MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

YOKOGAWA

S2CP471-01 S1

SAFETY CONTROLLER PROCESSOR MODULE

Used with the applicable ProSafe-RS configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Yokogawa S2CP471-01 S1

General Specifications

GS 32P06D20-01EN

ProSafe-RS
S2CP471, S2CP471KT
Processor module (for SSC60 and S2SC70)
Processor module upgrade kit (for SSC60 and S2SC70)

■ GENERAL

This GS describes the hardware specifications of the processor module (S2CP471) which is mounted on the ProSafe-RS safety control units. The two S2CP471 can be used in dual-redundant configuration on a duplexed safety control unit.

The existing SCP461 mounted on the safety control unit can be replaced with S2CP471. The processor module upgrade kit (S2CP471KT) contains essential components for the replacement. The details of the kit contents are given in the following sections.

■ MODEL AND SUFFIX CODES

Processor module

		Description
Model	S2CP471	Processor module (for SSC60 and S2SC70)
Suffix Codes	-0	With no explosion protection
	-1	With explosion protection
	1	With ISA Standard G3

Processor module upgrade kit

		Description
Model	S2CP471KT	Processor module upgrade kit (for SSC60 and S2SC70)
Suffix Code	-1	Always 1
Option Codes	/SS0	for SSC60S-S25, S2SC70S-S41☐0 (Single, standard type, with no explosion protection)
	/DS0	for SSC60D-S25, S2SC70D-S41☐0 (Duplexed, standard type, with no explosion protection)
	/SF0	for SSC60S-F25, S2SC70S-F41☐0 (Single, wide range temperature type, with no explosion protection)
	/DF0	for SSC60D-F25, S2SC70D-F41☐0 (Duplexed, wide range temperature type, with no explosion protection)
	/SS1	for SSC60S-S2E, S2SC70S-S41☐1 (Single, standard type, with explosion protection)
	/DS1	for SSC60D-S2E, S2SC70D-S41☐1 (Duplexed, standard type, with explosion protection)
	/SF1	for SSC60S-F2E, S2SC70S-F41☐1 (Single, wide range temperature type, with explosion protection)
	/DF1	for SSC60D-F2E, S2SC70D-F41☐1 (Duplexed, wide range temperature type, with explosion protection)

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GS 32P06D20-01EN
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■ OPERATING CONDITIONS OF S2CP471

- S2CP471 runs with ProSafe-RS R3.01 or later (R4.01 or later when it is mounted on S2SC70☐). Be sure to apply the software patch for supporting S2CP471 when using S2CP471 with ProSafe-RS R3.01, R3.02, R4.01,R4.02, R4.03, or R4.04.
- S2CP471 can be mounted only on the ProSafe-RS safety control units shown in the following table.

Safety control unit	Duplexed safety control unit	Applicable S2CP471
S2SC70S-☐4☐☐0☐☐ (*1)	S2SC70D-☐4☐☐0☐☐ (*1)	S2CP471-01
S2SC70S-☐A☐☐0☐☐	S2SC70D-☐A☐☐0☐☐	
SSC60S-☐☐1☐☐ (no-explosion protection) (*1)	SSC60D-☐☐1☐☐ (no-explosion protection) (*1)	
SSC60S-☐☐5☐☐ (*1)	SSC60D-☐☐5☐☐ (*1)	
S2SC70S-☐4☐☐1☐☐ (*1)	S2SC70D-☐4☐☐1☐☐ (*1)	S2CP471-11
S2SC70S-☐A☐☐1☐☐	S2SC70D-☐A☐☐1☐☐	
SSC60S-☐☐1☐☐ (explosion protection) (*2)	SSC60D-☐☐1☐☐ (explosion protection) (*2)	
SSC60S-☐☐E☐☐ (*1)	SSC60D-☐☐E☐☐ (*1)	

*1: These safety control units are shipped with processor module SCP461. The existing SCP461 can be replaced with S2CP471.
*2: These safety control units are shipped with processor module SCP461.
S2CP471-11 cannot be used for SSC60☐-☐☐1☐☐ if ATEX Ex "ec" and UKEX Ex "ec" is required.
S2CP471-11 can be used for SSC60☐-☐☐1☐☐ if FM NI is required.

■ HARDWARE SPECIFICATIONS OF S2CP471

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

● Safety Integrity Level

SIL 3

● Weight

S2CP471: Approx. 700 g

● Built-in battery (replaceable)

Part No. S9450FE x 1 pc
(recommended replacement period: 3 years under the average ambient temperature of 30 ºC or less)

■ MAINTENANCE INFORMATION

The on-line replacement of S2CP471 in dual-redundant configuration can be performed by a user.

For the replacement of existing SCP461 with S2CP471, the following points must be considered.

- The software version of ProSafe-RS must be R3.01 or later (R4.01 or later when it is mounted on S2SC70☐). Be sure to apply the software patch for supporting S2CP471 when S2CP471 is used with ProSafe-RS R3.01, R3.02, R4.01,R4.02, R4.03, or R4.04.
- The replacement from SCP461 to S2CP471 is prohibited to perform by a user. It must be performed by the service engineer authorized by Yokogawa Electric Corporation.
- S2CP471 cannot be co-existed with SCP461 in dual-redundant configuration. However, a pair of SCP461 in dual-redundant configuration can be on-line replaced with a pair of S2CP471.
- The existing S2CP471 must not be replaced with SCP461.
- The processor module modification history label is necessary.
- An air deflector must be mounted on the safety control unit S2SC70☐-F4☐☐☐☐☐ and SSC60☐-F☐☐☐☐☐☐.
- For hardware, the processor module upgrade kit S2CP471KT described in the following section must be used.

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■ PROCESSOR MODULE UPGRADE KIT (MODEL: S2CP471KT)

The processor module upgrade kit (S2CP471KT) contains essential components for the replacement of the processor module. Select suitable processor module upgrade kit as per the existing safety control unit. The details of the kit contents are given in the following table.

Applicable existing safety control unit	Processor module upgrade kit	Components of the processor module upgrade Kit		
		Processor module	Processor module modification history label T9044DZ	Air deflector T9085JZ
S2SC70S-S4□□0□□	S2CP471KT-1/SS0	S2CP471-01 (1 Qty)	1 Qty	–
S2SC70S-F4□□0□□	S2CP471KT-1/SF0	S2CP471-01 (1 Qty)	1 Qty	1 Qty
S2SC70D-S4□□0□□	S2CP471KT-1/DS0	S2CP471-01 (2 Qty)	1 Qty	–
S2SC70D-F4□□0□□	S2CP471KT-1/DF0	S2CP471-01 (2 Qty)	1 Qty	1 Qty
SSC60S-S□1□□ (no-explosion protection)	S2CP471KT-1/SS0	S2CP471-01 (1 Qty)	1 Qty	–
SSC60S-S□5□□	S2CP471KT-1/SS0	S2CP471-01 (1 Qty)	1 Qty	–
SSC60S-F□1□□ (no-explosion protection)	S2CP471KT-1/SF0	S2CP471-01 (1 Qty)	1 Qty	1 Qty
SSC60S-F□5□□	S2CP471KT-1/SF0	S2CP471-01 (1 Qty)	1 Qty	1 Qty
SSC60D-S□1□□ (no-explosion protection)	S2CP471KT-1/DS0	S2CP471-01 (2 Qty)	1 Qty	–
SSC60D-S□5□□	S2CP471KT-1/DS0	S2CP471-01 (2 Qty)	1 Qty	–
SSC60D-F□1□□ (no-explosion protection)	S2CP471KT-1/DF0	S2CP471-01 (2 Qty)	1 Qty	1 Qty
SSC60D-F□5□□	S2CP471KT-1/DF0	S2CP471-01 (2 Qty)	1 Qty	1 Qty
S2SC70S-S4□□1□□	S2CP471KT-1/SS1	S2CP471-11 (1 Qty)	1 Qty	-
S2SC70S-F4□□1□□	S2CP471KT-1/SF1	S2CP471-11 (1 Qty)	1 Qty	1 Qty
S2SC70D-S4□□1□□	S2CP471KT-1/DS1	S2CP471-11 (2 Qty)	1 Qty	-
S2SC70D-F4□□1□□	S2CP471KT-1/DF1	S2CP471-11 (2 Qty)	1 Qty	1 Qty
SSC60S-S□1□□ (explosion protection) (*1)	S2CP471KT-1/SS1	S2CP471-11 (1 Qty)	1 Qty	-
SSC60S-S□E□□	S2CP471KT-1/SS1	S2CP471-11 (1 Qty)	1 Qty	-
SSC60S-F□1□□ (explosion protection) (*1)	S2CP471KT-1/SF1	S2CP471-11 (1 Qty)	1 Qty	1 Qty
SSC60S-F□E□□	S2CP471KT-1/SF1	S2CP471-11 (1 Qty)	1 Qty	1 Qty
SSC60D-S□1□□ (explosion protection) (*1)	S2CP471KT-1/DS1	S2CP471-11 (2 Qty)	1 Qty	-
SSC60D-S□E□□	S2CP471KT-1/DS1	S2CP471-11 (2 Qty)	1 Qty	-
SSC60D-F□1□□ (explosion protection) (*1)	S2CP471KT-1/DF1	S2CP471-11 (2 Qty)	1 Qty	1 Qty
SSC60D-F□E□□	S2CP471KT-1/DF1	S2CP471-11 (2 Qty)	1 Qty	1 Qty

*1: S2CP471KT is unavailable if ATEX Ex "ec" and UKEX Ex "ec" is required. S2CP471KT is available if FM NI is required.

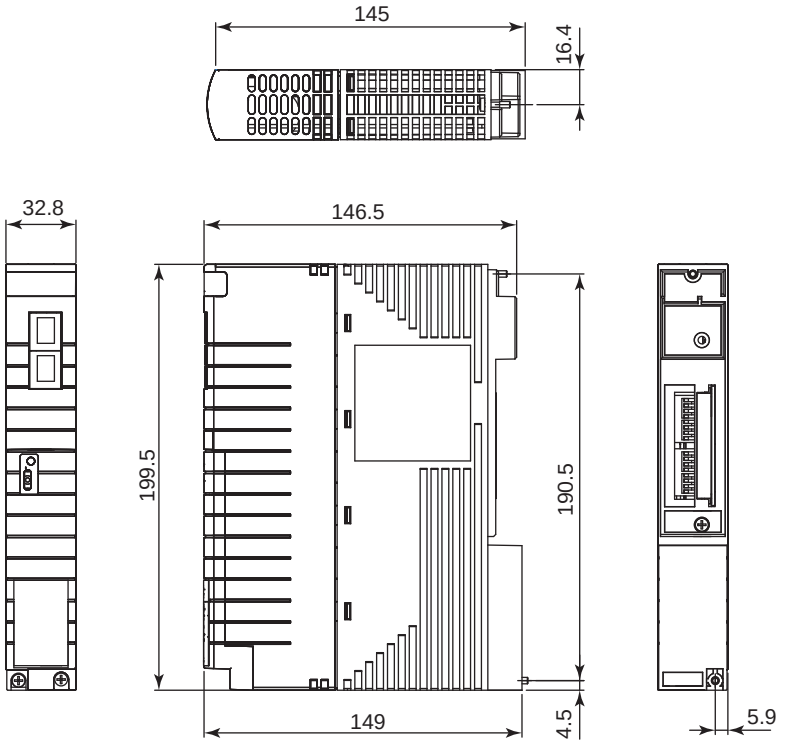
For the replacement from SCP461 to S2CP471 by using S2CP471KT, refer to OPERATING CONDITIONS OF S2CP471 and HARDWARE SPECIFICATIONS OF S2CP471 sections. Even after SCP461 is replaced with S2CP471, there is no change in the specifications of existing safety control unit. Suffix codes of the existing safety control unit remain.

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■ EXTERNAL DIMENSION

● Processor module S2CP471

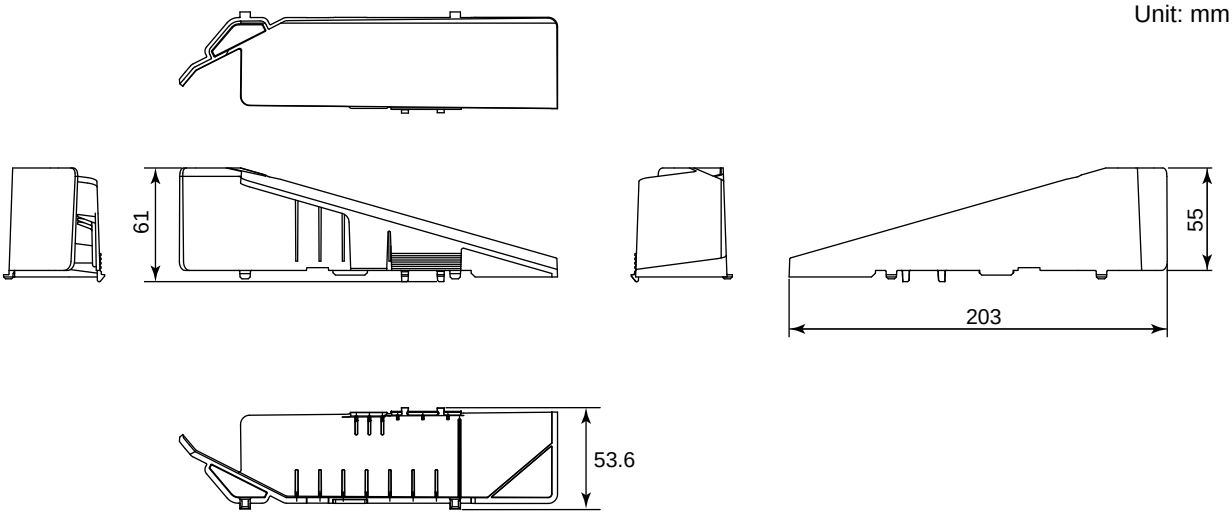
Unit: mm



F01.ai

● Air deflector T9085JZ

Unit: mm



F02E.ai

Nominal tolerance:

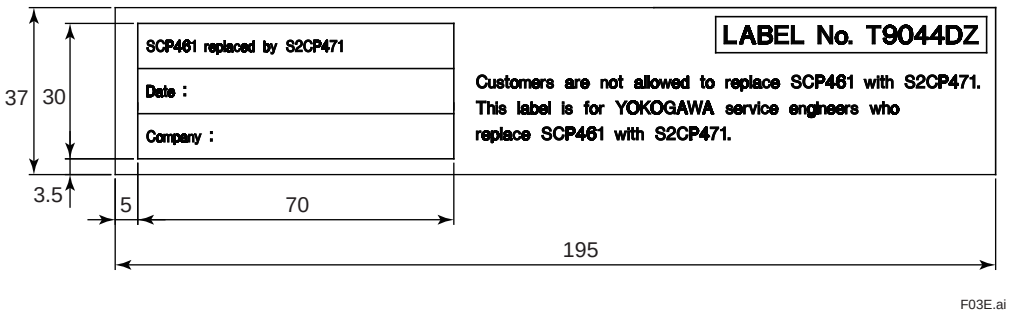
Nominal tolerance is ± 0.8 mm for the dimensions of 0.5 mm or more and 120 mm or less, and the combined nominal tolerance is ± 1.5 mm.
The nominal tolerance is in accordance with JEM 1459 for the dimensions over 120 mm.

For the external dimensions of safety control unit with the air deflector, refer to the GS "ProSafe-RS Safety Control Unit, Duplexed Safety Control Unit (for N-IO/FIO, Rack Mountable Type)" (GS 32P06D10-01EN).

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● **Processor module modification history label T9044DZ**

Unit: mm



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.

■ CONFORMITY STANDARDS

- S2CP471, air deflector, and processor module modification history label comply to the applicable standards as a part of the safety control units (SSC60☐ and S2SC70☐).
- A certification standard under the model code of S2CP471KT is not available.
- For applicable standards of the safety control units, refer to the GS "Standards compliant models" (GS 32P01B60-01EN).

■ ORDERING INFORMATION

Specify the model, suffix code(s), and option code(s).
The replacement from SCP461 to S2CP471 is prohibited to perform by a user.
When replacing from SCP461 to S2CP471, it is required to order S2CP471KT and request the service engineer authorized by Yokogawa Electric Corporation for replacement.

■ TRADEMARK ACKNOWLEDGMENT

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