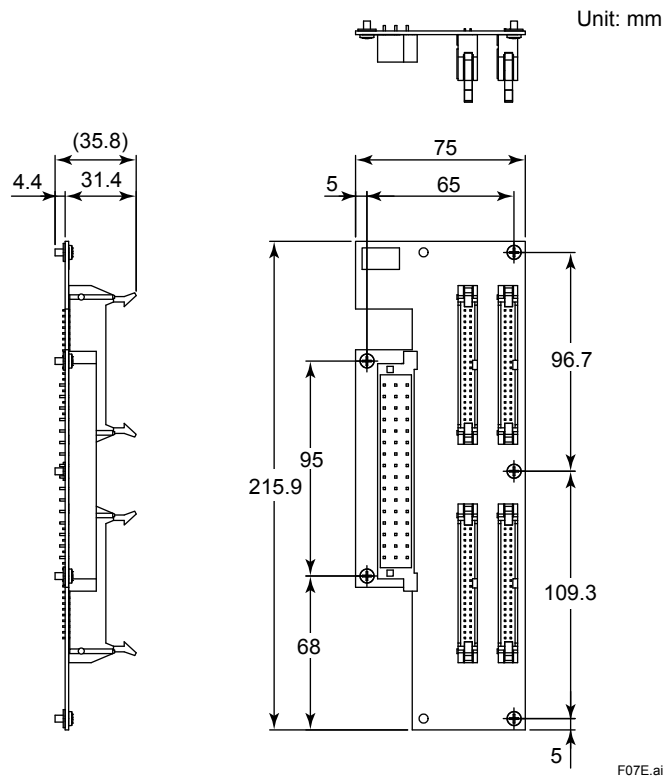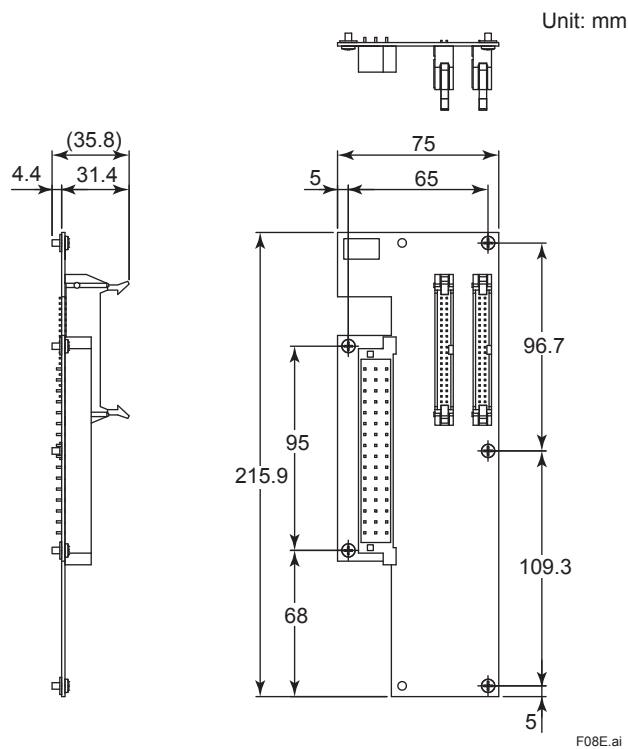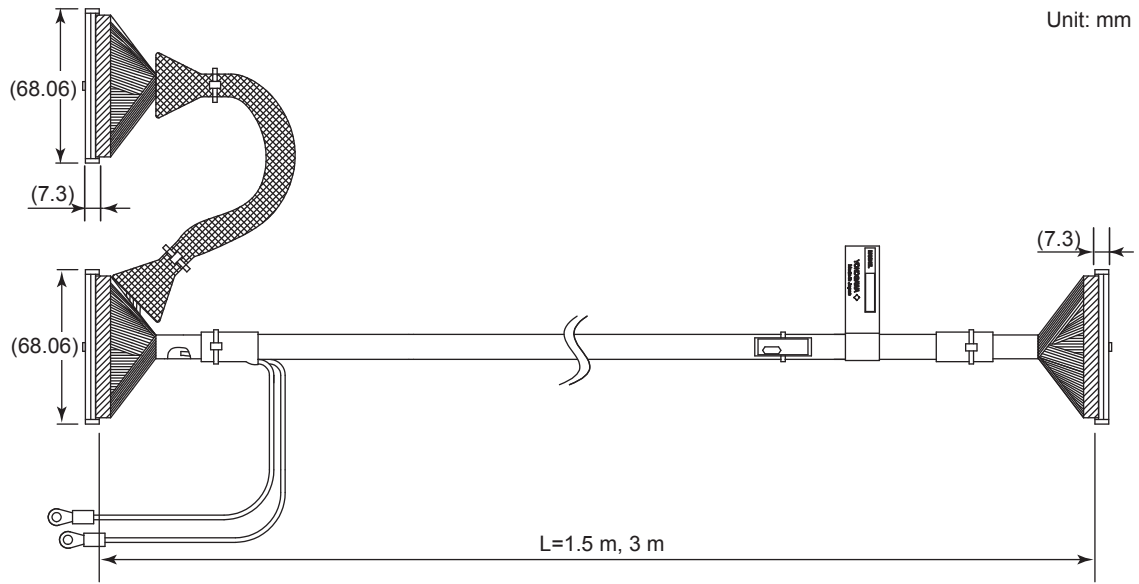
Nominal Tolerances:
    When the reference dimension is over 0.5 mm and equal or less than 120 mm, its nominal tolerance is ± 0.8 mm, while its combination of nominal tolerance is ± 1.5 mm.
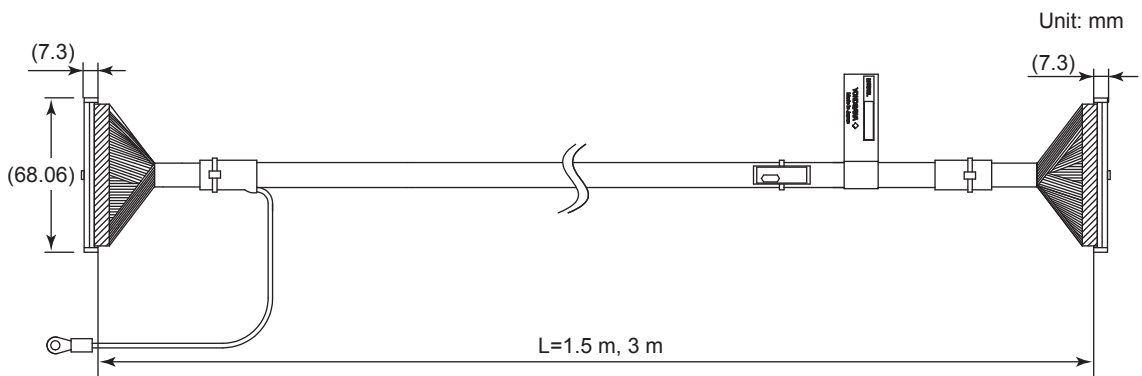   When the reference dimension is over 120 mm, its nominal tolerance is in accordance with JEM 1459.

● **Migration Cable**

SYK101W

Unit: mm

(68.06)

(7.3)

(7.3)

(68.06)

L=1.5 m, 3 m

F09E.ai

SYK101

Unit: mm

(7.3)

(7.3)

(68.06)

L=1.5 m, 3 m

F10E.ai

SYK501W

Unit: mm

(68.06)

(7.3)

(7.3)

(68.06)

L=1.5 m, 3 m

F11E.ai

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SYK501

Unit: mm

L=1.5 m, 3 m

(68.06)

(7.3)

(7.3)

F12E.ai

SYK301

Unit: mm

L=1.5 m, 3 m

(55.36)

(7.3)

(7.3)

F13E.ai

SYK502

Unit: mm

L= 40 cm

(15)

(15)

(68.06)

F14E.ai

Nominal tolerances of cable length:
When the reference dimension is less than or equal to 3000 mm, its nominal tolerance is +5%, -0%.
When the reference dimension is over 3000 mm, its nominal tolerance is +3% or +1m(whichever is smaller), -0%.

● **Fitting Frame**

SYPP10

Unit: mm
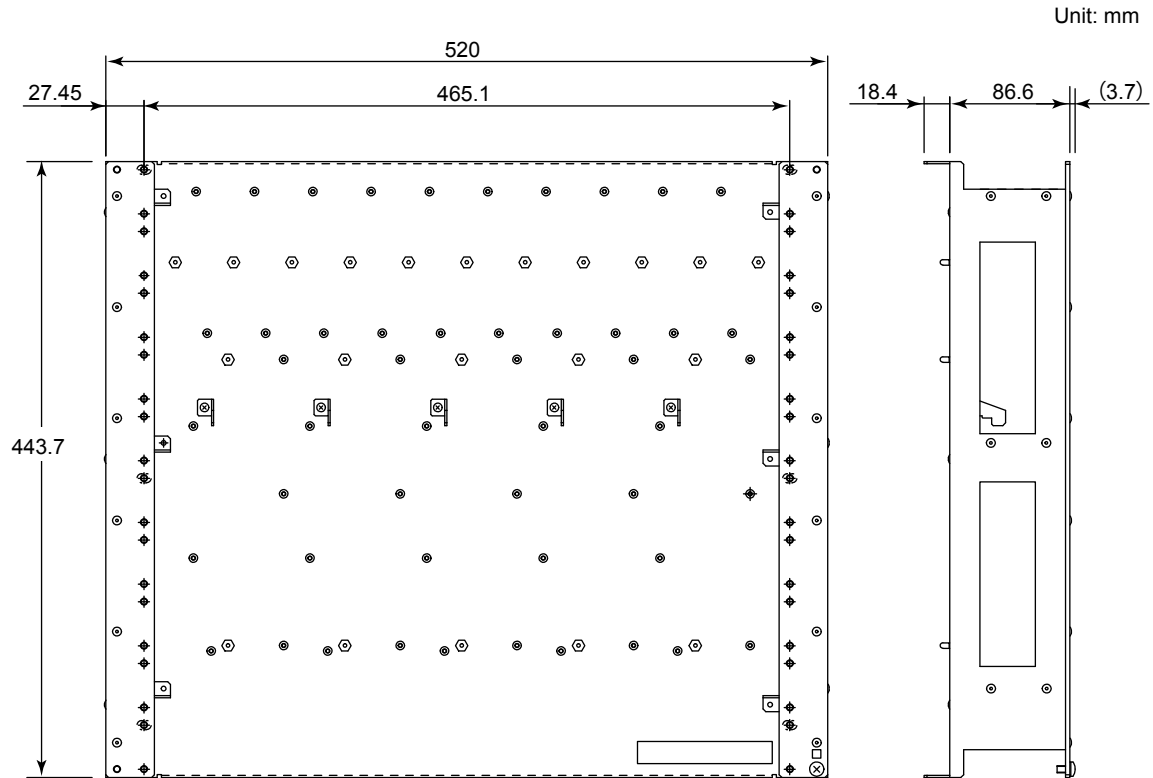
F15E.ai

Nominal Tolerances:
    When the reference dimension is over 0.5 mm and equal or less than 120 mm, its nominal tolerance is ± 0.8 mm, while its combination of nominal tolerance is ± 1.5 mm.
    When the reference dimension is over 120 mm, its nominal tolerance is in accordance with JEM 1459.
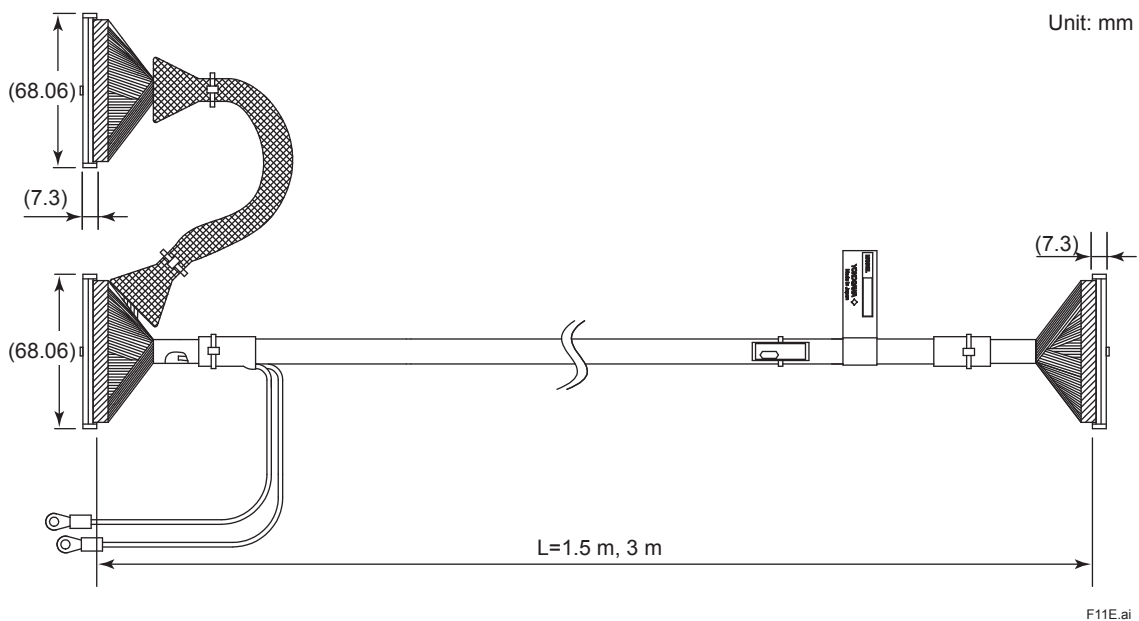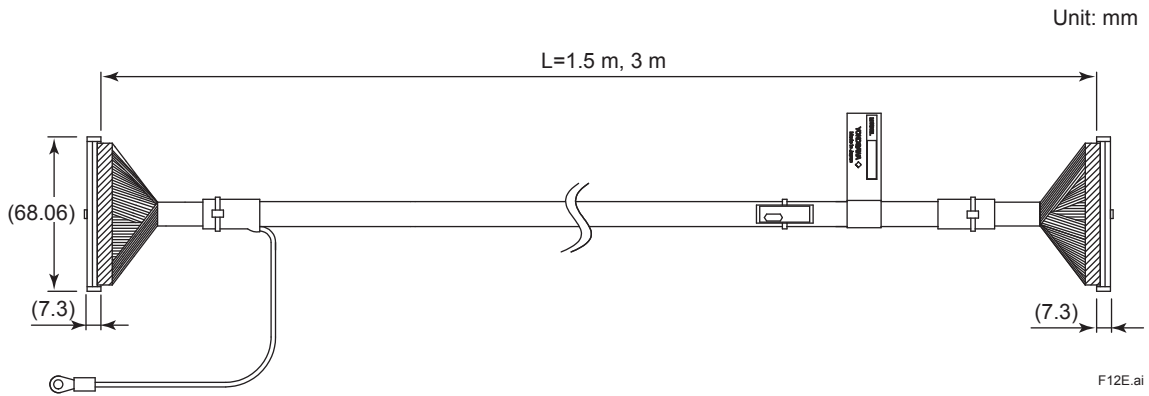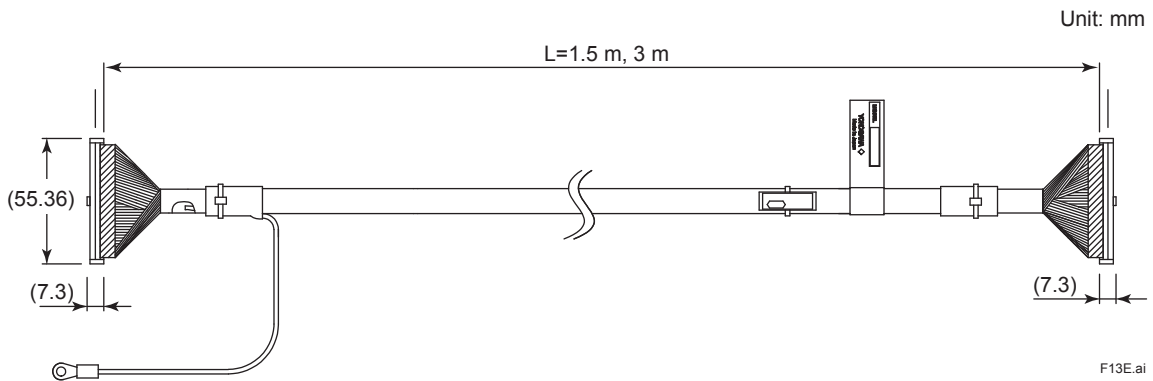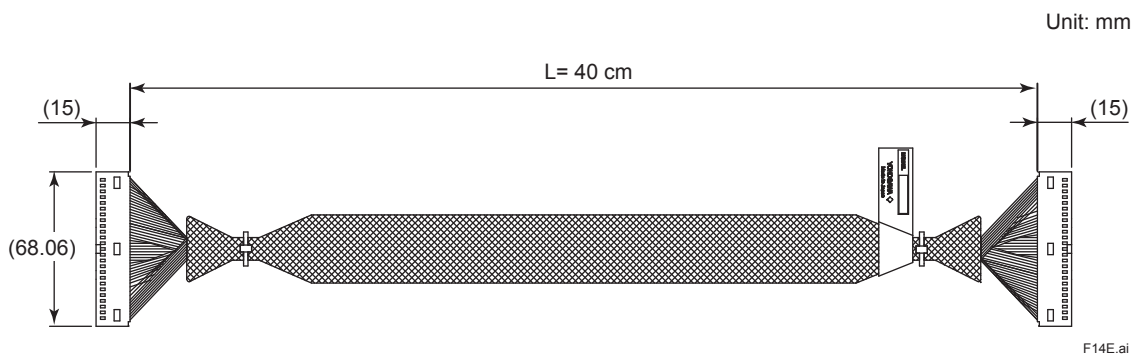
■ MODEL AND SUFFIX CODES

● Migration Adapter

		Description
Model	SYEPD5D	Adapter for CDM (32-channel to 16-channel x 2 Conversion with ISA Standard G3)
Suffix Codes	-1	DI (1-16 ch)
	-5	DO (1-16 ch)
	1	DI (17-32 ch)
	5	DO (17-32 ch)
	0	Always 0

		Description
Model	SYEPD4D	Adapter for CDO (16-channel to 8-channel x 2 Conversion with ISA Standard G3)
Suffix Codes	-5	DO (1-8 ch)
	5	DO (9-16 ch)
	0	Always 0

		Description
Model	SYEPD4B	Adapter for Digital Output branch (16-channel to 8-channel × 2 Conversion with ISA Standard G3)
Suffix Codes	-5	DO (1-8 ch)
	5	DO (9-16 ch)
	0	Always 0

		Description
Model	SYEPA5D	Adapter for CAI (32-channel to 16-channel × 2 Conversion with ISA Standard G3)
Suffix Codes	-1	AI (1-6 ch)
	1	AI (17-32 ch)
	0	Always 0

		Description
Model	SYEPA4D	Adapter for VIM (16-channel to 16-channel × 1 Conversion with ISA Standard G3)
Suffix Codes	-1	AI (1-16 ch)
	0	Always 0
	0	Always 0

● **Migration Cable**

		Description
Model	SYK101W	Cable for Digital Input (Dual-Redundant use only, for SDV144)
Suffix Codes	-C150	Cable length: 1.5 m
	-C300	Cable length: 3 m

		Description
Model	SYK101	Cable for Digital Input (Single use only, for SDV144)
Suffix Codes	-C150	Cable length: 1.5 m
	-C300	Cable length: 3 m

		Description
Model	SYK501W	Cable for Digital Output (Dual-Redundant use only, for SDV541/SDV531)
Suffix Codes	-C150	Cable length: 1.5 m
	-C300	Cable length: 3 m

		Description
Model	SYK501	Cable for Digital Output (Single use only, for SDV541/SDV531)
Suffix Codes	-C150	Cable length: 1.5 m
	-C300	Cable length: 3 m

		Description
Model	SYK502	Cable for Digital Output branch
Suffix Codes	-C040	Cable length: 40 cm

		Description
Model	SYK301	Cable for Analog (Single and Dual-Redundant)
Suffix Codes	-C150	Cable length : 1.5 m
	-C300	Cable length : 3 m

● **Fitting Frame**

		Description
Model	SYPP10	Adapter Fitting Frame
Suffix Codes	-0	Always 0
	0	Always 0

■ STANDARD ACCESSORIES

The Fitting Frame (SYPP10) is supplied with the following accessories.

Name	Part No.	Quantity	Remark
Bracket	T9084QJ	5	ProSafe-PLC I/O Cable Fixing Bracket
Screw	Y9420LB	5	ProSafe-PLC I/O Cable Fixing Bracket Screw

■ CONFORMITY STANDARDS

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

■ ORDERING INFORMATION

Specify the model and suffix codes when ordering.

■ TRADEMARKS

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