

## Product Discontinuation Notices

Safety Controllers

Issue Date  
July 1, 2014

No. 2014058CE

**Discontinuation Notice of Safety Controller Model F3SX-EB1, Accessories Function set-up software Model F3SX-CD100-E and RS-232C connection cable Model F39-JC2X1, F39-JC2X2 series.**

### Product Discontinuation

Safety Controllers  
**Model F3SX-EB1**  
Function Setup Software for the F3SX  
**Model F3SX-CD100-E**  
RS-232C Cable  
**Model F39-JC2X1**  
  
**Model F39-JC2X2**



### Recommended Replacement

Safety Controllers  
**Model G9SP-N20S**  
G9SP configurator  
**Model WS02-G9SP□-V1**  
  
No recommended replacement  
**ELECOM CO.,LTD**  
**Model U2C-B20BK**  
  
No recommended replacement  
**ELECOM CO.,LTD**  
**Model U2C-B20BK**

#### [ Discontinuation date ]

The end of March, 2016

#### [ Caution on recommended replacement ]

Body color, dimensions, wire connection, mounting dimensions, characteristics, operation ratings, operation methods are changed.

#### [ Difference from discontinued product ]

Recommended replacement Model	Body Color	Dimensions	Wire connection	Mounting Dimensions	Characteristics	Operation ratings	Operation methods
G9SP-N20S	--	--	--	--	--	--	--
WS02-G9SP□-V1	-	-	-	-	-	-	-
U2C-B20BK	--	--	*	-	-	-	-

\*\* : Compatible

\* : The change is a little/Almost compatible

-- : Not compatible

- : No corresponding specification

**[ Product Discontinuation and recommended replacement ]**

Product discontinuation	Recommended replacement
F3SX-EB1	G9SP-N20S
F3SX-CD100-E	WS02-G9SP01-V1 (1 license)
	WS02-G9SP10-V1 (10 licenses)
	WS02-G9SP50-V1 (50 licenses)
	WS02-G9SPXX-V1 (Site license)
F39-JC2X1	No recommended replacement ELECOM CO.,LTD U2C-B20BK
F39-JC2X2	No recommended replacement ELECOM CO.,LTD U2C-B20BK

**[ Body color ]**

Product discontinuation Model F3SX-EB1	Recommendable replacement Model G9SP-N20S
Terminal block: Black Body: Gray	Terminal block: Black Body: Black
	

Product discontinuation Model F39-JC2X1 Model F39-JC2X2	Recommendable replacement ELECOM CO.,LTD Model U2C-B20BK
Terminal block: Silver Cable: Black	Terminal block: Black Cable: Black
	

[ Wire connection ]

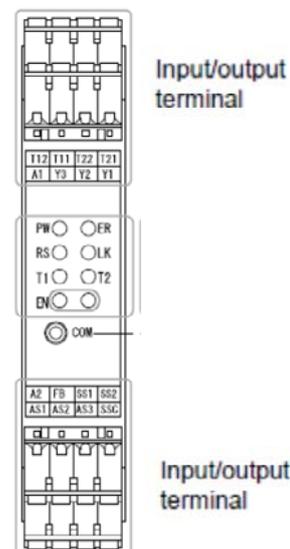
Product discontinuation  
Model F3SX-EB1

Terminal block

< Main module with DC solid-state Safety Output >

Input/Output terminal

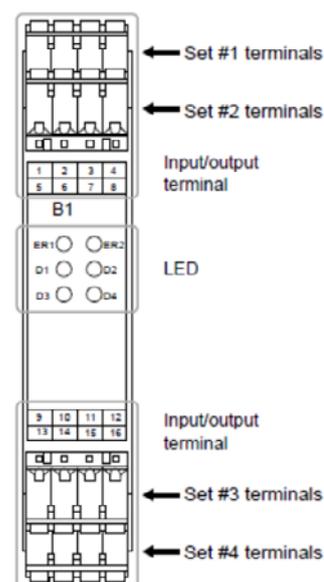
Terminal name	Terminal No.	Functions
Power input	A1	24V DC input
	A2	GND (0V) input
Emergency-stop input	T11	Emergency-stop switch input
	T12	
	T21	Emergency-stop switch input
	T22	
Reset input	Y1	Reset input, selection between auto reset / manual reset, system reset
	Y2	
	Y3	
Feedback input	FB	Monitoring feedback time
Auxiliary solid-state output	AS1	Safety output monitor (Standard Setup: Outputs signal that is synchronous and in the same logics as those of the safety output)
	AS2	Ready output (Standard Setup: When F3SX CPU has been initialized and the input and output have turned into normally controllable state, the output is turning ON.)
	AS3	Standby output (Standard Setup: When F3SX CPU has been initialized and the input and output have turned into normally controllable state, the output is turning ON)
Auxiliary input	SSC	Start command input
DC solid-state safety output	SS1	DC solid-state safety output 1
	SS2	DC solid-state safety output 2
RS-232C port	COM	Port for communication cable connection (RS-232C)



< Single-beam Safety Sensors Input Module >

Input terminal

Terminal name	Terminal No.	Connection
24V DC	1	Single-beam safety sensor (Set #1)
0V	2	OMRON Model
Control Output	3	E3FS-10B4[ ] [ ] (Type 2)
Test input	4	E3ZS-T81A(Type2)
24V DC	1	Single-beam safety sensor (Set #2)
0V	2	OMRON Model
Control Output	3	E3FS-10B4[ ] [ ] (Type 2)
Test input	4	E3ZS-T81A(Type2)
24V DC	1	Single-beam safety sensor (Set #3)
0V	2	OMRON Model
Control Output	3	E3FS-10B4[ ] [ ] (Type 2)
Test input	4	E3ZS-T81A(Type2)
24V DC	1	Single-beam safety sensor (Set #4)
0V	2	OMRON Model
Control Output	3	E3FS-10B4[ ] [ ] (Type 2)
Test input	4	E3ZS-T81A(Type2)



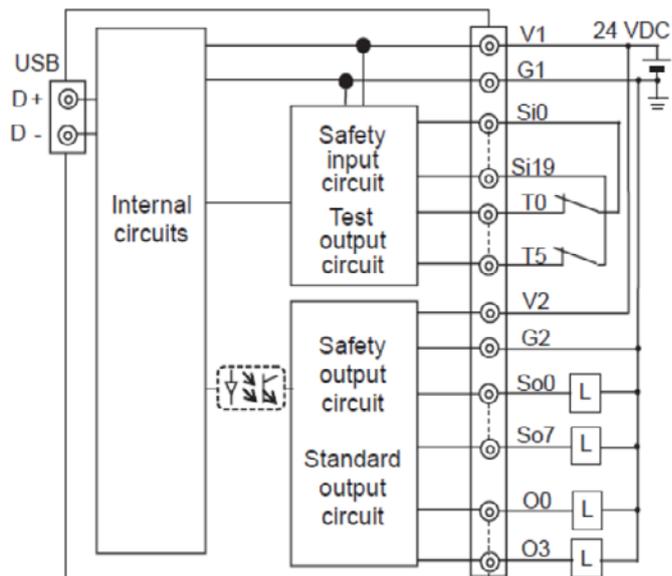
**Recommendable replacement  
Model G9SP-N20S**

**Terminal block**

Top	V1	G1	Si1	Si3	Si5	Si7	Si9	Si11	Si13	Si15	Si17	Si19
(24 pin)	NC	Si0	Si2	Si4	Si6	Si8	Si10	Si12	Si14	Si16	Si18	NC

Bottom	NC	So0	So2	So4	So6	NC	T0	T2	T4	
(19 pin)	V2	G2	So1	So3	So5	So7	NC	T1	T3	T5

Terminals	Function
V1/G1	Power supply terminals for Internal/Input circuits (24 VDC)
V2/G2	Power supply terminals for output circuits (24 VDC)
NC	Not used (Do not connect.)
Si0-Si19	Safety input terminals 20 terminals
T0-T5	Test output terminals 6 terminals
So0-So7	Standard output terminals 8 terminals

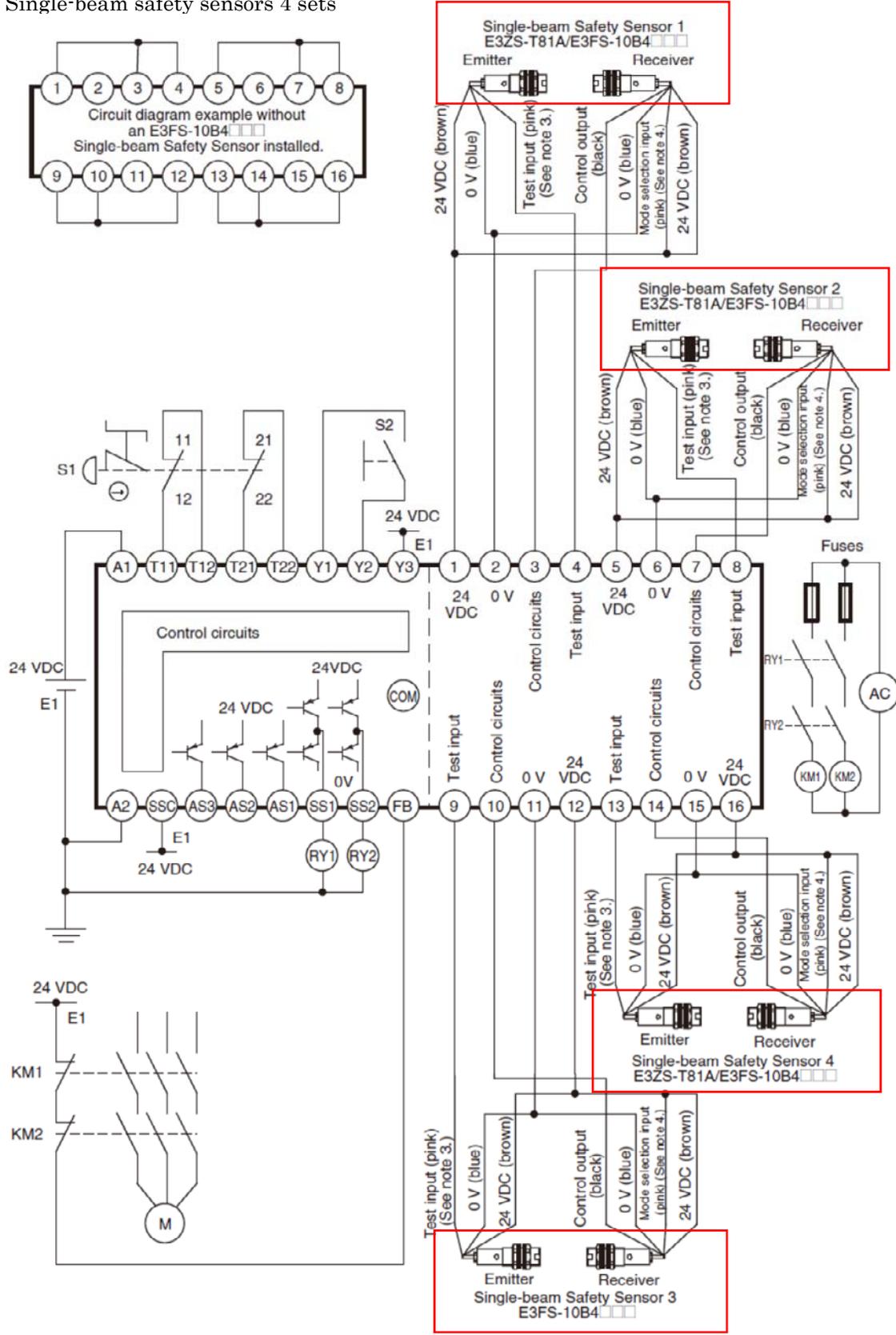


[ Wire connection ]

Product discontinuation  
Model F3SX-EB1

Wire connection

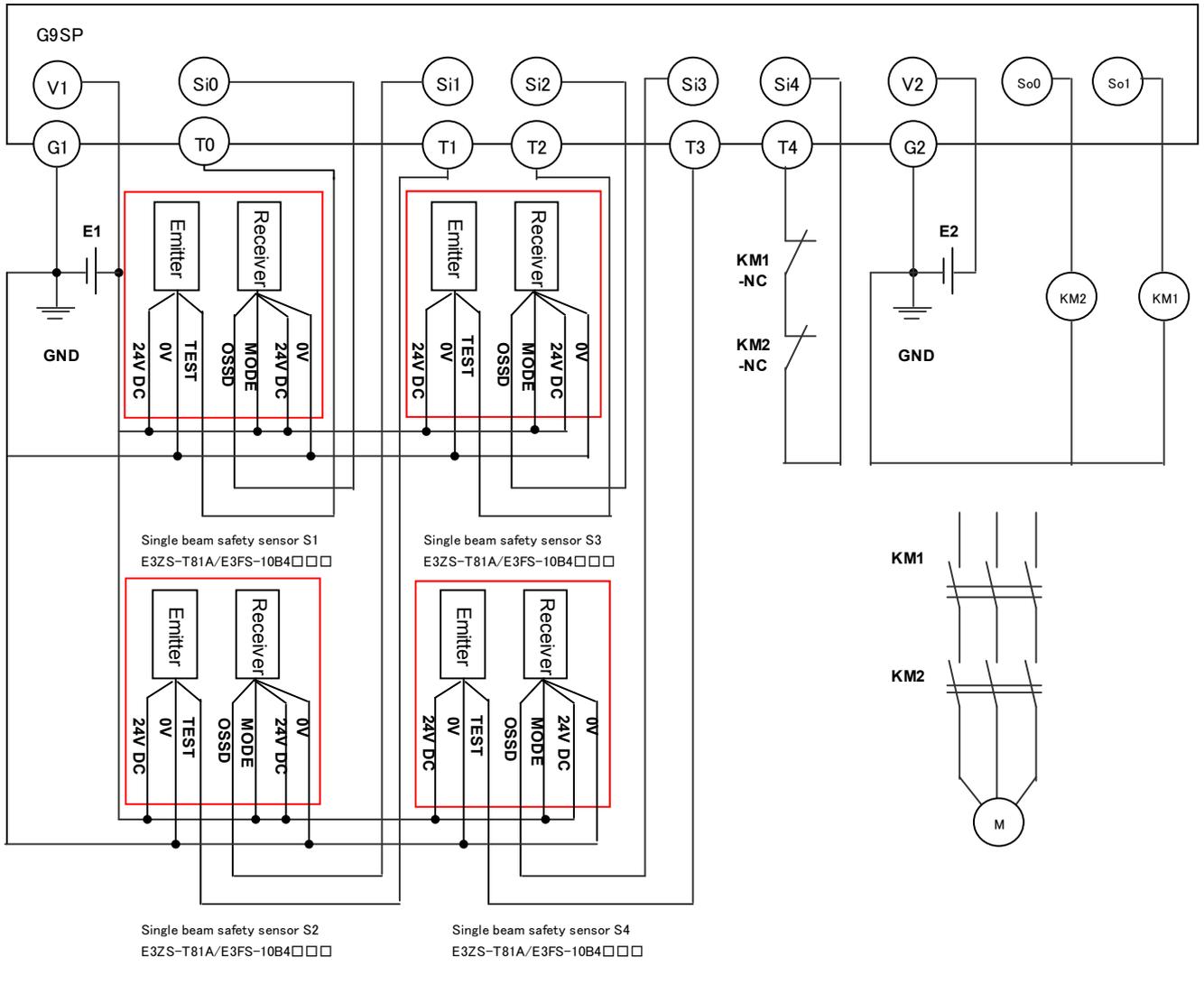
Single-beam safety sensors 4 sets



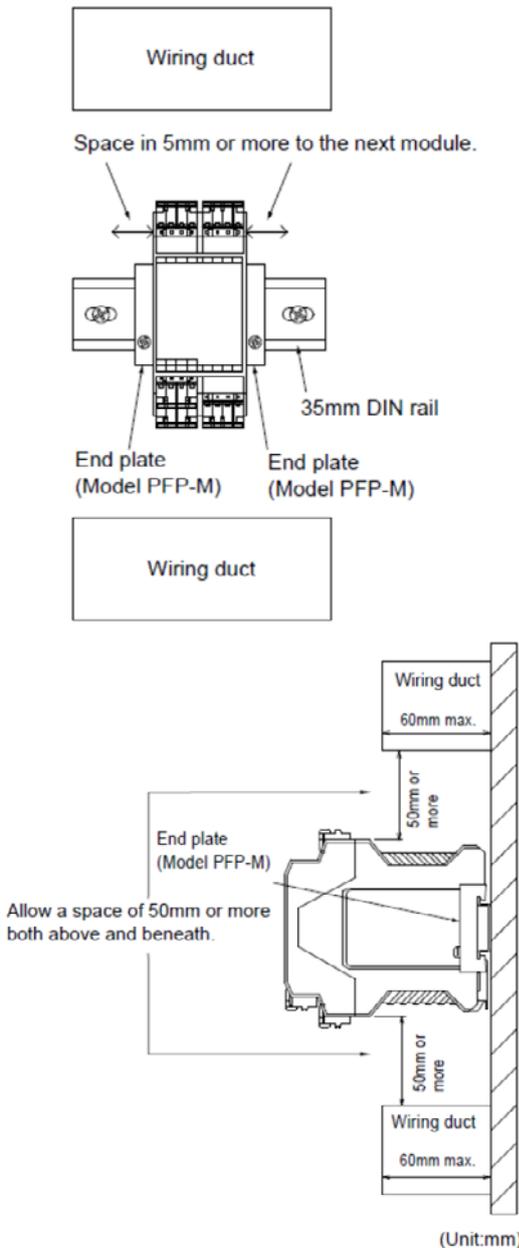
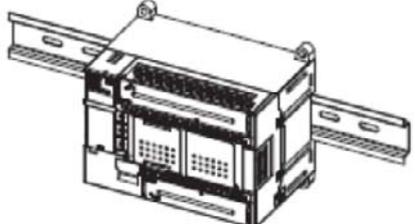
**Recommendable replacement  
Model G9SP-N20S**

**Wire connection**

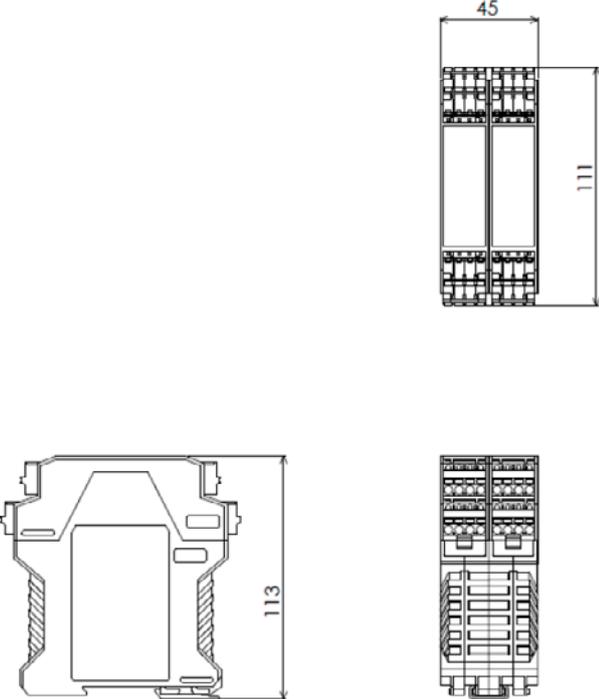
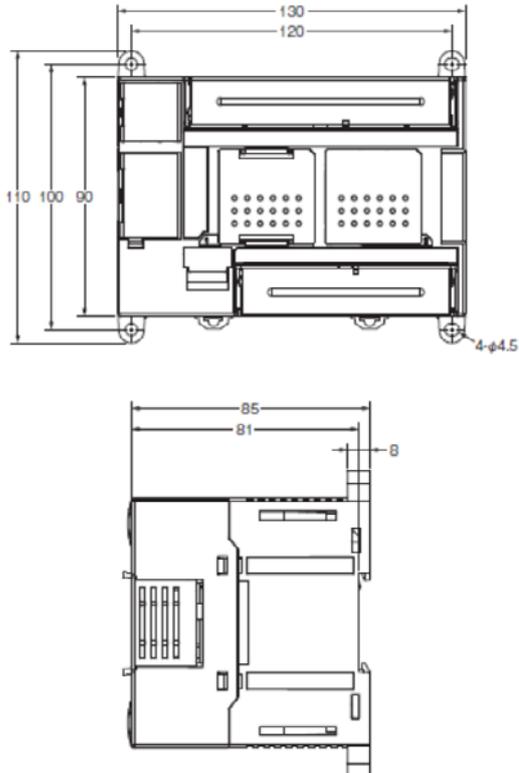
Single-beam safety sensors 4 sets (Max 6 sets)

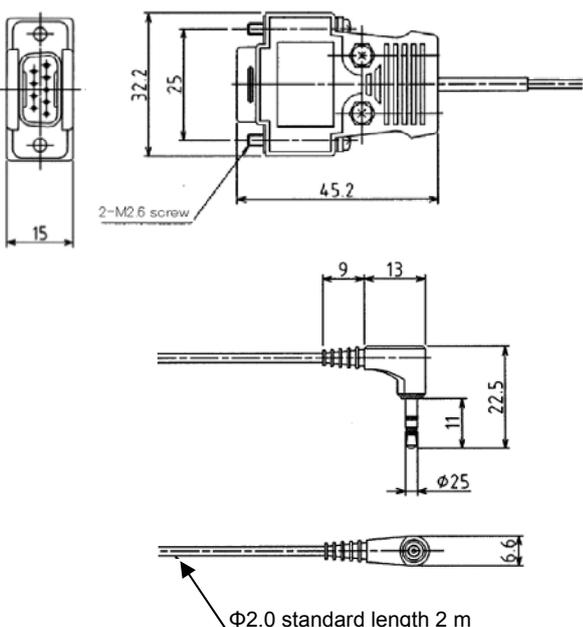
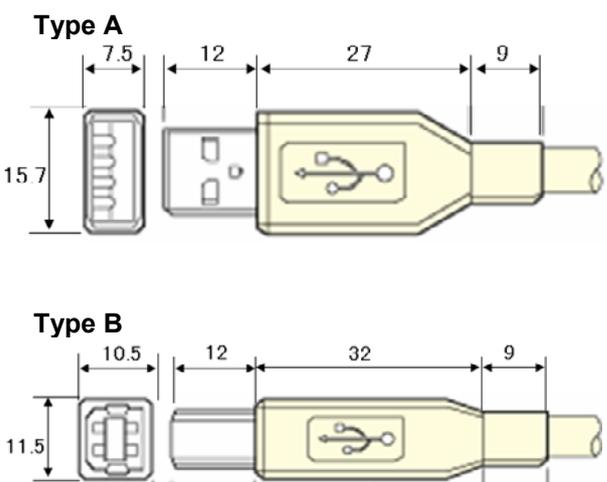


[ Mounting dimensions ]

<p align="center"><b>Product discontinuation</b> <b>Model F3SX-EB1</b></p>	<p align="center"><b>Recommendable replacement</b> <b>Model G9SP-N20S</b></p>
<p><b>Mounting dimensions</b></p> <ul style="list-style-type: none"> <li>· Use DIN rail (35mm-wide) for placing the main body into the control board.</li> <li>· Locate the wiring duct and main body on an appropriate position so that they cause no trouble to occur with placement/displacement of the unit, connection/disconnection of the connectors, or heat release of the unit. Use of the wiring duct of 60 mm high or less is recommended.</li> <li>· Allow for 5 mm or more on both sides of the module and 50 mm or more above and beneath.</li> </ul> 	<p><b>Mounting dimensions</b></p> <ul style="list-style-type: none"> <li>· Use DIN Track (TH35-7.5/TH35-15 according to IEC 60715) or M4 screws with a tightening torque of 1.2 N·m (10.5 lb·in) to install the G9SP-N20S into the control panel.</li> <li>· Mount the G9SP-N20S to the DIN Track using PFP-M end Plates (not included with the G9SP-N20S) to prevent it from falling off the DIN Track because of vibration. Correctly mount all Units to DIN Track.</li> <li>· Install the G9SP-N20S in the vertical direction shown below to ensure adequate cooling.</li> <li>· Space must be provided around the G9SP-N20S, at least 20 mm from its side surfaces and at least 50 mm from its top and bottom surfaces, for ventilation and wiring.</li> <li>· Be sure to lock all locking mechanisms, such as those on I/O terminal blocks and connectors, before attempting to use the controller.</li> </ul> 

[ Dimensions ]

<p>Product discontinuation Model F3SX-EB1</p>	<p>Recommendable replacement Model G9SP-N20S</p>
	

<p>Product discontinuation Model F39-JC2X1 Model F39-JC2X2</p>	<p>Recommendable replacement ELECOM CO.,LTD Model U2C-B20BK</p>
<p>Cable length 2 m Connector D-SUB9, pin-plug</p> 	<p>Cable length 2 m Connector USB</p> 

**[ Characteristics ]**

Item	Product discontinuation Model F3SX-EB1	Recommendable replacement Model G9SP-N20S
Rated supply voltage	24 V DC $\pm 10\%$	24 V DC $-15\%/+10\%$
Rated current	300 mA	500 mA
Over-voltage category (IEC60664-1)	II	II
Ambient temperature	Operating: $-10$ to $+50^{\circ}\text{C}$ Storage: $-30$ to $+70^{\circ}\text{C}$	Operating: $0$ to $55^{\circ}\text{C}$ Storage: $-20$ to $75^{\circ}\text{C}$
Ambient humidity	Operating and storage: $35$ to $85\%$ RH each	$10\%$ to $95\%$ (with no condensation)
Vibration resistance	$10$ to $55$ Hz double amplitude of $0.7$ mm each in X, Y and Z direction, $20$ sweeps (with power on)	$5$ to $8.4$ Hz: $3.5$ mm, $8.4$ to $150$ Hz: $9.8$ m/s <sup>2</sup>
Shock resistance	$100$ m/s <sup>2</sup> each in X, Y and Z direction, $1,000$ times (with power on)	$147$ m/s <sup>2</sup> : $11$ ms
Degree of protection	Terminal block: IP20, Main body: IP40 (IEC60529)	IP20 except terminal blocks
Input signals	Emergency-stop input 1 point Reset input 1 point Feedback input 1 point Auxiliary input 1 point ON: $15$ to $24$ V DC $\pm 10\%$ OFF: Open or $0$ to $5$ V DC Internal impedance: Approx. $5$ kohm	Safety input: Sinking inputs $20$ points (PNP compatible) Input current: $6$ mA ON voltage: $11$ V DC min. (between inputs and G1) OFF voltage: $5$ V DC max. (between inputs and G1) OFF current: $1$ mA max.
Output signals	DC solid-state safety output $2$ points PNP transistor output Load current $300$ mA max. (resistive load/inductive load) Residual voltage (for ON): $2$ V max. Residual voltage (for OFF): $0.1$ V max. Leakage current (for OFF): $0.1$ mA max. Permissible capacity load: $1$ $\mu\text{F}$ max. Allowable wiring resistance between output terminal and load: $4$ ohm max.	Safety output: Sourcing outputs (PNP) $8$ points Rated output current: $0.8$ A max./point $1.6$ A max./ $4$ points ON residual voltage: $1.2$ V max. OFF residual voltage: $2$ V max. Leakage current: $0.1$ mA max.
	Auxiliary solid-state output $3$ points PNP transistor output Load current: $25$ mA max., Residual voltage: $2$ V max.	Test output: Sourcing output (PNP) $6$ points Rated output current: T0, T1, T2: $100$ mA max. T3: $300$ mA max. T4, T5: $30$ mA max. T0-2, T4-5 total: $120$ mA max. ON residual voltage: $1.8$ V max. Leakage current: $0.1$ mA max.
Category, Performance Level (PL) (EN ISO13849-1:2008)	Category 4, PL e If the application which model E3ZS/E3FS is used, Category is 2 and performance level is c.	Category 4, PL e If the application which model E3ZS/E3FS is used, Category is 2 and performance level is c.
Safety integrity level (IEC61508)	SIL3 If the application which model E3ZS/E3FS is used, SIL is 1.	SIL3 If the application which model E3ZS/E3FS is used, SIL is 1.
Weight	$300$ g	$430$ g
Connectable input devices	Emergency-stop switch Single-beam safety sensors $4$ sets	Emergency-stop switch Single-beam safety sensors $4$ sets (max. $6$ sets)

Item	Product discontinuation Model F3SX-EB1	Recommendable replacement Model G9SP-N20S
<p><b>Legislation and Standards</b></p>	<p>EN61508 (SIL1-3)            EN ISO13849-1: 2008 (Cat.4 PL e)            EN61496-1 (Type4 ESPE)            EN50178            EN55011            EN61000-6-2            EN61000-6-4            EN1760            EN574 (Type III C)            EN1088            IEC61508 (SIL1-3)            IEC61496-1 (Type4 ESPE)            IEC60204-1            UL508            UL1998            UL61496-1 (type4 ESPE)            CSA C22.2 No.14            CSA C22.2 No.0.8</p>	<p>EN ISO 13849-1 (Cat.2 PL e)            EN ISO 13849-2            EN ISO 13850            EN 60204-1            EN 61000-6-2            EN 61000-6-4            EN 61131-2            EN 62061 (SIL CL 3)            IEC 61508 parts 1-7 (SIL 3)            NFPA 79            ANSI RIA 15.06            ANSI B11.19            UL508            ANSI/UL1998            CSA C22.2 No.142</p>

[ Operation ratings ]

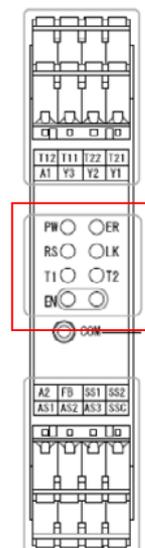
Product discontinuation  
Model F3SX-EB1

LED indicators

The LED indicators of F3SX-EB1 is as follows.

< Main module with DC solid-state Safety Output >

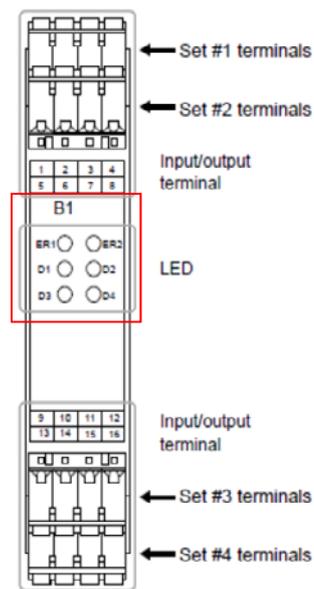
Indication	Name	Color	Function
PW	Power indicator	Green	Lights up while power is ON.
ER	Error indicator	Red	Lights up or flashes when an error occurs. Lighting up: No synchronization between emergency-stop inputs. 1-time flashing: Short-circuiting or mis-wiring between emergency-stop inputs. 2-time flashing: Trouble or mis-wiring around emergency-stop input circuit. 3-time flashing: Mis-wiring or break around Y1, Y2 or Y3 terminal. 4-time flashing: Short-circuiting or mis-wiring around the DC solid-state safety out puts. Trouble in the DC solid-state safety output circuits. 5-time flashing: Trouble or welding around safety relay output circuit. 6-time flashing: Error in feedback signals from an external devices. Continuously flashing: Affected by noises or trouble around the internal circuit of F3SX.
RS	Reset input indicator	Green	Lights up at the time of: Auto resetting: Y3 terminal input is ON. Manual resetting: Y2 terminal input is ON.
LK	Interlock indicator	Yellow	Lights up in interlock states.
T1	T12 input indicator	Green	Lights up when input is ON at T12 terminal.
T2	T22 input indicator	Green	Lights up when input is ON at T22 terminal.
EN	DC solid-state safety output ON indicator	Green	Lights up when DC solid-state safety output is ON.
	DC solid-state safety output OFF indicator	Red	Lights up when DC solid-state safety output is OFF.



**Product discontinuation  
Model F3SX-EB1**

**< Single-beam Safety Sensors Input Module >**

Indication	Name	Color	Function
ER1	Error indicator	Red	Flashes when an error occurs with Model E3FS/E3ZS Set #1 or Set #2
ER2	Error indicator	Red	Flashes when an error occurs with Model E3FS/E3ZS Set #3 or Set #4
D1	Model E3FS/E3ZS Set #1 input indicator	Green	Lights up when Model E3FS/E3ZS Set #1 output turns ON.
D2	Model E3FS/E3ZS Set #2 input indicator	Green	Lights up when Model E3FS/E3ZS Set #2 output turns ON.
D3	Model E3FS/E3ZS Set #3 input indicator	Green	Lights up when Model E3FS/E3ZS Set #3 output turns ON.
D4	Model E3FS/E3ZS Set #4 input indicator	Green	Lights up when Model E3FS/E3ZS Set #4 output turns ON.



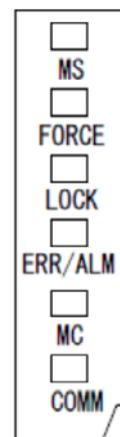
**Recommendable replacement  
Model G9SP-N20S**

**LED indicators**

The LED indicators of G9SP-N20S is as follows.

**< Operation indicators >**

Indication	Name	Color	States	Function
MS	Module Status	Green	Light	Operating (RUN Mode)
			Flash	Idle (IDLE Mode)
		Red	Light	Critical fault status (fatal error)
			Flash	Abort status (non-fatal error, such as connection of an unsupported Unit)
		Green/Red	Flash	The G9SP-series Controller is being initialized or is waiting for configuration.
		-	Off	Power is not being supplied to the internal circuits or a Memory Cassette operation is in progress.
FORCE	Force-set/ reset status	Yellow	Light	Force-setting/resetting is enabled (Force Mode).
			Off	Force Mode is not being used or a Memory Cassette operation is in progress.
LOCK	Configuration lock	Yellow	Light	The configuration is valid and locked.
			Flash	The configuration is valid and unlocked.
			Off	There is no valid configuration or a Memory Cassette operation is in progress.
ERR/ALM	Error status	Red	Light	A fatal error has occurred.
			Flash	A non-fatal error has occurred.
			Off	Operation is normal.
MC	Memory Cassette	Yellow	Light	One of the following Memory Cassette operations has been completed. 1. Backing up data to the Memory Cassette 2. Restoring data from the Memory Cassette This indicator lights yellow when the operation ends normally. If the operation ends in an error, this indicator lights yellow and the ERR/ALM indicator lights red.
			Flash 0.5 sec	The G9SP-series Controller is waiting to start a Memory Cassette operation.
			Flash 0.25 sec	Data is being written to or from the Memory Cassette.
			Off	A Memory Cassette operation is not being performed.
COMM	USB communications	Yellow	Flash	USB communications are in progress (data is being sent or received).
			Off	USB communications are not in progress.



**Recommendable replacement  
Model G9SP-N20S**

**< I/O indicators >**

Indication	Name	Color	States	Function
OUT PWR	Output Power	Green	Light	The output power supply is normal.
			Off	<ul style="list-style-type: none"> <li>• The output power supply is not being supplied.</li> <li>• The Controller is being initialized.</li> <li>• Configuring Mode</li> <li>• A fatal error has occurred.</li> </ul>
Si0 - 19	Safety input signal	Yellow	Light	The input signal is ON.
		Red	Light	<ul style="list-style-type: none"> <li>• An error was detected in an input circuit.</li> <li>• A discrepancy error (input data mismatch) was detected for Dual Channel Mode settings.</li> <li>• If an error is detected for a Memory Cassette operation, the terminal number indicator that corresponds to the error code will light.</li> </ul>
			Flash	An error was detected in other terminal in Dual Channel Mode (with no error for this input).
		-	Off	<ul style="list-style-type: none"> <li>• The input signal is OFF.</li> <li>• Initialization is in progress.</li> <li>• Waiting for configuration.</li> <li>• A fatal error occurred.</li> </ul>
So0 - 7	Safety output signal	Yellow	Light	The output signal is ON.
		Red	Light	<ul style="list-style-type: none"> <li>• An error was detected in an output circuit.</li> <li>• A dual channel violation (output data mismatch) was detected in Dual Channel Mode.</li> </ul>
			Flash	An error was detected in other terminal in Dual Channel Mode (with no error for this input).
		-	Off	The output signal is OFF.

[ Operation methods ]

<b>Product discontinuation Model F3SX-EB1</b>	<b>Recommendable replacement Model G9SP-N20S</b>																				
<p><b>Operation switch</b> F3SX-EB1 doesn't have operation switch.</p>	<p><b>Operation switch</b> G9SP-N20S has operation switches.</p> <p>(1) Push switch</p> <ul style="list-style-type: none"> <li>• Backing up data to a Memory Cassette and restoring data from a Memory Cassette</li> <li>• Displaying the current configuration ID on the I/O indicators</li> </ul> <p>(2) DIP Switch (4 pins) The DIP switch is used to back up data to a Memory Cassette.</p> <table border="1" data-bbox="810 593 1465 1095"> <thead> <tr> <th>No.</th> <th>Name</th> <th>Description</th> <th>Default</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>Do not use</td> <td>Leave set to OFF</td> <td>OFF</td> </tr> <tr> <td>SW2</td> <td>Do not use</td> <td>Leave set to OFF</td> <td>OFF</td> </tr> <tr> <td>SW3</td> <td>Do not use</td> <td>Leave set to OFF</td> <td>OFF</td> </tr> <tr> <td>SW4</td> <td>Backup from G9SP-series Controller to Memory Cassette</td> <td>If the G9SP-series Controller is started while this pin is ON, the data will be backed up from the G9SP-N20S to the Memory Cassette (MC). Leave this pin turned OFF during normal operation.</td> <td>OFF</td> </tr> </tbody> </table>	No.	Name	Description	Default	SW1	Do not use	Leave set to OFF	OFF	SW2	Do not use	Leave set to OFF	OFF	SW3	Do not use	Leave set to OFF	OFF	SW4	Backup from G9SP-series Controller to Memory Cassette	If the G9SP-series Controller is started while this pin is ON, the data will be backed up from the G9SP-N20S to the Memory Cassette (MC). Leave this pin turned OFF during normal operation.	OFF
No.	Name	Description	Default																		
SW1	Do not use	Leave set to OFF	OFF																		
SW2	Do not use	Leave set to OFF	OFF																		
SW3	Do not use	Leave set to OFF	OFF																		
SW4	Backup from G9SP-series Controller to Memory Cassette	If the G9SP-series Controller is started while this pin is ON, the data will be backed up from the G9SP-N20S to the Memory Cassette (MC). Leave this pin turned OFF during normal operation.	OFF																		

Specifications and prices in this product news are as of the issue date and are subject to change without notice. Only main changes in specifications are described in this document. Please be sure to read the relevant catalogs, datasheets, product specifications, instructions, and manuals for precautions and necessary information when using products.