

Product Discontinuation Notices

December 1, 2009

Safety Sensors

No. 2009306E

Discontinuation Notice of Safety Light Curtain. Type F3S-B series

Product Discontinuation

Safety light curtain
Accessory (Extension Cable)



Type F3S-B series
Type F39-JB[]A series

Recommended Replacement

Safety light curtain
Accessory (Extension Cable)



Type F3SR-430B series
Type F39-JD[]A series

Discontinuation date : The end of March, 2010

Caution on recommended replacement

About the change to F3SR-430B

- 1) Dimensions, wire connection, mounting dimensions, characteristics, operation rating and operation methods are different.
- 2) Body color are a similarity.
- 3) External test function and instability output is not equipped
- 4) Top and bottom mounting brackets and intermediate mounting brackets are options

Difference from discontinued product

Model	Body Color	Dimensions	Wire connection	Mounting Dimensions	Characteristics	Operation ratings	Operation methods
Type F3SR-430B	*	--	--	--	--	--	--

** : Fully compatible

* : The change is a little/Almost compatible

-- : Not compatible

- : No corresponding specification

Accessory cable is only for F3S-B. Production is ended according to the production end of F3S-B.

Product Discontinuation and recommended replacement

Product discontinuation	Recommended replacement
Type F3S-B122P	Type F3SR-430B0270
Type F3S-B122P-01	
Type F3S-B182P	Type F3SR-430B0430
Type F3S-B182P-01	
Type F3S-B242P	Type F3SR-430B0590
Type F3S-B242P-01	
Type F3S-B302P	Type F3SR-430B0750
Type F3S-B302P-01	
Type F3S-B362P	Type F3SR-430B0910
Type F3S-B362P-01	
Type F3S-B422P	Type F3SR-430B0990
Type F3S-B422P-01	
Type F3S-B482P	Type F3SR-430B1150
Type F3S-B482P-01	
Type F3S-B542P	Type F3SR-430B1310
Type F3S-B542P-01	
Type F3S-B602P	Type F3SR-430B1470
Type F3S-B602P-01	
Type F3S-B662P	Type F3SR-430B1630
Type F3S-B662P-01	
Type F39-JB1A	Type F39-JD3A
Type F39-JB2A	Type F39-JD7A
Type F39-JB3A	Type F39-JD10A

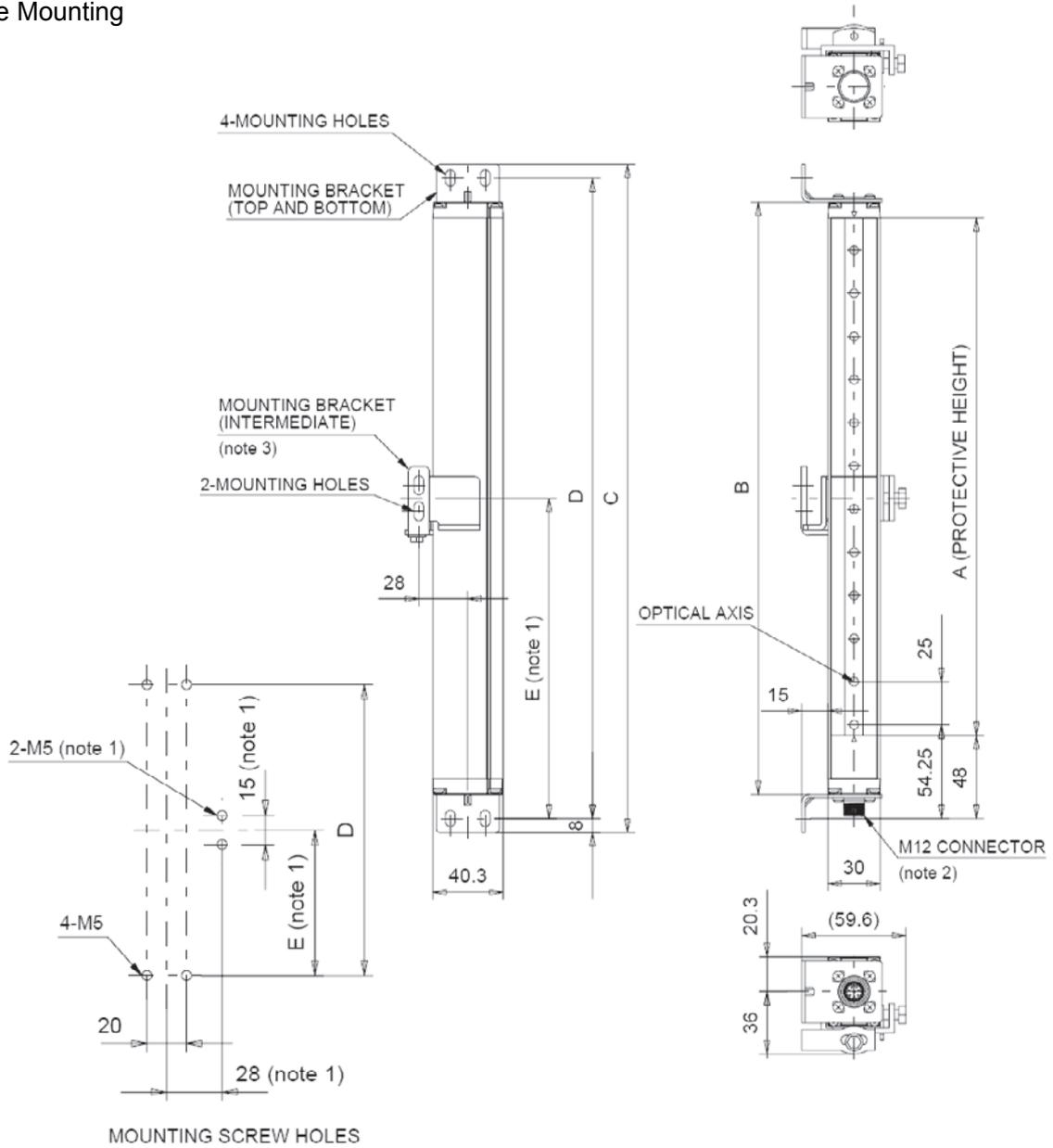
Body color

Product discontinuation Type F3S-B	Recommendable replacement Type F3SR-430B
	

Dimensions

Product discontinuation Type F3S-B

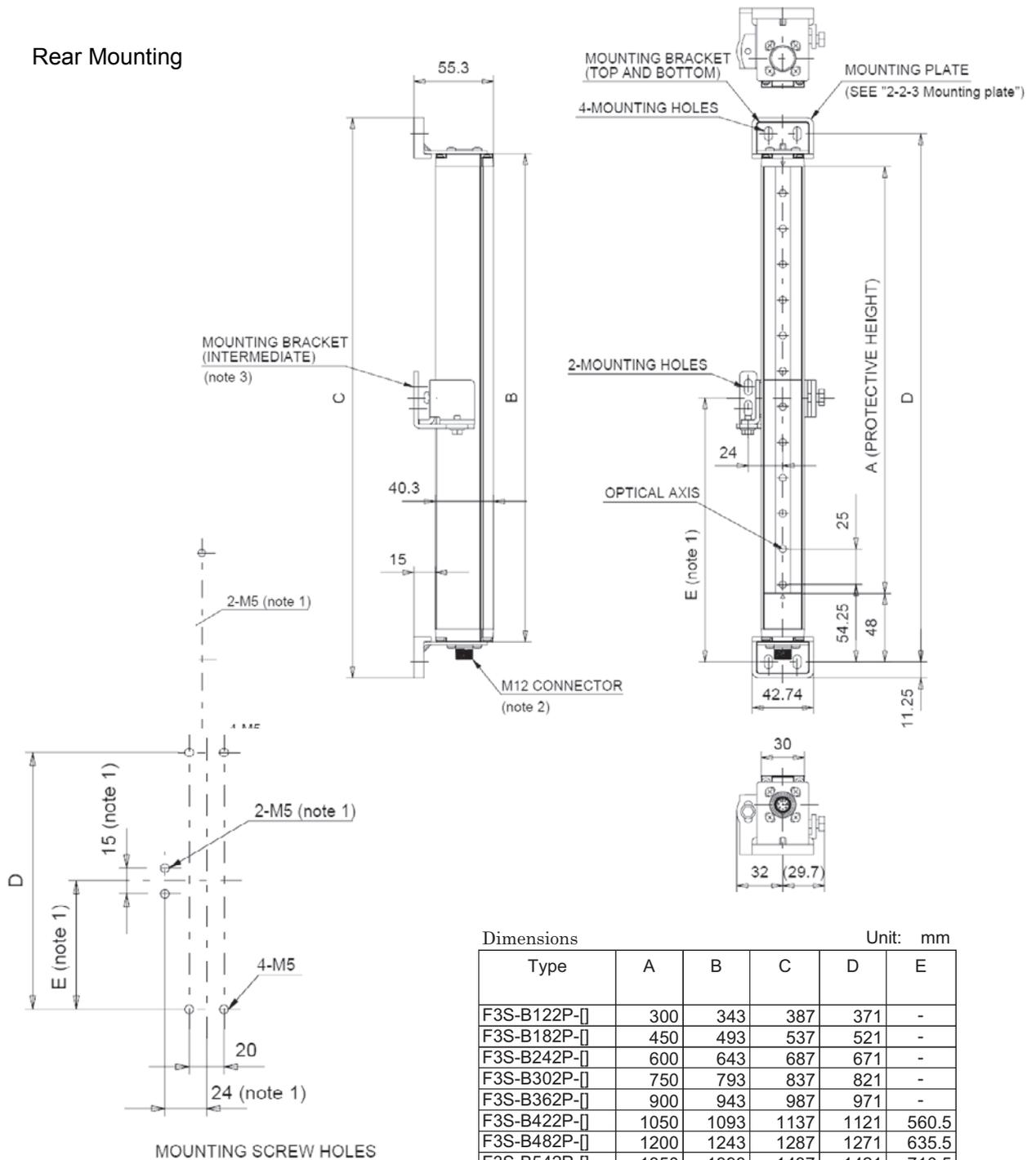
Side Mounting



Dimensions

Product discontinuation Type F3S-B

Rear Mounting



Dimensions

Unit: mm

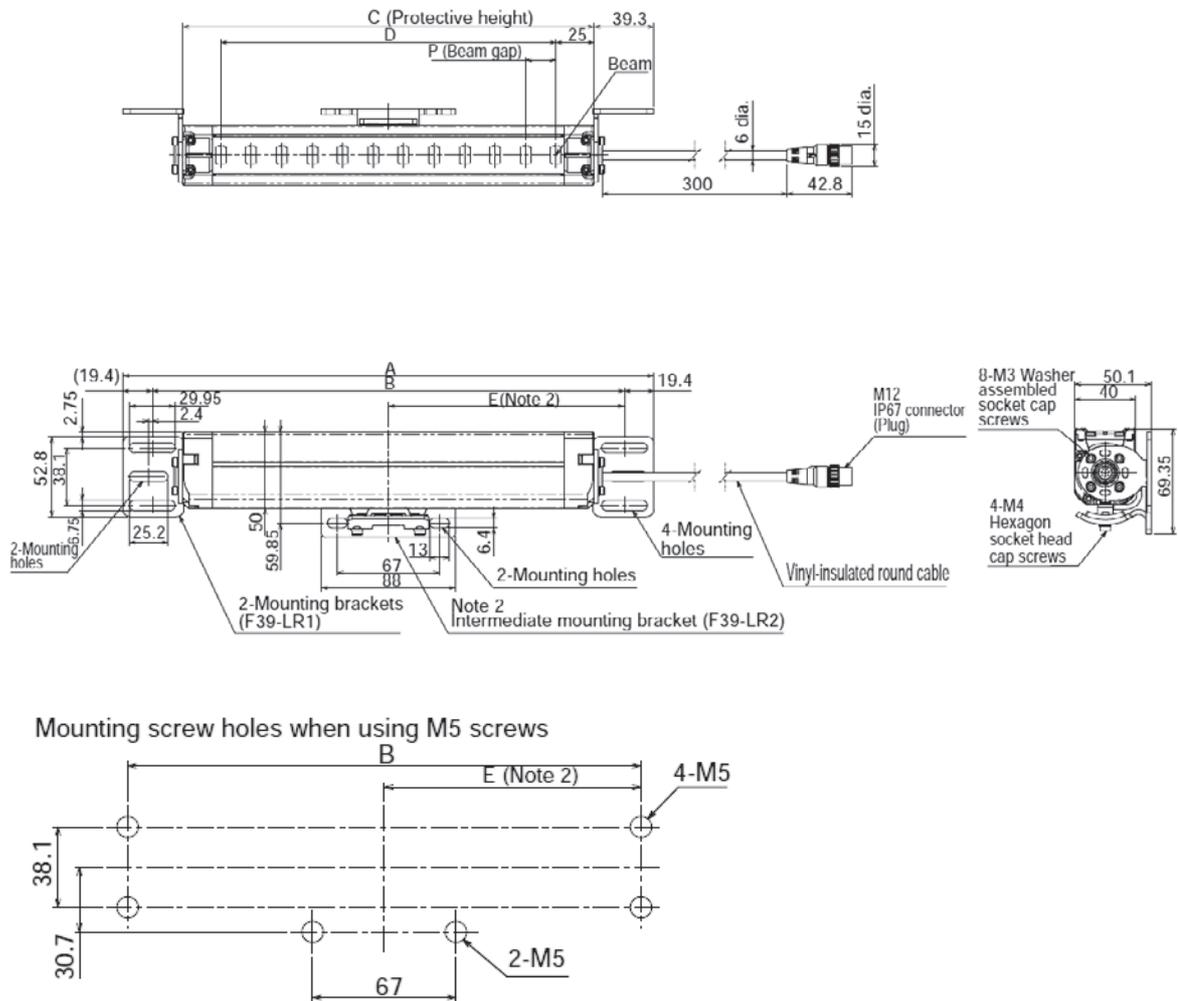
Type	A	B	C	D	E
F3S-B122P-□	300	343	387	371	-
F3S-B182P-□	450	493	537	521	-
F3S-B242P-□	600	643	687	671	-
F3S-B302P-□	750	793	837	821	-
F3S-B362P-□	900	943	987	971	-
F3S-B422P-□	1050	1093	1137	1121	560.5
F3S-B482P-□	1200	1243	1287	1271	635.5
F3S-B542P-□	1350	1393	1437	1421	710.5
F3S-B602P-□	1500	1543	1587	1571	785.5
F3S-B662P-□	1650	1693	1737	1721	860.5

Note.1 The intermediate bracket and mounting screw holes are only applied to types have a protective height of 1050mm or longer

Dimensions

Recommendable replacement Type F3SR-430B

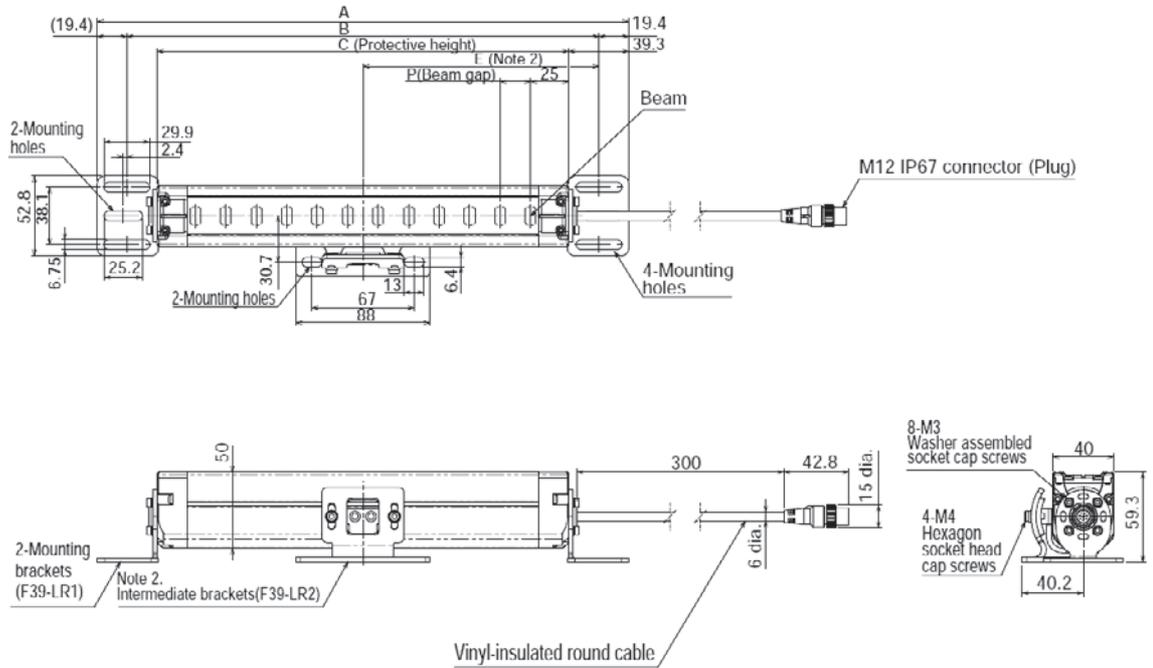
Side Mounting



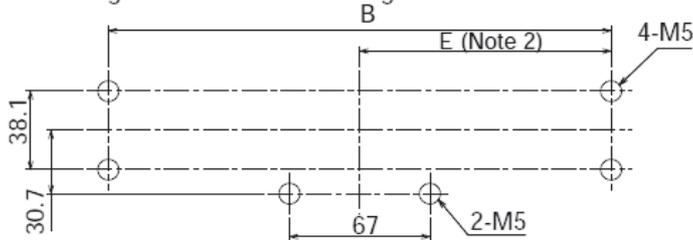
Dimensions

Recommendable replacement Type F3SR-430B

Rear Mounting



Mounting screw holes when using M5 screws



Note.1 Dimensions

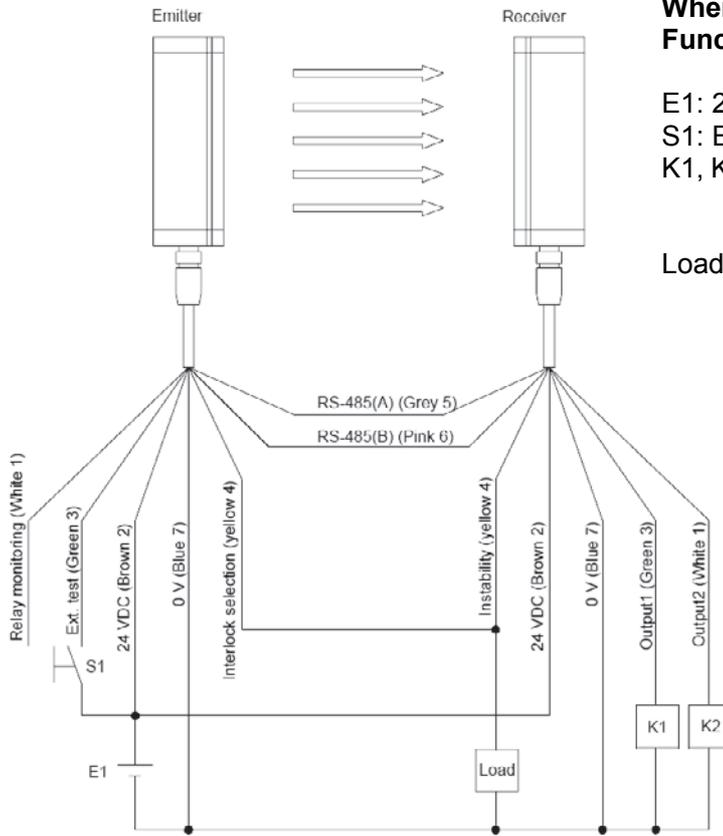
Unit: mm

Type	C	A	B	D	E
F3SR-430B0270	270	348.6	308.8	220	-
F3SR-430B0430	430	508.6	468.8	380	-
F3SR-430B0590	590	668.6	628.8	540	-
F3SR-430B0750	750	828.6	788.8	700	-
F3SR-430B0910	910	988.6	948.8	860	-
F3SR-430B0990	990	1068.6	1028.8	940	-
F3SR-430B1150	1150	1228.6	1188.8	1100	594.4
F3SR-430B1310	1310	1388.6	1348.8	1260	674.4
F3SR-430B1470	1470	1548.6	1508.8	1420	754.4
F3SR-430B1630	1630	1708.6	1668.8	1580	834.4

Note.2 The intermediate bracket and mounting screw holes are only applied to types have a protective height of 1150mm or longer

Wire Connection

Product discontinuation Type F3S-B

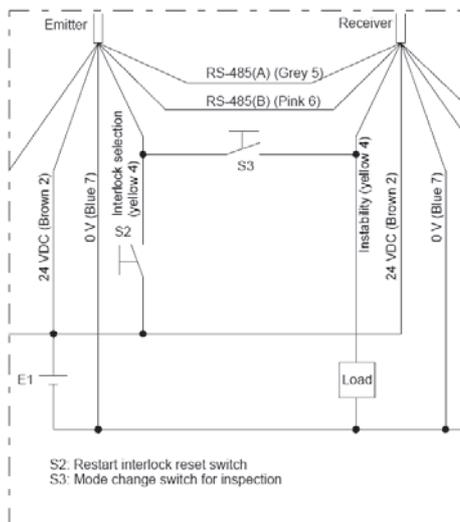


When not using Start/restart interlock Function

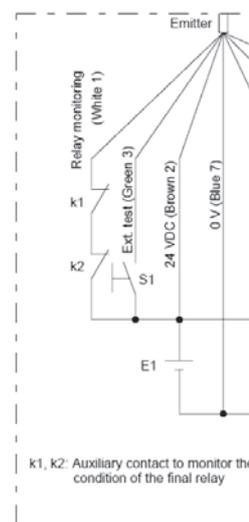
- E1: 24VDC Power supply
- S1: External test switch
- K1, K2: Relay or PLC input to control the dangerous movement of machine
- Load: Inductive load with surge suppressor or resistive load to indicate unstable condition

F3S-B[P-01 only

When using Start/restart interlock Function



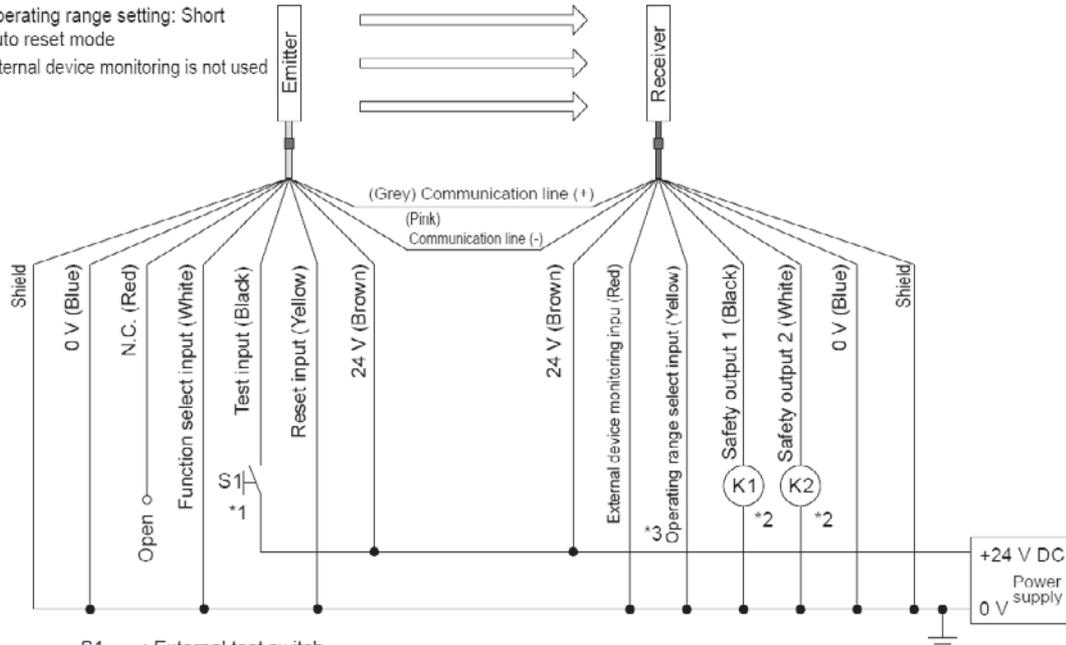
When using Relay Monitoring Function



Wire Connection

Recommendable replacement Type F3SR-430B

- Operating range setting: Short
- Auto reset mode
- External device monitoring is not used



S1 : External test switch

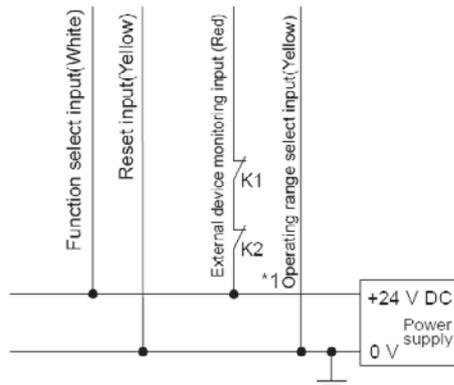
K1, K2 : Relay or other device that controls hazardous parts of the machine

*1 Use a switch for micro loads (Input specifications: 24 V, 2.5 mA).

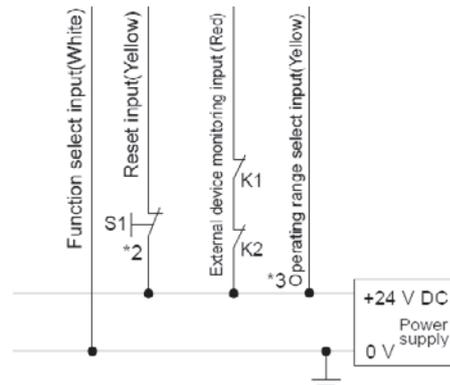
*2 F3SR-B can operate even if K1 and K2 are not connected.

*3 To change the operating range setting to Long, connect the operating range select input line to 24 V.

- Operating range setting: Short
- Auto reset mode
- External device monitoring is used



- Operating range setting: Long
- Manual reset mode
- External device monitoring is used



K1, K2: Relay or other device that controls hazardous parts of the machine

S1 : Interlock reset switch

*1 To change the operating range setting to Long, connect the operating range select input line to 24 V.

*2 Use a switch for micro loads (Input specifications: 24 V, 2.5 mA).

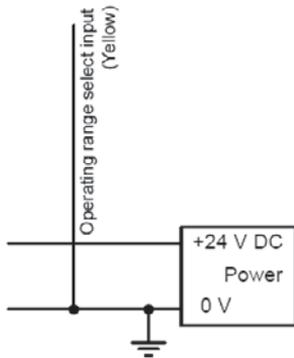
*3 To change the operating range setting to Short, connect the operating range select input line to 0 V.

**Recommendable replacement
Type F3SR-430B**

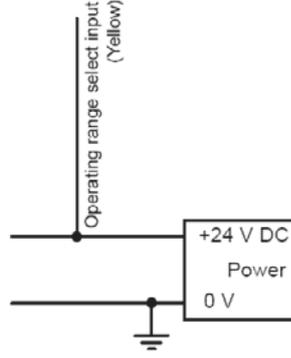
Operating Range Select Function

This function allows you to select operating range by wiring at startup. The F3SR-B enters lockout when wiring at startup is open or wiring is switched during operation. Operating range can be selected from Short (0.3 to 7 m) or Long (5 to 20 m).

Short: Operating ranges 0.3 to 7 m



Long: Operating ranges 5 to 20 m



Be sure to connect the operating range select input line to either 24 V or 0 V according to the range used. When the line is not connected to 24 V or 0 V, it will result in a wiring error and the F3SR-B enters a lockout state.

Availability of Functions Based on Input Line Status

The F3SR-B determines operation mode of the external device monitoring and interlock functions (manual reset and auto reset) based on the wiring status of the three input lines at startup (reset input/external device monitoring input/function select input). Any combinations other than the table below will result in wiring errors leading to lockout state.

Using the F3SR-B with external device monitoring disabled and auto reset

Input line	Wiring status
Reset input	0 V or open
External device monitoring input	
Function select input	

Using the F3SR-B with external device monitoring enabled and auto reset

Input line	Wiring status
Reset input	0 V or open
External device monitoring input	24 V ^1
Function select input	24 V

Using the F3SR-B with external device monitoring enabled and manual reset

Input line	Wiring status
Reset input	24 V
External device monitoring input	24 V *1
Function select input	0 V or open

Note.1 Apply voltage of 24 V via normally closed (N.C.) contact of the external relay (or contactor) that controls hazardous parts of machines.

Operation ratings

		Product discontinuation Type F3S-B	Recommendable replacement Type F3SR-430B
Operating range		0.3 to 5m	5 to 20 m (for long wiring) 0.3 to 7 m (for short wiring)
Beam gap		25mm	20mm
Number of beams (Note.1)		12 to 66	8 to 112
Protective height (Note.1)		300 to 1650mm	190 to 2270mm
Detection capability		Diameter 30mm opaque objects	Diameter 30mm opaque objects
Effective aperture angle (EAA)		Within $\pm 5^\circ$ for the emitter and receiver at a detection distance of at least 3 m according to IEC61496-2	Within $\pm 2.5^\circ$ for the emitter and receiver at a detection distance of at least 3 m according to IEC61496-2
Light source		Infrared LED 880nm wavelength	Infrared LED 870nm wavelength
Power supply voltage		DC24V \pm 20%	DC24V \pm 20%
Start waiting time		2 s max.	2 s max.
Current consumption		400 mA max.	231mA max.
Operating mode		Light ON	Light ON
Safety outputs		PNP transistor outputs x 2 Load current 200 mA max., residual voltage 2 V max.	PNP transistors x 2 Load current 500 mA max. residual voltage 2 V max.
Instability output		PNP transistor x 1 Load current 100mA max. residual voltage 2 V max.	Not equipped
Protection circuit		Output short-circuit protection, power supply reverse polarity protection	Output short-circuit protection, power supply reverse polarity protection
Safety-related functions		- Start interlock/Restart interlock (Based on the wiring status of the interlock/Restart interlock input) - External device monitoring (F3S-B□P-01 only)	- Start interlock/Restart interlock - External device monitoring (Based on the wiring status of the Reset input, External device monitoring input, Function select input)
Test functions		- Self test (after power ON, and during operation) - External test with the External test function (Response time: 180 ms max.)	- Self test (after power ON, and during operation) - External test (light emission stop function by test input)
Response time	ON to OFF (Note2)	Refer to time table of ON to OFF	15 ms max.
	ON to OFF (Note2)	F3S-B□P :130 ms max. F3S-B□P-01:320 ms max.	60 ms max.
Wiring connections		M12 connectors, 8-pin	M12 connectors, 8-pin
Ambient temperature		During operation: -10 to +55 °C During storage: -25 to +70°C	During operation: -10 to +55°C During storage: -25 to +70°C
Ambient humidity		During operation: 35 to 85 %RH During storage: 35 to 95 %RH	During operation: 35 to 85 %RH During storage: 35 to 95 %RH
Vibration resistance		Malfunction:10 to 55Hz, Multiple amplitude of 0.7mm, 20 sweeps each in X,Y,Z directions	Malfunction:10 to 55Hz, Multiple amplitude of 0.7mm, 20 sweeps each in X,Y,Z directions
Shock resistance		Malfunction:100m/s ² , 1,000 times each in X,Y,Z directions	Malfunction:100m/s ² , 1,000 times each in X,Y,Z directions

	Product discontinuation Type F3S-B	Recommendable replacement Type F3SR-430B
Degree of protection	IEC60529 IP65	IEC60529 IP65, IP67
Material	Case: Aluminum Front cover: PMMA resin (acrylic resin) End caps: PA6	Casing: Aluminum, zinc die-cast Optical cover: PMMA resin (acrylic)

Note.1 Number of beam and protective height

Discontinuation F3S-B			Replacement F3SR-430B		
Type	Number of beam	Protective height (mm)	Type	Number of beam	Protective height (mm)
F3S-B122P, F3S-B122P-01	12	300	F3SR-430B0270	12	270
F3S-B182P, F3S-B182P-01	18	450	F3SR-430B0430	20	430
F3S-B242P, F3S-B242P-01	24	600	F3SR-430B0590	28	590
F3S-B302P, F3S-B302P-01	30	750	F3SR-430B0750	36	750
F3S-B362P, F3S-B362P-01	36	900	F3SR-430B0910	44	910
F3S-B422P, F3S-B422P-01	42	1050	F3SR-430B0990	48	990
F3S-B482P, F3S-B482P-01	48	1200	F3SR-430B1150	56	1150
F3S-B542P, F3S-B542P-01	54	1350	F3SR-430B1310	64	1310
F3S-B602P, F3S-B602P-01	60	1500	F3SR-430B1470	72	1470
F3S-B662P, F3S-B662P-01	66	1650	F3SR-430B1630	80	1630

Note.2 Time table of ON to OFF

Discontinuation F3S-B	
Type	Response time
F3S-B122P, F3S-B122P-01	20ms max.
F3S-B182P, F3S-B182P-01	20ms max.
F3S-B242P, F3S-B242P-01	20ms max.
F3S-B302P, F3S-B302P-01	23ms max.
F3S-B362P, F3S-B362P-01	27ms max.
F3S-B422P, F3S-B422P-01	30ms max.
F3S-B482P, F3S-B482P-01	34ms max.
F3S-B542P, F3S-B542P-01	37ms max.
F3S-B602P, F3S-B602P-01	41ms max.
F3S-B662P, F3S-B662P-01	45ms max.

Operation ratings

Product discontinuation Type F3S-B	Recommendable replacement Type F3SR-430B
Refer to wire connection and characteristics	Refer to wire connection and characteristics

Operation methods

Product discontinuation Type F3S-B	Recommendable replacement Type F3SR-430B
Refer to wire connection	Refer to wire connection