GENERAL

This General Specifications (GS) provides the hardware specifications of the safety control unit, which are intelligent parts of the safety control station (SCS). This product supports both N-IO and FIO.

HARDWARE SPECIFICATIONS

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

Module Configuration

- Power Supply Module (SPW481, SPW482 or SPW484): 2 modules
- Processor Module (SCP461 style S2 or later): 2 modules for dual redundant configuration

Processor

MIPS R5000 Processor

Main Memory Capacity

128 MB

Memory Protection at Power Failure

Application program is stored in non-volatile memories. Processor Module Management Information is stored in the storage memories backed up by a non-rechargeable battery.

The battery's recommended replacement cycle is three years when it is used under the average ambient temperature of 30 °C or less.

Temperature Adaptability

A fan unit is provided for high temperature use where the safety control units (S2SC70S-F/S2SC70D-F) ambient temperature exceeds 40 °C.

Control Network

Vnet/IP interface: Dual-redundant

No. of Node Units Connectable

In order to extend the number of I/O channels, S2SC70S allows N-IO nodes and safety node units to be connected to it. The number of individual nodes that can be connected is as follows.

- Max. 32/SCS
- Max. 13/SCS

For details, refer to the GS "ProSafe-RS Outline of I/O Modules (for N-IO)" (GS 32P06F10-01EN).

Installation Restrictions for Node Units

N-IO Node

An N-IO node is connected via an N-ESB bus or optical ESB bus. A node connection via the N-ESB bus needs an N-ESB bus coupler module (S2EN402 or S2EN404).

A node connection via the optical ESB bus needs an ESB bus coupler module (SEC401 or SEC402) and an ESB bus optical repeater module (SNT401 or SNT411).

Safety Node Unit (SNB10D)

A safety node unit is connected via an ESB bus or optical ESB bus. A safety node unit connection via the ESB bus needs an ESB bus coupler module (SEC401 or SEC402). A safety node unit connection via the optical ESB bus needs an ESB bus coupler module (SEC401 or SEC402) and an ESB bus optical repeater module (SNT401 or SNT411).
Installation Restrictions for Bus Interface Module

N-ESB Bus Coupler Modules (S2EN402 or S2EN404) shall be installed in an odd-numbered slot and the adjacent slot on the right of slots 1 to 8 according to the number of branches.

A pair of ESB Bus Coupler Modules (SEC401 or SEC402) shall be installed in slots 7 and 8.

A pair of Optical ESB Bus Repeater Master Modules (SNT401 or SNT411) shall be installed in an odd-numbered slot and the adjacent slot on the right of slots 1 to 6 according to the number of branches.

For details, refer to the GS of each module.

Installation Restrictions

Up to eight I/O modules (for FIO) can be installed to a S2SC70□.

For the I/O module (for FIO) installation limitations and notes, refer to “ProSafe-RS Outline of I/O Modules” (GS 32Q06K20-31E).

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

Power Consumption

- S2SC70S-S/S2SC70D-S
  100 to 120 V AC model: 200 VA
  200 to 240 V AC model: 230 VA
  24 V DC model: 5.5 A
- S2SC70S-F/S2SC70D-F
  100 to 120 V AC model: 240 VA
  200 to 240 V AC model: 290 VA
  24 V DC model: 7.0 A

Weight

S2SC70S-S: Approx. 7.9 kg
S2SC70S-F: Approx. 13 kg
S2SC70D-S: Approx. 8.5 kg
S2SC70D-F: Approx. 13 kg

Mounting

Rack mounting: Rack mount (S2SC70□-S, M5x8 screws)
(S2SC70□-F, M5x12 screws)
Insulation bush (accessory)

Connection

Power Supply: M4 screw terminal connection
Grounding: M4 screw terminal connection
The following shows a configuration example of ProaSafe-RS system of S2SC70□, N-IO node and safety node units.

*1: For details, refer to the GS “N-IO field enclosure” (GS 32P06Q10-01EN)

Figure Safety Control Station (SCS) System Configuration
**EXTERNAL DIMENSIONS**

- S2SC70S-S, S2SC70S-F, S2SC70D-S, S2SC70D-F

![Diagram of S2SC70S-S, S2SC70D-S, S2SC70S-F, S2SC70D-F]

**SOFTWARE**

S2SC70S and S2SC70D are supported by R4.01 or later. A software license is required for S2SC70S and S2SC70D separately. For details, refer to the GS “Safety Control Function (for S2SC70)” (GS 32P03B30-01EN) and “Project I/O License” (GS 32P03A10-01EN).

**STANDARD ACCESSORIES**

S2SC70S and S2SC70D are delivered with the following standard accessories.

<table>
<thead>
<tr>
<th>Parts Names</th>
<th>Parts Numbers</th>
<th>Description</th>
<th>Quantity</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulating bush</td>
<td>S9049PM</td>
<td>S2SC70S-S / S2SC70D-S</td>
<td>8</td>
<td>Accessories</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S2SC70S-F / S2SC70D-F</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

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

The nominal tolerance is in accordance with JEM 1459 for the dimensions over 120 mm.
## MODEL AND SUFFIX CODES

### Safety Control Unit

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S2SC70S</td>
<td>Safety Control Unit (for N-IO/FIO, Rack Mountable Type)</td>
</tr>
</tbody>
</table>

### Suffix Codes

<table>
<thead>
<tr>
<th>Suffix Codes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-S</td>
<td>Standard type (-20 to 40 °C)</td>
</tr>
<tr>
<td>-F</td>
<td>wide range temperature type (-20 to 70 °C)</td>
</tr>
<tr>
<td>4</td>
<td>Dual-redundant Vnet/IP, dual-redundant power supply</td>
</tr>
<tr>
<td>1</td>
<td>Always 1</td>
</tr>
<tr>
<td>1</td>
<td>100 - 120 V AC power supply (*1)</td>
</tr>
<tr>
<td>2</td>
<td>220 - 240 V AC power supply (*1)</td>
</tr>
<tr>
<td>4</td>
<td>24 V DC power supply (*1) (*2)</td>
</tr>
<tr>
<td>0</td>
<td>With no explosion protection</td>
</tr>
<tr>
<td>1</td>
<td>With explosion protection (*2)</td>
</tr>
<tr>
<td>1</td>
<td>With ISA Standard G3</td>
</tr>
<tr>
<td>0</td>
<td>Always 0</td>
</tr>
</tbody>
</table>

### Option Code

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ATDOC</td>
<td>Explosion Protection Manual (*3)</td>
</tr>
</tbody>
</table>

*1: For the rack mountable devices, DIN rail mountable devices, and wall mountable devices to meet the Safety Standards and EMC Standards, the devices must be installed in a lockable metal cabinet. The cabinet must conform to IEC/EN/CSA 61010-2-201 or provide degrees of protection IP3X or above and IK09 or above.

*2: Only suffix code for 24 V DC power supply complies with ATEX/IECEx Directive.

*3: Select the option code “/ATDOC” to follow the ATEX/IECEx Directive when any components are used for explosion protection.

### Duplexed Safety Control Unit

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>S2SC70D</td>
<td>Duplexed Safety Control Unit (for N-IO/FIO, Rack Mountable Type)</td>
</tr>
</tbody>
</table>

### Suffix Codes

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<th>Description</th>
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<tbody>
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<td>Standard type (-20 to 40 °C)</td>
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<td>wide range temperature type (-20 to 70 °C)</td>
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<tr>
<td>4</td>
<td>Dual-redundant Vnet/IP, dual-redundant power supply</td>
</tr>
<tr>
<td>1</td>
<td>Always 1</td>
</tr>
<tr>
<td>1</td>
<td>100 - 120 V AC power supply (*1)</td>
</tr>
<tr>
<td>2</td>
<td>220 - 240 V AC power supply (*1)</td>
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<tr>
<td>4</td>
<td>24 V DC power supply (*1) (*2)</td>
</tr>
<tr>
<td>0</td>
<td>With no explosion protection</td>
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<tr>
<td>1</td>
<td>With explosion protection (*2)</td>
</tr>
<tr>
<td>1</td>
<td>With ISA Standard G3</td>
</tr>
<tr>
<td>0</td>
<td>Always 0</td>
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*2: Only suffix code for 24 V DC power supply complies with ATEX/IECEx Directive.

*3: Select the option code “/ATDOC” to follow the ATEX/IECEx Directive when any components are used for explosion protection.

### CONFORMITY STANDARDS

Refer to “ProSafe-RS Standards compliant models” (GS 32P01B60-01EN).

### ORDERING INFORMATION

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

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

The processor module is delivered without a battery for memory back up. Please separately purchase the battery as specified below and place it prior to use the processor module.

- Part No. S9185FA x 1 pce (for S2SC70S)
- Part No. S9185FA x 2 pcs (for S2SC70D)

**TRADEMARKS**

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