General Specifications

GS 32Q06D10-31E

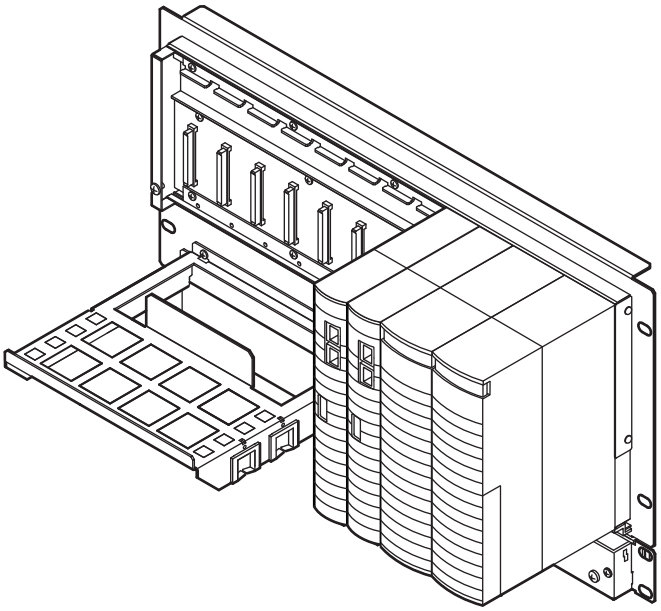
ProSafe-RS
SSC60S, SSC60D
Safety Control Unit, Duplexed Safety Control Unit
(for Vnet/IP, Rack Mountable Type)

■ GENERAL

This GS provides the hardware specifications of the safety control unit for Vnet/IP, which are intelligent parts of the safety control station (SCS).

■ HARDWARE SPECIFICATIONS

For the criteria for the installation environment, refer to “ProSafe-RS Safety Instrumented System Overview (for Vnet/IP)” (GS 32P01B10-01EN).



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● Safety Integrity Level

SIL 3

● Module Configuration

Power Supply Module (SPW481, SPW482 or SPW484): 2 modules
Processor Module (S2CP471 or SCP461): 2 modules for dual-redundant configuration. (*1)

*1: A dual-redundant configuration is enabled by using 2 identical modules with same model code (S2CP471 or SCP461).

● Memory Protection at Power Failure

Application program is stored in flash memory.
Processor module operation data is stored in NVRAM (nonvolatile memory).

● Temperature Adaptability

A fan unit is provided for high temperature use where the safety control units (SSC60S-F/SSC60D-F) ambient temperature exceeds 40 °C.

● Communications Interface

Vnet/IP interface:	Dual-redundant
ESB bus interface:	Dual-redundant

● Communication on Vnet/IP

Communication speed:	100 Mbps, Full duplex
Connection:	UTP cable (CAT5e or higher), RJ45 connector
Interface:	100Base-TX compliance
Max. distance:	100 m (distance between SSC60S/SSC60D and Layer 2 switch)

● Connecting Safety Node Units

Up to 13 safety node units can be connected to a safety control unit using SEC402 ESB bus coupler module.
Up to 9 safety node units can be connected to a safety control unit using SEC401 ESB bus coupler module.
For installation, ESB bus coupler modules (SEC402/SEC401) should be mounted on 7-th and 8-th slots.
ESB bus can be extended by Optical ESB bus repeater modules.

● Number of I/O Modules Mounted

Up to eight for each safety control unit

Up to 110 for each SCS (using SEC402 ESB bus coupler module)
Up to 78 for each SCS (using SEC401 ESB bus coupler module)

● Power Requirements

Specify suffix codes.
Voltage: 100 to 120 V AC, 50 or 60 Hz
Voltage: 220 to 240 V AC, 50 or 60 Hz
Voltage: 24 V DC

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GS 32Q06D10-31E

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Power Consumption

- SSC60S-S/SSC60D-S
  - 100 to 120 V AC model: 200 VA
  - 200 to 240 V AC model: 230 VA
  - 24 V DC model: 5.5 A
- SSC60S-F/SSC60D-F
  - 100 to 120 V AC model: 240 VA
  - 200 to 240 V AC model: 290 VA
  - 24 V DC model: 7.0 A

Battery

- S2CP471
  Part No. : S9450FE
  Battery's recommended replacement period: Three years under the average ambient temperature of 30 °C or less.
- SCP461
  Part No. : S9185FA
  Battery's recommended replacement period: Three years under the average ambient temperature of 30 °C or less.

Weight

Approximately 7.9 kg (for SSC60S-S)
Approximately 13 kg (for SSC60S-F)
Approximately 8.5 kg (for SSC60D-S)
Approximately 13 kg (for SSC60D-F)

Mounting

Rack mounting: SSC60S-S/SSC60D-S rack mounted with eight M5 screws
SSC60S-F/SSC60D-F rack mounted with twelve M5 screws
Insulating Bushing: Supplied as accessories

The SCS is composed of a safety control unit, safety node units and an ESB bus connecting them.

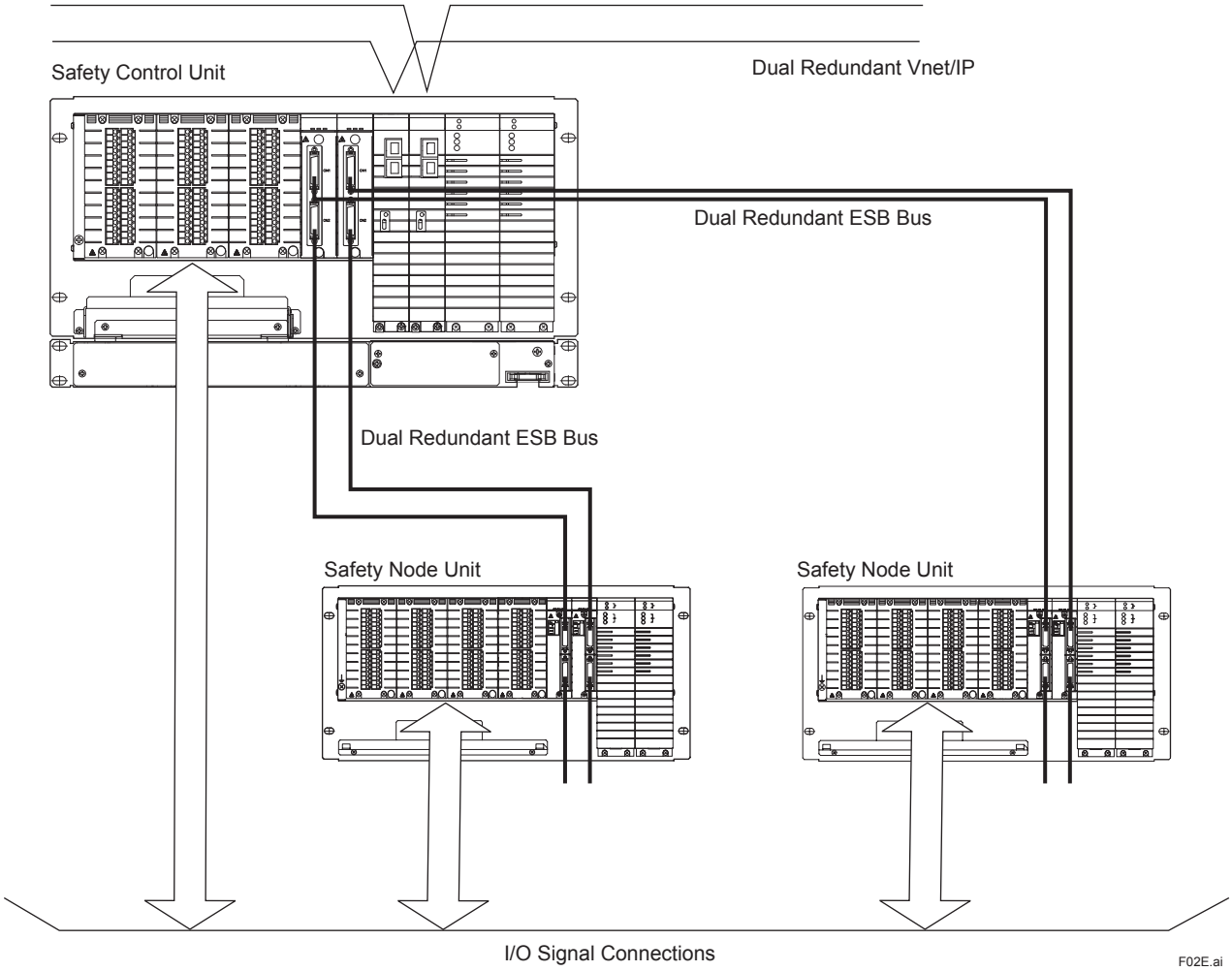


Figure SCS Configuration

● Connections

Power Supply: Connected with M4 screws.
Grounding: Connected with M4 screws.

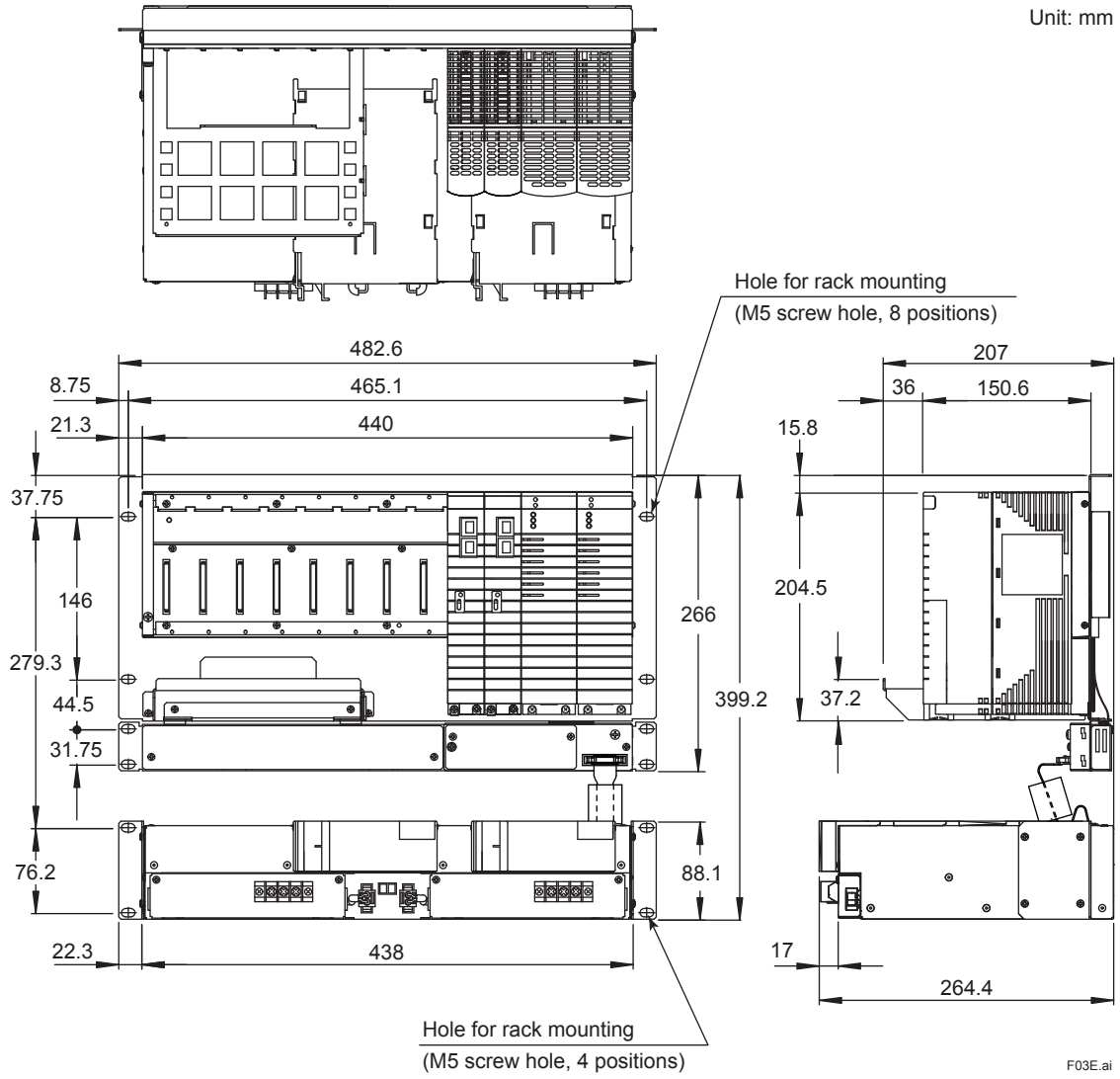
● Conformity Standards

Refer to “Standards Compliant Models” (GS 32P01B60-01EN).

■ EXTERNAL DIMENSIONS

● SSC60S-S, SSC60S-F, SSC60D-S, SSC60D-F

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.

■ MODEL AND SUFFIX CODES

Safety Control Unit

		Description
Model	SSC60S	Safety Control Unit (for Vnet/IP, Rack Mountable Type) (*1) (*2)
Suffix Codes	-S	Standard Type (-20 to 40 °C) (with ISA Standard G3)
	-F	Wide range temperature (-20 to 70 °C) type (with Fan unit and ISA Standard G3)
	2	Dual-redundant power supply
	5	With no explosion protection
	E	With explosion protection
	1	100-120 V AC power supply
	2	220-240 V AC power supply
	4	24 V DC power supply
	2	Without Safety Control Function License (R4.01 or later)
Option Code	/ATDOC	Explosion Protection Manual (*3)

Note: Install the 19-inch rack mountable type devices in a keyed metallic cabinet to conform to the safety standards, the EMC conformity standards and the explosion protection standards.
For details, refer to ProSafe-RS Installation Guidance (TI 32P01J10-01EN).
*1: Shipped with SCP461. Also S2CP471 is usable. Replacing from SCP461 to S2CP471 by a user is prohibited. Replacement work must be done by the service engineer authorized by Yokogawa Electric Corporation. See GS 32P06D20-01EN.
*2: When SSC60S that is mounted with S2CP471 is used with ProSafe-RS R3.01, R3.02, R4.01,R4.02, R4.03, or R4.04, be sure to apply the software patch for supporting S2CP471.
*3: Select the option code "/ATDOC" to follow the ATEX Directive and UKEX Regulation when any components are used for explosion protection.

Duplexed Safety Control Unit

		Description
Model	SSC60D	Duplexed Safety Control Unit (for Vnet/IP, Rack Mountable Type) (*1) (*2)
Suffix Codes	-S	Standard Type (-20 to 40 °C) (with ISA Standard G3)
	-F	Wide range temperature (-20 to 70 °C) type (with Fan unit and ISA Standard G3)
	2	Dual-redundant power supply
	5	With no explosion protection
	E	With explosion protection
	1	100-120 V AC power supply
	2	220-240 V AC power supply
	4	24 V DC power supply
	2	Without Safety Control Function License (R4.01 or later)
Option Code	/ATDOC	Explosion Protection Manual (*3)

Note: Install the 19-inch rack mountable type devices in a keyed metallic cabinet to conform to the safety standards, the EMC conformity standards and the explosion protection standards.
For details, refer to ProSafe-RS Installation Guidance (TI 32P01J10-01EN).
*1: Shipped with a pair of SCP461. Also a pair of S2CP471 is usable. Replacing from SCP461 to S2CP471 by a user is prohibited. Replacement work must be done by the service engineer authorized by Yokogawa Electric Corporation. See GS 32P06D20-01EN.
*2: When SSC60D that is mounted with S2CP471 is used with ProSafe-RS R3.01, R3.02, R4.01,R4.02, R4.03, or R4.04, be sure to apply the software patch for supporting S2CP471.
*3: Select the option code "/ATDOC" to follow the ATEX Directive and UKEX Regulation when any components are used for explosion protection.

■ SOFTWARE

One SSC60S or SSC60D requires one software license for the safety control function. For details, refer to "Safety Control Function (for SSC60□), Safety Control Function for SCS Simulator (for SSC60□)" (GS 32P03B10-01EN) and "Project I/O License" (GS 32P03A10-01EN).

■ STANDARD ACCESSORIES

The safety control unit is supplied with the following accessories.

Accessory	Part number	Description	Quantity	Remark
Insulating bushing	S9049PM	SSC60S-S/SSC60D-S	8	Accessories
		SSC60S-F/SSC60D-F	12	

■ ORDERING INFORMATION

Specify the model and suffix codes when ordering.
For selecting the right products for explosion protection, please refer to the TI “Explosion Protection” (TI 32S01J30-01E) without fail.

■ TRADEMARK ACKNOWLEDGMENT

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