

Safety Light Curtain Advance type

F3SG-RA

New Standard of Safety Light Curtain, Offering Both Robustness and Reliability

- Robust and compact
- New muting function to increase both productivity and safety
- All models designed for global use. PNP/NPN selection by DIP switch
- Conforming to major international standards including Chinese standard GB 4584 *

* The F3SG-4RA□□□□-25-01TS does not conform.



Ordering Information

Main Units

Safety Light Curtain

Finger protection

Number of beams	Protective height (mm)	Model
15	160	F3SG-4RA0160-14
23	240	F3SG-4RA0240-14
31	320	F3SG-4RA0320-14
39	400	F3SG-4RA0400-14
47	480	F3SG-4RA0480-14
55	560	F3SG-4RA0560-14
63	640	F3SG-4RA0640-14
71	720	F3SG-4RA0720-14
79	800	F3SG-4RA0800-14
87	880	F3SG-4RA0880-14
95	960	F3SG-4RA0960-14
103	1,040	F3SG-4RA1040-14
111	1,120	F3SG-4RA1120-14
119	1,200	F3SG-4RA1200-14
127	1,280	F3SG-4RA1280-14
135	1,360	F3SG-4RA1360-14
143	1,440	F3SG-4RA1440-14
151	1,520	F3SG-4RA1520-14
159	1,600	F3SG-4RA1600-14
167	1,680	F3SG-4RA1680-14
175	1,760	F3SG-4RA1760-14
183	1,840	F3SG-4RA1840-14
191	1,920	F3SG-4RA1920-14
199	2,000	F3SG-4RA2000-14
207	2,080	F3SG-4RA2080-14

Hand and arm protection

Number of beams	Protective height (mm)	Model
8	190	F3SG-4RA0190-30
12	270	F3SG-4RA0270-30
16	350	F3SG-4RA0350-30
20	430	F3SG-4RA0430-30
24	510	F3SG-4RA0510-30
28	590	F3SG-4RA0590-30
32	670	F3SG-4RA0670-30
36	750	F3SG-4RA0750-30
40	830	F3SG-4RA0830-30
44	910	F3SG-4RA0910-30
48	990	F3SG-4RA0990-30
52	1,070	F3SG-4RA1070-30
56	1,150	F3SG-4RA1150-30
60	1,230	F3SG-4RA1230-30
64	1,310	F3SG-4RA1310-30
68	1,390	F3SG-4RA1390-30
72	1,470	F3SG-4RA1470-30
76	1,550	F3SG-4RA1550-30
80	1,630	F3SG-4RA1630-30
84	1,710	F3SG-4RA1710-30
88	1,790	F3SG-4RA1790-30
92	1,870	F3SG-4RA1870-30
96	1,950	F3SG-4RA1950-30
100	2,030	F3SG-4RA2030-30
104	2,110	F3SG-4RA2110-30
108	2,190	F3SG-4RA2190-30
112	2,270	F3SG-4RA2270-30
116	2,350	F3SG-4RA2350-30
120	2,430	F3SG-4RA2430-30
124	2,510	F3SG-4RA2510-30




Hand protection

Number of beams	Protective height (mm)	Model
8	185	F3SG-4RA0185-25-01TS NEW
12	265	F3SG-4RA0265-25-01TS NEW
16	345	F3SG-4RA0345-25-01TS NEW
20	425	F3SG-4RA0425-25-01TS NEW
24	505	F3SG-4RA0505-25-01TS NEW
28	585	F3SG-4RA0585-25-01TS NEW
32	665	F3SG-4RA0665-25-01TS NEW
36	745	F3SG-4RA0745-25-01TS NEW
40	825	F3SG-4RA0825-25-01TS NEW
44	905	F3SG-4RA0905-25-01TS NEW
48	985	F3SG-4RA0985-25-01TS NEW
52	1065	F3SG-4RA1065-25-01TS NEW
56	1145	F3SG-4RA1145-25-01TS NEW
60	1225	F3SG-4RA1225-25-01TS NEW
64	1305	F3SG-4RA1305-25-01TS NEW
68	1385	F3SG-4RA1385-25-01TS NEW
72	1465	F3SG-4RA1465-25-01TS NEW
76	1545	F3SG-4RA1545-25-01TS NEW
80	1625	F3SG-4RA1625-25-01TS NEW
84	1705	F3SG-4RA1705-25-01TS NEW
88	1785	F3SG-4RA1785-25-01TS NEW
92	1865	F3SG-4RA1865-25-01TS NEW
96	1945	F3SG-4RA1945-25-01TS NEW

Accessories (Sold separately)

Single-ended Connector Cable

For F3SG-4RA□□□□-14/-4RA□□□□-30


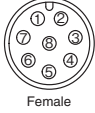
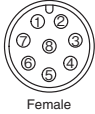
Appearance	Type	Cable length	Specifications	Model																								
	For emitter M12 connector (5-pin), 5 wires Color: Gray	3 m	 <table border="1"> <tr><td>1</td><td>+24 VDC</td><td>Brown</td></tr> <tr><td>2</td><td>TEST</td><td>Black</td></tr> <tr><td>3</td><td>0 VDC</td><td>Blue</td></tr> <tr><td>4</td><td>Not used</td><td>White</td></tr> <tr><td>5</td><td>Not used</td><td>Yellow</td></tr> </table>	1	+24 VDC	Brown	2	TEST	Black	3	0 VDC	Blue	4	Not used	White	5	Not used	Yellow	F39-JG3A-L									
		1		+24 VDC	Brown																							
		2		TEST	Black																							
		3		0 VDC	Blue																							
		4		Not used	White																							
	5	Not used	Yellow																									
	7 m	F39-JG7A-L																										
	10 m	F39-JG10A-L																										
	15 m	F39-JG15A-L																										
	20 m	F39-JG20A-L																										
	For receiver M12 connector (8-pin), 8 wires Color: Black	3 m	 <table border="1"> <tr><td>1</td><td>RESET</td><td>Yellow</td></tr> <tr><td>2</td><td>+24 VDC</td><td>Brown</td></tr> <tr><td>3</td><td>MUTE A</td><td>Gray</td></tr> <tr><td>4</td><td>MUTE B</td><td>Pink</td></tr> <tr><td>5</td><td>OSSD 1</td><td>Black</td></tr> <tr><td>6</td><td>OSSD 2</td><td>White</td></tr> <tr><td>7</td><td>0 VDC</td><td>Blue</td></tr> <tr><td>8</td><td>AUX</td><td>Red</td></tr> </table>	1	RESET	Yellow	2	+24 VDC	Brown	3	MUTE A	Gray	4	MUTE B	Pink	5	OSSD 1	Black	6	OSSD 2	White	7	0 VDC	Blue	8	AUX	Red	F39-JG3A-D
		1		RESET	Yellow																							
		2		+24 VDC	Brown																							
		3		MUTE A	Gray																							
		4		MUTE B	Pink																							
5	OSSD 1	Black																										
6	OSSD 2	White																										
7	0 VDC	Blue																										
8	AUX	Red																										
7 m	F39-JG7A-D																											
10 m	F39-JG10A-D																											
15 m	F39-JG15A-D																											
20 m	F39-JG20A-D																											

Note: To extend the cable length to 20 m or more, add the F39-JG□□B Double-end Connector Cable.

Example: When using a cable of 30 m, connect the F39-JG10A Single-ended Connector Cable with the F39-JG20B Double-end Connector Cable.

Single-ended Connector Cable (2 covers per set, one for emitter and one for receiver)

For F3SG-4RA□□□□-25-01TS


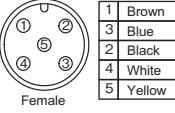
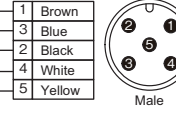

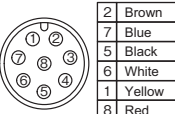
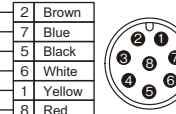
Appearance	Cable length	Specifications	Model																								
	3 m	For emitter M12 connector (8-pin), Color: Gray Connected to Power Cable or Double-Ended Cable  <table border="1"> <tr><td>1</td><td>Not used</td><td>White</td></tr> <tr><td>2</td><td>+24 VDC</td><td>Brown</td></tr> <tr><td>3</td><td>TEST</td><td>Black</td></tr> <tr><td>4</td><td>Not used</td><td>Yellow</td></tr> <tr><td>5</td><td>Not used</td><td>Gray</td></tr> <tr><td>6</td><td>Not used</td><td>Pink</td></tr> <tr><td>7</td><td>0 VDC</td><td>Blue</td></tr> <tr><td>8</td><td>Not used</td><td>Red</td></tr> </table>	1	Not used	White	2	+24 VDC	Brown	3	TEST	Black	4	Not used	Yellow	5	Not used	Gray	6	Not used	Pink	7	0 VDC	Blue	8	Not used	Red	F39-JD3A
	1		Not used	White																							
	2		+24 VDC	Brown																							
	3		TEST	Black																							
	4		Not used	Yellow																							
5	Not used	Gray																									
6	Not used	Pink																									
7	0 VDC	Blue																									
8	Not used	Red																									
7 m	F39-JD7A																										
10 m	F39-JD10A																										
	15 m	For receiver M12 connector (8-pin), Color: Gray Connected to Power Cable or Double-Ended Cable  <table border="1"> <tr><td>1</td><td>OSSD 2</td><td>White</td></tr> <tr><td>2</td><td>+24 VDC</td><td>Brown</td></tr> <tr><td>3</td><td>OSSD 1</td><td>Black</td></tr> <tr><td>4</td><td>AUX</td><td>Yellow</td></tr> <tr><td>5</td><td>Not used</td><td>Gray</td></tr> <tr><td>6</td><td>Not used</td><td>Pink</td></tr> <tr><td>7</td><td>0 VDC</td><td>Blue</td></tr> <tr><td>8</td><td>EDM</td><td>Red</td></tr> </table>	1	OSSD 2	White	2	+24 VDC	Brown	3	OSSD 1	Black	4	AUX	Yellow	5	Not used	Gray	6	Not used	Pink	7	0 VDC	Blue	8	EDM	Red	F39-JD15A
			1	OSSD 2	White																						
2	+24 VDC	Brown																									
3	OSSD 1	Black																									
4	AUX	Yellow																									
5	Not used	Gray																									
6	Not used	Pink																									
7	0 VDC	Blue																									
8	EDM	Red																									
20 m	F39-JD20A																										

Note: To extend the cable length to more than 20 m, add the F39-JD□□B Double-ended Connector Cable.

Example: When using a cable of 30 m, connect the F39-JD10A Single-ended Connector Cable with the F39-JD20B Double-ended Connector Cable.

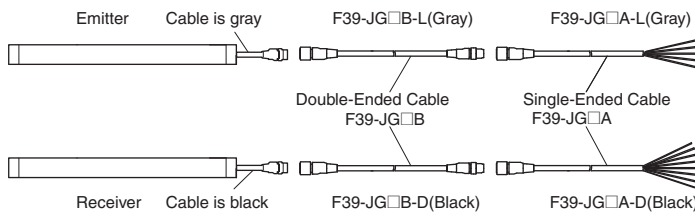
F3SG-RA

Double-ended Connector Cable For cable extension and simple wiring For F3SG-4RA□□□□-14/4RA□□□□-30


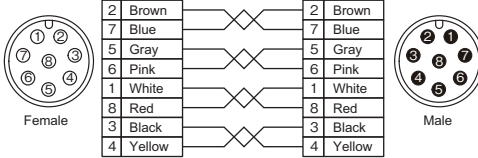
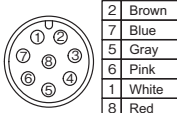
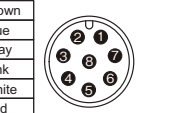
Appearance	Type	Cable length	Specifications	Model			
	For emitter M12 connector (5-pin) on both ends Color: Gray	0.5 m	<div style="display: flex; justify-content: space-around;"> <div> <p>Connected to Power Cable or Double-Ended Cable</p>  </div> <div> <p>Connected to Single-Ended Cable, or Double-Ended cable</p>  </div> </div>	F39-JGR5B-L			
		1 m		F39-JG1B-L			
		3 m		F39-JG3B-L			
		5 m		F39-JG5B-L			
		7 m		F39-JG7B-L			
		10 m		F39-JG10B-L			
		15 m		F39-JG15B-L			
		20 m		F39-JG20B-L			
				For receiver M12 connector (8-pin) on both ends Color: Black	0.5 m	<div style="display: flex; justify-content: space-around;"> <div> <p>Connected to Power Cable or Double-Ended Cable</p>  </div> <div> <p>Connected to Single-Ended Cable, or Double-Ended cable</p>  </div> </div>	F39-JGR5B-D
					1 m		F39-JG1B-D
3 m	F39-JG3B-D						
5 m	F39-JG5B-D						
7 m	F39-JG7B-D						
10 m	F39-JG10B-D						
15 m	F39-JG15B-D						
20 m	F39-JG20B-D						

Note: To extend the cable length to more than 20 m, use the F39-JG□B Double-ended Connector Cables in combination.
Example: When using a cable of 30 m, connect the F39-JG10B Double-ended Connector Cable with the F39-JG20B Double-ended Connector Cable.
To extend the cable length under series connection, use F39-JGR2W and F39-JG□B in combination. Also, the cable length 10 to 20m cannot be used.

<Connection example>

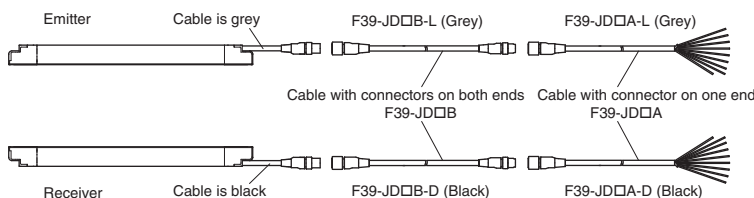


Double-ended Connector Cable (2 covers per set, one for emitter and one for receiver) For F3SG-4RA□□□□-25-01TS


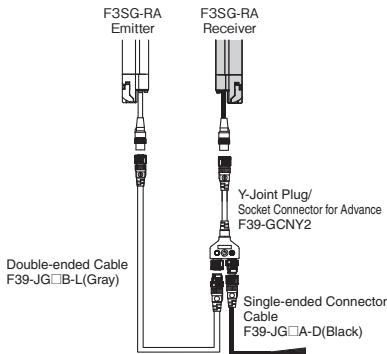
Appearance	Cable length	Specifications	Model		
	0.5 m	<p>For emitter M12 connector (8-pin), Color: Gray</p> 	F39-JDR5B		
	1 m		F39-JD1B		
	3 m		F39-JD3B		
	5 m		F39-JD5B		
			7 m	<p>For receiver M12 connector (8-pin), Color: Black</p> <div style="display: flex; justify-content: space-around;"> <div> <p>Connected to Power Cable or Double-Ended Cable</p>  </div> <div> <p>Connected to Single-Ended Cable, or Double-Ended cable</p>  </div> </div>	F39-JD7B
			10 m		F39-JD10B
			15 m		F39-JD15B
			20 m		F39-JD20B

Note: To extend the cable length to more than 20 m, use the F39-JD□B Double-ended Connector Cables in combination.
Example: When using a cable of 30 m, connect the F39-JD10B Double-ended Connector Cable with the F39-JD20B Double-ended Connector Cable.
To extend the cable length under series connection, use F39-JGR2WTS and F39-JD□B in combination. Also, the cable length 10 to 20m cannot be used.

<Connection example>


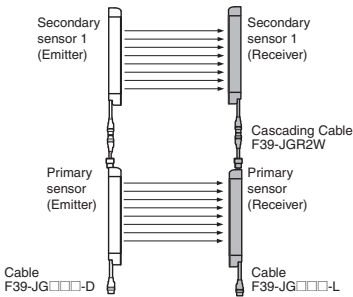


Y-Joint Plug/Socket Connector for F3SG-4RA□□□□-14/-4RA□□□□-30

Appearance	Type	Cable length	Specifications	Model
	M12 connectors. Used for reduced wiring.	0.5 m		F39-GCNY2


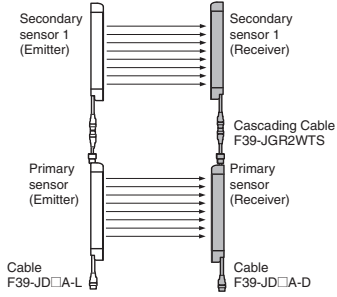
Cascading Cable (Two cables per set, for emitter and receiver)

For F3SG-4RA□□□□-14/-4RA□□□□-30

Appearance	Type	Cable length	Specifications	Model
	Emitter cable: Cap (5-pin), M12 connector (5-pin) Receiver cable: Cap (8-pin), M12 connector (8-pin)	0.2 m		F39-JGR2W





Cascading Cable (Two cables per set, for emitter and receiver)

For F3SG-4RA□□□□-25-01TS

Appearance	Type	Cable length	Specifications	Model
	Cap (8-pin), M12 connector (8-pin)	0.2 m		F39-JGR2WTS

F3SG-RA

Sensor Mounting Brackets

Appearance	Specification	Application	Model
	Standard Fixed Bracket *3	Bracket to mount the F3SG-R. Side mounting and backside mounting possible. (This is included as a standard accessory with the product. It comes as a set of two Brackets. Refer to note *1 for the number of sets provided with each model.)	F39-LGF
	Standard Adjustable Bracket	Bracket to mount the F3SG-R. Beam alignment after mounting possible. The angle adjustment range is $\pm 15^\circ$. Side mounting and backside mounting possible. (Sold separately as a set of two Brackets. Refer to note *1 for the number of sets required for each model.)	F39-LGA
	Top/Bottom Adjustable Bracket *2	Bracket to mount the F3SG-R. Use this bracket at the top and bottom positions of the F3SG-R. Beam alignment after mounting possible. The angle adjustment range is $\pm 22.5^\circ$. Side mounting and backside mounting possible. (Sold separately. 4 brackets per set.)	F39-LGTB
	Top/Bottom Adjustable Bracket *2 (For user-made mounting part)	Top/Bottom Adjustable Bracket without a bracket to mount to the wall. Use the user's own wall mounting part to suit the machine. (Sold separately. 4 brackets per set.)	F39-LGTB-1

*1 [for F3SG-4RA□□□□-14]

- Protective height of 0160 to 1200: 2 sets, Protective height of 1280 to 2080: 3 sets

[for F3SG-4RA□□□□-30]

- Protective height of 0190 to 1230: 2 sets, Protective height of 1310 to 2270: 3 sets, Protective height of 2350 to 2510: 4 sets

*2 Top/Bottom Adjustable Bracket cannot be used with the Standard Fixed Bracket. Use with the Standard Adjustable Bracket.

Using Top/Bottom Adjustable Brackets with Standard Adjustable Brackets

F3SG-4RA□□□□-14: Protective height of 1120 to 1920: 1 set of Top/Bottom Adjustable Brackets and 1 set of Standard Adjustable Brackets

Protective height of 2000 to 2080: 1 set of Top/Bottom Adjustable Brackets and 2 sets of Standard Adjustable Brackets

Protective height of 1040 or lower: Standard Adjustable Brackets cannot be used.

F3SG-4RA□□□□-30: Protective height of 1150 to 1950: 1 set of Top/Bottom Adjustable Brackets and 1 set of Standard Adjustable Brackets

Protective height of 2030 to 2510: 1 set of Top/Bottom Adjustable Brackets and 2 sets of Standard Adjustable Brackets




Protective height of 1070 or lower: Standard Adjustable Brackets cannot be used.

F3SG-4RA□□□□-25-01TS: Protective height of 1145 to 1945: 1 set of Top/Bottom Adjustable Brackets and 2 sets of Standard Adjustable Brackets


Protective height of 1065 or lower: Standard Adjustable Brackets cannot be used.

*3 Sensor Mounting Brackets are not provided with the F3SG-4RA□□□□-25-01TS. Purchase if required.


Interface units and configuration tool SD Manager 2

Appearance	Type	Specifications	Model
	SD Manager2	The Configuration Tool SD Manager 2 is available to download from our website at http://www.ia.omron.com/f3sg-r_tool . To change the settings of the F3SG-RA using SD Manager 2, it is necessary to set the receiver's two DIP switches No. 8 to ON.	-
	Interface Unit	F39-GIF interface unit to connect the F3SG-RA receiver to a USB port of the PC	F39-GIF
	Bluetooth Communication Unit	F39-BT bluetooth unit to enable bluetooth on the F3SG-RA	F39-BT


Lamp

Appearance	Type	Specifications	Model
	Lamp	The lamp unit can be connected to a receiver and turned ON based on the operation of F3SG-RA.	F39-LP
	Lamp and Bluetooth Communication Unit	The lamp can indicate red, orange, and green colors, to which three different states can be assigned.	F39-BTLP

End Cap

Appearance	Specifications	Model
	Housing color: Black For both emitter and receiver (Attached to the F3SG-R. The End Cap can be purchased if lost.)	F39-CNM


Laser Pointer for F3SG-R

Appearance	Specifications	Model
	The laser pointer is attached on the optical surface of the F3SG-R to help coarse adjustment of beams.	F39-PTG

Spatter Protection Cover(Two covers per set, for emitter and receiver)

Spatter Protection Covers include mounting brackets.

For Safety Light Curtain models of the protective height of 2,000 mm or longer, use two Spatter Protection Covers of different lengths.

Appearance	Safety Light Curtain Model			Model
	Finger protection	Hand protection	Hand and arm protection	
	F3SG-□RA0160-14	F3SG-4RA0185-25-01TS	F3SG-□RA0190-30	F39-HGA0200
	F3SG-□RA0240-14	F3SG-4RA0265-25-01TS	F3SG-□RA0270-30	F39-HGA0280
	F3SG-□RA0320-14	F3SG-4RA0345-25-01TS	F3SG-□RA0350-30	F39-HGA0360
	F3SG-□RA0400-14	F3SG-4RA0425-25-01TS	F3SG-□RA0430-30	F39-HGA0440
	F3SG-□RA0480-14	F3SG-4RA0505-25-01TS	F3SG-□RA0510-30	F39-HGA0520
	F3SG-□RA0560-14	F3SG-4RA0585-25-01TS	F3SG-□RA0590-30	F39-HGA0600
	F3SG-□RA0640-14	F3SG-4RA0665-25-01TS	F3SG-□RA0670-30	F39-HGA0680
	F3SG-□RA0720-14	F3SG-4RA0745-25-01TS	F3SG-□RA0750-30	F39-HGA0760
	F3SG-□RA0800-14	F3SG-4RA0825-25-01TS	F3SG-□RA0830-30	F39-HGA0840
	F3SG-□RA0880-14	F3SG-4RA0905-25-01TS	F3SG-□RA0910-30	F39-HGA0920
	F3SG-□RA0960-14	F3SG-4RA0985-25-01TS	F3SG-□RA0990-30	F39-HGA1000
	F3SG-□RA1040-14	F3SG-4RA1065-25-01TS	F3SG-□RA1070-30	F39-HGA1080
	F3SG-□RA1120-14	F3SG-4RA1145-25-01TS	F3SG-□RA1150-30	F39-HGA1160
	F3SG-□RA1200-14	F3SG-4RA1225-25-01TS	F3SG-□RA1230-30	F39-HGA1240
	F3SG-□RA1280-14	F3SG-4RA1305-25-01TS	F3SG-□RA1310-30	F39-HGA1320
	F3SG-□RA1360-14	F3SG-4RA1385-25-01TS	F3SG-□RA1390-30	F39-HGA1400
	F3SG-□RA1440-14	F3SG-4RA1465-25-01TS	F3SG-□RA1470-30	F39-HGA1480
	F3SG-□RA1520-14	F3SG-4RA1545-25-01TS	F3SG-□RA1550-30	F39-HGA1560
	F3SG-□RA1600-14	F3SG-4RA1625-25-01TS	F3SG-□RA1630-30	F39-HGA1640
	F3SG-□RA1680-14	F3SG-4RA1705-25-01TS	F3SG-□RA1710-30	F39-HGA1720
	F3SG-□RA1760-14	F3SG-4RA1785-25-01TS	F3SG-□RA1790-30	F39-HGA1800
	F3SG-□RA1840-14	F3SG-4RA1865-25-01TS	F3SG-□RA1870-30	F39-HGA1880
	F3SG-□RA1920-14	F3SG-4RA1945-25-01TS	F3SG-□RA1950-30	F39-HGA1960
	F3SG-□RA2000-14	-	F3SG-□RA2030-30	F39-HGA1480 F39-HGA0550
	F3SG-□RA2080-14	-	F3SG-□RA2110-30	F39-HGA1560 F39-HGA0550
-	-	F3SG-□RA2190-30	F39-HGA1640 F39-HGA0550	
-	-	F3SG-□RA2270-30	F39-HGA1720 F39-HGA0550	
-	-	F3SG-□RA2350-30	F39-HGA1800 F39-HGA0550	
-	-	F3SG-□RA2430-30	F39-HGA1880 F39-HGA0550	
-	-	F3SG-□RA2510-30	F39-HGA1960 F39-HGA0550	

Note: The operating range of the Safety Light Curtain attached with the product is 10% shorter than the rating.

Test Rod

Diameter	Model
14 mm dia.	F39-TRD14
25 mm dia.	F39-TRD25
30 mm dia.	F39-TRD30

F3SG-RA

Ratings and Specifications

Main unit

F3SG-4RA□□□□-14/-4RA□□□□-30

		F3SG-4RA□□□□-14 F3SG-2RA□□□□-14	F3SG-4RA□□□□-30 F3SG-2RA□□□□-30	
Type of ESPE (IEC 61496-1)	Type 4	F3SG-4RA□□□□-14/-30		
	Type 2	F3SG-2RA□□□□-14/-30		
Performance	Object Resolution (Detection Capability)	Opaque objects		
	Beam Gap	14-mm dia.	30-mm dia.	
	Number of Beams	10 mm	20 mm	
	Lens Size	15 to 207	8 to 124	
	Protective Height	5.2 × 3.4 (W × H) mm	7-mm dia.	
	Operating Range	Long	160 to 2080 mm (6.3 to 81.9 inch)	190 to 2510 mm (7.3 to 98.7 inch)
		Short	0.3 to 10.0 m (1 to 32 ft.)	0.3 to 20.0 m (1 to 65 ft.)
	Response Time	ON to OFF	0.3 to 3.0 m (1 to 10 ft.)	0.3 to 7.0 m (1 to 23 ft.)
		OFF to ON	Normal mode: 8 to 18 ms max. *1 Slow mode: 16 to 36 ms max. *1 *2	
			40 to 90 ms max. *1	
		*1 Response time when used in one segment system or in cascaded connection. *2 Selectable by Configuration Tool.		
	Effective Aperture Angle (EAA) (IEC 61496-2)	Type 4	±2.5° max., emitter and receiver at operating range of 3 m or greater	
		Type 2	±5.0° max., emitter and receiver at operating range of 3 m or greater	
Light Source	Infrared LEDs, Wavelength: 870 nm			
Startup Waiting Time	2 s max.			
Electrical	Power Supply Voltage (Vs)	SELV/PELV 24 VDC±20% (ripple p-p 10% max.)		
	Current Consumption	Refer to page 22.		
	Safety Outputs (OSSD)	Two PNP or NPN transistor outputs (PNP or NPN is selectable by DIP Switch.) Load current of 300 mA max., Residual voltage of 2 V max. (except for voltage drop due to cable extension), Capacitive load of 1 μF max., Inductive load of 2.2 H max. *1 Leakage current of 1 mA max. (PNP), 2 mA max. (NPN) *2		
		*1 The load inductance is the maximum value when the safety output frequently repeats ON and OFF. When you use the safety output at 4 Hz or less, the usable load inductance becomes larger. *2 These values must be taken into consideration when connecting elements including a capacitive load such as a capacitor.		
	Auxiliary Output	One PNP or NPN transistor output (PNP or NPN is selectable by DIP Switch.) Load current of 100 mA max., Residual voltage of 2 V max.		
	Output Operation Mode	Safety Output	Light-ON (Safety output is enabled when the receiver receives an emitting signal.)	
		Auxiliary Output	Safety output (Inverted signal output:Enable) (default) (Configurable by Configuration Tool)	
	Input Voltage	ON Voltage	TEST: 24 V Active: 9 V to Vs (sink current 3 mA max.) * 0 V Active: 0 to 3 V (source current 3 mA max.) MUTE A/B: PNP: Vs to Vs-3 V (sink current 3 mA max.) * NPN: 0 to 3 V (source current 3 mA max.) RESET: PNP: Vs to Vs-3 V (sink current 5 mA max.) * NPN: 0 to 3 V (source current 5 mA max.)	
			OFF Voltage	TEST: 24 V Active : 0 to 1.5 V or open 0 V Active : 9 V to Vs or open MUTE A/B, RESET: PNP: 0 to 1/2 Vs, or open * NPN: 1/2 Vs to Vs, or open *
			* The Vs indicates a supply voltage value in your environment.	
Overvoltage Category (IEC 60664-1)	II			
Indicators	Refer to page 25.			
Protective Circuit	Output short protection, Power supply reverse polarity protection			
Insulation Resistance	20 MΩ or higher (500 VDC megger)			
Dielectric Strength	1,000 VAC, 50/60 Hz (1 min)			
Functional	Mutual Interference Prevention (Scan Code)	This function prevents mutual interference in up to two F3SG-RA systems.		
	Cascade Connection	Number of cascaded segments: 3 max. Total number of beams: 255 max. Cable lengths between sensors: 10 m max.		
	Test Function	Self-test (at power-on, and during operation) External test (light emission stop function by test input)		
	Safety-Related Functions	Interlock External device monitoring (EDM) Pre-reset Fixed blanking/Floating blanking Reduced resolution Muting/Override Scan code selection PNP/NPN selection Response time adjustment		

			F3SG-4RA□□□□-14 F3SG-2RA□□□□-14	F3SG-4RA□□□□-30 F3SG-2RA□□□□-30
Environmental	Ambient Temperature	Operating	-10 to 55°C (14 to 131°F) (non-icing)	
		Storage	-25 to 70°C (-13 to 158°F)	
	Ambient Humidity	Operating	35% to 85% (non-condensing)	
		Storage	35% to 95%	
	Ambient Illuminance		Incandescent lamp: 3,000 lx max. on receiver surface Sunlight: 10,000 lx max. on receiver surface	
	Degree of Protection (IEC 60529)		IP65 and IP67	
	Vibration Resistance (IEC 61496-1)		10 to 55 Hz, Multiple amplitude of 0.7 mm, 20 sweeps for all 3 axes	
Shock Resistance (IEC 61496-1)		100 m/s ² , 1000 shocks for all 3 axes		
Pollution Degree (IEC 60664-1)		Pollution Degree 3		
Connections	Power cable	Type of Connection	M12 connectors: 5-pin emitter and 8-pin receiver, IP67 rated when mated, Cables prewired to the sensors	
		Number of Wires	Emitter: 5, Receiver: 8	
		Cable Length	0.3 m	
		Cable Diameter	6 mm	
		Minimum Bending Radius	R5 mm	
	Cascading cable	Type of Connection	M12 connectors: 5-pin emitter and 8-pin receiver, IP67 rated when mated	
		Number of Wires	Emitter: 5, Receiver: 8	
		Cable Length	0.2 m	
		Cable Diameter	6 mm	
	Extension cable - Single-ended cable - Double-ended cable	Type of Connection	M12 connectors: 5-pin emitter and 8-pin receiver, IP67 rated when mated	
		Number of Wires	Emitter: 5, Receiver: 8	
		Cable Length	Refer to page 13.	
		Cable Diameter	6.6 mm	
Extension of Power Cable	Minimum Bending Radius	R36 mm		
			100 m max.	
Material	Material	Housing: Aluminum Cap: PBT Front window: PMMA Cable: Oil resistant PVC Mounting Bracket: ZDC2 FE plate: SUS		
	Weight (packaged)	Refer to page 22.		
	Included Accessories	Safety Precautions, Quick Installation Manual, Standard Fixed Bracket*, Troubleshooting Guide Sticker, Warning Zone Label * The quantity of Standard Fixed Brackets included varies depending on the protective height. [F3SG-□RA□□□□-14] - Protective height of 0160 to 1200: 2 sets - Protective height of 1280 to 2080: 3 sets [F3SG-□RA□□□□-30] - Protective height of 0190 to 1230: 2 sets - Protective height of 1310 to 2270: 3 sets - Protective height of 2350 to 2510: 4 sets		
Conformity	Conforming standards		Refer to page 24.	
	Type of ESPE (IEC 61496-1)		Type 4	
	Performance Level (PL)/Safety category	Type 4	PL e/Category 4 (EN ISO 13849-1:2008)	
		Type 2	PL c/Category 2 (EN ISO 13849-1:2008)	
	PFHd		1.1 × 10 ⁻⁸ (IEC 61508)	
	Proof test interval T _M		Every 20 years (IEC 61508)	
	SFF		99% (IEC 61508)	
HFT		1 (IEC 61508)		
Classification		Type B (IEC 61508-2)		

F3SG-4RA□□□□-25-01TS

Type of ESPE (IEC 61496-1)		Type 4	F3SG-4RA□□□□-25-01TS	
Performance	Object Resolution (Detection Capability)		Opaque objects 25-mm dia.	
	Beam Gap		20 mm	
	Number of Beams		8 to 96	
	Lens Size		6.0x5.0 (WxH) mm	
	Protective Height		185 to 1945 mm (7.3 to 76.6 inch)	
	Operating Range	Long		0.3 to 17.0 m (1 to 56 ft.)
		Short		0.3 to 5.0 m (1 to 16 ft.)
	Response Time	ON to OFF		8 to 13 ms *1
		OFF to ON		40 to 65ms *1
		*1 Response time when used in one segment system or in cascaded connection. Refer to page 23.		
Effective Aperture Angle (EAA) (IEC 61496-2)	Type 4		±2.5° max., emitter and receiver at operating range of 3 m or greater	
Light Source			Infrared LEDs, Wavelength: 870 nm	
Startup Waiting Time			2 s max.	
Electrical	Power Supply Voltage (Vs)		SELV/PELV 24 VDC±20% (ripple p-p 10% max.)	
	Current Consumption		Refer to page 23 .	
	Safety Outputs (OSSD)			Two PNP or NPN transistor outputs (PNP or NPN is selectable by DIP Switch.) Load current of 300 mA max., Residual voltage of 2 V max. (except for voltage drop due to cable extension), Capacitive load of 1 µF max., Inductive load of 2.2 H max. *1 Leakage current of 1 mA max. (PNP), 2 mA max. (NPN) *2
		*1.*The load inductance is the maximum value when the safety output frequently repeats ON and OFF. When you use the safety output at 4 Hz or less, the usable load inductance becomes larger. *2.*These values must be taken into consideration when connecting elements including a capacitive load such as a capacitor.		
	Auxiliary Output		One PNP or NPN transistor output (Safety Output and homopolarity) Load current of 100 mA max., Residual voltage of 2 V max .	
	Output Operation Mode	Safety Output		Light-ON (Safety output is enabled when the receiver receives an emitting signal.)
		Auxiliary Output		Reverse output of safety output
	Input Voltage	External device monitoring input (Lockout reset input)		PNP ON voltage: Vs-3 V to Vs (short circuit current: approx. 6.5 mA) * OFF voltage: 0 V to 1/2 Vs, or open (short circuit current: approx. 8.0 mA) *
				NPN ON voltage: 0 V to 3 V (short circuit current: approx. 8.0 mA) * OFF voltage: 1/2 Vs to Vs, or open (short circuit current: approx. 6.5 mA) *
		Test input		TEST: 24 V inactive setting ON voltage: 0 V to 1.5 V or open (short circuit current: approx. 2.0 mA) OFF voltage: 9 V to Vs (short circuit current: approx. 2.5 mA) * 0 V inactive setting ON voltage: 9 V to Vs or open (short circuit current: approx. 2.5 mA) OFF voltage: 0 V to 3 V (short circuit current: approx. 2.0 mA)
* The Vs indicates a supply voltage value in your environment.				
Overvoltage Category (IEC 60664-1)			II	
Indicators			Refer to page 25 .	
Protective Circuit			Output short protection, Power supply reverse polarity protection	
Insulation Resistance			20 MΩ or higher (500 VDC megger)	
Dielectric Strength			1,000 VAC, 50/60 Hz (1 min)	
Functional	Mutual Interference Prevention (Scan Code)		This function prevents mutual interference in up to two F3SG-RA systems.	
	Cascade Connection		Number of cascaded segments: 3 max. Total number of beams: 255 max. Cable length between sensors: 10 m max.	
	Test Function		Self-test (at power-on, and during operation) External test (light emission stop function by test input)	
	Safety-Related Functions		External device monitoring (EDM) Scan code selection PNP/NPN selection	
Environmental	Ambient Temperature	Operating	-10 to 55°C (14 to 131°F) (non-icing)	
		Storage	-25 to 70°C (-13 to 158°F)	
	Ambient Humidity	Operating	35% to 85% (non-condensing)	
		Storage	35% to 95%	
	Ambient Illuminance		Incandescent lamp: 3,000 lx max. on receiver surface Sunlight: 10,000 lx max. on receiver surface	
	Degree of Protection (IEC 60529)		IP65 and IP67	
	Vibration Resistance (IEC 61496-1)		10 to 55 Hz, Multiple amplitude of 0.7 mm, 20 sweeps for all 3 axes	
Shock Resistance (IEC 61496-1)		100 m/s ² , 1000 shocks for all 3 axes		
Pollution Degree (IEC 60664-1)			Pollution Degree 3	

		F3SG-4RA□□□□□-25-01TS	
Connections	Power cable	Type of Connection	M12 connectors: 8-pin emitter and receiver, IP67 rated when mated, Cables prewired to the sensors
		Number of Wires	On emitter: 5-wire, On receiver: 8-wire
		Cable Length	0.3 m
		Cable Diameter	6 mm
	Cascading cable	Minimum Bending Radius	R5 mm
		Type of Connection	M12 connectors: 8-pin emitter and receiver, IP67 rated when mated
		Number of Wires	On emitter: 5-wire, On receiver: 8-wire
		Cable Length	0.2 m
	Extension cable - Single-ended cable - Double-ended cable	Cable Diameter	6 mm
		Minimum Bending Radius	R5 mm
		Type of Connection	M12 connectors: 8-pin emitter and receiver, IP67 rated when mated
		Number of Wires	On emitter and receiver: 8-wire
	Extension of Power Cable	Cable Length	Refer to page 13.
Cable Diameter		6.6 mm	
Minimum Bending Radius		R36 mm	
Extension of Power Cable		100 m max.(Emitter/Receiver)	
Material	Material	Housing: Aluminum Cap: PBT Front window: PMMA Cable: Oil resistant PVC FE plate: SUS	
	Weight (packaged)	Refer to page 23 .	
	Included Accessories	Safety Precautions, Quick Installation Manual, Troubleshooting Guide Sticker,	
Conformity	Conforming standards	Refer to page 24 .	
	Performance Level (PL)/ Safety category	Type 4	
	PFHd	1.1×10^{-8} (IEC 61508)	
	Proof test interval T_M	Every 20 years (IEC 61508)	
	SFF	99% (IEC 61508)	
	HFT	1 (IEC 61508)	
	Classification	Type B (IEC 61508-2)	

Bluetooth Communication Unit

Communication System	Bluetooth Version 3.0
Communication Profile	SPP (Serial Port Profile)
Transmission Distance	Approx. 10 m max. (Output power: Class 2) *

* It depends on use environment conditions.

F3SG-RA

List of Models/Response Time/Current Consumption/Weight

F3SG-4RA□□□□-14/F3SG-2RA□□□□-14

Model		Number of Beams	Protective Height [mm]	Response Time [ms]			Current Consumption [mA]		Weight [kg] ²
				ON → OFF ¹	OFF (Synchronized) → ON	OFF (Not synchronized) → ON	Emitter	Receiver	
F3SG-4RA0160-14	F3SG-2RA0160-14	15	160	8	40	140	40	75	1.8
F3SG-4RA0240-14	F3SG-2RA0240-14	23	240	8	40	140	45	75	2.0
F3SG-4RA0320-14	F3SG-2RA0320-14	31	320	8	40	140	55	75	2.2
F3SG-4RA0400-14	F3SG-2RA0400-14	39	400	8	40	140	60	80	2.7
F3SG-4RA0480-14	F3SG-2RA0480-14	47	480	13	65	165	50	80	2.9
F3SG-4RA0560-14	F3SG-2RA0560-14	55	560	13	65	165	55	80	3.1
F3SG-4RA0640-14	F3SG-2RA0640-14	63	640	13	65	165	60	85	3.3
F3SG-4RA0720-14	F3SG-2RA0720-14	71	720	13	65	165	65	85	3.9
F3SG-4RA0800-14	F3SG-2RA0800-14	79	800	13	65	165	65	90	4.1
F3SG-4RA0880-14	F3SG-2RA0880-14	87	880	13	65	165	70	90	4.3
F3SG-4RA0960-14	F3SG-2RA0960-14	95	960	13	65	165	75	90	4.5
F3SG-4RA1040-14	F3SG-2RA1040-14	103	1040	13	65	165	80	95	4.7
F3SG-4RA1120-14	F3SG-2RA1120-14	111	1120	13	65	165	85	95	4.8
F3SG-4RA1200-14	F3SG-2RA1200-14	119	1200	13	65	165	90	100	5.0
F3SG-4RA1280-14	F3SG-2RA1280-14	127	1280	13	65	165	95	100	5.2
F3SG-4RA1360-14	F3SG-2RA1360-14	135	1360	13	65	165	95	105	5.6
F3SG-4RA1440-14	F3SG-2RA1440-14	143	1440	18	90	190	85	105	5.8
F3SG-4RA1520-14	F3SG-2RA1520-14	151	1520	18	90	190	90	105	6.0
F3SG-4RA1600-14	F3SG-2RA1600-14	159	1600	18	90	190	90	110	6.6
F3SG-4RA1680-14	F3SG-2RA1680-14	167	1680	18	90	190	95	110	6.8
F3SG-4RA1760-14	F3SG-2RA1760-14	175	1760	18	90	190	100	115	7.0
F3SG-4RA1840-14	F3SG-2RA1840-14	183	1840	18	90	190	100	115	7.2
F3SG-4RA1920-14	F3SG-2RA1920-14	191	1920	18	90	190	105	120	7.3
F3SG-4RA2000-14	F3SG-2RA2000-14	199	2000	18	90	190	105	120	7.5
F3SG-4RA2080-14	F3SG-2RA2080-14	207	2080	18	90	190	110	125	8.1

*1 The response times are values when Scan Code is set at Code B. The response times for Code A are 1 ms shorter than these values.

*2 The weight includes an emitter, a receiver and included brackets in a product package.

F3SG-4RA□□□□-30/F3SG-2RA□□□□-30

Model		Number of Beams	Protective Height [mm]	Response Time [ms]			Current Consumption [mA]		Weight [kg] ²
				ON → OFF ¹	OFF (Synchronized) → ON	OFF (Not synchronized) → ON	Emitter	Receiver	
F3SG-4RA0190-30	F3SG-2RA0190-30	8	190	8	40	140	35	75	1.8
F3SG-4RA0270-30	F3SG-2RA0270-30	12	270	8	40	140	35	75	2.0
F3SG-4RA0350-30	F3SG-2RA0350-30	16	350	8	40	140	40	75	2.2
F3SG-4RA0430-30	F3SG-2RA0430-30	20	430	8	40	140	45	75	2.7
F3SG-4RA0510-30	F3SG-2RA0510-30	24	510	8	40	140	50	75	2.9
F3SG-4RA0590-30	F3SG-2RA0590-30	28	590	8	40	140	50	75	3.1
F3SG-4RA0670-30	F3SG-2RA0670-30	32	670	8	40	140	55	75	3.3
F3SG-4RA0750-30	F3SG-2RA0750-30	36	750	8	40	140	60	80	3.9
F3SG-4RA0830-30	F3SG-2RA0830-30	40	830	8	40	140	65	80	4.0
F3SG-4RA0910-30	F3SG-2RA0910-30	44	910	13	65	165	50	80	4.2
F3SG-4RA0990-30	F3SG-2RA0990-30	48	990	13	65	165	50	80	4.4
F3SG-4RA1070-30	F3SG-2RA1070-30	52	1070	13	65	165	55	80	4.6
F3SG-4RA1150-30	F3SG-2RA1150-30	56	1150	13	65	165	55	85	4.8
F3SG-4RA1230-30	F3SG-2RA1230-30	60	1230	13	65	165	55	85	4.9
F3SG-4RA1310-30	F3SG-2RA1310-30	64	1310	13	65	165	60	85	5.1
F3SG-4RA1390-30	F3SG-2RA1390-30	68	1390	13	65	165	60	85	5.6
F3SG-4RA1470-30	F3SG-2RA1470-30	72	1470	13	65	165	65	85	5.8
F3SG-4RA1550-30	F3SG-2RA1550-30	76	1550	13	65	165	65	90	6.0
F3SG-4RA1630-30	F3SG-2RA1630-30	80	1630	13	65	165	70	90	6.5
F3SG-4RA1710-30	F3SG-2RA1710-30	84	1710	13	65	165	70	90	6.7
F3SG-4RA1790-30	F3SG-2RA1790-30	88	1790	13	65	165	70	90	6.9
F3SG-4RA1870-30	F3SG-2RA1870-30	92	1870	13	65	165	75	90	7.1
F3SG-4RA1950-30	F3SG-2RA1950-30	96	1950	13	65	165	75	95	7.3
F3SG-4RA2030-30	F3SG-2RA2030-30	100	2030	13	65	165	80	95	7.4
F3SG-4RA2110-30	F3SG-2RA2110-30	104	2110	13	65	165	80	95	8.0
F3SG-4RA2190-30	F3SG-2RA2190-30	108	2190	13	65	165	85	95	8.2
F3SG-4RA2270-30	F3SG-2RA2270-30	112	2270	13	65	165	85	100	8.4
F3SG-4RA2350-30	F3SG-2RA2350-30	116	2350	13	65	165	85	100	8.8
F3SG-4RA2430-30	F3SG-2RA2430-30	120	2430	13	65	165	90	100	8.9
F3SG-4RA2510-30	F3SG-2RA2510-30	124	2510	13	65	165	90	100	9.1

*1 The response times are values when Scan Code is set at Code B. The response times for Code A are 1 ms shorter than these values.

The maximum speed of movement of a test rod up to which the detection capability is maintained is 2.0 m/s.

*2 The weight includes an emitter, a receiver and included brackets in a product package.

F3SG-4RA□□□□-25-01TS

Model	Number of Beams	Protective Height [mm]	Response Time [ms]			Current Consumption [mA]		Weight [kg] *3
			ON → OFF *1	OFF (Synchronized) → ON	OFF (Not synchronized) → ON	Emitter	Receiver	
F3SG-4RA0185-25	8	185	8	40	140	35	75	1.2
F3SG-4RA0265-25	12	265	8	40	140	35	75	1.4
F3SG-4RA0345-25	16	345	8	40	140	40	75	1.6
F3SG-4RA0425-25	20	425	8	40	140	45	75	2.1
F3SG-4RA0505-25	24	505	8	40	140	50	75	2.3
F3SG-4RA0585-25	28	585	8	40	140	50	75	2.4
F3SG-4RA0665-25	32	665	8	40	140	55	75	2.6
F3SG-4RA0745-25	36	745	8	40	140	60	80	3.1
F3SG-4RA0825-25	40	825	8	40	140	65	80	3.2
F3SG-4RA0905-25	44	905	13	65	165	50	80	3.4
F3SG-4RA0985-25	48	985	13	65	165	50	80	3.6
F3SG-4RA1065-25	52	1065	13	65	165	55	80	3.8
F3SG-4RA1145-25	56	1145	13	65	165	55	85	4.5
F3SG-4RA1225-25	60	1225	13	65	165	55	85	4.6
F3SG-4RA1305-25	64	1305	13	65	165	60	85	4.8
F3SG-4RA1385-25	68	1385	13	65	165	60	85	5.1
F3SG-4RA1465-25	72	1465	13	65	165	65	85	5.3
F3SG-4RA1545-25	76	1545	13	65	165	65	90	5.4
F3SG-4RA1625-25	80	1625	13	65	165	70	90	6.0
F3SG-4RA1705-25	84	1705	13	65	165	70	90	6.2
F3SG-4RA1785-25	88	1785	13	65	165	70	90	6.4
F3SG-4RA1865-25	92	1865	13	65	165	75	90	6.6
F3SG-4RA1945-25	96	1945	13	65	165	75	95	6.7

*1 The response times are values when Scan Code is set at Code B. The response times for Code A are 1 ms shorter than these values.

*2 The weight includes an emitter and a receiver in a product package.

Legislation and Standards

1. The F3SG-R does not receive type approval provided by Article 44-2 of the Industrial Safety and Health Act of Japan. When using the F3SG-R in Japan as a "safety system for pressing or shearing machines" prescribed in Article 42 of that law, the machine control system must receive type approval.
2. The F3SG-R is electro-sensitive protective equipment (ESPE) in accordance with European Union (EU) Machinery Directive Index Annex V, Item 2.
3. EC Declaration of Conformity
OMRON declares that the F3SG-R is in conformity with the requirements of the following EC Directives:
Machinery Directive 2006/42/EC
EMC Directive 2014/30/EU
4. Conforming Standards
 - (1) European standards
EN61496-1 (Type 4 and Type 2 ESPE), EN 61496-2 (Type 4 and Type 2 AOPD), EN61508-1 through -4 (SIL 3 for Type 4 and SIL 1 for Type 2), EN ISO 13849-1:2008 (PL e, Category 4 for Type 4 and PL c, Category 2 for Type 2)
 - (2) International standards
IEC61496-1 (Type 4 and Type 2 ESPE), IEC61496-2 (Type 4 and Type 2 AOPD), IEC61508-1 through -4 (SIL 3 for Type 4 and SIL 1 for Type 2), ISO 13849-1:2006 (PL e, Category 4 for Type 4 and PL c, Category 2 for Type 2)
 - (3) JIS standards
JIS B 9704-1 (Type 4 and Type 2 ESPE), JIS B 9704-2 (Type 4 and Type 2 AOPD)
 - (4) North American standards
UL61496-1 (Type 4 and Type 2 ESPE), UL61496-2 (Type 4 and Type 2 AOPD), UL508, UL1998, CAN/CSA C22.2 No.14, CAN/CSA C22.2 No.0.8
 - (5) Chinese standards *
GB4584 (Specification of active opto-electronic protective devices for presses)
5. Third-Party Certifications
 - (1) TÜV SÜD
 - EC Type-Examination certificate:
EU Machinery Directive, Type 4 and Type 2 ESPE (EN61496-1), Type 4 and Type 2 AOPD (EN 61496-2)
 - Certificate:
Type 4 and Type 2 ESPE (EN61496-1), Type 4 and Type 2 AOPD (EN61496-2), EN 61508-1 through -4 (SIL 3 for Type 4 and SIL 1 for Type 2), EN ISO 13849-1:2008 (PL e, Category 4 for Type 4, and PL c, Category 2 for Type 2)
 - (2) UL
 - UL Listing:
Type 4 and Type 2 ESPE (UL61496-1), Type 4 and Type 2 AOPD (UL61496-2), UL508, UL1998, CAN/CSA C22.2 No.14, CAN/CSA C22.2 No.0.8
 - (3) China National Casting and Forging Machines Quality Supervision and Inspection Center *
 - Certificate:
GB4584 (Specification of active opto-electronic protective devices for presses)
6. Other Standards
The F3SG-R is designed according to the standards listed below. To make sure that the final system complies with the following standards and regulations, you are asked to design and use it in accordance with all other related standards, laws, and regulations. If you have any questions, consult with specialized organizations such as the body responsible for prescribing and/or enforcing machinery safety regulations in the location where the equipment is to be used.
 - European Standards: EN415-4, EN691-1, EN692, EN693, IEC/TS 62046
 - U.S. Occupational Safety and Health Standards: OSHA 29 CFR 1910.212
 - U.S. Occupational Safety and Health Standards: OSHA 29 CFR 1910.217
 - American National Standards: ANSI B11.1 to B11.19
 - American National Standards: ANSI/RIA R15.06
 - Canadian Standards Association CSA Z142, Z432, Z434
 - SEMI Standards SEMI S2
 - Japan Ministry of Health, Labour and Welfare "Guidelines for Comprehensive Safety Standards of Machinery", Standard Bureau's Notification No. 0731001 dated July 31, 2007.rms and Conditions Agreement
 - Chinese National Standards: GB17120, GB27607 *

* The F3SG-4RA□□□□-25-01TS does not conform.

Indicator

F3SG-4RA□□□□-14/-4RA□□□□-30

Emitter

Name of Indicator		Color	Illuminated	Blinking
Test	TEST	Green	–	External Test is being performed
Operating range	LONG	Green	Long range mode is selected	Lockout state due to DIP Switch setting error or Operating range selection setting error
Power	POWER	Green	Power is ON.	Error due to noise
Lockout	LOCKOUT	Red	–	Lockout state due to error in emitter

Receiver

Name of Indicator		Color	Illuminated	Blinking
Top-beam-state	TOP	Blue	The top beam is unblocked	Muting/Override state, or Lockout state due to Cap error or Other sensor error
PNP/NPN mode	NPN	Green	NPN mode is selected by DIP Switch	–
Response time	SLOW	Green	Response Time Adjustment is enabled	–
Sequence error	SEQ	Yellow	–	Sequence error in Muting or Pre-reset mode
Blanking	BLANK	Green	Blanking, Warning Zone or Reduced Resolution is enabled	Teach-in mode, or Blanking Monitoring error
Configuration	CFG	Green	–	Teach-in mode, zone measurement beng performed by Dynamic Muting, or Lockout state due to Parameter error or Cascading Configuration error
Interlock	INT-LK	Yellow	Interlock state	Pre-reset mode
External device monitoring	EDM	Green	RESET input is in ON state	Lockout state due to EDM error
Internal error	INTERNAL	Red	–	Lockout state due to Internal error, or error due to abnormal power supply or noise
Lockout	LOCKOUT	Red	–	Lockout state due to error in receiver
Stable-state	STB	Green	Incident light level is 170% or higher of ON-threshold	Safety output is instantaneously turned OFF due to ambient light or vibration
ON/OFF	ON/OFF	Green	Safety output is in ON state	–
		Red	Safety output is in OFF state, or the sensor is in Setting state	Lockout state due to Safety Output error, or error due to abnormal power supply or noise
Communication	COM	Green	Synchronization between emitter and receiver is maintained	Lockout state due to Communication error, or error due to abnormal power supply or noise
Bottom-beam-state	BTM	Blue	The bottom beam is unblocked	Muting/Override state, or Lockout state due to DIP Switch setting error

F3SG-RA

F3SG-4RA□□□□-25-01TS

Emitter

Location	Name of Indicator	Color	Illuminated	Blinking
1	TEST	Green	–	External Test is being performed
2	LONG	Green	Long range mode is selected	Lockout state due to DIP Switch setting error or Operating range selection setting error
3	POWER	Green	Power is ON.	Error due to noise
4	LOCKOUT	Red	–	Lockout state due to error in emitter

Receiver

Location	Name of Indicator	Color	Illuminated	Blinking
1	TOP	Blue	The top beam is unblocked	Lockout state due to Cap error or Other sensor error
2	NPN	Green	NPN mode is selected by DIP Switch	–
3	CFG	Green	–	Lockout state due to Cascading Configuration error
4	EDM	Green	EDM input is in ON state *	Lockout state due to EDM error
5	INTERNAL	Red	–	Lockout state due to Internal error, or error due to abnormal power supply or noise
6	LOCKOUT	Red	–	Lockout state due to error in receiver
7	STB	Green	Incident light level is 170% or higher of ON-threshold	Safety output is instantaneously turned OFF due to ambient light or vibration
8	ON/OFF	Green	Safety output is in ON state	–
		Red	Safety output is in OFF state	Lockout state due to Safety Output error, or error due to abnormal power supply or noise
9	COM	Green	Synchronization between emitter and receiver is maintained	Lockout state due to Communication error, or error due to abnormal power supply or noise
10	BTM	Blue	The bottom beam is unblocked	Lockout state due to DIP Switch setting error

* The LED is illuminated when the EDM input is in ON state regardless of wiring with EDM used or unused.

Interface Unit

Main unit	PC/AT compatible machine (computer that runs Microsoft Windows)
Operating system (OS)	Windows 7 (32-bit/64-bit), Windows 8 (32-bit/64-bit)
Communication port	USB port ×1
Ambient temperature	Operating: -10 to 55°C, Storage: -30 to 70°C(non-icing and non-condensing)
Ambient humidity	Operating: 35% to 85%, Storage: 35% to 95%(non-condensing)

Lamp

Item	F39-LP
Applicable Sensor	F3SG-□RA Series Safety Light Curtain (Receiver)
LED Light Color	Red/Green/Orange
Power Supply Voltage	24 VDC±20%, ripple p-p 10% max.(shares sensor's power supply)
Current Consumption	25 mA max. (shares sensor's power supply.)
Ambient Temperature	Operating: -10 to 55°C, Storage: -25 to 70°C
Ambient Humidity	Operating: 35% to 85%, Storage: 35% to 95%
Vibration Resistance	10 to 55 Hz, Multiple amplitude of 0.7 mm,20 sweeps for all 3 axes
Shock Resistance	100 m/s ² , 1000 shocks for all 3 axes
Degree of Protection	IP65 and IP67(When attached to F3SG)
Type of Connection	Connectable to F3SG-RA's terminal connector
Material	Lighting element: PC, Other body parts: PBT
Weight	45 g (when packaged)

Connections (Basic Wiring Diagram)

F3SG-4RA□□□□-14/-4RA□□□□-30

Standalone F3SG-RA with Auto Reset mode and EDM disabled using PNP Outputs

The following is the example of Muting disabled, External Device Monitoring disabled, Auto-Reset mode, PNP outputs and External Test not used.

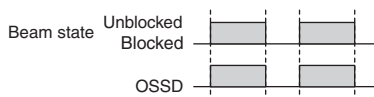
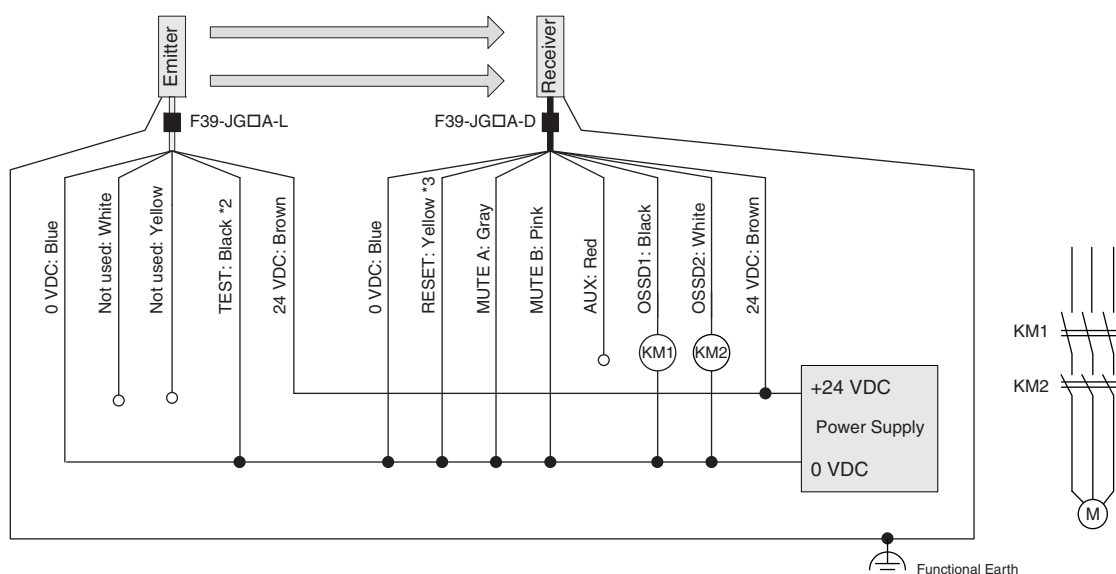
DIP Switch settings *1

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Disabled (factory default setting)	2 <input checked="" type="checkbox"/> ON	2 <input checked="" type="checkbox"/> ON
	Auto Reset (factory default setting)	3 <input checked="" type="checkbox"/> ON	3 <input checked="" type="checkbox"/> ON
		4 <input checked="" type="checkbox"/> ON	4 <input checked="" type="checkbox"/> ON
	PNP (factory default setting)	7 <input checked="" type="checkbox"/> ON	7 <input checked="" type="checkbox"/> ON
Emitter	External Test: 24 V Active (factory default setting)	4 <input checked="" type="checkbox"/> ON	

☐: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

Wiring Example



KM1, KM2: Safety relay with forcibly guided contacts (G7SA) or magnetic contactor
M: 3-phase motor

*1.*The functions are configurable with DIP Switch. Refer to Safety Light Curtain F3SG-R Series User's Manual for more information on setting the functions by the DIP Switch.

*2.*Connect the line to 24 V via a test switch (N.O. contact) if External Test is used.

*3.*Connect the line to 24 V via a lockout reset switch (N.C. contact) if Lockout Reset is used.

Note: Functional earth connection is unnecessary when you use the F3SG-R in a general industrial environment where noise control or stable power supply is considered. However, when you use the F3SG-R in an environment where there may be excessive noise from surroundings or stable power supply may be interfered, it is recommended the F3SG-R be connected to functional earth. The wiring examples in later examples do not indicate functional earth. To use functional earth, wire an earth cable according to the example above. Refer to *Safety Light Curtain F3SG-R Series User's Manual* for more information.

Standalone F3SG-RA with Manual Reset mode and EDM enabled using PNP Outputs

The following is the example of External Device Monitoring enabled, Manual Reset mode, PNP output and External Test in 24 V Active.

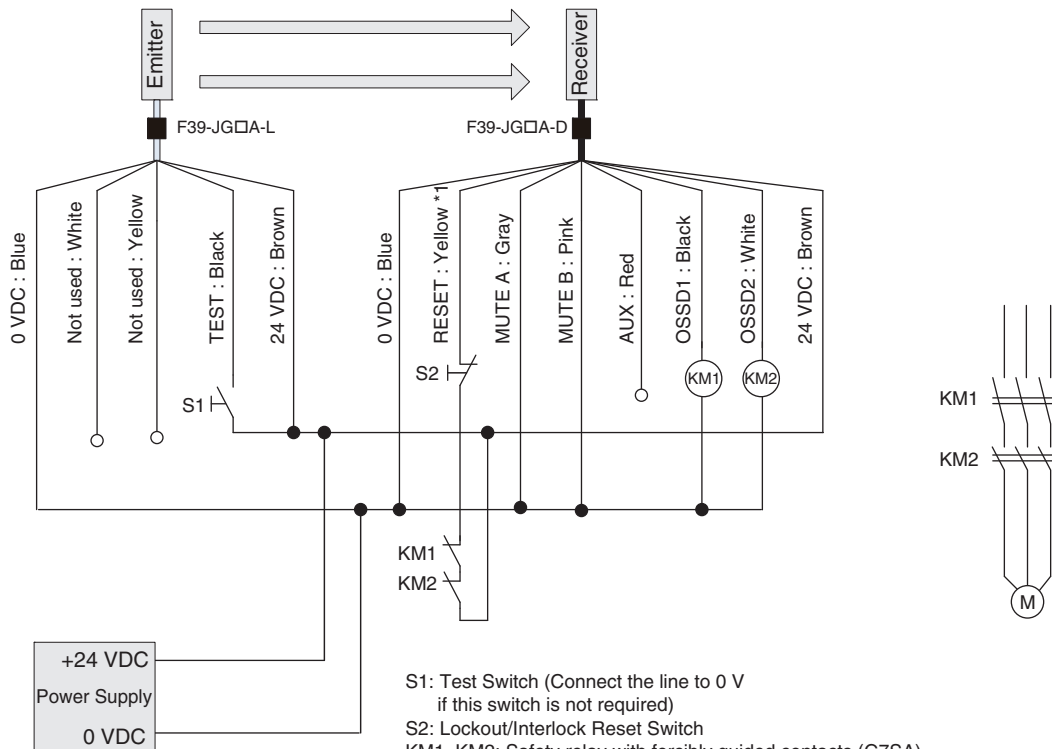
DIP Switch settings *2

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Enabled	2 <input checked="" type="checkbox"/> ON	2 <input checked="" type="checkbox"/> ON
	Manual Reset	3 <input checked="" type="checkbox"/> ON	3 <input checked="" type="checkbox"/> ON
		4 <input checked="" type="checkbox"/> ON	4 <input checked="" type="checkbox"/> ON
	PNP (factory default setting)	7 <input checked="" type="checkbox"/> ON	7 <input checked="" type="checkbox"/> ON
Emitter	External Test: 24 V Active (factory default setting)	4 <input checked="" type="checkbox"/> ON	

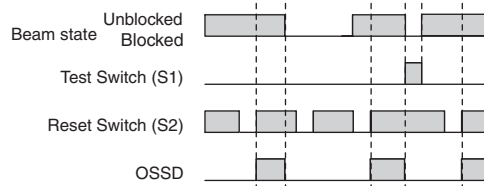
: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

Wiring Example



- S1: Test Switch (Connect the line to 0 V if this switch is not required)
- S2: Lockout/Interlock Reset Switch
- KM1, KM2: Safety relay with forcibly guided contacts (G7SA) or magnetic contactor
- M: 3-phase motor
- *1. Also used as EDM input line.
- *2. The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-R Series User's Manual* for more information on setting the functions by the DIP Switch.



Standalone F3SG-RA with Y-Joint Plug/Socket Connector using PNP outputs

The following is the example of Muting disabled, External Device Monitoring enabled, Manual Reset mode, PNP output and External Test in 24 V Active.

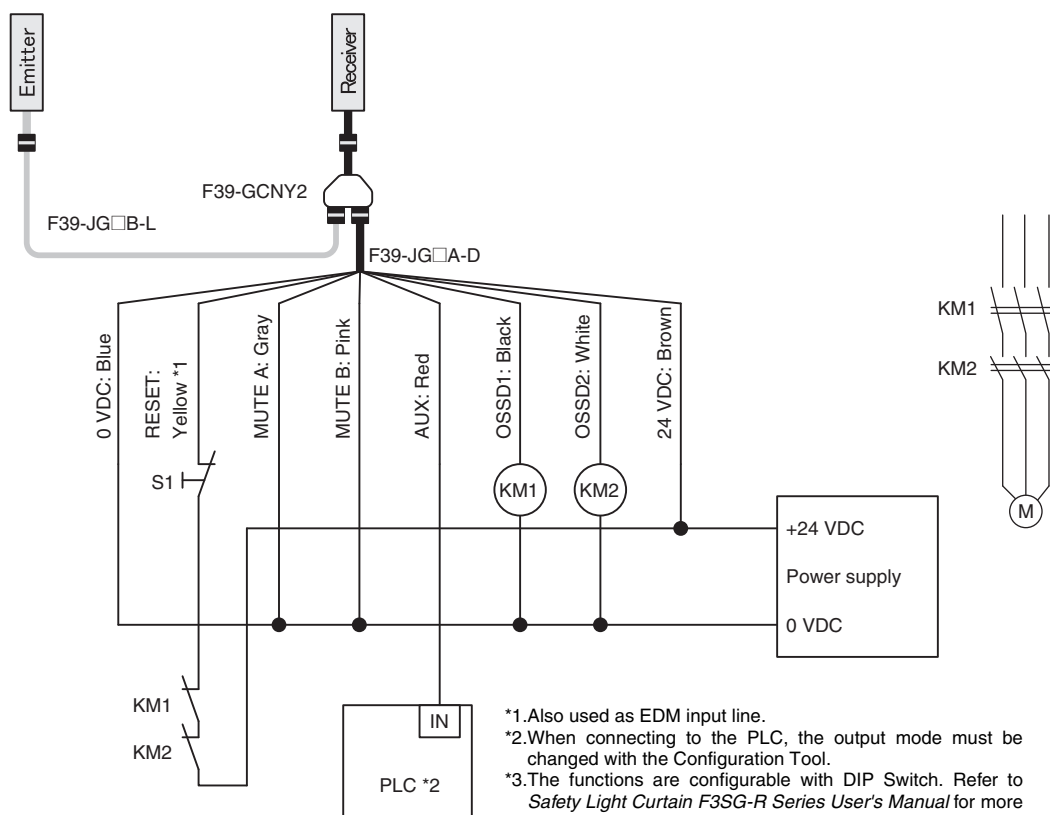
DIP Switch settings *3

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Enabled	2 <input checked="" type="checkbox"/> ON	2 <input checked="" type="checkbox"/> ON
	Manual Reset	3 <input checked="" type="checkbox"/> ON	3 <input checked="" type="checkbox"/> ON
		4 <input type="checkbox"/> OFF	4 <input type="checkbox"/> OFF
	PNP (factory default setting)	7 <input checked="" type="checkbox"/> ON	7 <input checked="" type="checkbox"/> ON
Emitter	External Test: 24 V Active (factory default setting)	4 <input type="checkbox"/> OFF	

: Indicates a switch position.

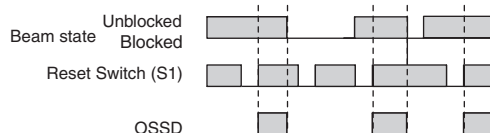
Configure functions with the DIP Switches before wiring.

Wiring Example



S1: Lockout/Interlock Reset Switch
 KM1, KM2: External device feedback
 M: 3-phase motor
 PLC: Programmable controller
 (Used for monitoring only. NOT related to safety system.)

*1. Also used as EDM input line.
 *2. When connecting to the PLC, the output mode must be changed with the Configuration Tool.
 *3. The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-R Series User's Manual* for more information on setting the functions by the DIP Switch.



F3SG-RA with Y-Joint Plug/Socket Connector in Standard Muting Mode/Exit-Only Muting Mode using PNP outputs

The following is the example of External Device Monitoring disabled, Auto Reset mode, PNP output and External Test in 24 V Active.

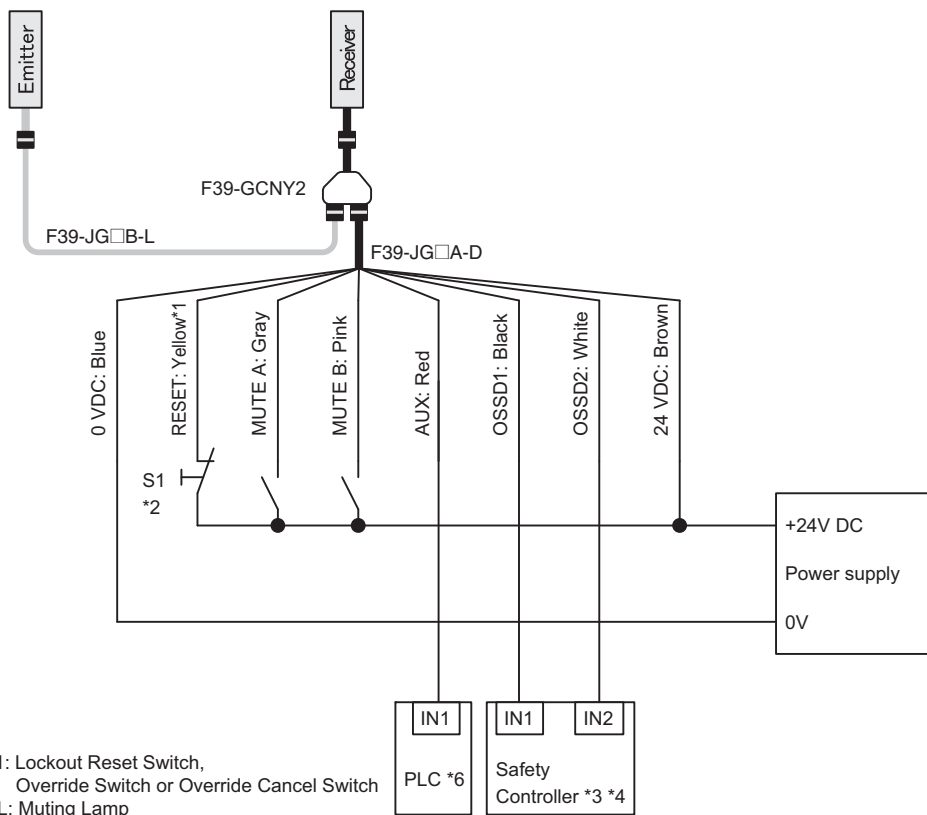
DIP Switch settings *5

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Disabled (factory default setting)	2 <input checked="" type="checkbox"/> ON	2 <input checked="" type="checkbox"/> ON
	Auto Reset (factory default setting)	3 <input checked="" type="checkbox"/> ON	3 <input checked="" type="checkbox"/> ON
		4 <input checked="" type="checkbox"/> ON	4 <input checked="" type="checkbox"/> ON
	PNP (factory default setting)	7 <input checked="" type="checkbox"/> ON	7 <input checked="" type="checkbox"/> ON
Emitter	External Test: 24 V Active (factory default setting)	4 <input checked="" type="checkbox"/> ON	

: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

Wiring Example



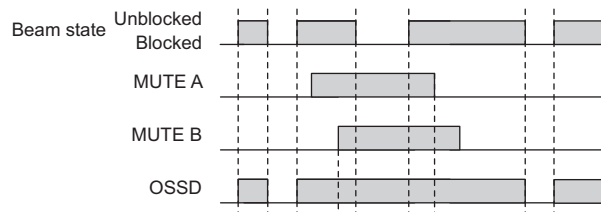
*1. Also used as EDM input line.

*2. Make sure to connect an override cancel switch to the Reset line when using the override function. Otherwise the override state may not be released by the override cancel switch, resulting in serious injury.

*3. Refer to page 34 for more information.

*4. The safety controller and the F3SG-R must share the power supply or be connected to the common terminal of the power supply.

*5. The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-R Series User's Manual* for more information on setting the functions by the DIP Switch.



Standard Muting Mode/Exit-Only Muting Mode using PNP Outputs

The following is the example of External Device Monitoring disabled, Auto Reset mode, PNP output and External Test in 24 V Active.

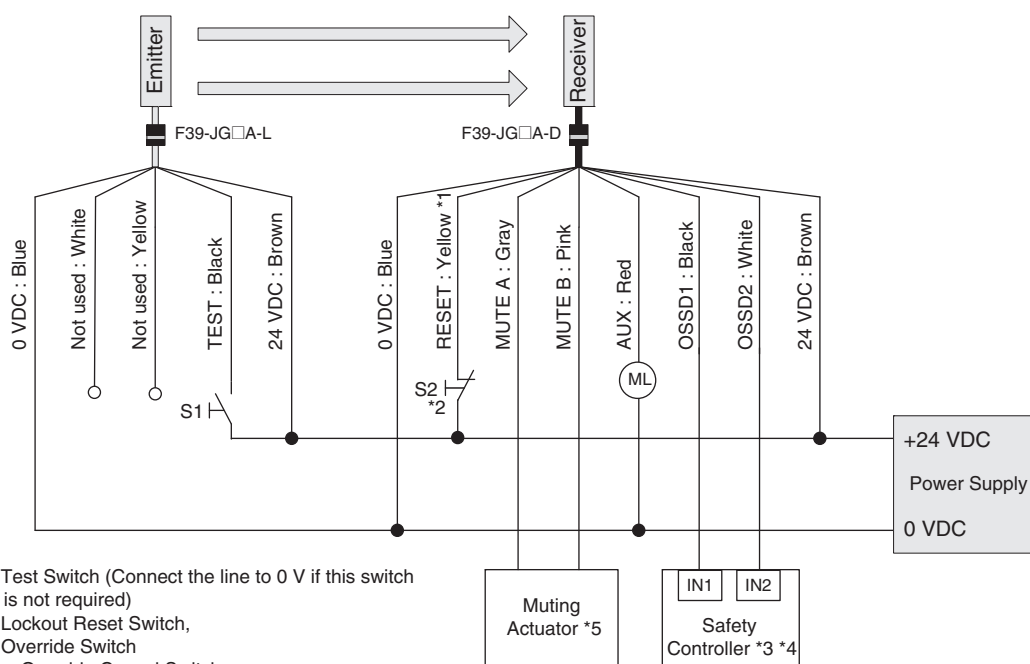
DIP Switch settings *6

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Disabled (factory default setting)	2 <input checked="" type="checkbox"/> ON	2 <input checked="" type="checkbox"/> ON
	Auto Reset (factory default setting)	3 <input checked="" type="checkbox"/> ON	3 <input checked="" type="checkbox"/> ON
		4 <input checked="" type="checkbox"/> ON	4 <input checked="" type="checkbox"/> ON
	PNP (factory default setting)	7 <input checked="" type="checkbox"/> ON	7 <input checked="" type="checkbox"/> ON
Emitter	External Test: 24 V Active (factory default setting)	4 <input checked="" type="checkbox"/> ON	

: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

Wiring Example



S1: Test Switch (Connect the line to 0 V if this switch is not required)

S2: Lockout Reset Switch, Override Switch or Override Cancel Switch

ML: Muting lamp

*1.Also used as Override input line.

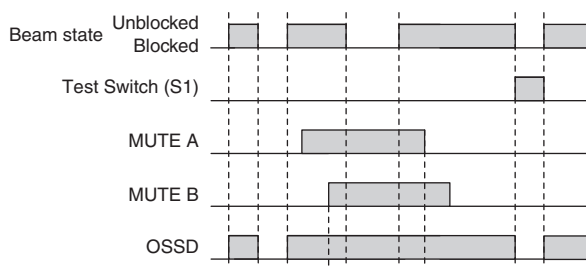
*2.Make sure to connect an override cancel switch to the Reset line when using the override function. Otherwise the override state may not be released by the override cancel switch, resulting in serious injury.

*3.Refer to page 34 for more information.

*4.The safety controller and the F3SG-R must share the power supply or be connected to the common terminal of the power supply.

*5.Refer to *Smart Muting Actuator F3W-MA Series User's Manual* for more information.

*6.The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-R Series User's Manual* for more information on setting the functions by the DIP Switch.



Standard Muting Mode/Exit-Only Muting Mode with two Muting Sensors using PNP Outputs

The following is the example of External Device Monitoring disabled, Auto Reset mode, PNP output and External Test in 24 V Active.

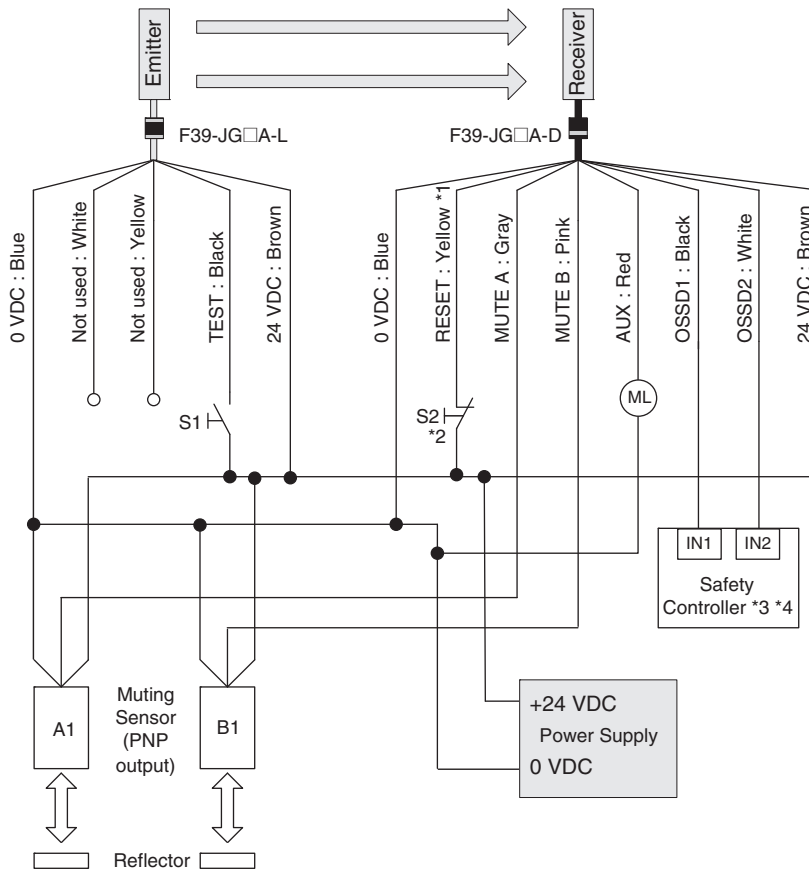
DIP Switch settings *5

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Disabled (factory default setting)	2 <input type="checkbox"/> ON	2 <input type="checkbox"/> ON
	Auto Reset (factory default setting)	3 <input type="checkbox"/> ON	3 <input type="checkbox"/> ON
		4 <input type="checkbox"/> ON	4 <input type="checkbox"/> ON
	PNP (factory default setting)	7 <input type="checkbox"/> ON	7 <input type="checkbox"/> ON
Emitter	External Test: 24 V Active (factory default setting)	4 <input type="checkbox"/> ON	

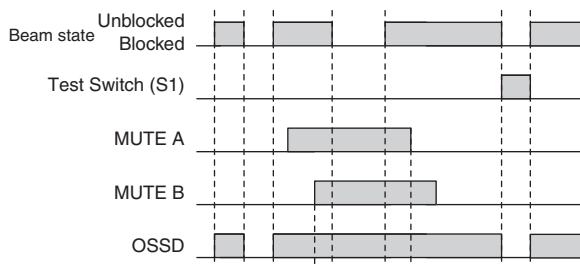
: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

Wiring Example



S1: Test Switch (Connect the line to 0 V if this switch is not required)
 S2: Lockout Reset Switch, Override Switch or Override Cancel Switch
 ML: Muting lamp
 A1, B1: Muting sensor



*1. Also used as Override input line.

*2. Make sure to connect an override cancel switch to the Reset line when using the override function. Otherwise the override state may not be released by the override cancel switch, resulting in serious injury.

*3. Refer to page 34 for more information.

*4. The safety controller and the F3SG-R must share the power supply or be connected to the common terminal of the power supply.

*5. The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-R Series User's Manual* for more information on setting the functions by the DIP Switch.

Standard Muting Mode with four Muting Sensors using PNP Outputs

The following is the example of External Device Monitoring disabled, Auto Reset mode, PNP output and External Test in 24 V Active.

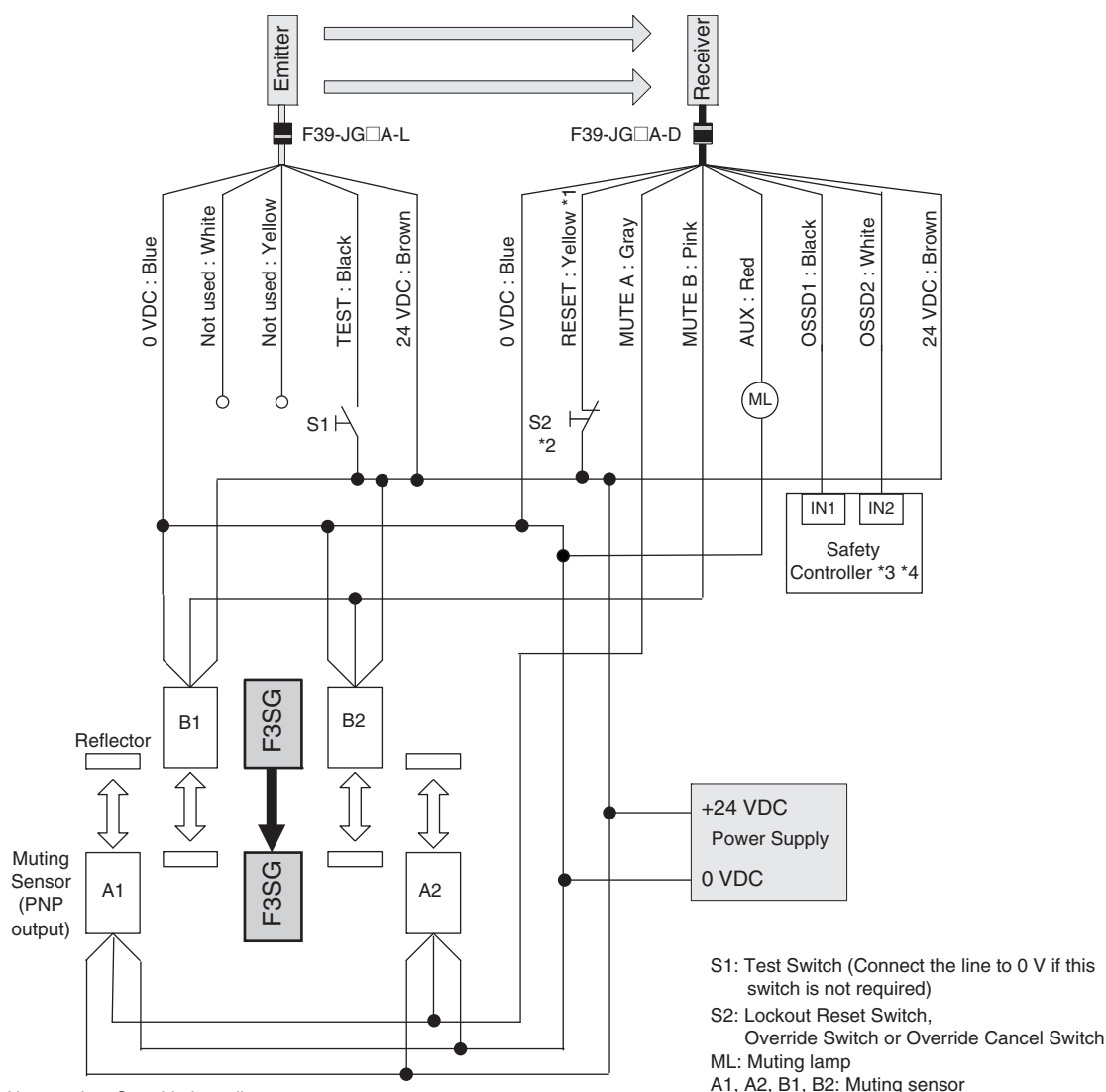
DIP Switch settings *5

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Disabled (factory default setting)	2 <input type="checkbox"/> ON	2 <input type="checkbox"/> ON
	Auto Reset (factory default setting)	3 <input type="checkbox"/> ON	3 <input type="checkbox"/> ON
		4 <input type="checkbox"/> ON	4 <input type="checkbox"/> ON
	PNP (factory default setting)	7 <input type="checkbox"/> ON	7 <input type="checkbox"/> ON
Emitter	External Test: 24 V Active (factory default setting)	4 <input type="checkbox"/> ON	

: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

Wiring Example



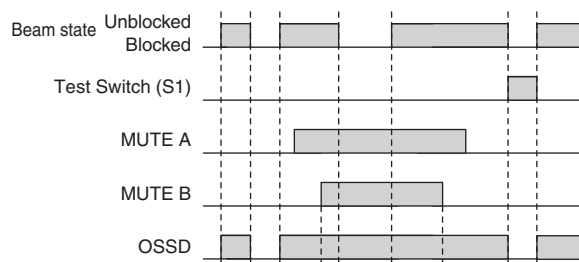
*1. Also used as Override input line.

*2. Make sure to connect an override cancel switch to the Reset line when using the override function. Otherwise the override state may not be released by the override cancel switch, resulting in serious injury.

*3. Refer to page 34 for more information.

*4. The safety controller and the F3SG-R must share the power supply or be connected to the common terminal of the power supply.

*5. The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-R Series User's Manual* for more information on setting the functions by the DIP Switch.



Pre-Reset Mode using PNP Output

The following is the example of External Device Monitoring disabled, Pre-Reset mode, PNP output and External Test in 24 V Active.

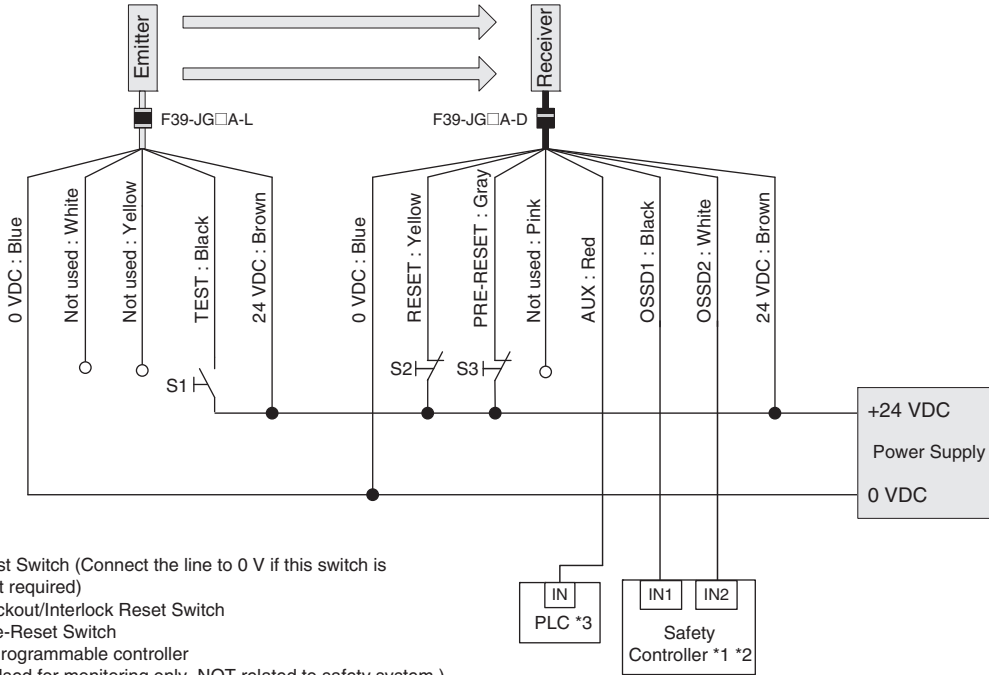
DIP Switch settings *4

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Disabled (factory default setting)	2 <input checked="" type="checkbox"/> ON	2 <input checked="" type="checkbox"/> ON
	Pre-Reset	3 <input checked="" type="checkbox"/> ON	3 <input checked="" type="checkbox"/> ON
		4 <input checked="" type="checkbox"/> ON	4 <input checked="" type="checkbox"/> ON
		7 <input checked="" type="checkbox"/> ON	7 <input checked="" type="checkbox"/> ON
Emitter	External Test: 24 V Active (factory default setting)	4 <input checked="" type="checkbox"/> ON	

: Indicates a switch position.

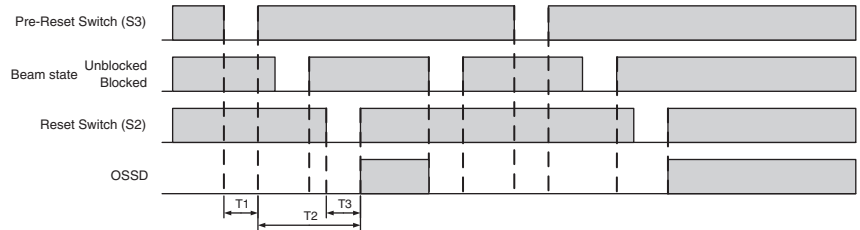
Configure functions with the DIP Switches before wiring.

Wiring Example



- S1: Test Switch (Connect the line to 0 V if this switch is not required)
- S2: Lockout/Interlock Reset Switch
- S3: Pre-Reset Switch
- PLC: Programmable controller
(Used for monitoring only. NOT related to safety system.)

- *1. Refer to the following list "Connectable Safety Control Units" on this page.
- *2. The safety controller and the F3SG-R must share the power supply or be connected to the common terminal of the power supply.
- *3. When connecting to the PLC, the output mode must be changed with the Configuration Tool.
- *4. The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-R Series User's Manual* for more information on setting the functions by the DIP Switch.



T1: Push time: must be $T1 \geq 300ms$
 T2: Pre-reset limit time between Pre-reset and Reset: must be $T2 \leq 60s$
 T3: Push time: must be $T3 \geq 300ms$

Connectable Safety Control Units

The F3SG-RA with PNP output can be connected to the safety control units listed in the table below.

Connectable Safety Control Units (PNP output)		
Safety Relay Units	Flexible Safety Units	Safety Controllers
G9SA-301 G9SA-321 G9SA-501 G9SB-200-B G9SB-200-D G9SB-301-B G9SB-301-D G9SE-201 G9SE-401 G9SE-221-T□	G9SX-AD322-T G9SX-ADA222-T G9SX-BC202 G9SX-GS226-T15	G9SP-N10S G9SP-N10D G9SP-N20S NE0A-SCPU01 NE1A-SCPU01 NE1A-SCPU02 DST1-ID12SL-1 DST1-MD16SL-1 DST1-MRD08SL-1 NX-SIH400 NX-SID800 F3SP-T01

Standalone F3SG-RA with Auto Reset mode and EDM disabled using NPN Outputs

The following is the example of Muting disabled, External Device Monitoring disabled, Auto-Reset mode, NPN outputs and External Test not used.

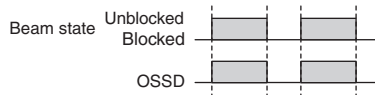
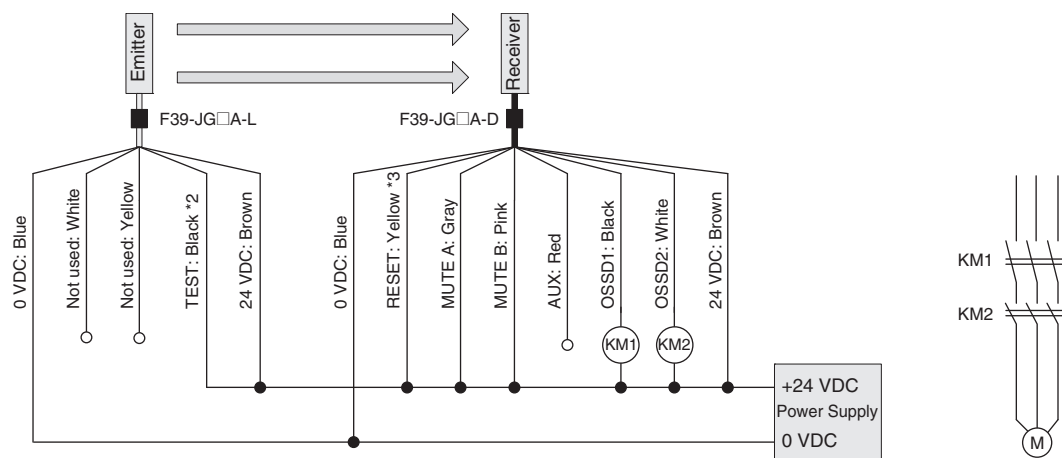
DIP Switch settings *1

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Enabled	2 <input checked="" type="checkbox"/> ON	2 <input checked="" type="checkbox"/> ON
	Manual Reset	3 <input checked="" type="checkbox"/> ON	3 <input checked="" type="checkbox"/> ON
		4 <input checked="" type="checkbox"/> ON	4 <input checked="" type="checkbox"/> ON
	NPN	7 <input checked="" type="checkbox"/> ON	7 <input checked="" type="checkbox"/> ON
Emitter	External Test: 0 V Active	4 <input type="checkbox"/> ON	

: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

Wiring Example



KM1, KM2: Safety relay with forcibly guided contacts (G7SA)
or magnetic contactor
M: 3-phase motor

- *1. The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-R Series User's Manual* for more information on setting the functions by the DIP Switch.
- *2. Connect the line to 0 V via a test switch (N.O. contact) if External Test is used.
- *3. Connect the line to 0 V via a lockout reset switch (N.C. contact) if Lockout Reset is used.

Standalone F3SG-RA with Manual Reset mode and EDM enabled using NPN Outputs

The following is the example of Muting disabled, External Device Monitoring enabled, Manual Reset mode, NPN output and External Test in 0 V Active.

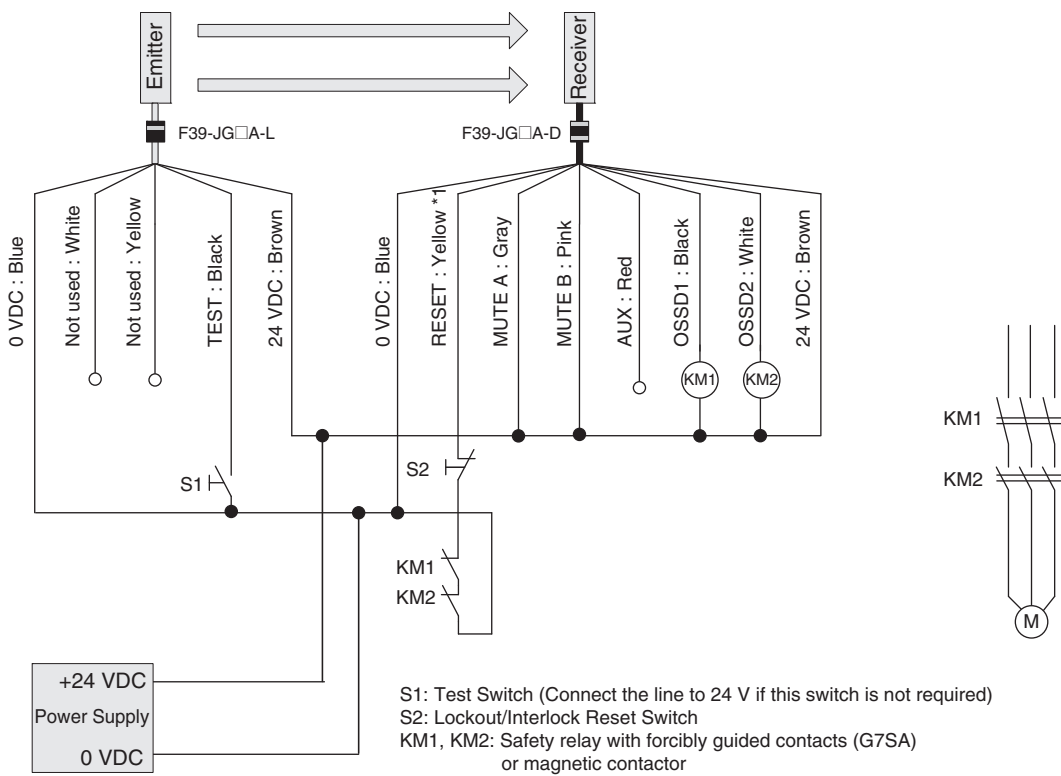
DIP Switch settings *2

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Enabled	2 <input checked="" type="checkbox"/> ON	2 <input checked="" type="checkbox"/> ON
	Manual Reset	3 <input checked="" type="checkbox"/> ON	3 <input checked="" type="checkbox"/> ON
		4 <input checked="" type="checkbox"/> ON	4 <input checked="" type="checkbox"/> ON
	NPN	7 <input checked="" type="checkbox"/> ON	7 <input checked="" type="checkbox"/> ON
Emitter	External Test: 0 V Active	4 <input checked="" type="checkbox"/> ON	

: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

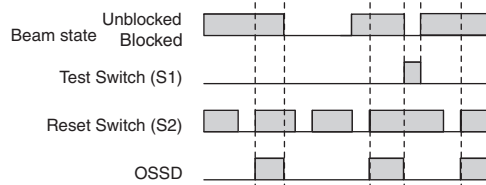
Wiring Example



S1: Test Switch (Connect the line to 24 V if this switch is not required)
 S2: Lockout/Interlock Reset Switch
 KM1, KM2: Safety relay with forcibly guided contacts (G7SA)
 or magnetic contactor
 M: 3-phase motor

*1. Also used as EDM input line.

*2. The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-R Series User's Manual* for more information on setting the functions by the DIP Switch.



Standalone F3SG-RA with Y-Joint Plug/Socket Connector using NPN outputs

The following is the example of Muting disabled, External Device Monitoring enabled, Manual Reset mode, NPN output and External Test in 24 V Active.

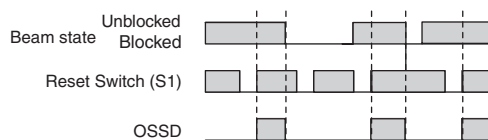
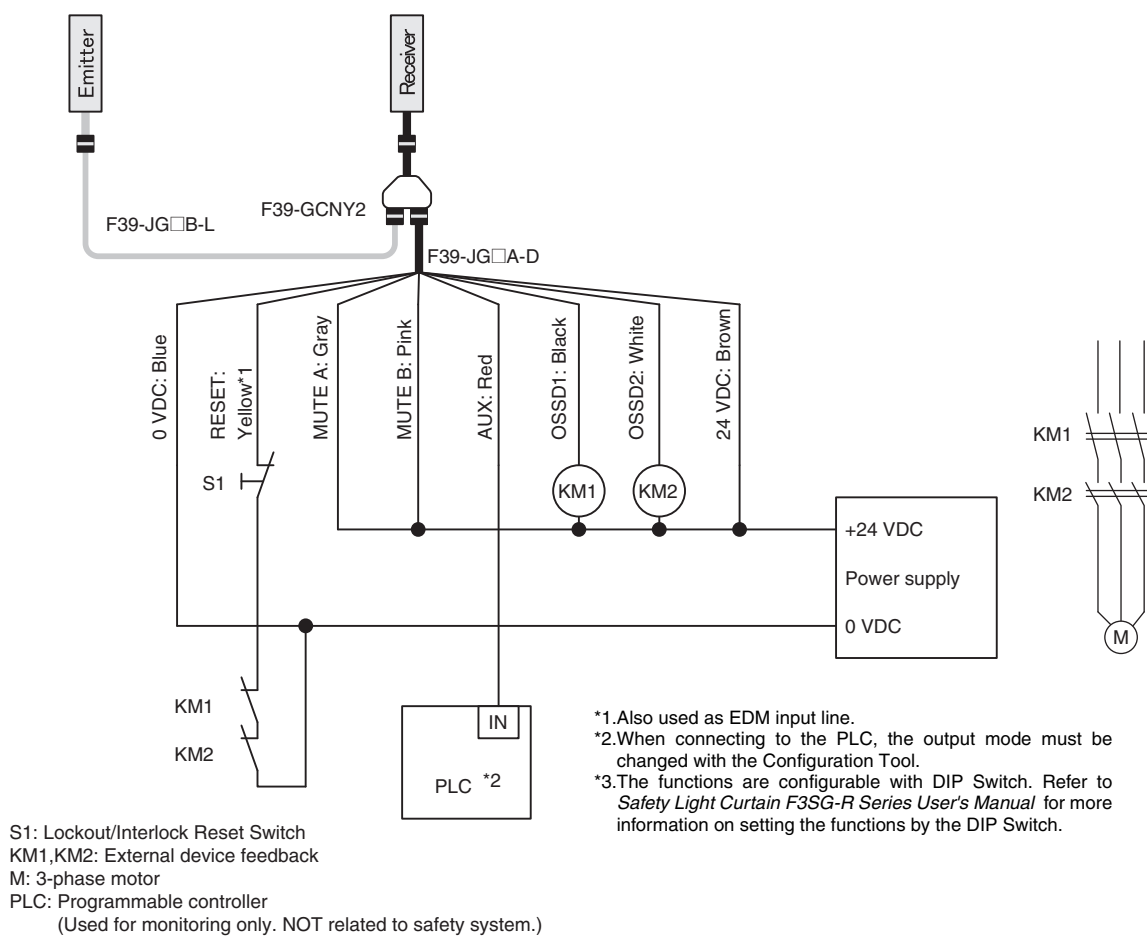
DIP Switch settings *3

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Enabled	2 <input checked="" type="checkbox"/> ON	2 <input checked="" type="checkbox"/> ON
	Manual Reset	3 <input checked="" type="checkbox"/> ON	3 <input checked="" type="checkbox"/> ON
		4 <input type="checkbox"/> OFF	4 <input type="checkbox"/> OFF
	NPN	7 <input checked="" type="checkbox"/> ON	7 <input checked="" type="checkbox"/> ON
Emitter	External Test: 24 V Active (factory default setting)	4 <input type="checkbox"/> OFF	

: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

Wiring Example



Standard Muting Mode/Exit-Only Muting Mode using NPN Outputs

The following is the example of External Device Monitoring enabled, Auto Reset mode, NPN output and External Test in 0 V Active.

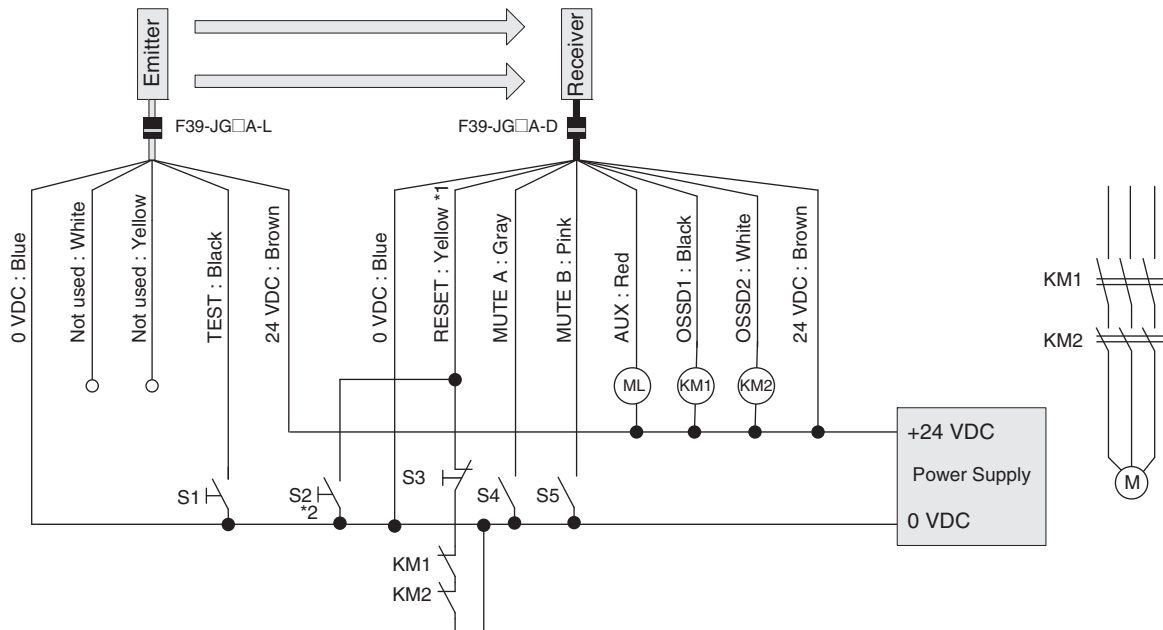
DIP Switch settings *3

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Enabled	2 <input type="checkbox"/> ON	2 <input type="checkbox"/> ON
	Auto Reset (factory default setting)	3 <input type="checkbox"/> ON	3 <input type="checkbox"/> ON
		4 <input type="checkbox"/> ON	4 <input type="checkbox"/> ON
	NPN	7 <input type="checkbox"/> ON	7 <input type="checkbox"/> ON
Emitter	External Test: 0 V Active	4 <input type="checkbox"/> ON	

: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

Wiring Example

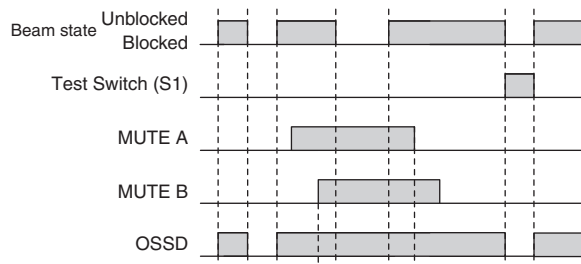


- S1: Test Switch (Connect the line to 24 V if this switch is not required)
- S2: Override Cancel Switch
- S3: Lockout Reset Switch or Override Switch
- S4, S5: Muting sensor
- KM1, KM2: Safety relay with forcibly guided contacts (G7SA) or magnetic contactor
- M: 3-phase motor
- ML: Muting lamp

*1. Also used as Override input line.

*2. Make sure to connect an override cancel switch to the Reset line when using the override function. Otherwise the override state may not be released by the override cancel switch, resulting in serious injury.

*3. The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-R Series User's Manual* for more information on setting the functions by the DIP Switch.



Standard Muting Mode/Exit-Only Muting Mode with two Muting Sensors using NPN Outputs

The following is the example of External Device Monitoring enabled, Auto Reset mode, NPN output and External Test in 0 V Active.

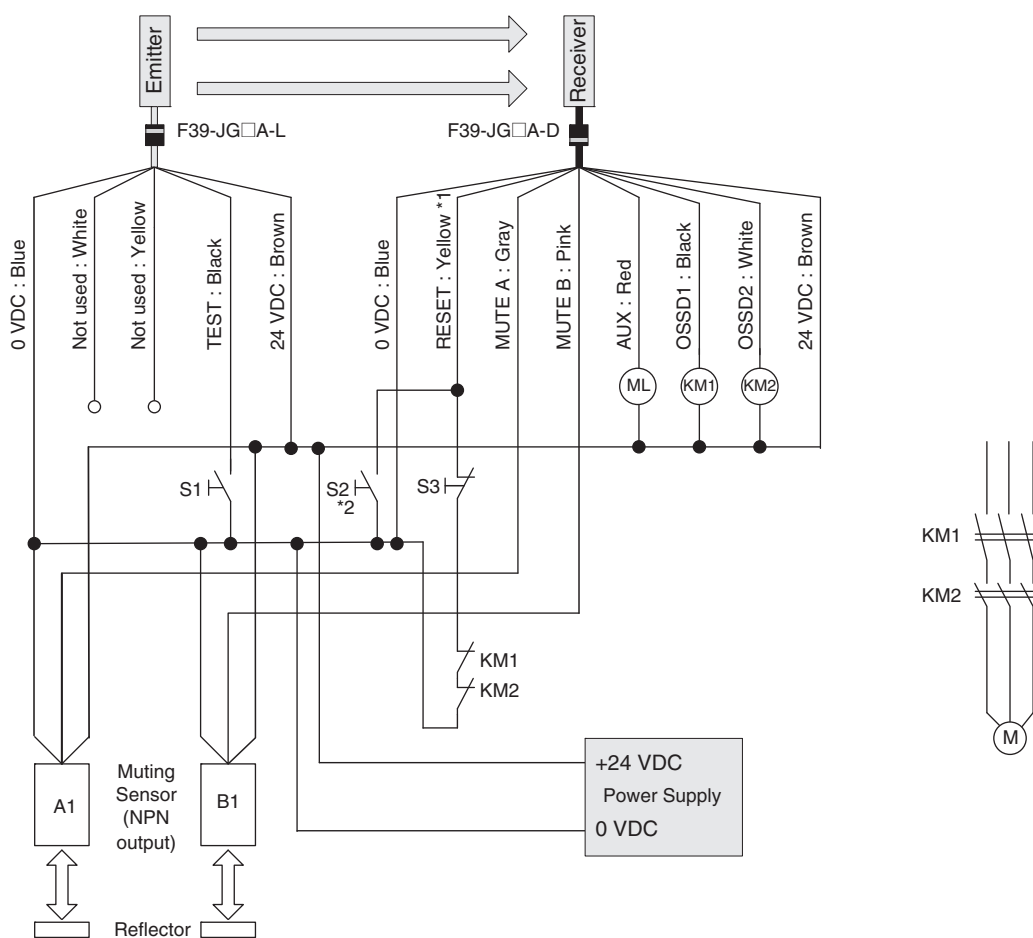
DIP Switch settings *3

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Enabled	2 <input type="checkbox"/> ON	2 <input type="checkbox"/> ON
	Auto Reset (factory default setting)	3 <input type="checkbox"/> ON	3 <input type="checkbox"/> ON
		4 <input type="checkbox"/> ON	4 <input type="checkbox"/> ON
	NPN	7 <input type="checkbox"/> ON	7 <input type="checkbox"/> ON
Emitter	External Test: 0 V Active	4 <input type="checkbox"/> ON	

: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

Wiring Example



S1: Test Switch (Connect the line to 24 V if this switch is not required)

S2: Override Cancel Switch

S3: Lockout Reset Switch or Override Switch

KM1, KM2: Safety relay with forcibly guided contacts (G7SA) or magnetic contactor

M: 3-phase motor

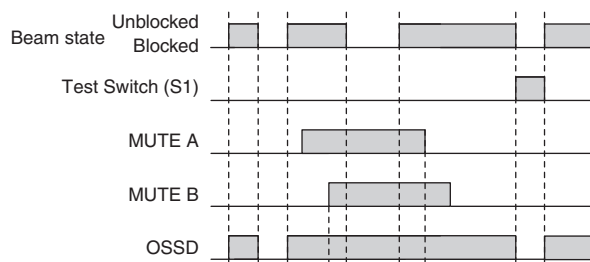
ML: Muting lamp

A1, B1: Muting sensor

*1. Also used as Override input line.

*2. Make sure to connect an override cancel switch to the Reset line when using the override function. Otherwise the override state may not be released by the override cancel switch, resulting in serious injury.

*3. The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-R Series User's Manual* for more information on setting the functions by the DIP Switch.



Standard Muting Mode with four Muting Sensors using NPN Outputs

The following is the example of External Device Monitoring enabled, Auto Reset mode, NPN output and External Test in 0 V Active.

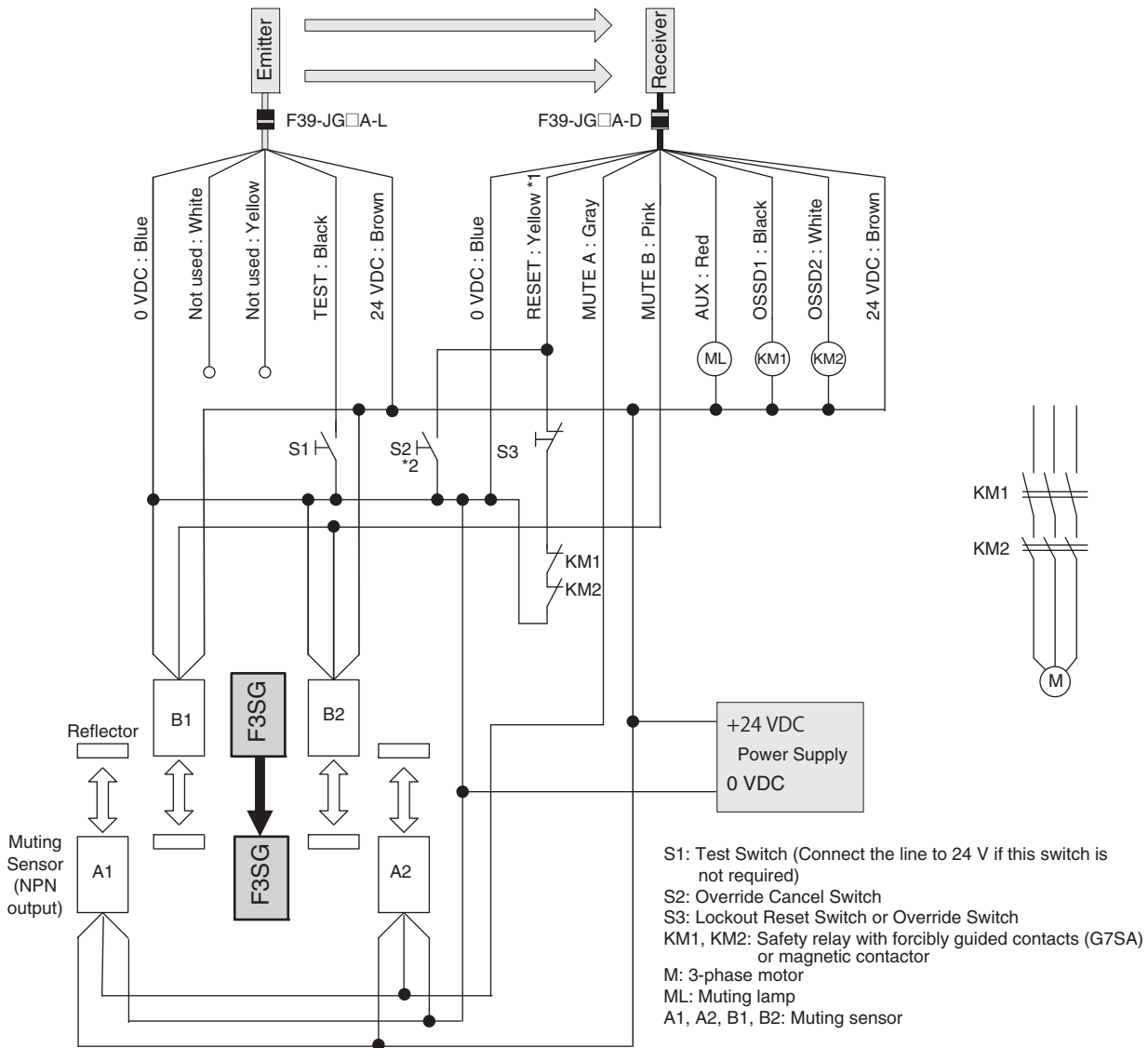
DIP Switch settings *3

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Enabled	2 <input type="checkbox"/> ON	2 <input type="checkbox"/> ON
	Auto Reset (factory default setting)	3 <input type="checkbox"/> ON	3 <input type="checkbox"/> ON
		4 <input type="checkbox"/> ON	4 <input type="checkbox"/> ON
	NPN	7 <input type="checkbox"/> ON	7 <input type="checkbox"/> ON
Emitter	External Test: 0 V Active	4 <input type="checkbox"/> ON	

: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

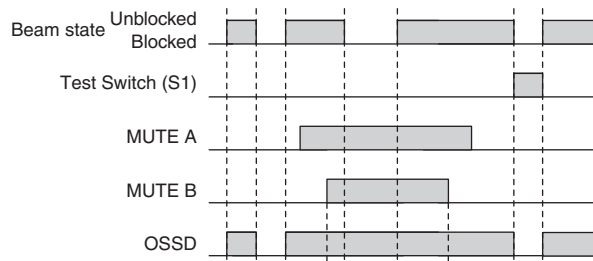
Wiring Example



*1. Also used as Override input line.

*2. Make sure to connect an override cancel switch to the Reset line when using the override function. Otherwise the override state may not be released by the override cancel switch, resulting in serious injury.

*3. The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-R Series User's Manual* for more information on setting the functions by the DIP Switch.



Pre-Reset Mode using NPN Output

The following is the example of External Device Monitoring enabled, Pre-Reset mode, NPN output and External Test in 0 V Active.

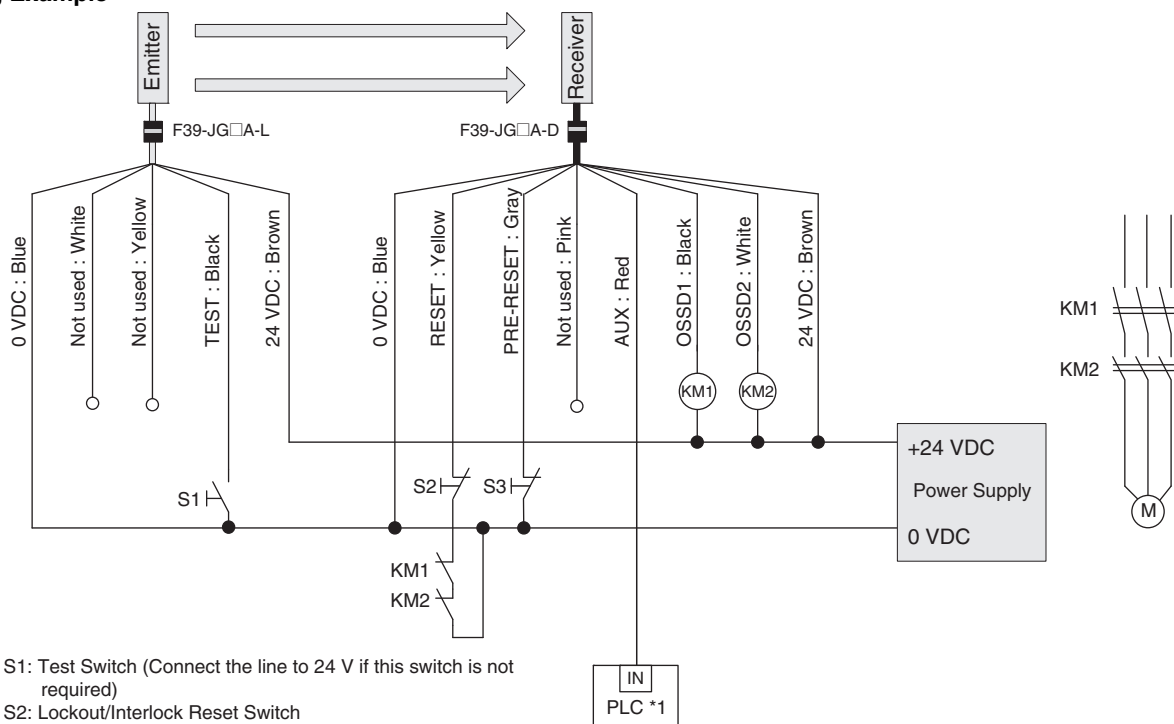
DIP Switch settings *2

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Enabled	2 <input checked="" type="checkbox"/> ON	2 <input checked="" type="checkbox"/> ON
	Pre-Reset	3 <input checked="" type="checkbox"/> ON	3 <input checked="" type="checkbox"/> ON
		4 <input checked="" type="checkbox"/> ON	4 <input checked="" type="checkbox"/> ON
	NPN	7 <input checked="" type="checkbox"/> ON	7 <input checked="" type="checkbox"/> ON
Emitter	External Test: 0 V Active	4 <input checked="" type="checkbox"/> ON	

: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

Wiring Example



S1: Test Switch (Connect the line to 24 V if this switch is not required)

S2: Lockout/Interlock Reset Switch

S3: Pre-Reset Switch

KM1, KM2: External device feedback

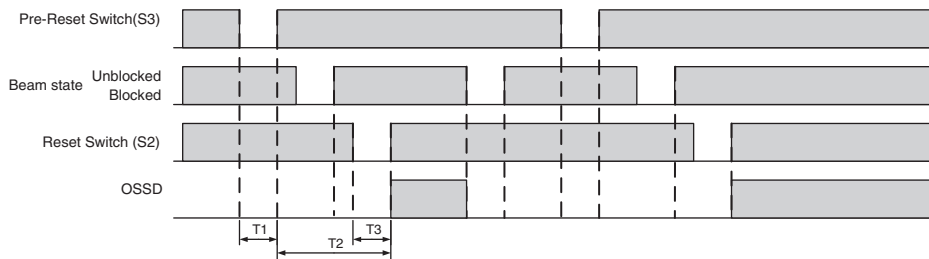
M: 3-phase motor

PLC: Programmable controller

(Used for monitoring only. NOT related to safety system.)

*1. When connecting to the PLC, the output mode must be changed with the Configuration Tool.

*2. The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-R Series User's Manual* for more information on setting the functions by the DIP Switch.



T1: Push time: must be $T1 \geq 300\text{ms}$
 T2: Pre-reset limit time between Pre-reset and Reset: must be $T2 \leq 60\text{s}$
 T3: Push time: must be $T3 \geq 300\text{ms}$

The F3SG-RA with NPN output can be connected to the safety control unit listed in the table below.

Connectable Safety Control Units (NPN output)
Safety Relay Units
G9SA-301-P

F3SG-4RA□□□□-25-01TS

EDM disabled, External Test unused and PNP Outputs

The following is the example of EDM disabled, PNP outputs and External Test unused.

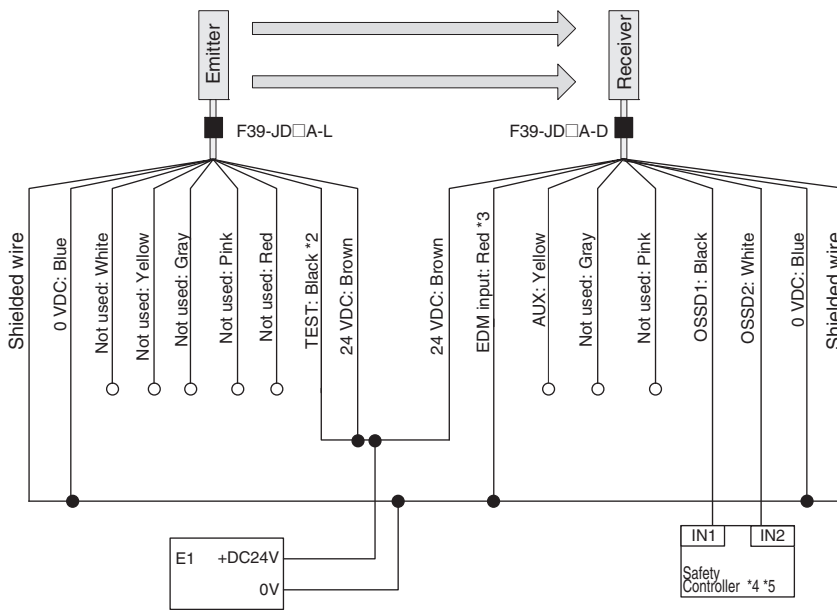
DIP Switch settings *1

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Disabled (factory default setting)	2 <input type="checkbox"/> ON	2 <input type="checkbox"/> ON
	PNP (factory default setting)	7 <input type="checkbox"/> ON	7 <input type="checkbox"/> ON
Emitter	External Test: 24 V Inactive (factory default setting)	4 <input type="checkbox"/> ON	

: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

Wiring Example



*1. The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-4RA□□□□-25-01TS Series User's Manual* for more information on setting the functions by the DIP Switch.

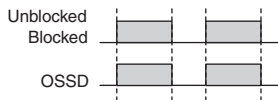
*2. When the external test function is used, connect to 24V via the test switch (N.C. contact).

*3. Also used for the lockout reset input. When using the lockout reset function, connect to 24V via lockout reset switch (N.C. contact).

*4. Refer to User's Manual for more information.

*5. The safety controller and the F3SG-RA must share the power supply or be connected to the common terminal of the power supply.

E1: 24VDC power supply (S8VS)



EDM enabled, External Test 0V Inactive and NPN Outputs

The following is the example of External Device Monitoring enabled, NPN outputs and External Test in 0 V Inactive.

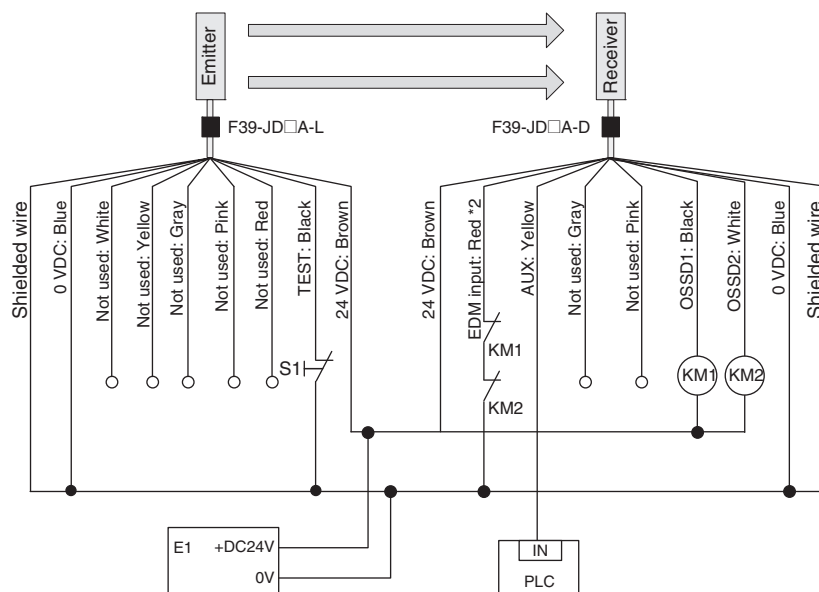
DIP Switch settings *1

	Function	DIP-SW1	DIP-SW2
Receiver	EDM Enabled	2 <input type="checkbox"/> ON	2 <input type="checkbox"/> ON
	NPN	7 <input type="checkbox"/> ON	7 <input type="checkbox"/> ON
Emitter	External Test: 0 V Inactive	4 <input type="checkbox"/> ON	

: Indicates a switch position.

Configure functions with the DIP Switches before wiring.

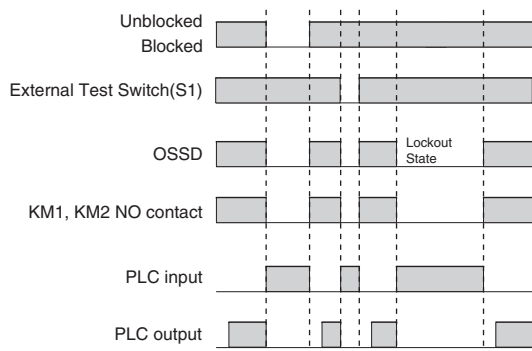
Wiring Example



*1. The functions are configurable with DIP Switch. Refer to *Safety Light Curtain F3SG-4RA□□□□-25-01TS Series User's Manual* for more information on setting the functions by the DIP Switch.

*2. Also used for the lockout reset input. When using the lockout reset function connect to 0V via lockout reset switch (N.C. contact).

- S1: External test switch (connect to 0V if a switch is not required)
- KM1, KM2: Safety relay with forcibly guided contacts (G7SA) or magnetic contactor
- E1: 24VDC power supply (S8VS)
- PLC: Programmable controller (Used for monitoring -- not related to safety system)



Connectable Safety Control Units

The F3SG-R with PNP output can be connected to the safety control units listed in the table below.

Connectable Safety Control Units (PNP output)		
Safety Relay Units	Flexible Safety Units	Safety Controllers
G9SA-301		G9SP-N10S
G9SA-321		G9SP-N10D
G9SA-501		G9SP-N20S
G9SB-200-B	G9SX-AD322-T	NE0A-SCPU01
G9SB-200-D	G9SX-ADA222-T	NE1A-SCPU01
G9SB-301-B	G9SX-BC202	NE1A-SCPU02
G9SB-301-D	G9SX-GS226-T15	DST1-ID12SL-1
G9SE-201		DST1-MD16SL-1
G9SE-401		DST1-MRD08SL-1
G9SE-221-T□		NX-SIH400
		NX-SID800
		F3SP-T01

The F3SG-R with NPN output can be connected to the safety control unit listed in the table below.

Connectable Safety Control Units (NPN output)
Safety Relay Units
G9SA-301-P

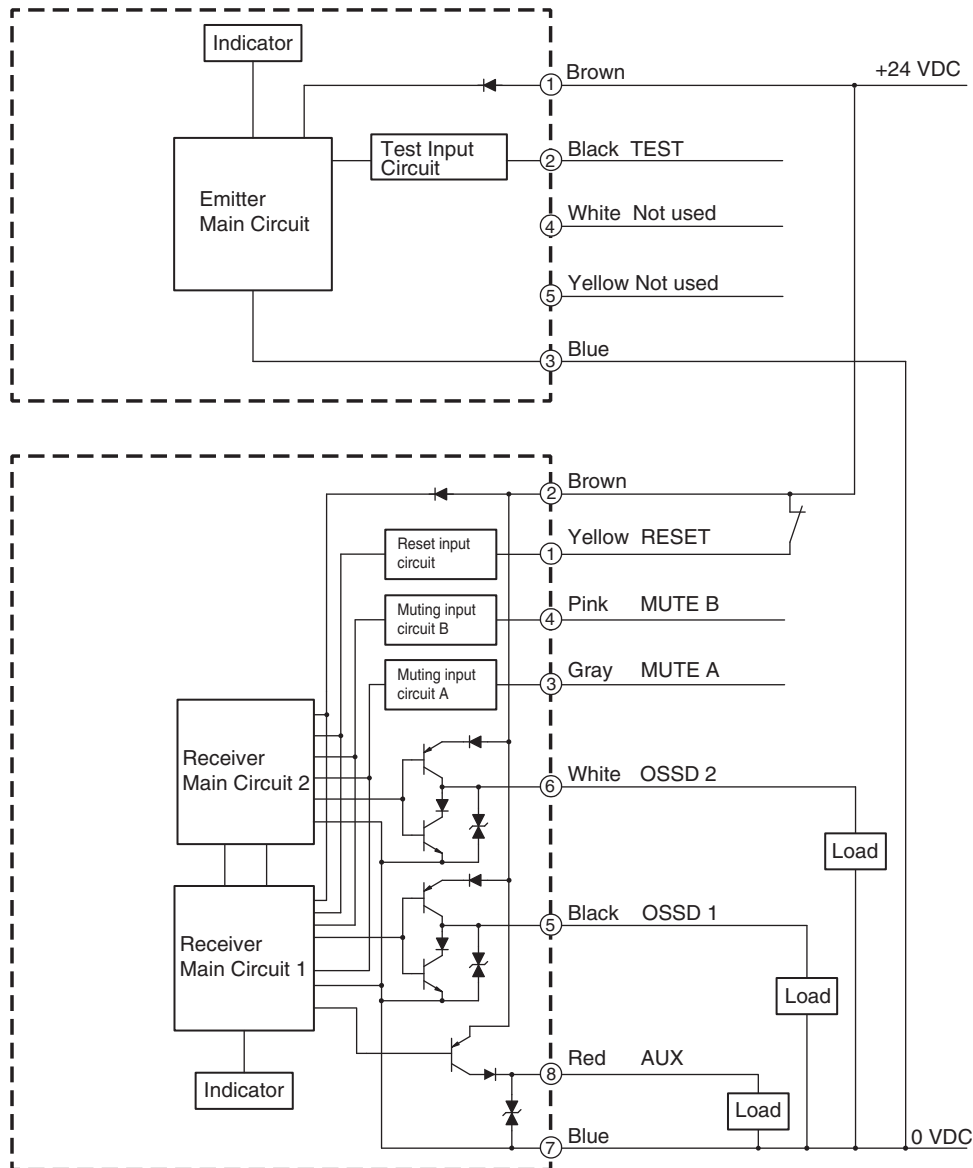
Input/Output Circuit

F3SG-4RA□□□□-14/-4RA□□□□-30

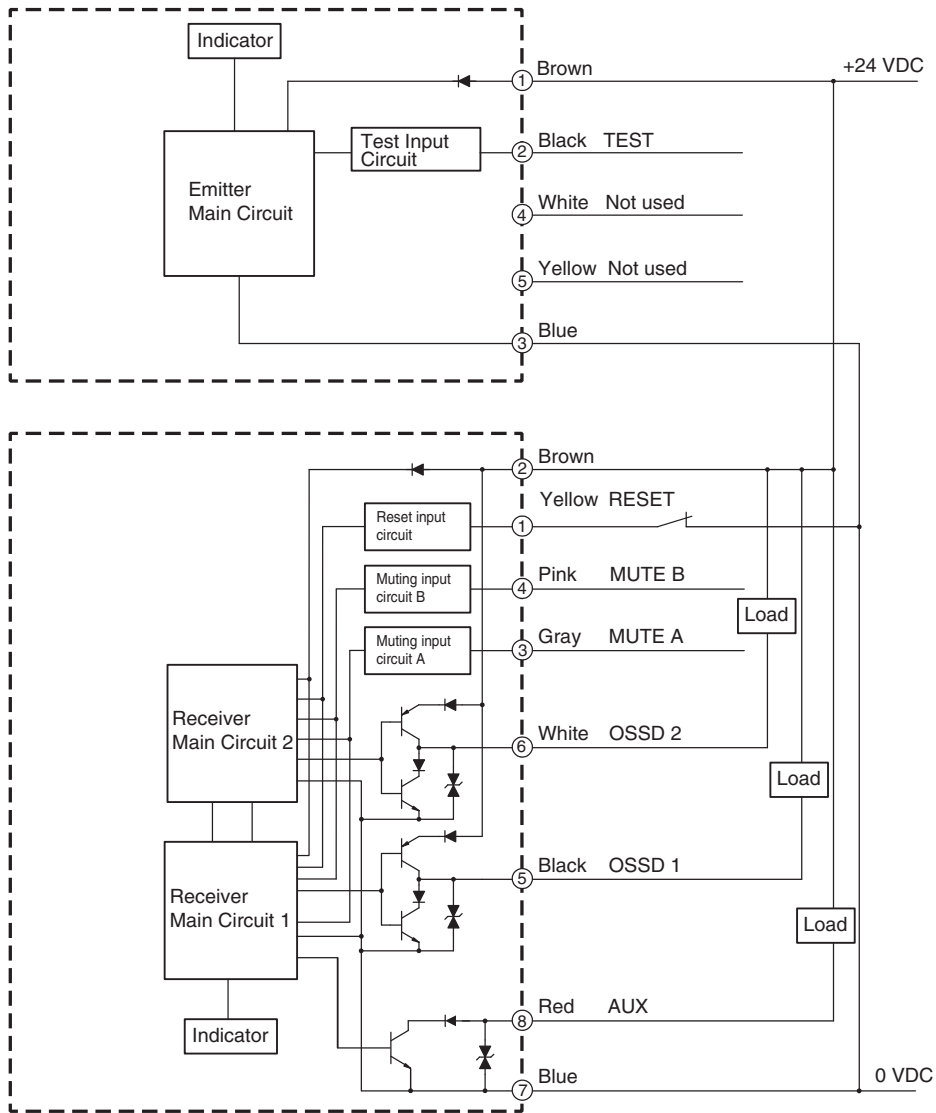
Entire Circuit Diagram

The entire circuit diagram of the F3SG-R is shown below.
The numbers in the circles indicate the connector's pin numbers.

PNP Output



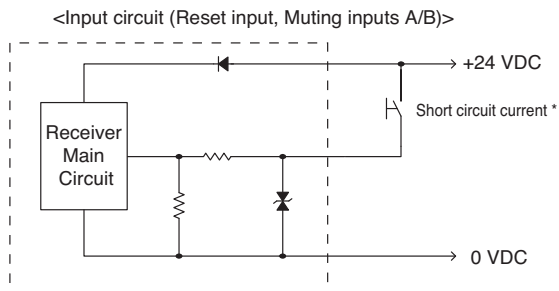
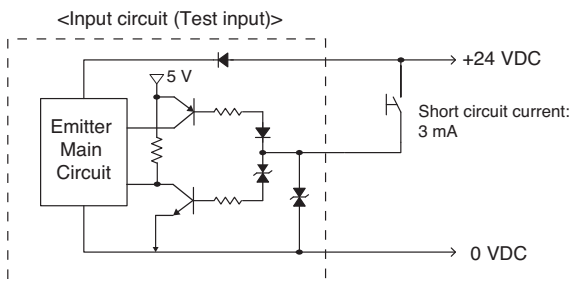
NPN Output



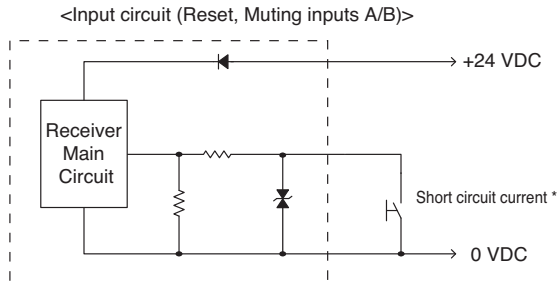
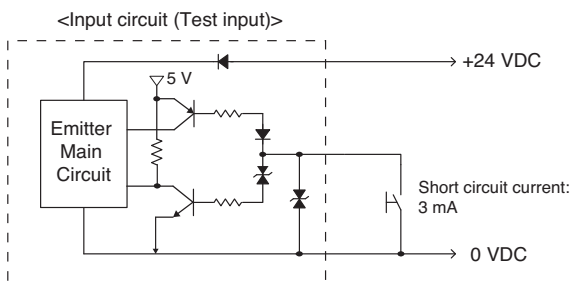
Input Circuit Diagram by Function

The input circuit diagrams of by function are shown below.

PNP Output



NPN Output



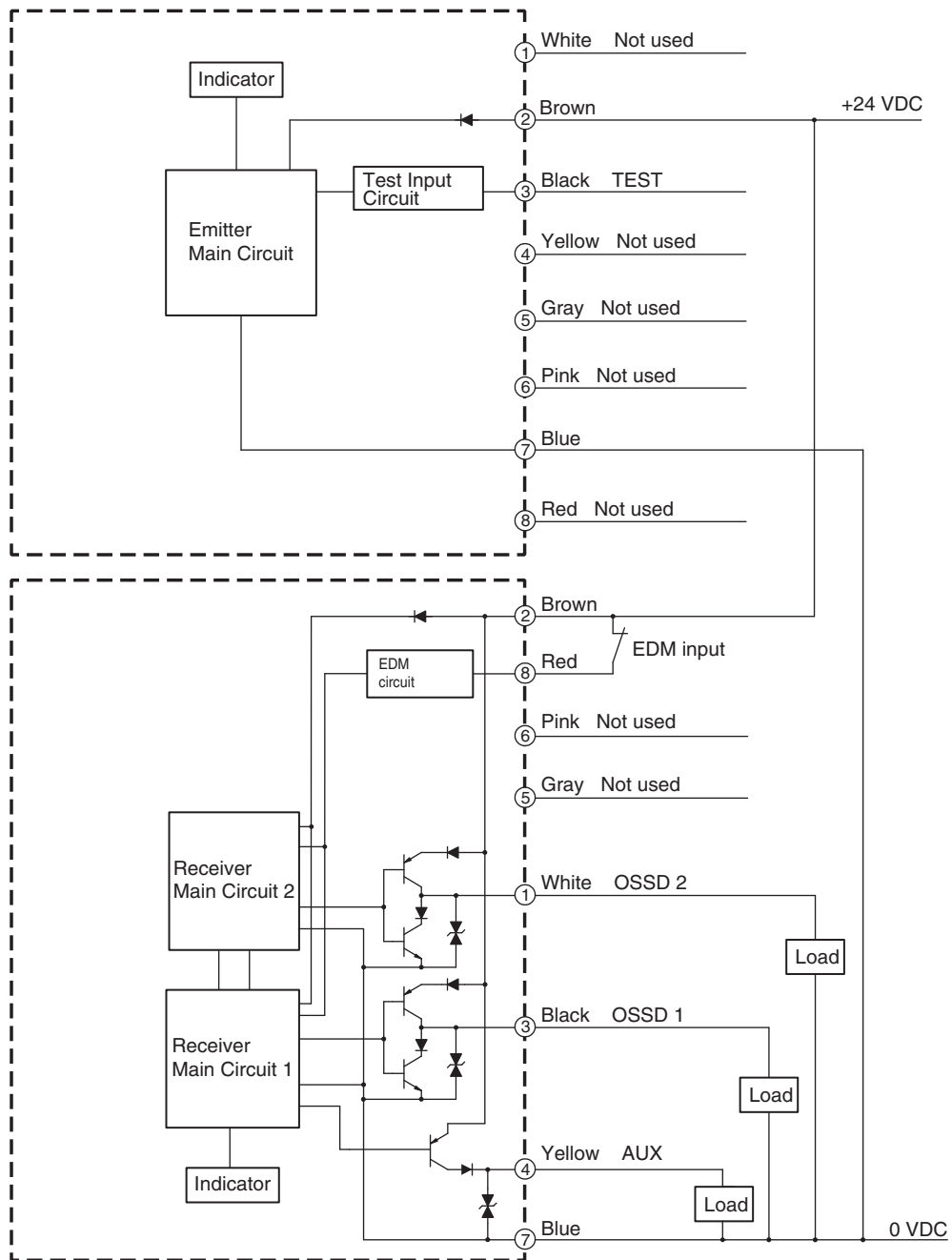
*Short circuit current: 5mA (Reset input), 3mA (Muting inputs A/B)

F3SG-4RA□□□□-25-01TS

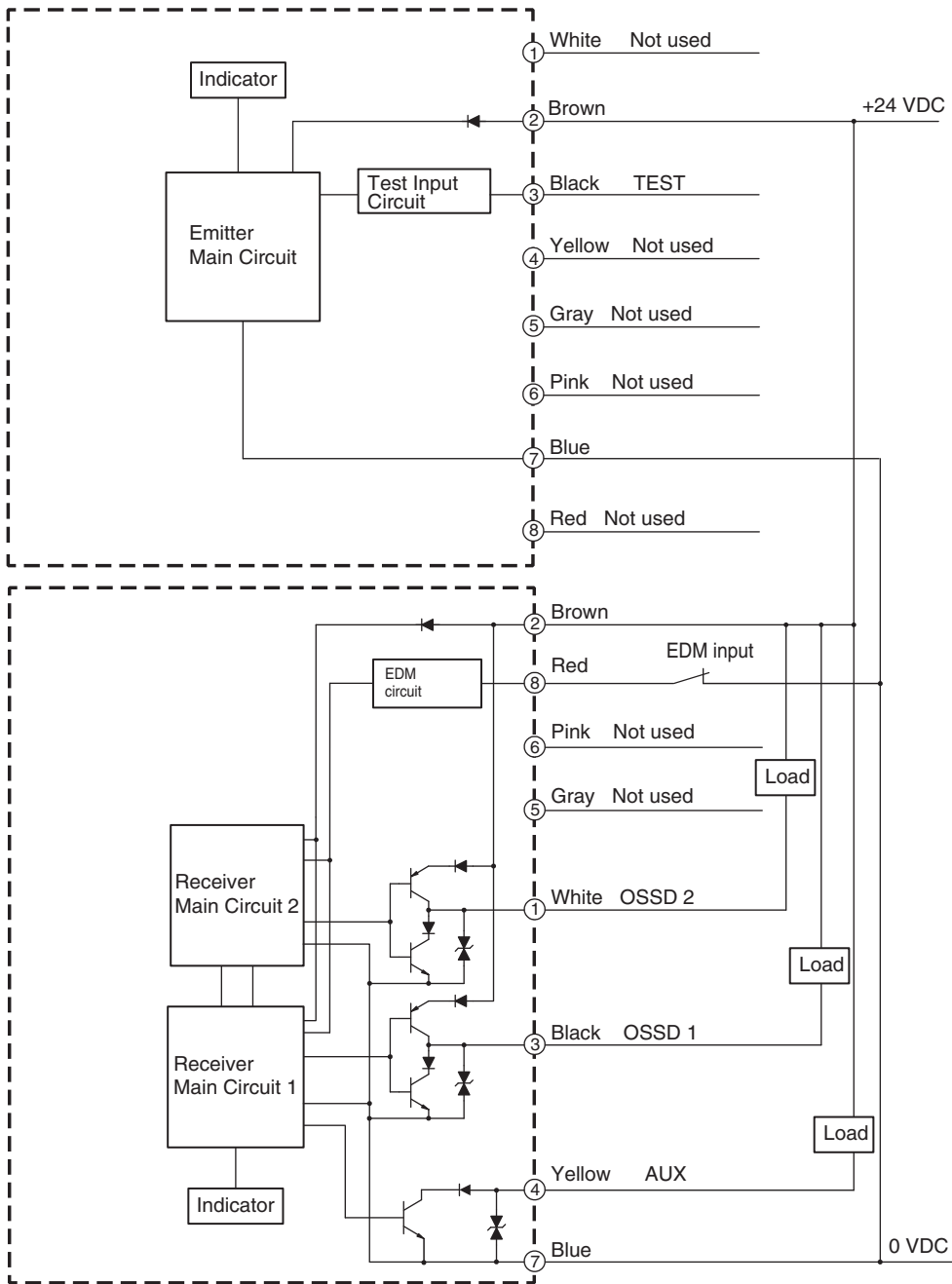
Entire Circuit Diagram

The entire circuit diagram of the F3SG-R is shown below.
The numbers in the circles indicate the connector's pin numbers.

PNP Output



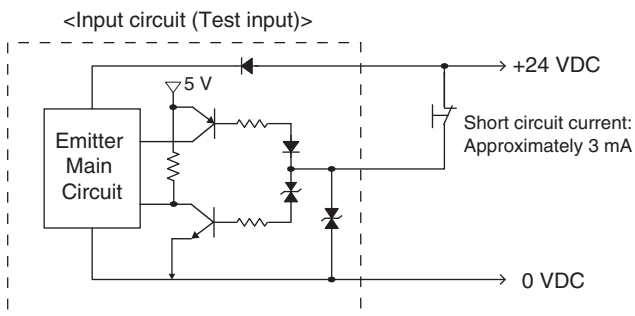
NPN Output



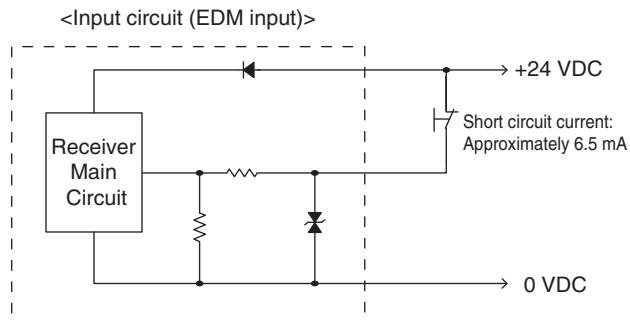
Input Circuit Diagram by Function

The input circuit diagrams of by function are shown below.

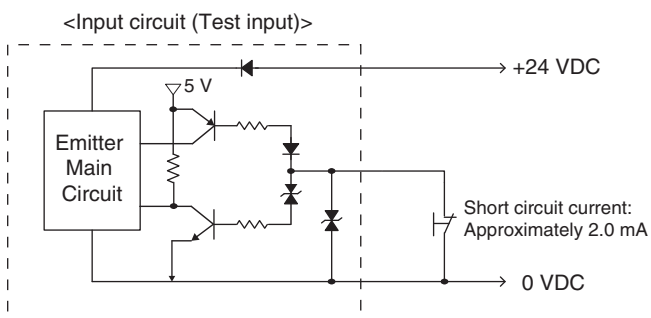
24V Inactive



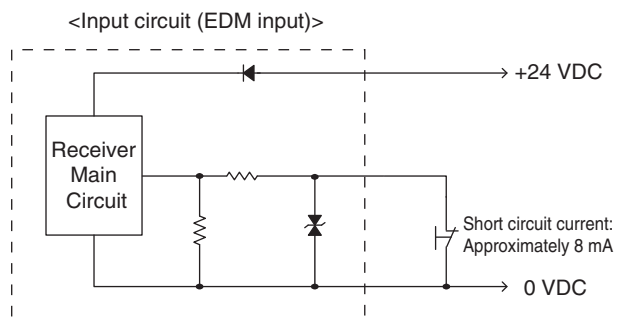
PNP Output



0V Inactive



NPN Output



*Short circuit current: 5mA (Reset input), 3mA (Muting inputs A/B)

F3SG-RA

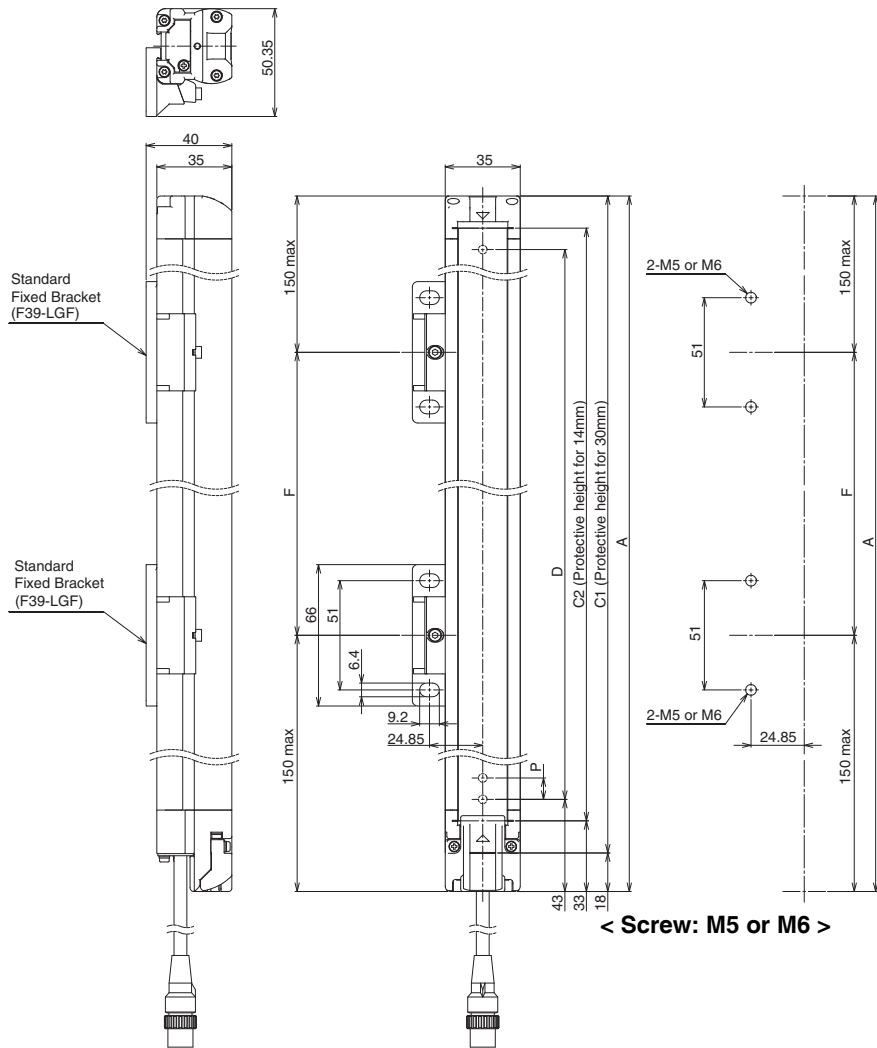
Dimensions

(Unit: mm)

F3SG-4RA□□□□-14/-4RA□□□□-30

Mounted with Standard Fixed Brackets (F39-LGF)

Backside Mounting



F3SG-□RA□□□□-30 Series

Dimension A	C1+18
Dimension C1	4-digit number of the type name (Protective height)
Dimension D	C1-50
Dimension P	20

F3SG-□RA□□□□-14 Series

Dimension A	C2+48
Dimension C2	4-digit number of the type name (Protective height)
Dimension D	C2-20
Dimension P	10

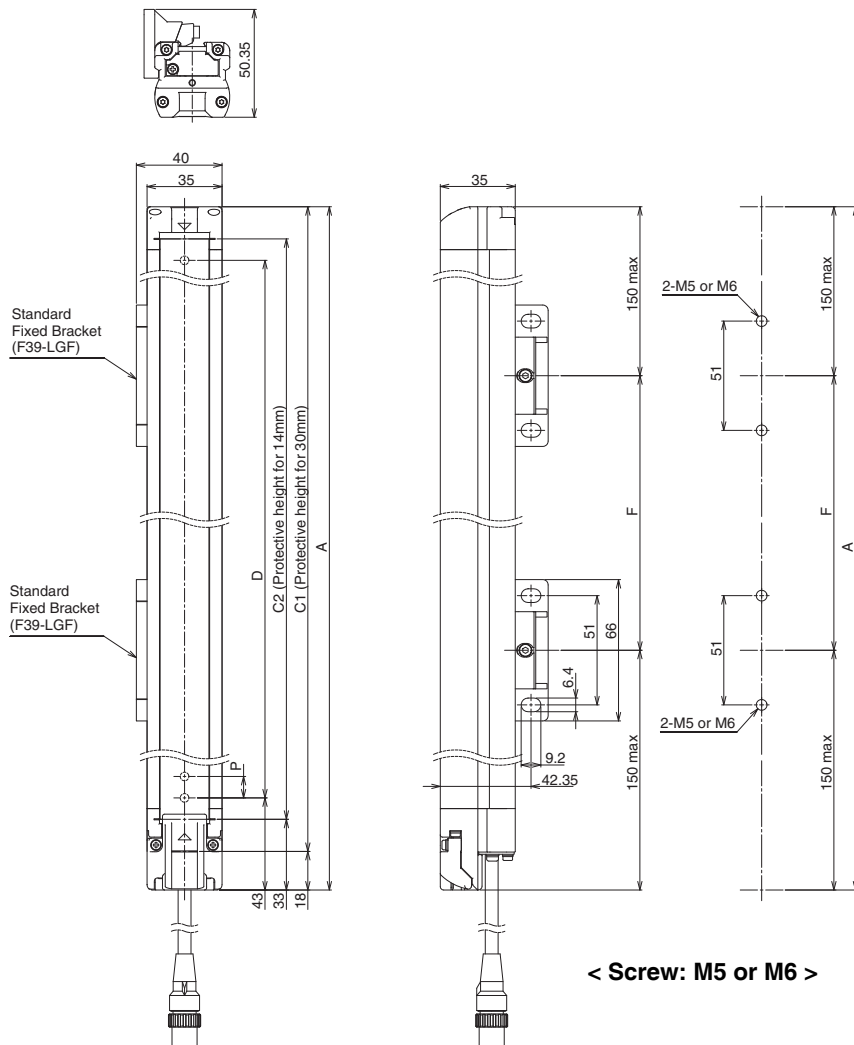
Protective height (C1)	Number of Standard Fixed Brackets *1	Dimension F
0190 to 1230	2 *2	1000 mm max.
1310 to 2270	3	1000 mm max.
2350 to 2510	4	1000 mm max.

Protective height (C2)	Number of Standard Fixed Brackets *1	Dimension F
0160 to 1200	2 *2	1000 mm max.
1280 to 2080	3	1000 mm max.

*1. The number of brackets required to mount either one of emitter and receiver.

*2. Mounting an emitter or receiver with one bracket is possible for the models of protective height of 0160 to 0270. In this case, locate this bracket at half the Dimension A (or at the center of the sensor length).

Side Mounting



F3SG-□RA□□□□-30 Series

Dimension A	C1+18
Dimension C1	4-digit number of the type name (Protective height)
Dimension D	C1-50
Dimension P	20

Protective height (C1)	Number of Standard Fixed Brackets *1	Dimension F
0190 to 1230	2 *2	1000 mm max.
1310 to 2270	3	1000 mm max.
2350 to 2510	4	1000 mm max.

F3SG-□RA□□□□-14 Series

Dimension A	C2+48
Dimension C2	4-digit number of the type name (Protective height)
Dimension D	C2-20
Dimension P	10

Protective height (C2)	Number of Standard Fixed Brackets *1	Dimension F
0160 to 1200	2 *2	1000 mm max.
1280 to 2080	3	1000 mm max.

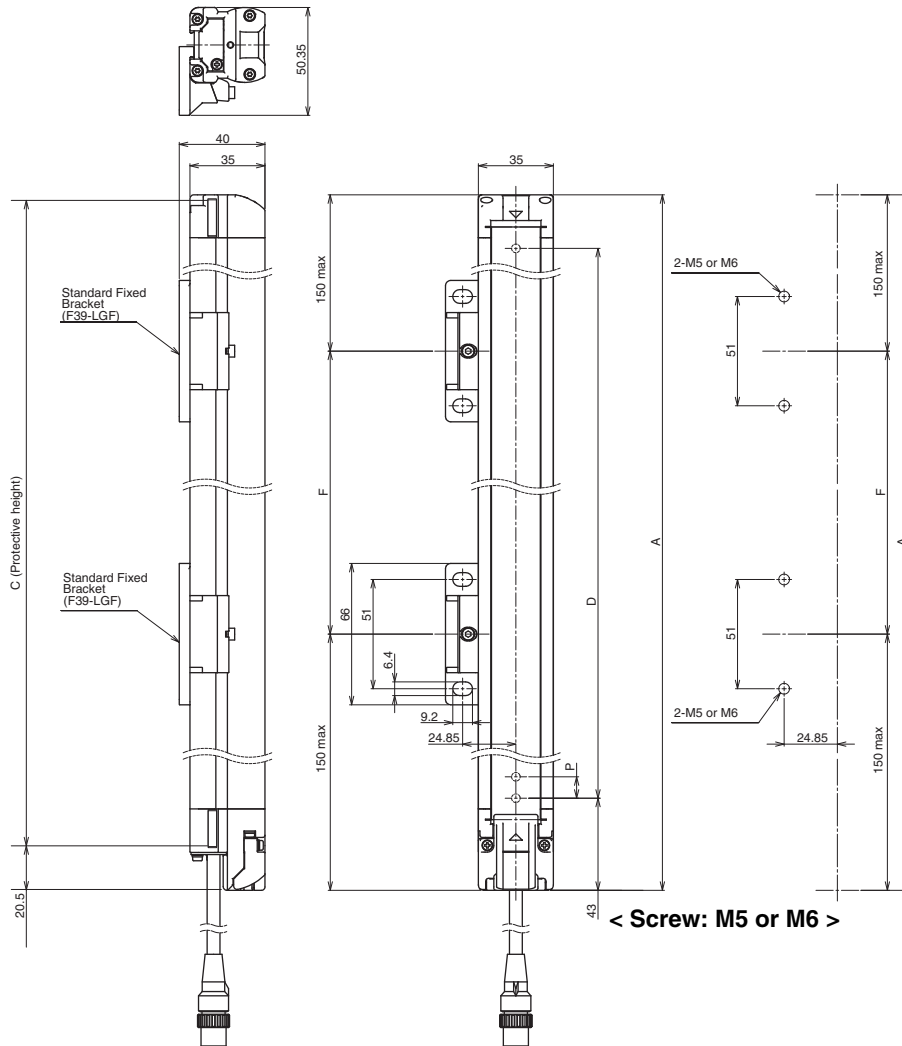
*1.The number of brackets required to mount either one of emitter and receiver.

*2.Mounting an emitter or receiver with one bracket is possible for the models of protective height of 0160 to 0270. In this case, locate this bracket at half the Dimension A (or at the center of the sensor length).

F3SG-4RA□□□□-25-01TS

Mounted with Standard Fixed Brackets (F39-LGF)

Backside Mounting



F3SG-4RA□□□□-25-01TS Series

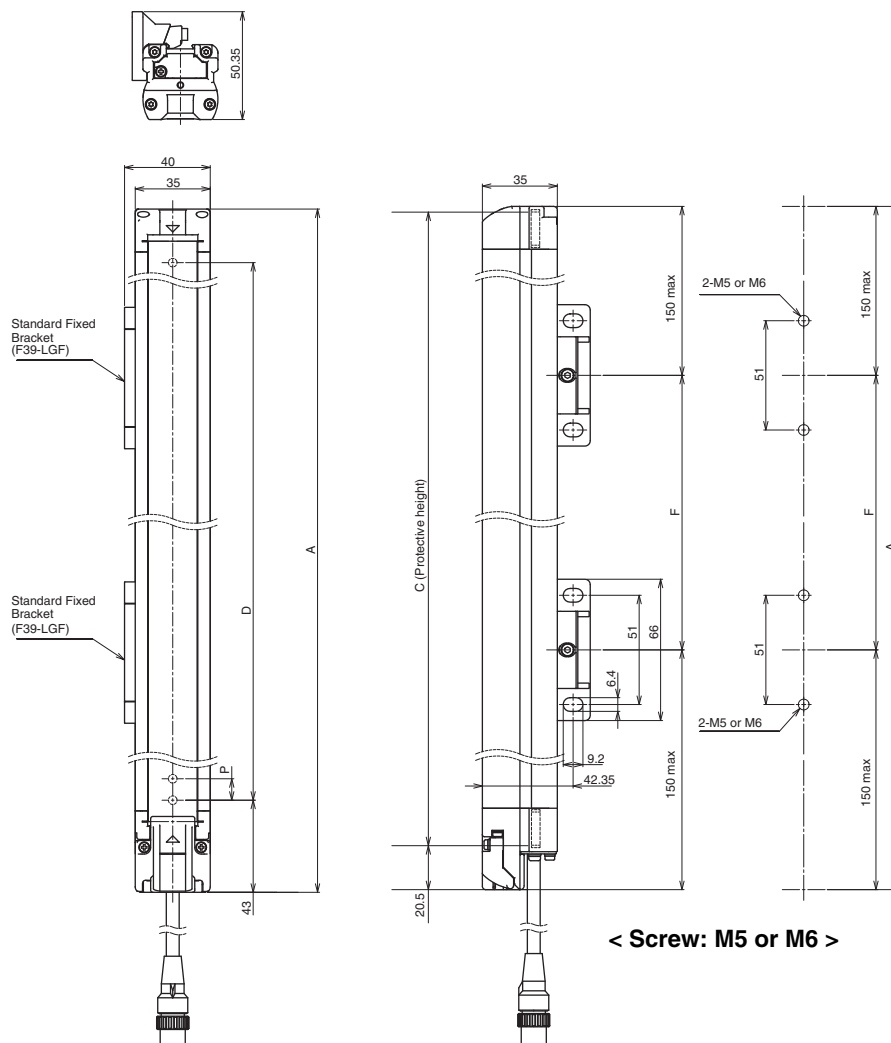
Dimension A	C+23
Dimension C	4-digit number of the type name (Protective height)
Dimension D	C-45
Dimension P	20

Protective height (C1)	Number of Standard Fixed Brackets *1	Dimension F
0185 to 1225	2 *2	1000 mm max.
1305 to 1945	3	1000 mm max.

*1. The number of brackets required to mount either one of emitter and receiver.

*2. Mounting an emitter or receiver with one bracket is possible for the models of protective height of 0185 or 0265. In this case, locate this bracket at half the Dimension A (or at the center of the sensor length).

Side Mounting



F3SG-4RA□□□□-25-01TS Series

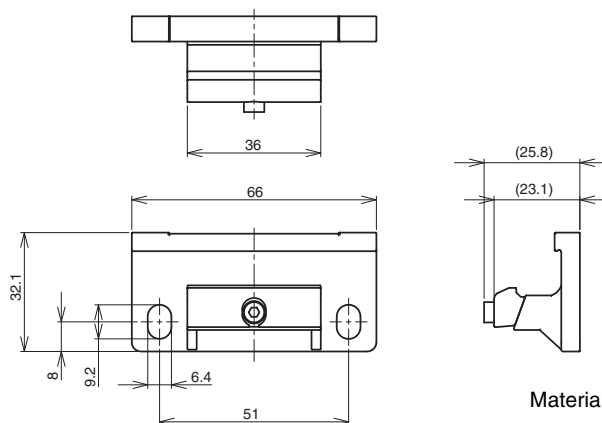
Dimension A	C+23
Dimension C	4-digit number of the type name (Protective height)
Dimension D	C-45
Dimension P	20

Protective height (C1)	Number of Standard Fixed Brackets *1	Dimension F
0185 to 1225	2 *2	1000 mm max.
1305 to 1945	3	1000 mm max.

*1.The number of brackets required to mount either one of emitter and receiver.

*2.Mounting an emitter or receiver with one bracket is possible for the models of protective height of 0185 or 0265. In this case, locate this bracket at half the Dimension A (or at the center of the sensor length).

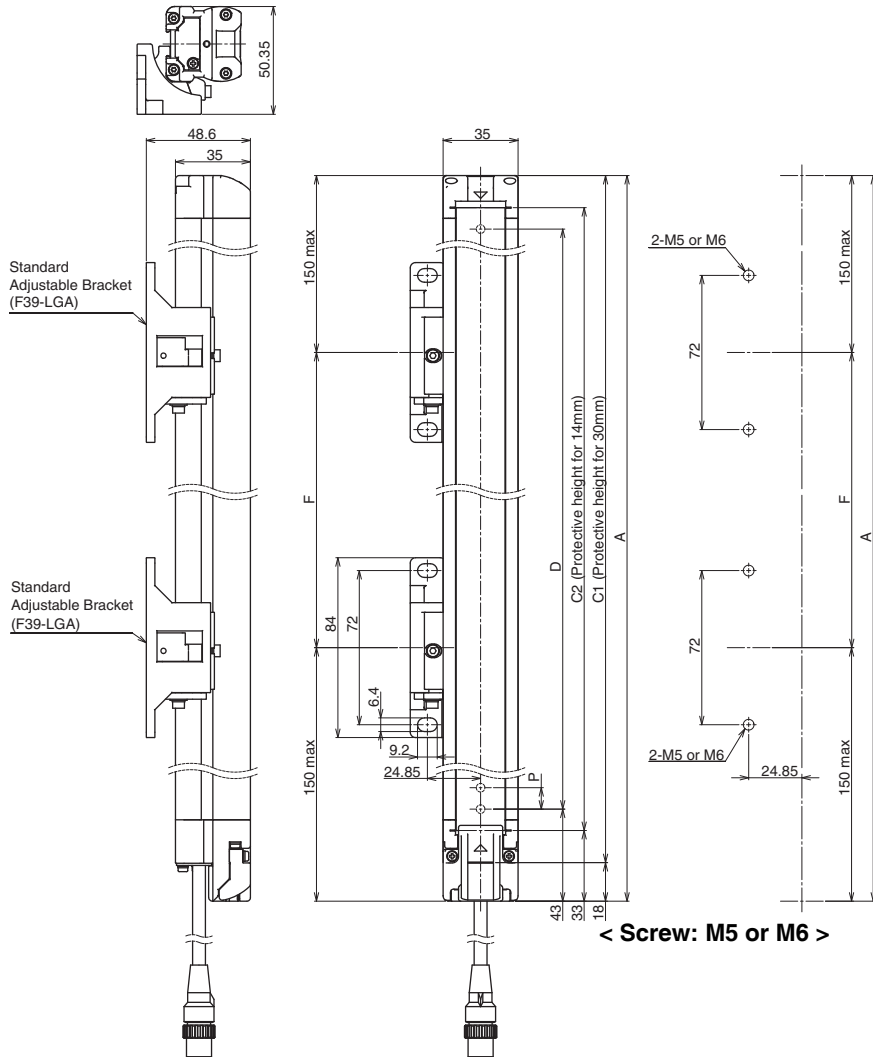
Standard Fixed Bracket (F39-LGF)



Material: ZDC2

F3SG-4RA□□□□-14/4RA□□□□-30

Mounted with Standard Adjustable Brackets (F39-LGA)
Backside Mounting



F3SG-□RA□□□□-30 Series

Dimension A	C1+18
Dimension C1	4-digit number of the type name (Protective height)
Dimension D	C1-50
Dimension P	20

F3SG-□RA□□□□-14 Series

Dimension A	C2+48
Dimension C2	4-digit number of the type name (Protective height)
Dimension D	C2-20
Dimension P	10

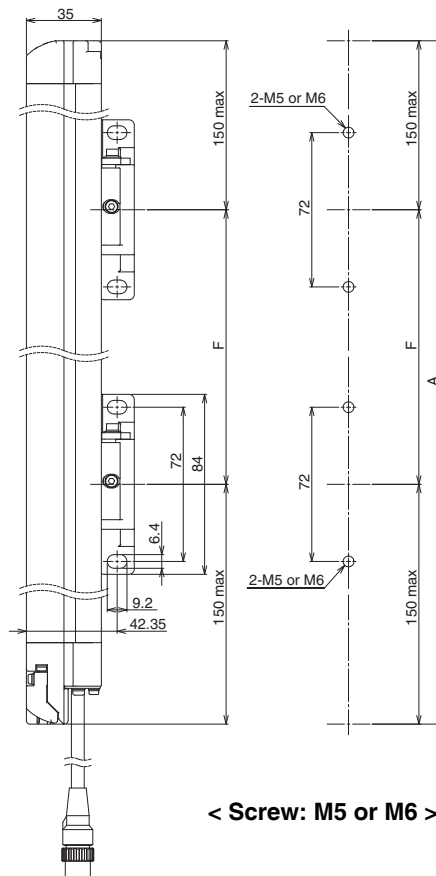
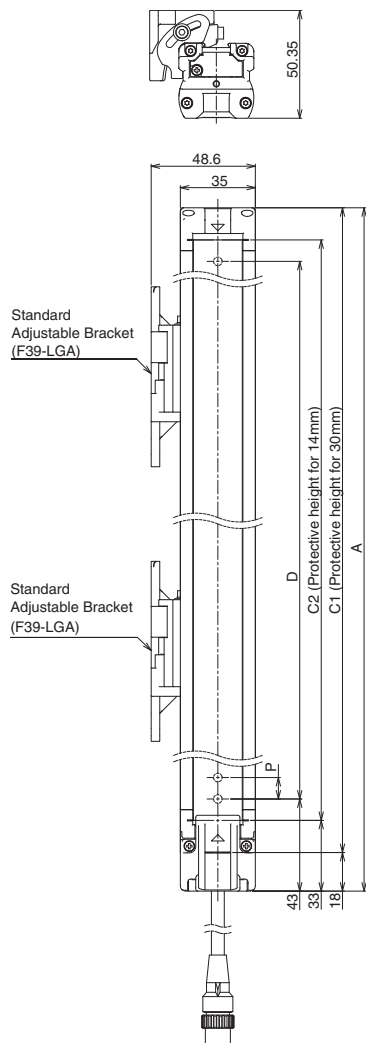
Protective height (C1)	Number of Standard Adjustable Brackets *1	Dimension F
0190 to 1230	2 *2	1000 mm max.
1310 to 2270	3	1000 mm max.
2350 to 2510	4	1000 mm max.

Protective height (C2)	Number of Standard Adjustable Brackets *1	Dimension F
0160 to 1200	2 *2	1000 mm max.
1280 to 2080	3	1000 mm max.

*1. The number of brackets required to mount either one of emitter and receiver.

*2. Mounting an emitter or receiver with one bracket is possible for the models of protective height of 0160 to 0270. In this case, locate this bracket at half the Dimension A (or at the center of the sensor length).

Side Mounting



< Screw: M5 or M6 >

F3SG-□RA□□□□-30 Series

Dimension A	C1+18
Dimension C1	4-digit number of the type name (Protective height)
Dimension D	C1-50
Dimension P	20

Protective height (C1)	Number of Standard Adjustable Brackets *1	Dimension F
0190 to 1230	2 *2	1000 mm max.
1310 to 2270	3	1000 mm max.
2350 to 2510	4	1000 mm max.

F3SG-□RA□□□□-14 Series

Dimension A	C2+48
Dimension C2	4-digit number of the type name (Protective height)
Dimension D	C2-20
Dimension P	10

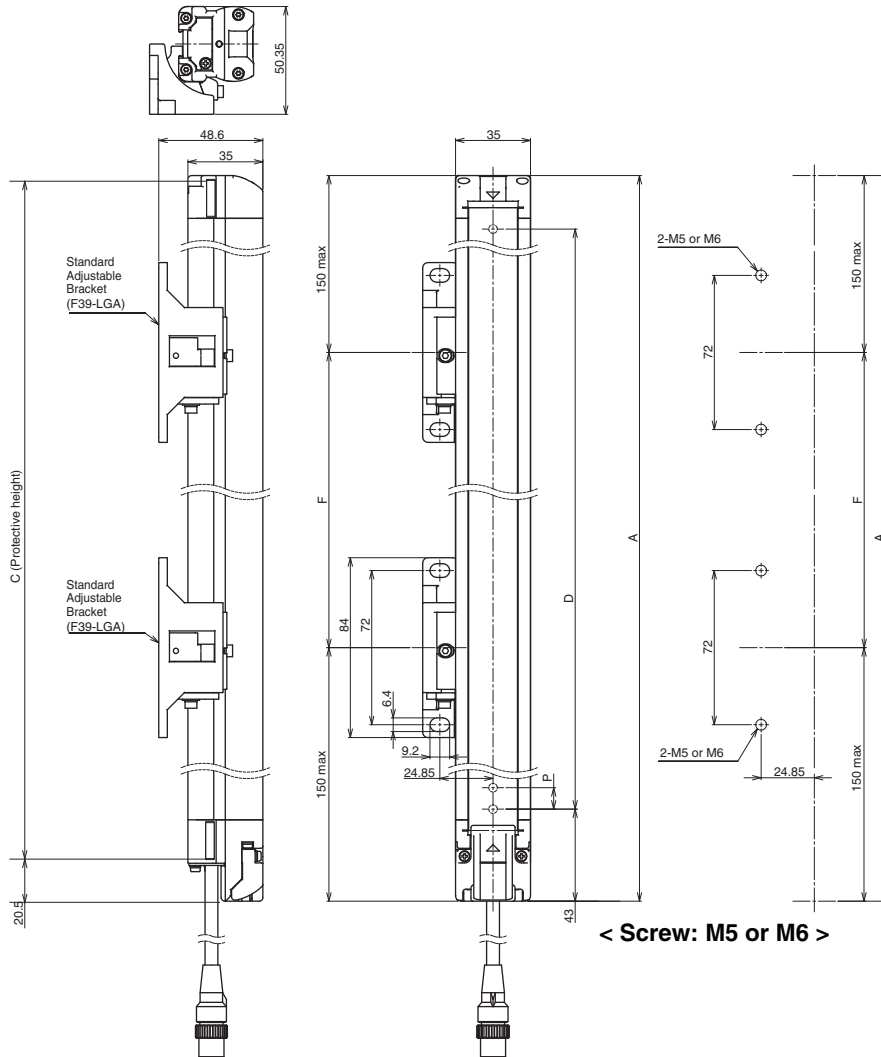
Protective height (C2)	Number of Standard Adjustable Brackets *1	Dimension F
0160 to 1200	2 *2	1000 mm max.
1280 to 2080	3	1000 mm max.

*1. The number of brackets required to mount either one of emitter and receiver.

*2. Mounting an emitter or receiver with one bracket is possible for the models of protective height of 0160 to 0270. In this case, locate this bracket at half the Dimension A (or at the center of the sensor length).

F3SG-4RA□□□□-25-01TS

Mounted with Standard Adjustable Brackets (F39-LGA)
Backside Mounting



F3SG-4RA□□□□-25-01TS Series

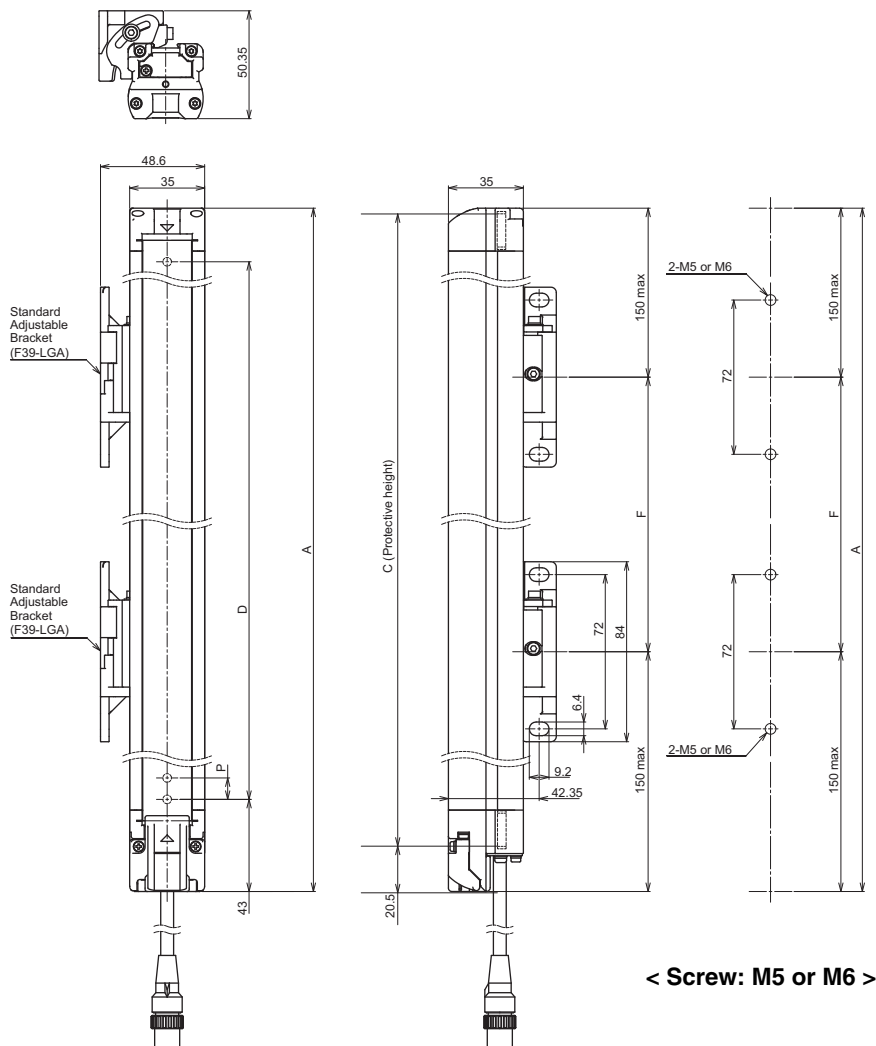
Dimension A	C+23
Dimension C	4-digit number of the type name (Protective height)
Dimension D	C-45
Dimension P	20

Protective height (C)	Number of Standard Adjustable Brackets *1	Dimension F
0185 to 1225	2 *2	1000 mm max.
1305 to 1945	3	1000 mm max.

*1.The number of brackets required to mount either one of emitter and receiver.

*2.Mounting an emitter or receiver with one bracket is possible for the models of protective height of 0185 or 0265. In this case, locate this bracket at half the Dimension A (or at the center of the sensor length).

Side Mounting



F3SG-4RA□□□□-25-01TS Series

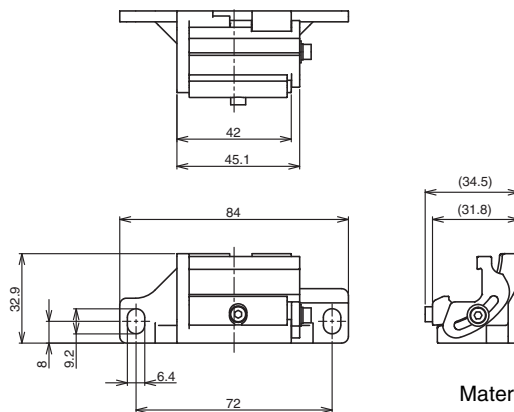
Dimension A	C+23
Dimension C	4-digit number of the type name (Protective height)
Dimension D	C-45
Dimension P	20

Protective height (C)	Number of Standard Adjustable Brackets *1	Dimension F
0185 to 1225	2 *2	1000 mm max.
1305 to 1945	3	1000 mm max.

*1.The number of brackets required to mount either one of emitter and receiver.

*2.Mounting an emitter or receiver with one bracket is possible for the models of protective height of 0185 or 0265. In this case, locate this bracket at half the Dimension A (or at the center of the sensor length).

Standard Adjustable Bracket (F39-LGA)



Material: ZDC2 ,Fluorochemical lubricant oil

F3SG-RA

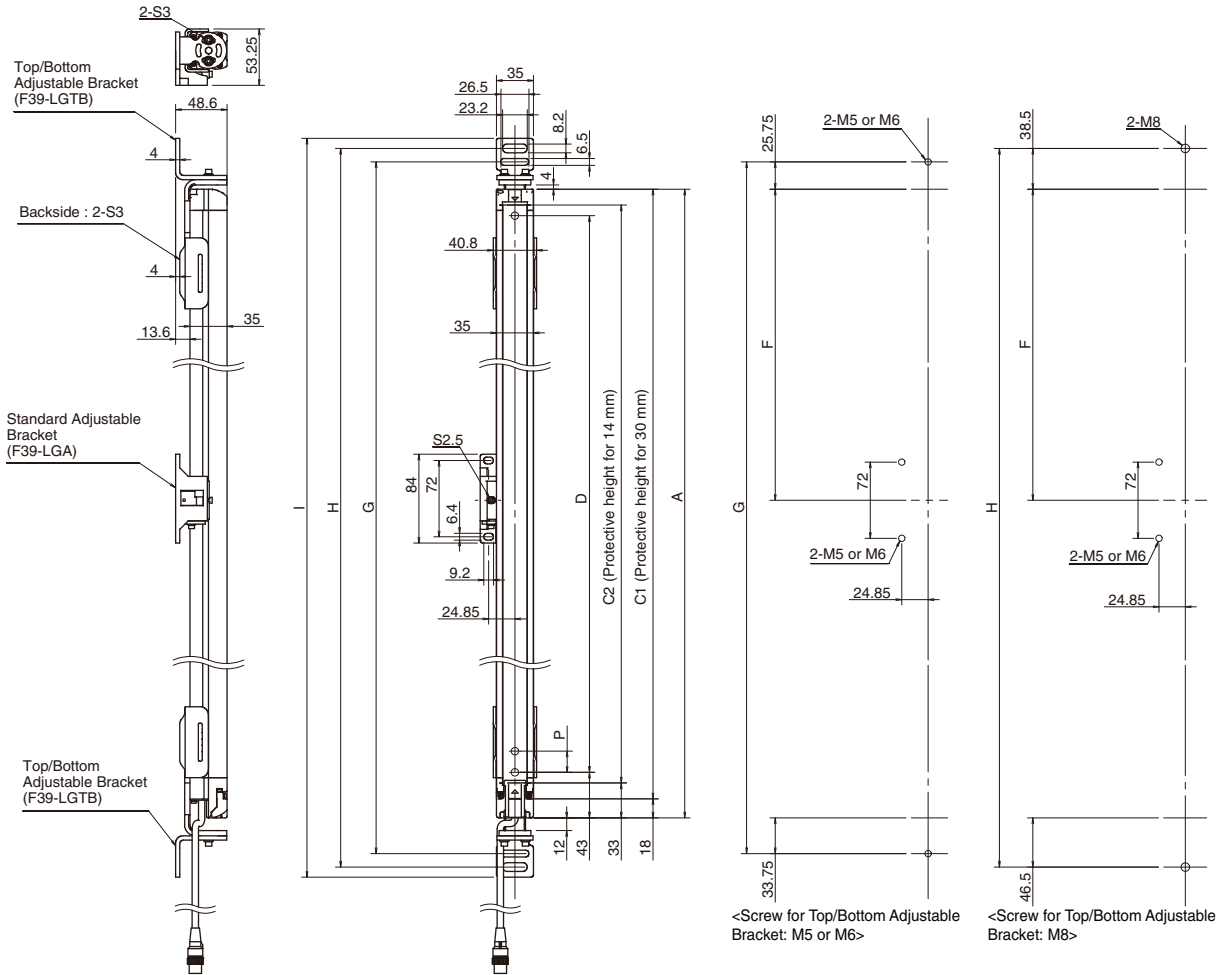
F3SG-4RA□□□□-14/-4RA□□□□-30

Mounted with Top/Bottom Adjustable Brackets (F39-LGTB) and Standard Adjustable Brackets (F39-LGA)

Dimensions when using the F3SG-RA Series except the F3SG-4RA0190-30 and F3SG-4RA0160-14

Refer to *Safety Light Curtain F3SG-R Series User's Manual* for the dimensions when using the F3SG-4RA0190-30 and F3SG-4RA0160-14.

Backside Mounting



F3SG-□RA□□□□-30 Series

Dimension A	C1+18
Dimension C1	4-digit number of the type name (Protective height)
Dimension D	C1-50
Dimension G	C1+77.5
Dimension H	C1+103
Dimension I	C1+122
Dimension P	20

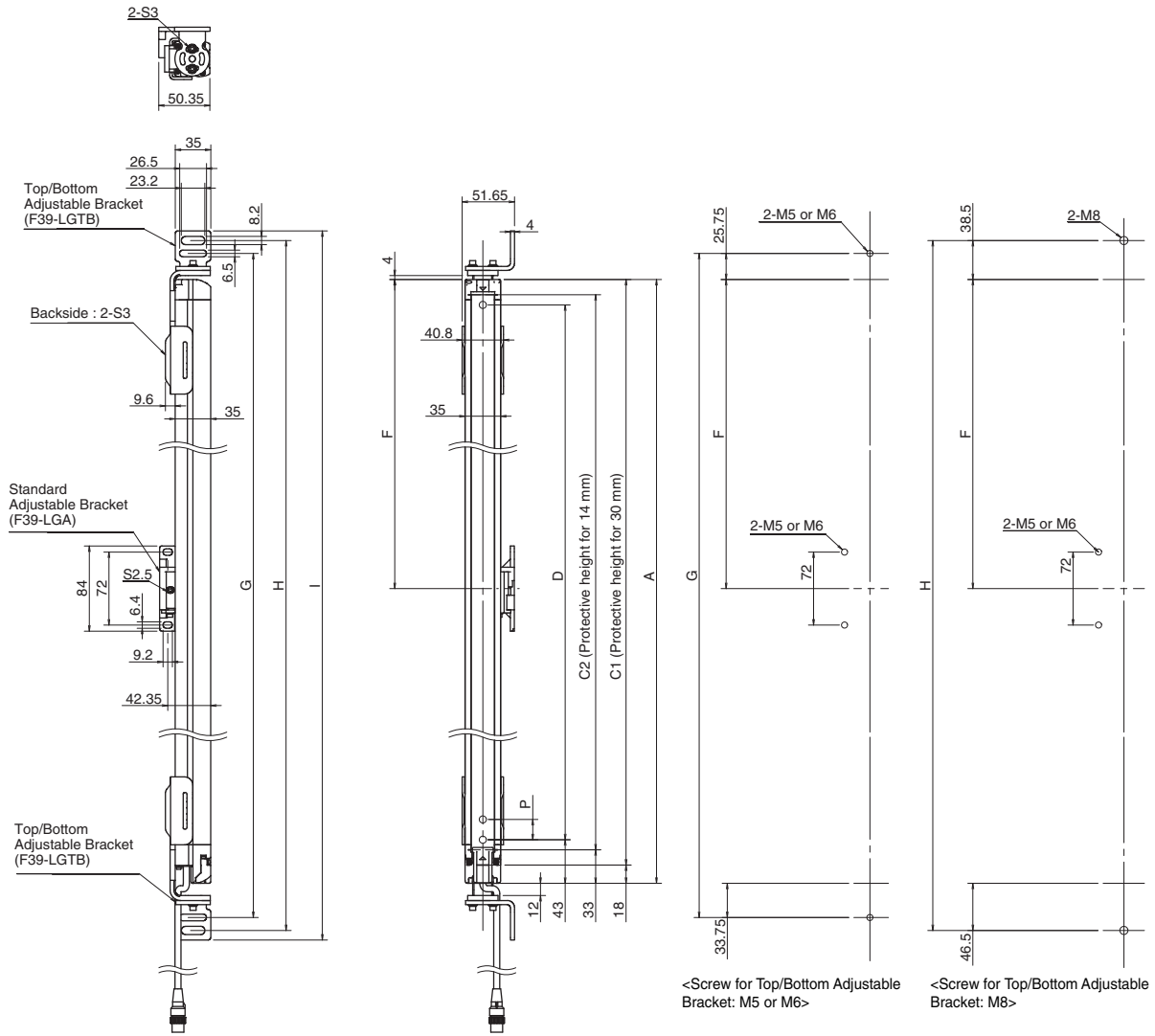
F3SG-□RA□□□□-14 Series

Dimension A	C2+48
Dimension C2	4-digit number of the type name (Protective height)
Dimension D	C2-20
Dimension G	C2+107.5
Dimension H	C2+133
Dimension I	C2+152
Dimension P	10

Protective height (C1)	Number of Top/Bottom Adjustable Brackets	Number of Standard Adjustable Brackets	Dimension F
0270 to 1070	2	0	-
1150 to 1950	2	1	1000 mm max.
2030 to 2510	2	2	1000 mm max.

Protective height (C2)	Number of Top/Bottom Adjustable Brackets	Number of Standard Adjustable Brackets	Dimension F
0240 to 1040	2	0	-
1120 to 1920	2	1	1000 mm max.
2000 to 2080	2	2	1000 mm max.

Side Mounting



F3SG-□RA□□□□-30 Series

Dimension A	C1+18
Dimension C1	4-digit number of the type name (Protective height)
Dimension D	C1-50
Dimension G	C1+77.5
Dimension H	C1+103
Dimension I	C1+122
Dimension P	20

Protective height (C1)	Number of Top/Bottom Adjustable Brackets	Number of Standard Adjustable Brackets	Dimension F
0270 to 1070	2	0	-
1150 to 1950	2	1	1000 mm max.
2030 to 2510	2	2	1000 mm max.

F3SG-□RA□□□□-14 Series

Dimension A	C2+48
Dimension C2	4-digit number of the type name (Protective height)
Dimension D	C2-20
Dimension G	C2+107.5
Dimension H	C2+133
Dimension I	C2+152
Dimension P	10

Protective height (C2)	Number of Top/Bottom Adjustable Brackets	Number of Standard Adjustable Brackets	Dimension F
0240 to 1040	2	0	-
1120 to 1920	2	1	1000 mm max.
2000 to 2080	2	2	1000 mm max.

F3SG-RA

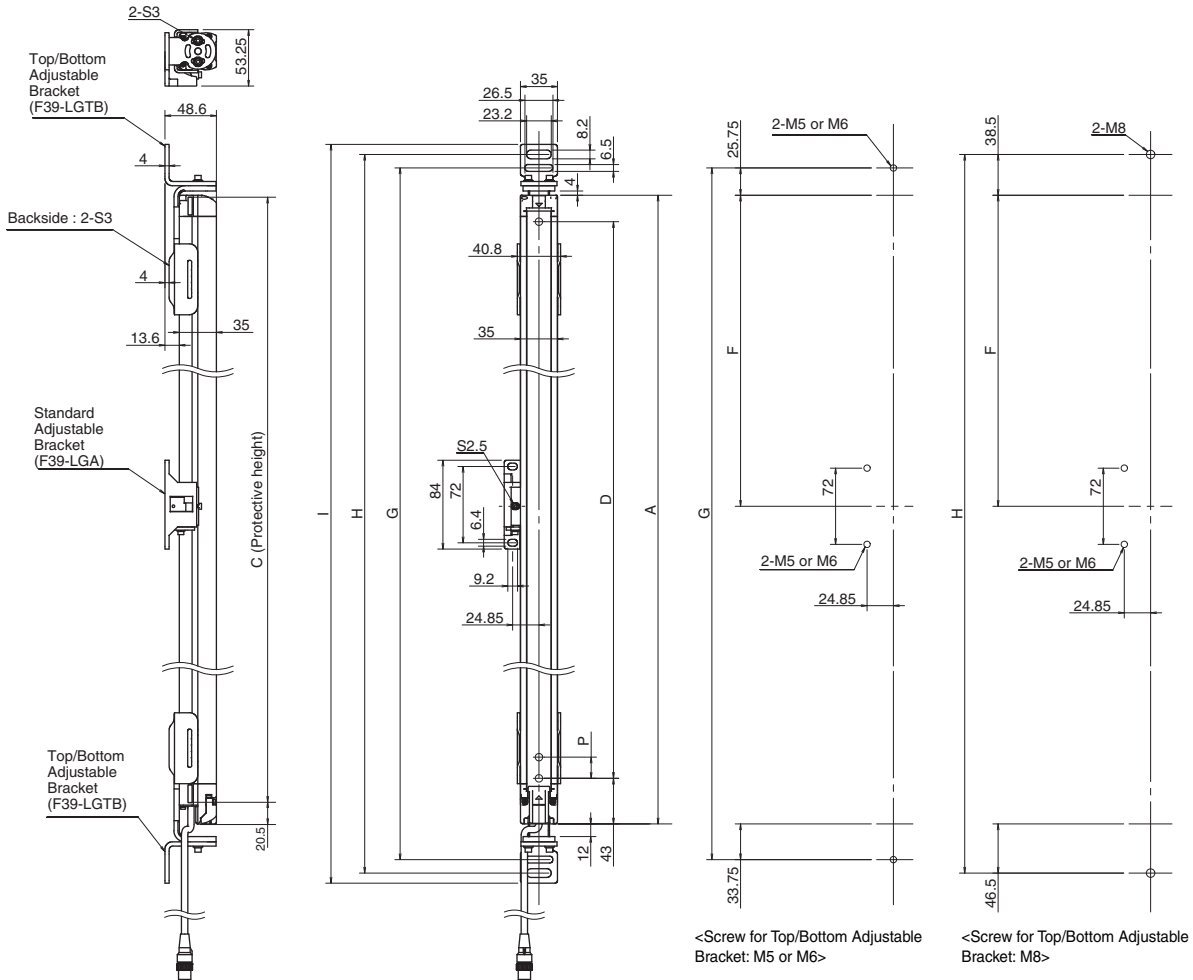
F3SG-4RA□□□□-25-01TS

Mounted with Top/Bottom Adjustable Brackets (F39-LGTB) and Standard Adjustable Brackets (F39-LGA)

Dimensions when using the F3SG-RA Series except the F3SG-4RA0185-25-01TS.

Refer to *Safety Light Curtain F3SG-4RA□□□□-25-01TS Series User's Manual* for the dimensions when using the F3SG-4RA0185-25-01TS.

Backside Mounting

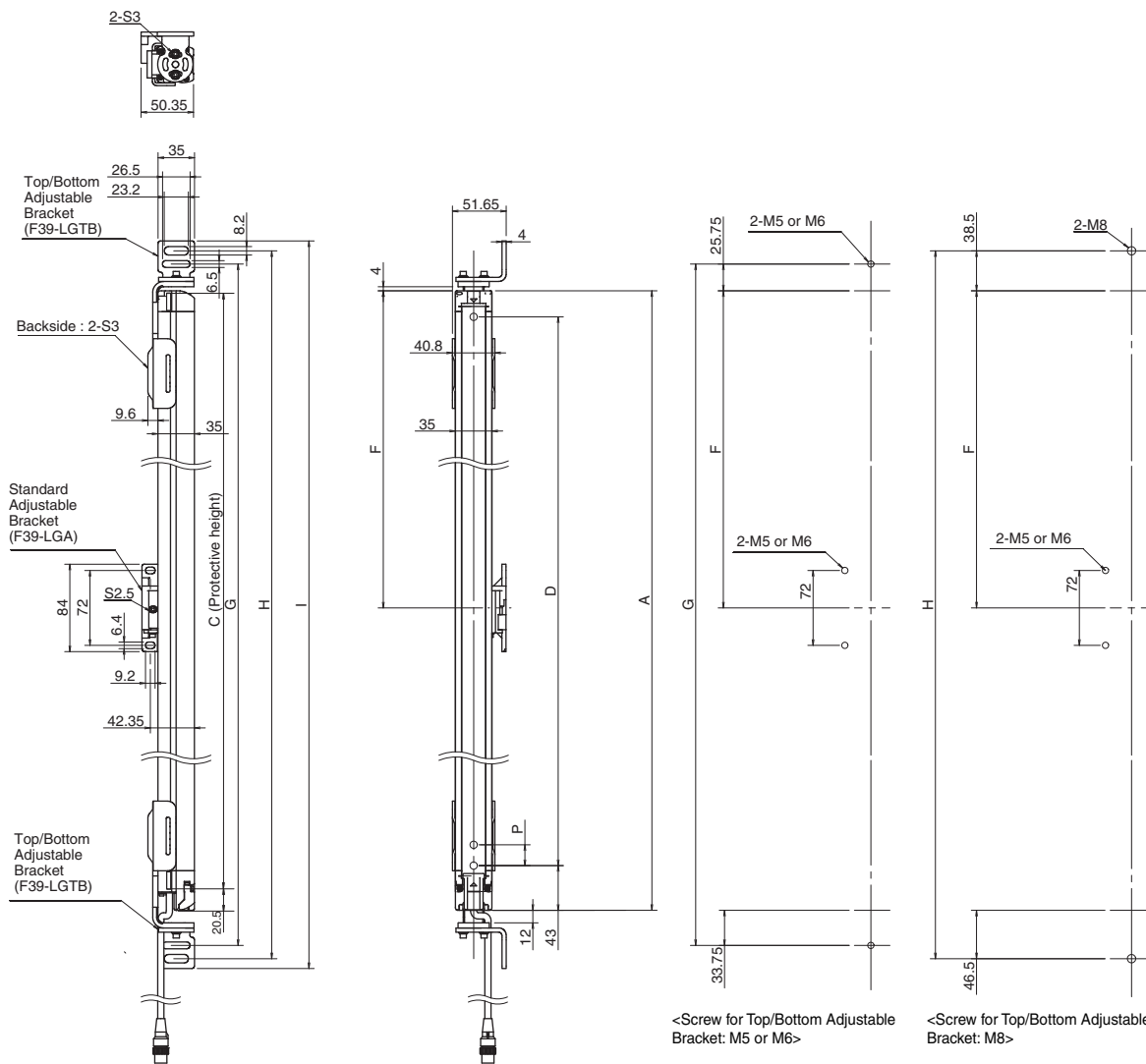


F3SG-4RA□□□□-25-01TS Series (Except for 0185)

	Optional accessory not connected	Optional accessory connected		
		F39-JGR2WTS	F39-BT	F39-LP F39-BTLP
Dimension A	C+23	C+23		
Dimension C	4-digit number of the type name (Protective height)	4-digit number of the type name (Protective height)		
Dimension D	C-45	C-45		
Dimension G	C+82.5	C+85.5	C+96	C+107.5
Dimension H	C+108	C+111	C+121.5	C+133
Dimension I	C+127	C+130	C+140.5	C+152
Dimension P	20	20		

Protective height (C)	Number of Standard Adjustable Brackets	Number of Standard Adjustable Brackets	Dimension F
0265 to 1065	2	0	-
1145 to 1945	2	1	1000 mm max.

Side Mounting

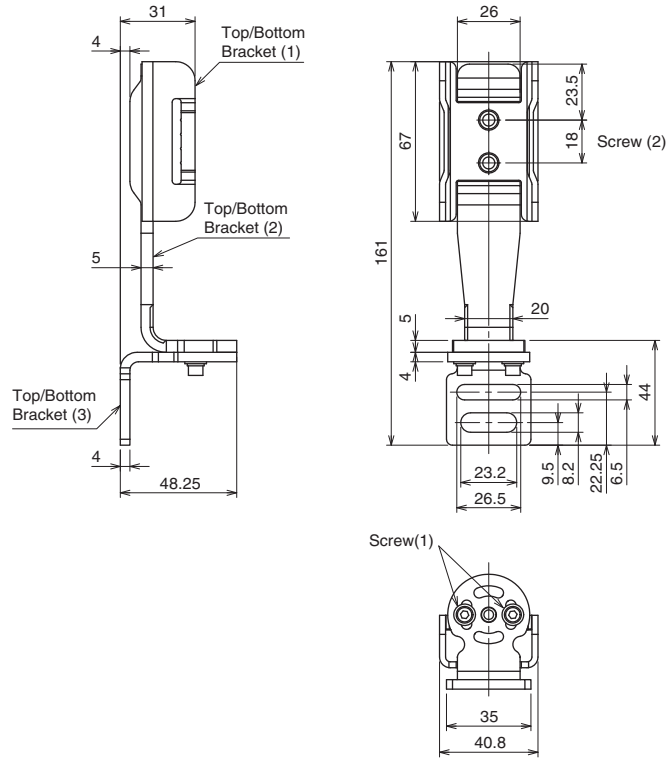


F3SG-4RA□□□□-25-01TS Series (Except for 0185)

	Optional accessory not connected	Optional accessory connected		
		F39-JGR2WTS	F39-BT	F39-LP F39-BTLP
Dimension A	C+23	C+23		
Dimension C	4-digit number of the type name (Protective height)	4-digit number of the type name (Protective height)		
Dimension D	C-45	C-45		
Dimension G	C+82.5	C+85.5	C+96	C+107.5
Dimension H	C+108	C+111	C+121.5	C+133
Dimension I	C+127	C+130	C+140.5	C+152
Dimension P	20	20		

Protective height (C)	Number of Standard Adjustable Brackets	Number of Standard Adjustable Brackets	Dimension F
0265 to 1065	2	0	-
1145 to 1945	2	1	1000 mm max.

Top/Bottom Adjustable Bracket (F39-LGTB)

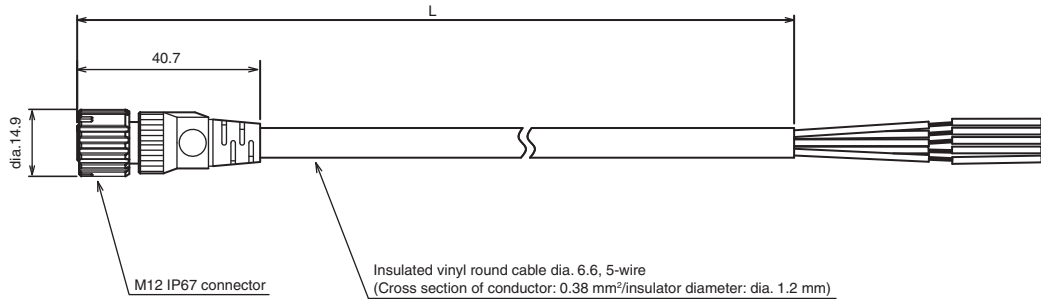


Material: SUS304

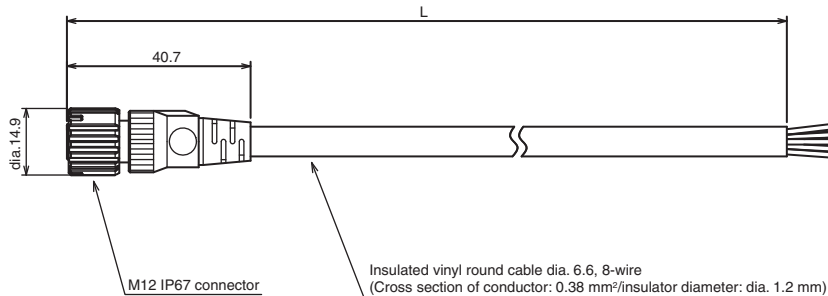
Accessories

For F3SG-4RA□□□□-14/-4RA□□□□-30

Single-Ended Cable for Emitter (F39-JG□A-L, sold separately)

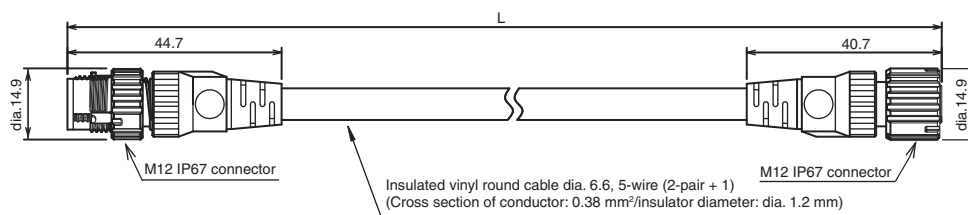


Single-Ended Cable for Receiver (F39-JG□A-D, sold separately)

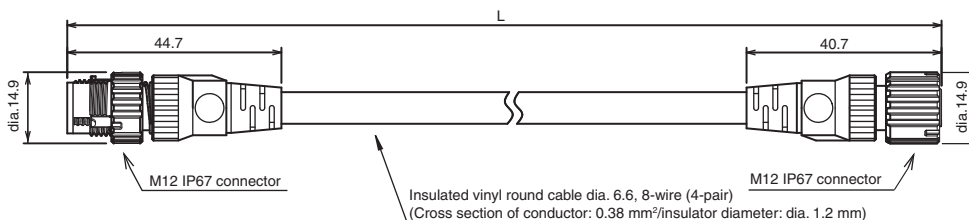


Emitter cable (Gray)	Receiver cable (Black)	L (m)
F39-JG3A-L	F39-JG3A-D	3
F39-JG7A-L	F39-JG7A-D	7
F39-JG10A-L	F39-JG10A-D	10
F39-JG15A-L	F39-JG15A-D	15
F39-JG20A-L	F39-JG20A-D	20

Double-ended Cable for Emitter: Cable for extension (F39-JG□B-L, sold separately)

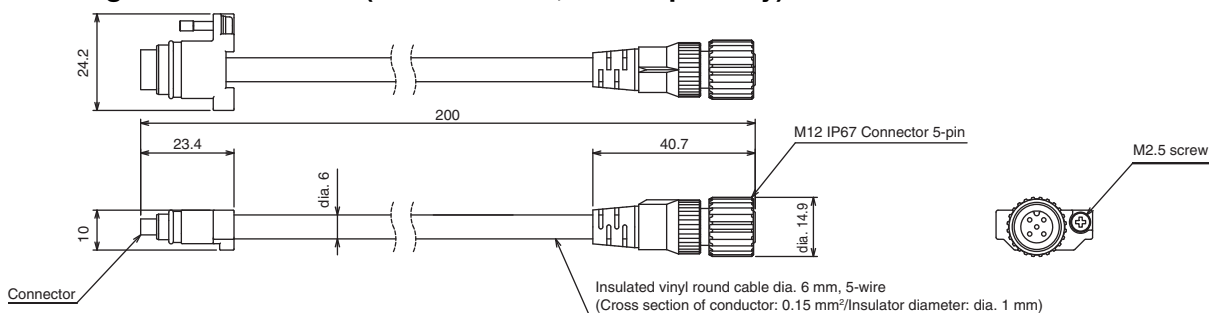


Double-Ended Cable for Receiver: Cable for extension (F39-JG□B-D, sold separately)

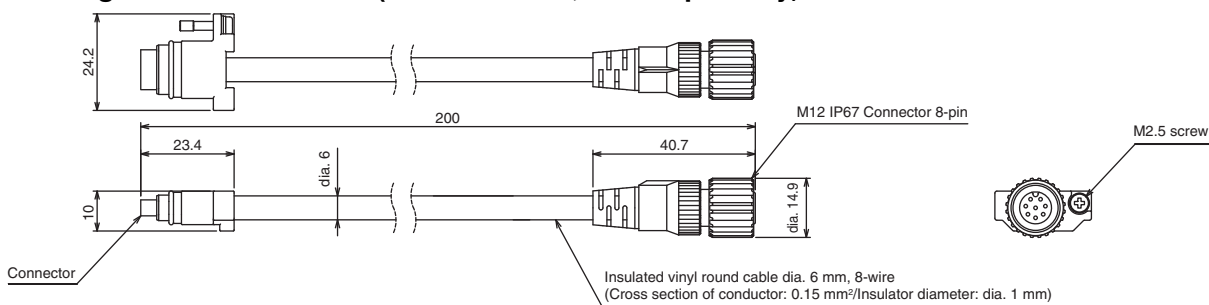


Emitter cable (Gray)	Receiver cable (Black)	L (m)
F39-JGR5B-L	F39-JGR15B-D	0.5
F39-JG1B-L	F39-JG1B-D	1
F39-JG3B-L	F39-JG3B-D	3
F39-JG5B-L	F39-JG5B-D	5
F39-JG7B-L	F39-JG7B-D	7
F39-JG10B-L	F39-JG10B-D	10
F39-JG15B-L	F39-JG15B-D	15
F39-JG20B-L	F39-JG20B-D	20

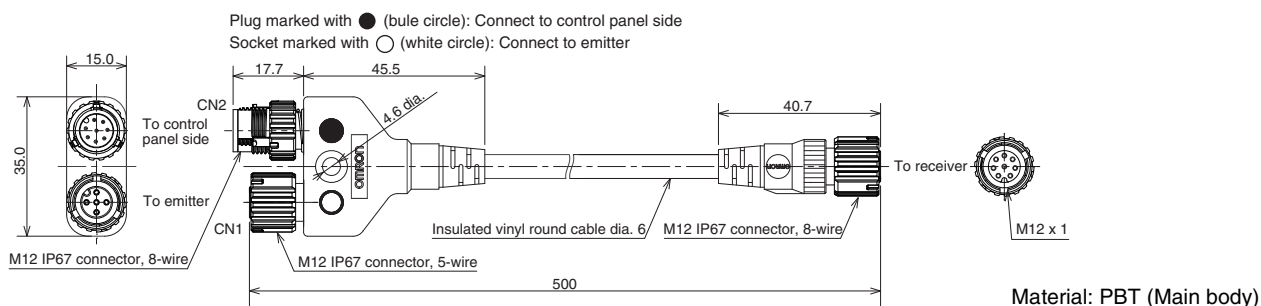
Cascading Cable for Emitter (F39-JGR2W-L, sold separately)



Cascading Cable for Receiver (F39-JGR2W-D, sold separately)



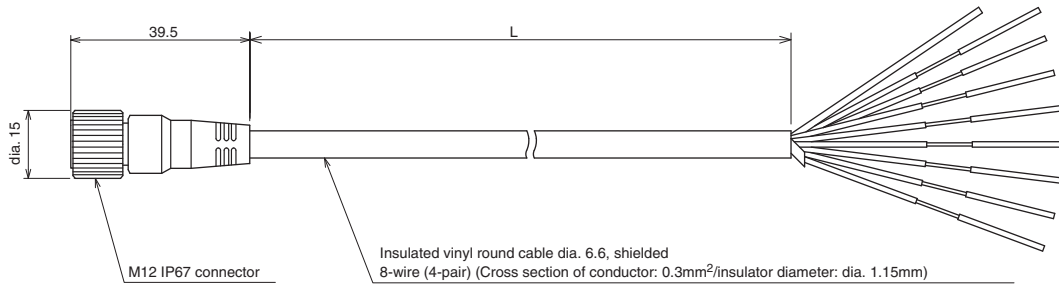
Y-Joint Plug/Socket Connector (F39-GCNY2, sold separately)



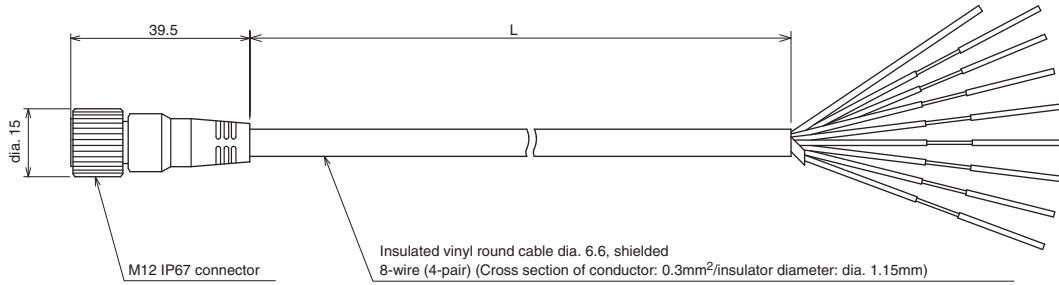
F3SG-RA

For F3SG-4RA□□□□-25-01TS

Single-Ended Cable for Emitter (F39-JD□A-L, sold separately)

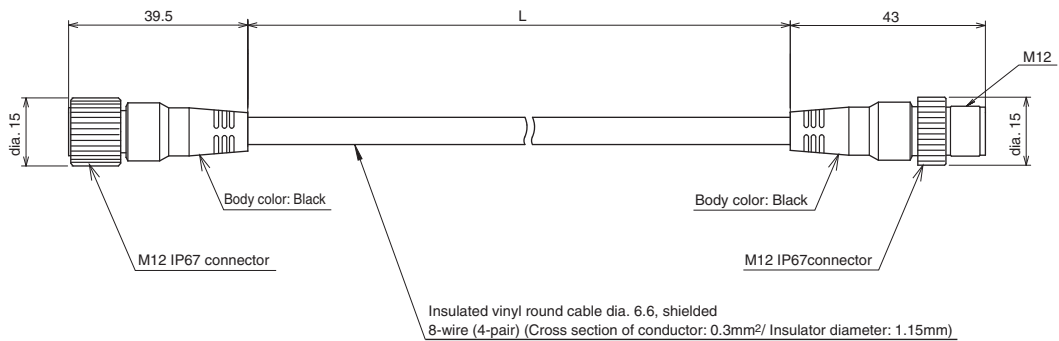


Single-Ended Cable for Receiver (F39-JD□A-D, sold separately)

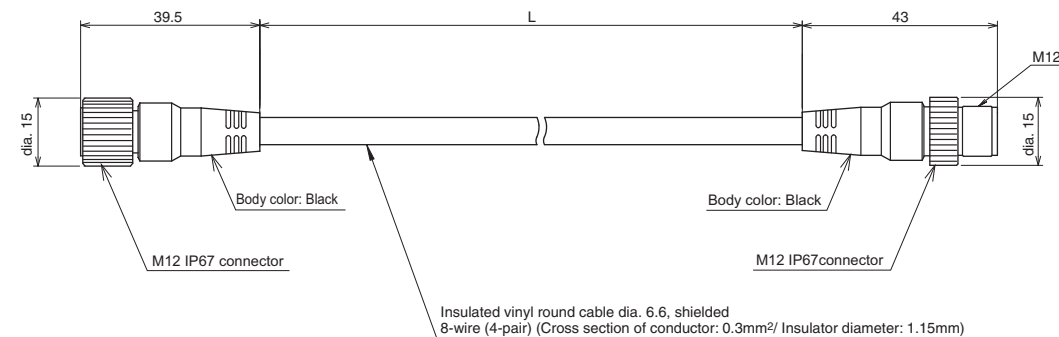


Emitter cable (Gray)	Receiver cable (Black)	L (m)
F39-JD3A-L	F39-JD3A-D	3
F39-JD7A-L	F39-JD7A-D	7
F39-JD10A-L	F39-JD10A-D	10
F39-JD15A-L	F39-JD15A-D	15
F39-JD20A-L	F39-JD20A-D	20

Double-Ended Cable for Emitter: Cable for extension (F39-JD□B-L, sold separately)

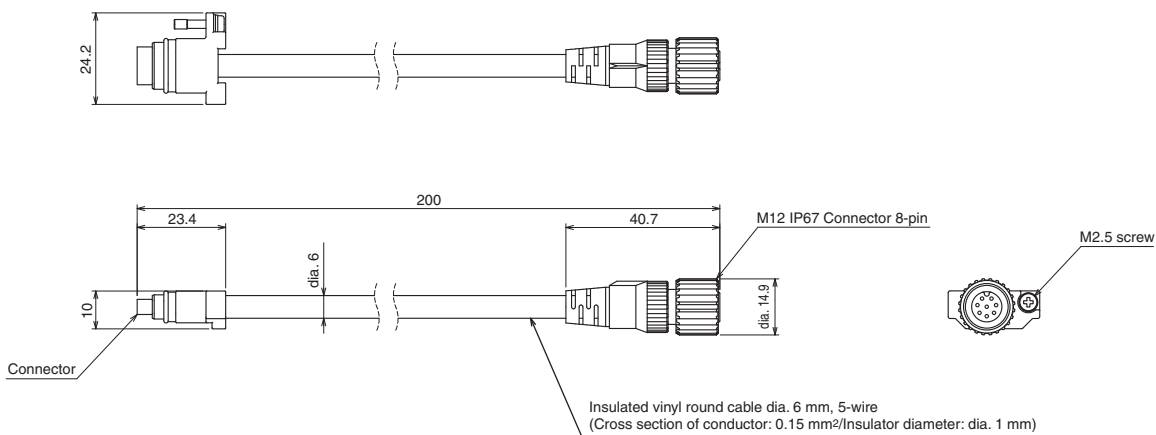


Double-Ended Cable for Receiver: Cable for extension (F39-JD□B-D, sold separately)

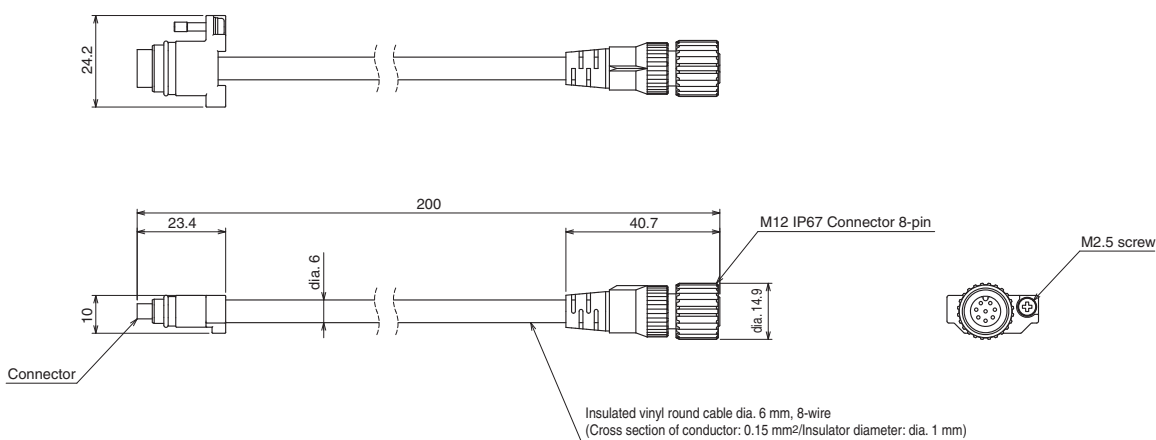


Emitter cable (Gray)	Receiver cable (Black)	L (m)
F39-JDR5B-L	F39-JDR5B-D	0.5
F39-JD1B-L	F39-JD1B-D	1
F39-JD3B-L	F39-JD3B-D	3
F39-JD5B-L	F39-JD5B-D	5
F39-JD7B-L	F39-JD7B-D	7
F39-JD10B-L	F39-JD10B-D	10
F39-JD15B-L	F39-JD15B-D	15
F39-JD20B-L	F39-JD20B-D	20

Cascading Cable for Emitter (F39-JGR2WTS-L, sold separately)

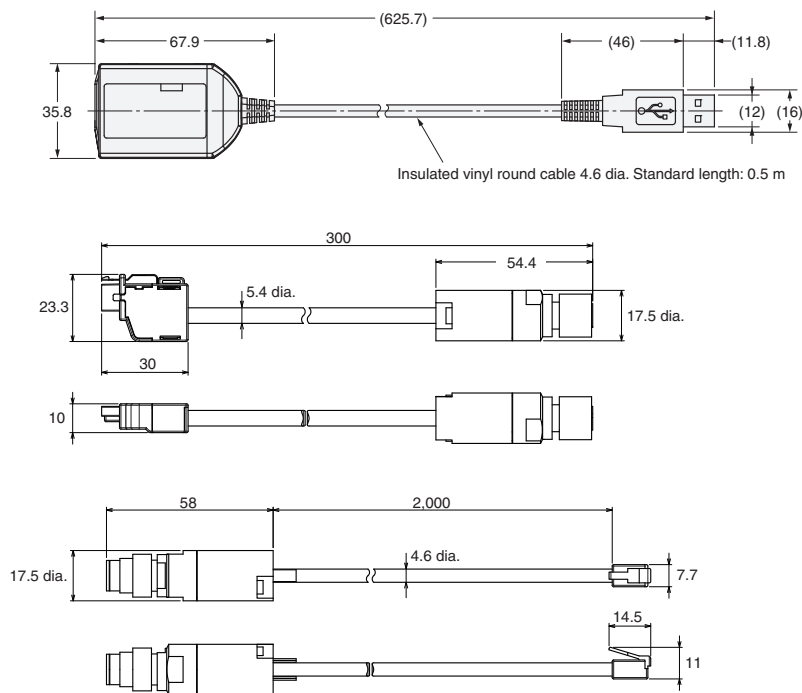


Cascading Cable for Receiver (F39-JGR2WTS-D, sold separately)

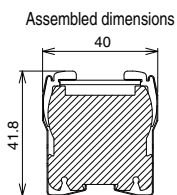


Set model name	Emitter cable (Gray)	Receiver cable (Black)	L (m)
F39-JGR2WTS	F39-JGR2WTS-L	F39-JGR2WTS-D	0.2

Interface Unit (F39-GIF)



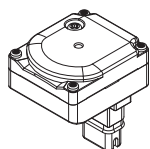
Spatter Protection Cover (F39-HGA)



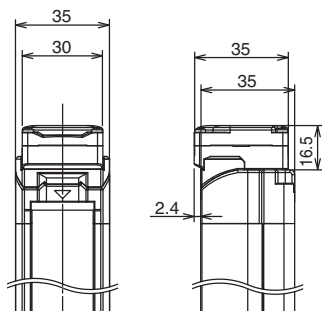
Model	Total length
F39-HGA□□□□	□□□□+4
F39-HGA0550	558

Material: PC (Transparent cover)
 ABS (Side wall)
 Stainless steel (Bracket)
 Aluminum adhesive tape
 (Fixing sticker)

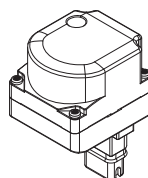
Bluetooth Communication Unit (F39-BT)



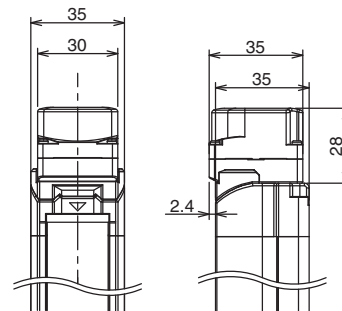
Material: PBT



Lamp and Bluetooth Communication Unit (F39-BTLP) Lamp (F39-LP)



Material:
 PC (Lighting element)
 PBT (Other body parts)



Related Manuals

ManNo.	Model	Manual name
Z352	F3SG-□R□□□□□□□□	Safety Light Curtain F3SG-□R Series User's Manual
Z380	F3SG-4RA□□□□-25-01TS	Safety Light Curtain F3SG-4RA□□□□-25-01TS Series User's Manual