

Safety Light Curtain  
F3SG-□RA Series



<http://www.ia.omron.com/f3sg-r>

Quick Installation Manual



Document Title	Cat. No.
Safety Light Curtain F3SG-R Series User's Manual	Z352-E1

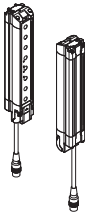

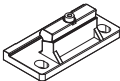
# Introduction


Thank you for purchasing the F3SG-□RA Series Safety Light Curtain (hereinafter referred to as the "F3SG-RA"). This document contains simple instructions to install the F3SG-RA.  
Please download the F3SG-RA User's Manual for full contents of the instructions from our website at:  
<http://www.ia.omron.com/f3sg-r>

## Table of Contents

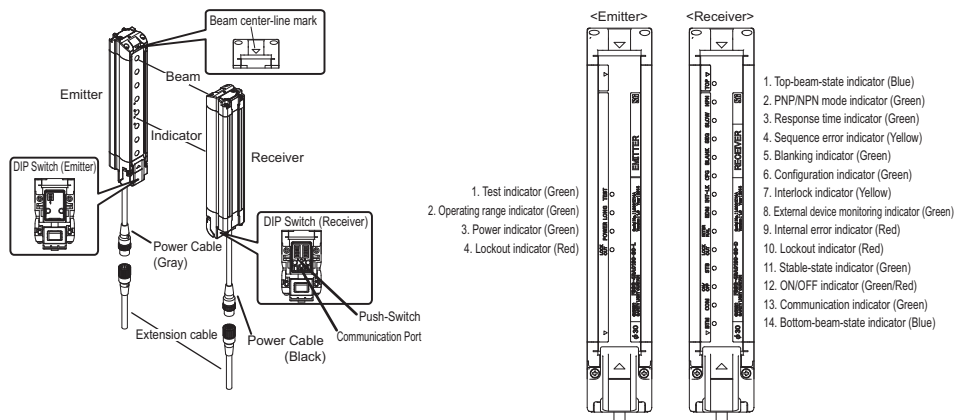
1. What is Included .....	1
2. System Components .....	2
3. F3SG-RA Setup Procedure Example .....	2
4. Setting with DIP Switch .....	3
5. Wiring Examples .....	4
5-1. EDM disabled, Auto Reset Mode, External Test disabled, Muting disabled and PNP Outputs ..	4
5-2. EDM enabled, Manual Reset Mode, External Test in 24 V Active, Muting enabled and PNP Out-	
puts .....	4
5-3. EDM disabled, Auto Reset Mode, External Test disabled, Muting disabled and NPN Outputs ..	5
5-4. EDM enabled, Manual Reset Mode, External Test in 0 V Active, Muting enabled and NPN Out-	
puts .....	5
6. Mounting and Beam Alignment .....	6
6-1. Mounting with Standard Fixed Brackets (F39-LGF) .....	6
6-2. Mounting with Standard Adjustable Brackets (F39-LGA) .....	8
7. Operation Check .....	11
Suitability for Use/Contact Information .....	11

## 1. What is Included

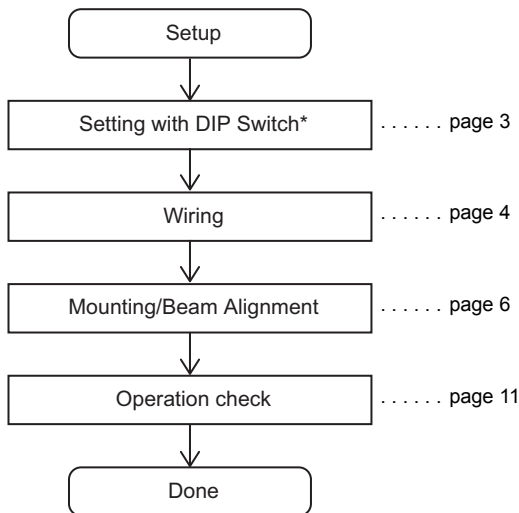
Product	Quantity														
F3SG-□RA□□□□□□□□ main unit 	Emitter x 1, Receiver x 1  Factory Default Settings <table><tr><th>Feature</th><th>Factory Default Setting</th></tr><tr><td>External Test</td><td>24 V Active</td></tr><tr><td>Interlock</td><td>Auto Reset Mode enabled</td></tr><tr><td>EDM (External Device Monitoring)</td><td>Disabled</td></tr><tr><td>Auxiliary Output</td><td>Safety output information (Inverted signal output: Enable)</td></tr><tr><td>Muting</td><td>Standard Muting Mode enabled</td></tr><tr><td>Override</td><td>Enabled</td></tr></table>  Refer to <i>F3SG-R Series User's Manual</i> for more information.	Feature	Factory Default Setting	External Test	24 V Active	Interlock	Auto Reset Mode enabled	EDM (External Device Monitoring)	Disabled	Auxiliary Output	Safety output information (Inverted signal output: Enable)	Muting	Standard Muting Mode enabled	Override	Enabled
Feature	Factory Default Setting														
External Test	24 V Active														
Interlock	Auto Reset Mode enabled														
EDM (External Device Monitoring)	Disabled														
Auxiliary Output	Safety output information (Inverted signal output: Enable)														
Muting	Standard Muting Mode enabled														
Override	Enabled														
Standard Fixed Bracket 	The number of brackets included depends on protective height of the F3SG-RA. Less than 1,280 mm: 2 sets 1,280 mm or longer and up to 2,270 mm: 3 sets 2,350 mm or longer and up to 2,510 mm: 4 sets														
Warning Zone Label	1														
Troubleshooting Guide Sticker	1														
Safety Precautions	4														
Quick Installation Manual	1														

 For ratings/specifications, input/output circuit, LED indicator status and troubleshooting, refer to *Safety Light Curtain F3SG-R Series User's Manual*.

## 2. System Components



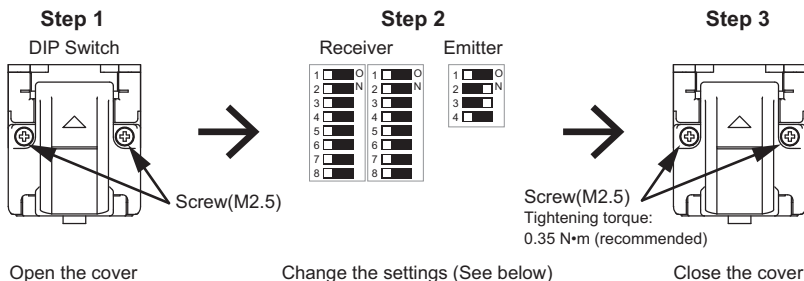
## 3. F3SG-RA Setup Procedure Example



\* Setting with DIP Switch may be necessary according to your application. For settings with Configuration Tool and by teach-in, refer to *Safety Light Curtain F3SG-R Series User's Manual*.



## 4. Setting with DIP Switch



□: Indicates a switch position.

	Position	Function	Setting		Factory default setting	Description
			DIP-SW1	DIP-SW2		
Receiver	1	Scan Code	1 <input type="checkbox"/> ON	1 <input type="checkbox"/> ON	X	Scan Code A
			1 <input type="checkbox"/> ON	1 <input type="checkbox"/> ON		Scan Code B
	2	External Device Monitoring (EDM)	2 <input type="checkbox"/> ON	2 <input type="checkbox"/> ON	X	External Device Monitoring (EDM) Disabled
			2 <input type="checkbox"/> ON	2 <input type="checkbox"/> ON		External Device Monitoring (EDM) Enabled
	3, 4	Interlock/Pre-Reset	3 <input type="checkbox"/> ON	3 <input type="checkbox"/> ON	X	Auto Reset
			4 <input type="checkbox"/> ON	4 <input type="checkbox"/> ON		Manual Reset (Start/Restart Interlock)
			3 <input type="checkbox"/> ON	3 <input type="checkbox"/> ON		Pre-Reset
			4 <input type="checkbox"/> ON	4 <input type="checkbox"/> ON		Auto Reset (same as factory default setting)
			3 <input type="checkbox"/> ON	3 <input type="checkbox"/> ON		
			4 <input type="checkbox"/> ON	4 <input type="checkbox"/> ON		
	5, 6	Fixed Blanking/ Floating Blanking	5 <input type="checkbox"/> ON	5 <input type="checkbox"/> ON	X	Blanking Disabled
			6 <input type="checkbox"/> ON	6 <input type="checkbox"/> ON		Fixed Blanking Enabled
			5 <input type="checkbox"/> ON	5 <input type="checkbox"/> ON		Floating Blanking Enabled
			6 <input type="checkbox"/> ON	6 <input type="checkbox"/> ON		Blanking Disabled (Same as Blanking Disabled (factory default setting))
	7	PNP/NPN Selection	7 <input type="checkbox"/> ON	7 <input type="checkbox"/> ON	X	PNP
			7 <input type="checkbox"/> ON	7 <input type="checkbox"/> ON		NPN
	8	DIP Switch/ Configuration Tool Selection	8 <input type="checkbox"/> ON	8 <input type="checkbox"/> ON	X	DIP Switch Enabled
			8 <input type="checkbox"/> ON	8 <input type="checkbox"/> ON		Configuration Tool Enabled
Emitter	1	Scan Code	1 <input type="checkbox"/> ON		X	Scan Code A
			1 <input type="checkbox"/> ON			Scan Code B
	2, 3	Operating Range Selection	2 <input type="checkbox"/> ON			Short Mode
			3 <input type="checkbox"/> ON			Setting Inhibited
			2 <input type="checkbox"/> ON			Setting Inhibited
			3 <input type="checkbox"/> ON			
			2 <input type="checkbox"/> ON		X	Long Mode
	4	External Test	4 <input type="checkbox"/> ON		X	24 V Active
			4 <input type="checkbox"/> ON			0 V Active



The receiver has two DIP Switches, both of which must be configured based on the table above.

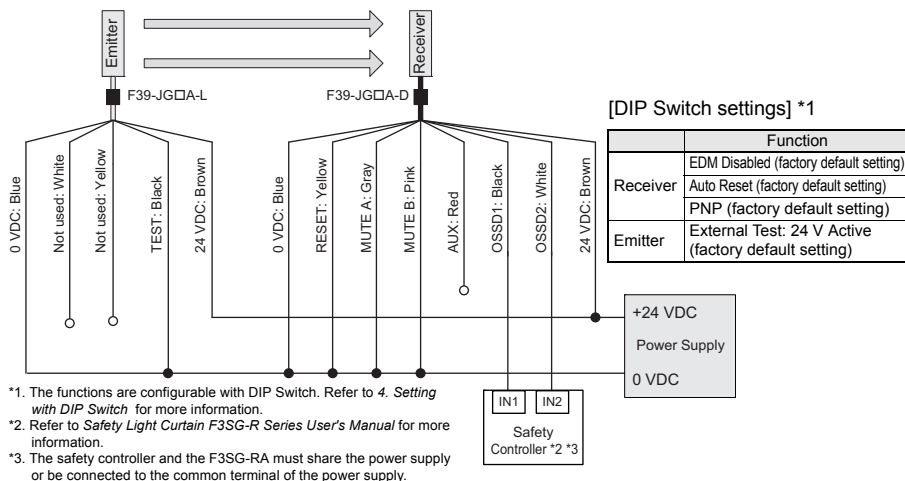


## 5. Wiring Examples

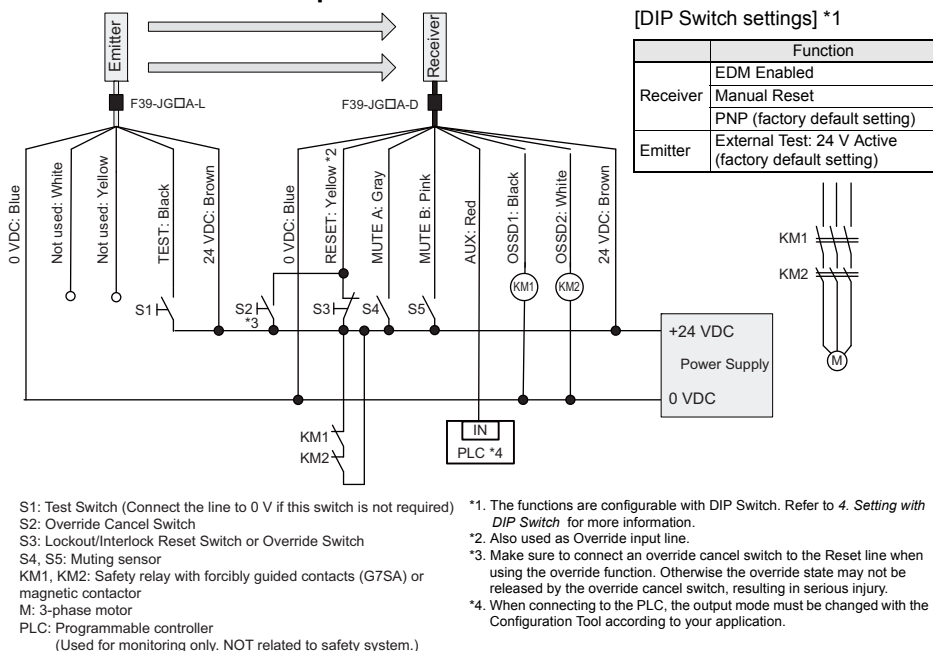


For input/output circuit and other examples than below, refer to *Safety Light Curtain F3SG-R Series User's Manual*.

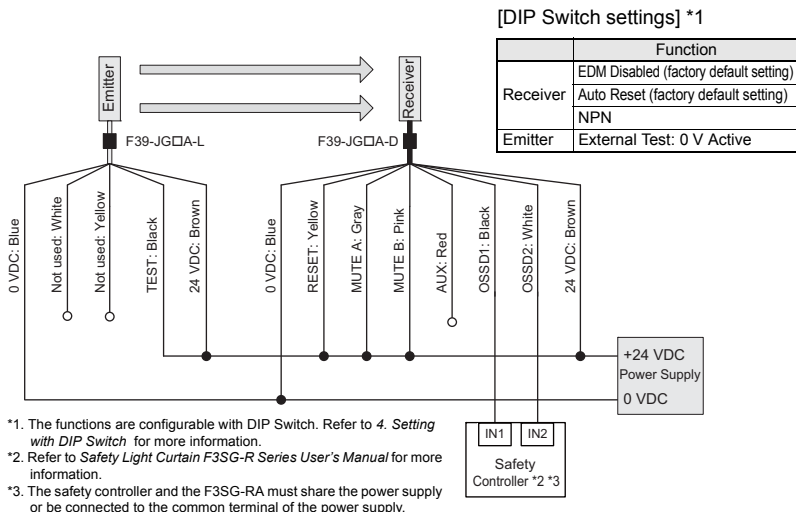
### 5-1. EDM disabled, Auto Reset Mode, External Test disabled, Muting disabled and PNP Outputs



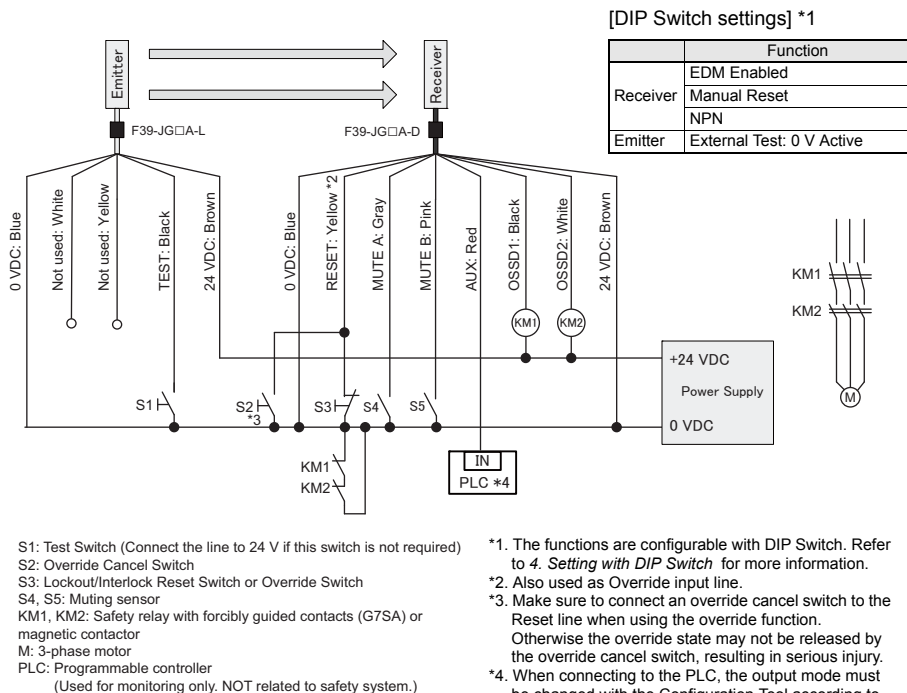
### 5-2. EDM enabled, Manual Reset Mode, External Test in 24 V Active, Muting enabled and PNP Outputs



### 5-3. EDM disabled, Auto Reset Mode, External Test disabled, Muting disabled and NPN Outputs



### 5-4. EDM enabled, Manual Reset Mode, External Test in 0 V Active, Muting enabled and NPN Outputs

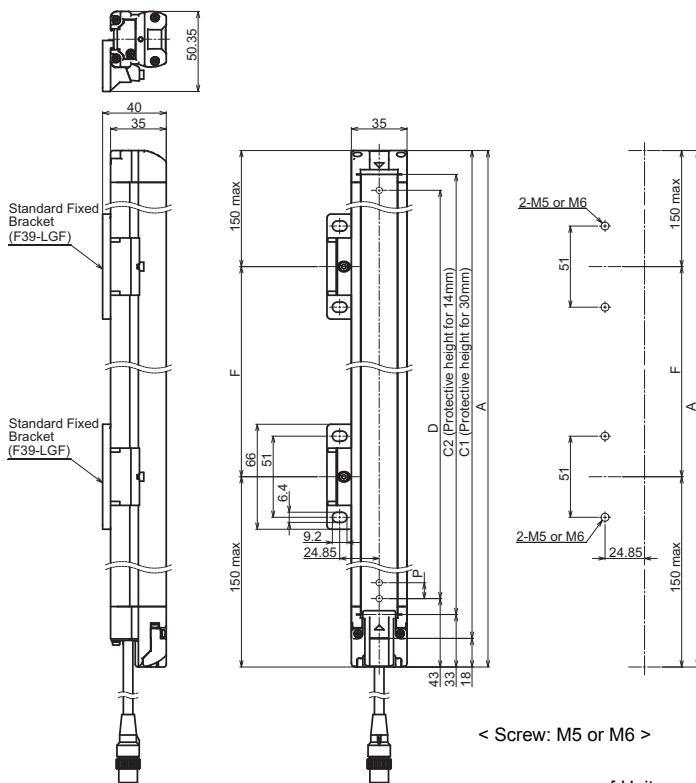


## 6. Mounting and Beam Alignment

### 6-1. Mounting with Standard Fixed Brackets (F39-LGF)

■ **Dimensions (Check position)**

[Backside mounting]



< Screw: M5 or M6 >

[ Unit : mm ]

## 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).



Refer to *Safety Light Curtain F3SG-R Series User's Manual* for dimensions of side mounting.

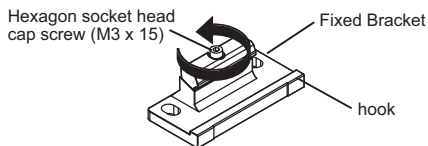


## ■ Mounting

### 1. Loosen the screw.

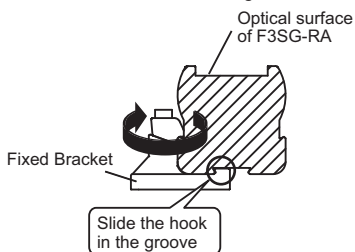
Step1  
Check  
position

Step2  
Mount

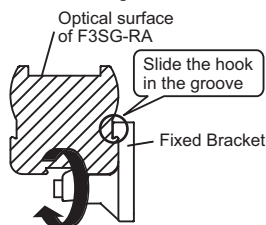


### 2. Lightly tighten the screw.

<Backside mounting>

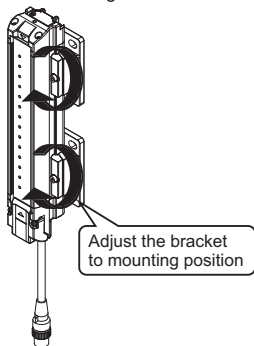


<Side mounting>

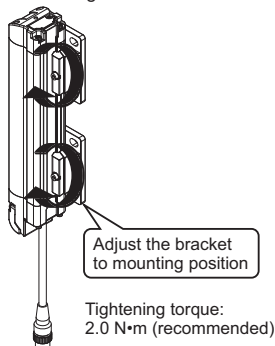


### 3. Adjust the mounting position and secure the bracket.

<Backside mounting>



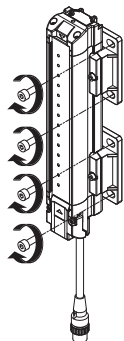
<Side mounting>



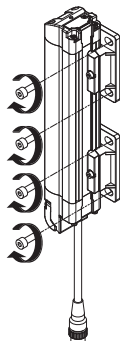
Tightening torque:  
2.0 N•m (recommended)

### 4. Secure the bracket to the wall.

<Backside mounting>



<Side mounting>



Screws to mount the brackets to the wall are not included.

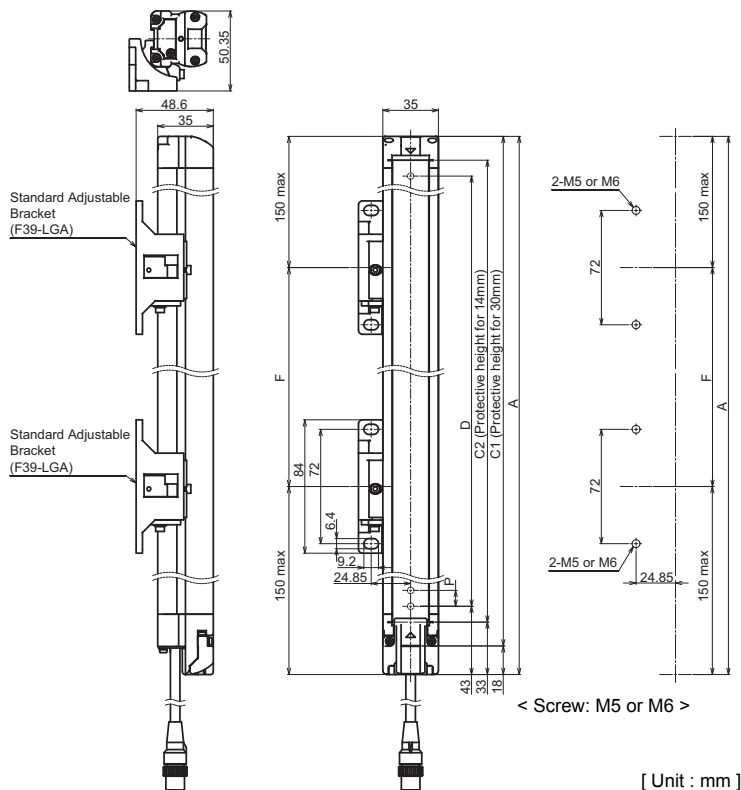




## 6-2. Mounting with Standard Adjustable Brackets (F39-LGA)

### ■ Dimensions (Check position)

[Backside mounting]



Step1

Check  
position

Step2

Mount



Step3

Align  
beams

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).

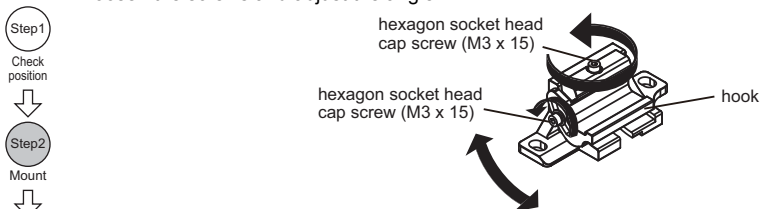


Refer to *Safety Light Curtain F3SG-R Series User's Manual* for dimensions of side mounting.

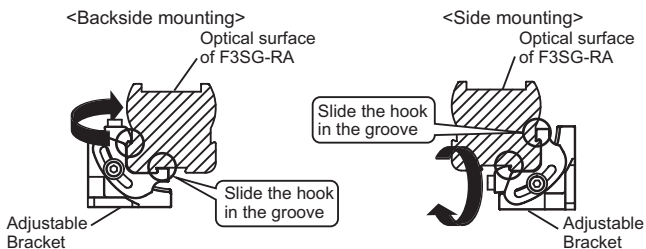


## ■ Mounting and Beam Alignment

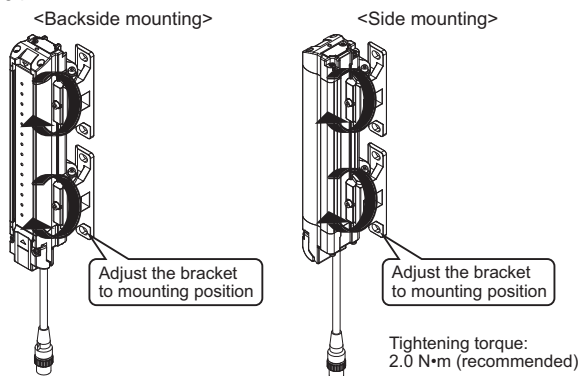
### 1. Loosen the screws and adjust the angle.



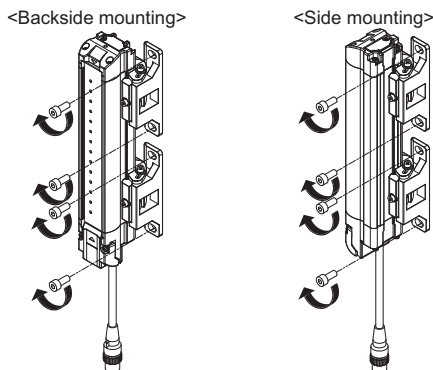
### 2. Lightly tighten the screw.



### 3. Adjust the mounting position and secure the bracket.



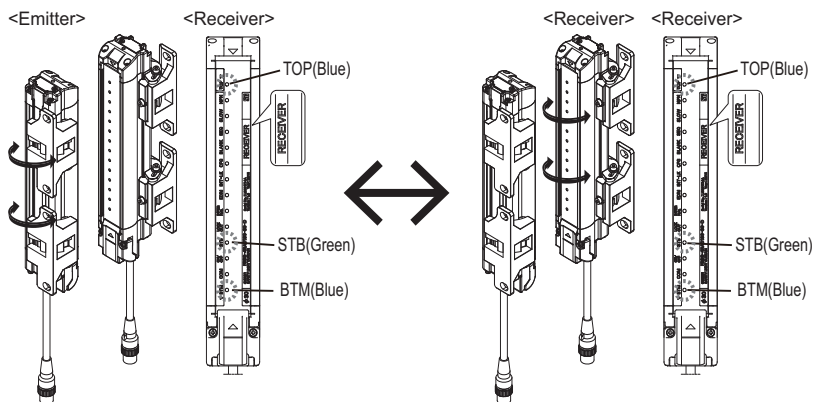
### 4. Secure the bracket to the wall.



Screws to mount the brackets to the wall are not included.

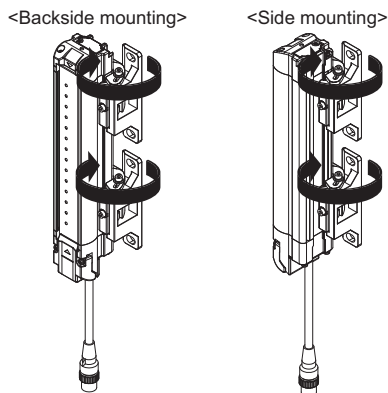


## 5. Perform beam alignment according to the indicators.



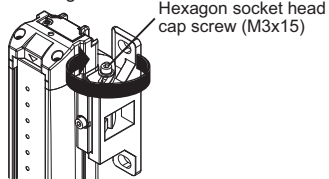
Angle adjustment range:  $\pm 15^\circ$

## 6. Securely tighten the remaining screws.



Tightening torque:  
2.0 N·m (recommended)

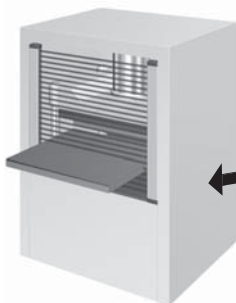
<Enlarged view>







## 7. Operation Check

After setting with DIP Switch, wiring, mounting and beam alignment are done, check the operation of the F3SG-RA. Attach the included Troubleshooting Guide Sticker nearby, if necessary.



		<b>omron</b>		For more information, visit
<b>TROUBLESHOOTING [EN]</b>				
 <b>Checking</b>	<b>SYMPTOM INDICATOR</b>	<b>MAJOR CAUSE</b>		
<b>LOOKOUT</b>  <b>Warning</b>	TOP	Cap is not attached. Error of other I/FSD in cascade		
	BLAND	Error is detected due to Blasting Monitoring		
	ISLGE	Error of module combination in cascade		
	ICSH	Error of I-CCU		
	INTERNAL	Error of internal circuit		
<b>LOOKOUT</b>  <b>Error</b>	ONOFF	Error of ON/OFF lines		
	COM	Error of communication		
	STOP	Error of stop-line setting		
<b>LOOKOUT</b>  <b>Error</b>	POWER	Error of sensor		
	ONOFF, COM or STOP	Error due to abnormal power supply or noise		
	INTERNAL	Error due to noise		
<b>LOOKOUT</b>  <b>Error</b>	POWER	Error due to noise		
	STOP	Error due to vibrator or ambient light		
<b>LOOKOUT</b>  <b>Error</b>	SDG	Wrong sequence of Making or Interrupt stop		



Refer to *Safety Light Curtain F3SG-R Series User's Manual* or the website for troubleshooting.



<http://www.ia.omron.com/f3sq-r>

## Suitability for Use

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

See also Product catalog for Warranty and Limitation of Liability.

**OMRON Corporation** Industrial Automation Company (Manufacturer)

**Shiokoji Horikawa, Shimogyo-ku, Kyoto, 600-8530 JAPAN**

**Contact: [www.ia.omron.com](http://www.ia.omron.com)**

### Regional Headquarters

■ OMRON EUROPE B.V. (Representative and Importer in EU)  
Wegalaan 67-69, NL-2132 JD Hoofddorp  
THE NETHERLANDS  
Tel: (31)-2356-81-300 / FAX: (31)-2356-81-388

■ OMRON ASIA PACIFIC PTE. LTD.  
No. 438A Alexandra Road # 05-05/08 (Lobby 2),  
Alexandra Technopark,  
Singapore 119967  
Tel: (65) 6835-3011 / Fax: (65) 6835-2711

■ OMRON SCIENTIFIC TECHNOLOGIES INC.  
6550 Dumbarton Circle  
Fremont, CA 94555 U.S.A.  
Tel: (1) 510-608-3400 / Fax: (1) 510-744-1442

■ OMRON (CHINA) CO., LTD.  
Room 2211, Bank of China Tower,  
200 Yin Cheng Zhong Road,  
PuDong New Area, Shanghai, 200120, China  
Tel: (86) 21-5037-2222 / Fax: (86) 21-5037-2200

In the interest of product improvement, specifications are subject to change without notice.