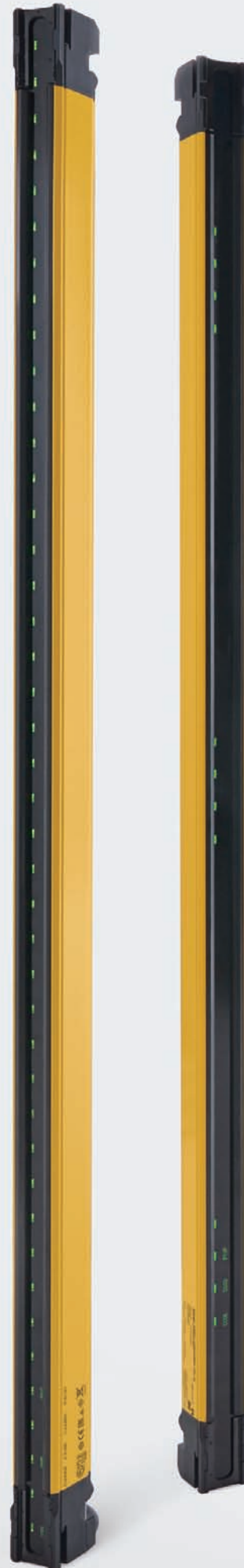


Easy to monitor and ready for IoT

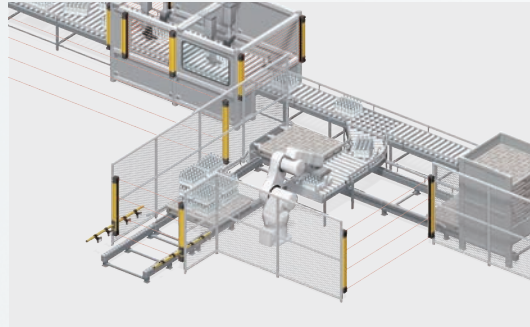


This series redefines safety at manufacturing sites

Manufacturers now need to manage globalization and flexible production. That's why we have developed our F3SG-SR/PG Series. This series offers a complete lineup of light curtains that comply with global safety standards and a wide range of functionality that covers all aspects from design through to maintenance. The F3SG-SR/PG Series helps manufacturers build safety systems.



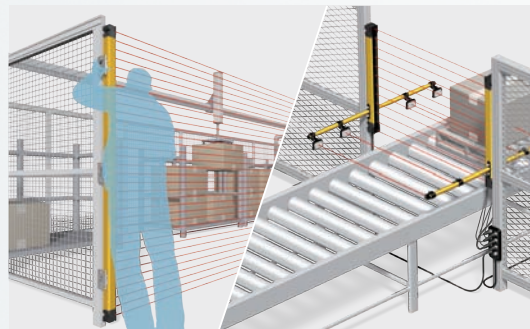
Build flexible safety systems



Design

Easy design of line safety Page 4

Flexible design for equipment Page 8



Set-up

Simple beam adjustment Page 10

Easy installation and angle adjustment Page 11

Various options to reduce wiring Page 12



IP69K model

Operation

Reduction in unwanted machine stoppages Page 14



Maintenance

Maintenance with no special skills required Page 16

Quick maintenance through ICT Page 17

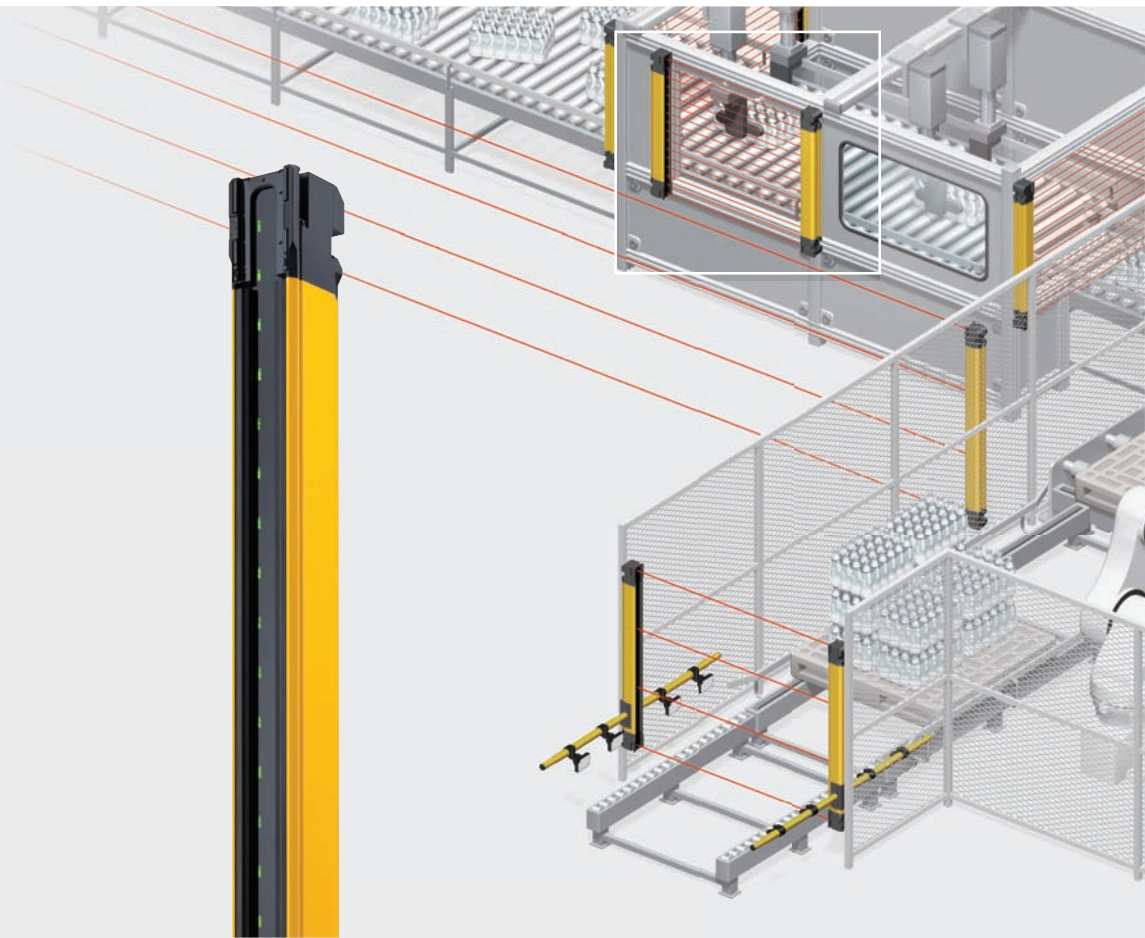
One series covers all protection applications—from machine

Standardize mechanical design across production lines and eliminate complexity of selection and design.

Protection at machine openings

Safety Light Curtain

F3SG-SR



Finger Protection

| | | |
|-----------------------------------|------------------------|------------------------------------|
| Beam gap | 10 mm | Detection capability 14-mm dia. |
| Protective height | 160 to 2,000 mm | |
| Max. operating range Min./Typ. | 10 m / 15 m | |

IP69K model available

Hand Protection

| | | |
|-----------------------------------|------------------------|------------------------------------|
| Beam gap | 20 mm | Detection capability 25-mm dia. |
| Protective height | 160 to 2,480 mm | |
| Max. operating range Min./Typ. | 20 m / 30 m | |

IP69K model available

Arm/Leg Protection

| | | |
|-----------------------------------|------------------------|------------------------------------|
| Beam gap | 40 mm | Detection capability 45-mm dia. |
| Protective height | 240 to 1,520 mm | |
| Max. operating range Min./Typ. | 20 m / 30 m | |

Body Protection

| | | |
|-----------------------------------|----------------------|------------------------------------|
| Beam gap | 80 mm | Detection capability 85-mm dia. |
| Protective height | 280 to 920 mm | |
| Max. operating range Min./Typ. | 20 m / 30 m | |

Common optional accessories including cables and brackets*

The light curtains share common optional accessories for ease of design and retrofitting of production lines.

Intelligent Tap
F39-SGIT-IL3

Bluetooth® Communication Unit
F39-SGBT

 IO-Link
 Bluetooth®
USB Type-C™

Lamp
F39-SGLP



Muting Sensor Arm Mounter
F39-FMA

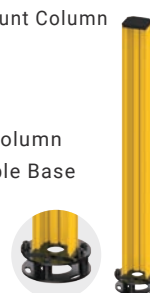


Muting Sensor
Connection Box
F39-GCN5

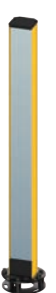


Floor Mount Column
F39-ST

Mount-Column
Adjustable Base
F39-STB



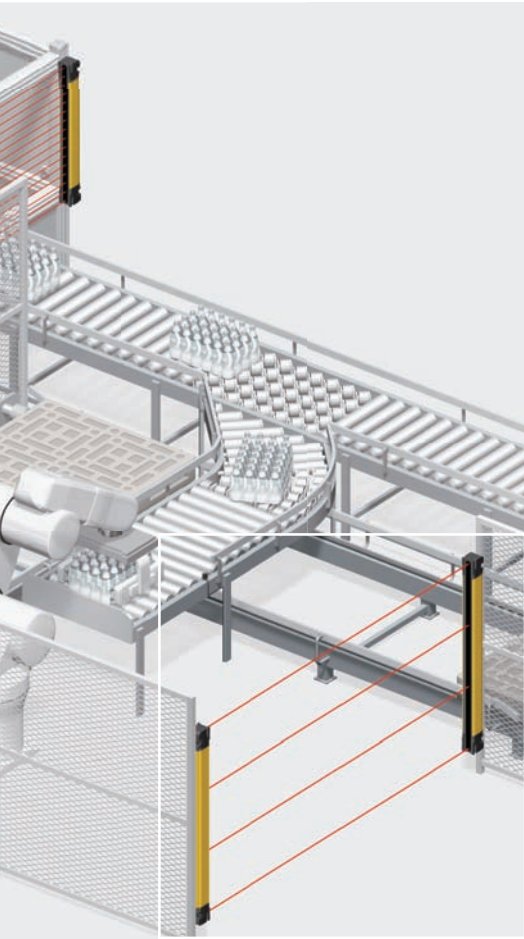
Mirror Column
(for F3SG-SR
Safety
Light Curtain)
F39-SML



* Except for some optional accessories. See the F3SG-SR/PG Datasheet for details.

(The mount-column adjustable base is sold separately.)


openings to perimeters of equipment






Protection around perimeters of equipment

Safety Multi-Light Beam

F3SG-PG



| | | |
|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
|  Perimeter Access Guarding |  Perimeter Guarding Long Range |  Perimeter Guarding Passive Mirror |
| Beam gap300/400/500 mm | Beam gap300/400/500 mm | Beam gap300/400/500 mm |
| Product length670 to 1,370 mm | Product length630 to 1,370 mm | Product length670 to 1,370 mm |
| Max. operating rangeMin./Typ.20 m / 30 m | Max. operating rangeMin./Typ.70 m / 110 m | Max. operating rangeMin./Typ.5 m / 8 m |

Helps build safety systems for machines all over the world

Mirror Column
(for F3SG-PG
Safety
Multi-Light Beam)
F39-PML



Laser
Alignment
Pointer
F39-PTS

This series conforms to worldwide safety standards.



PNP/NPN selection by changing the wiring allows you to easily bring and install the light curtain across the world.



The unique tightly sealed structure meets IP67G water and oil resistance and IP69K*.

*(Safety Light Curtain IP69K model F3SG-SR-K)

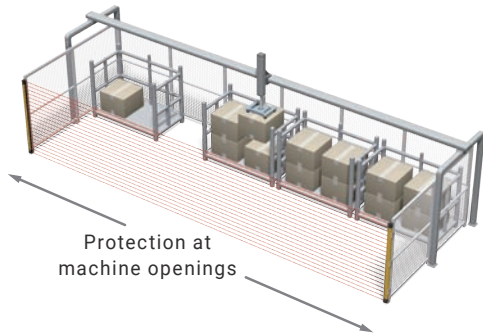


A broad lineup for flexible production line design

Create flexible design plans to suit your equipment requirements.

Long operating range thanks to unique optical design

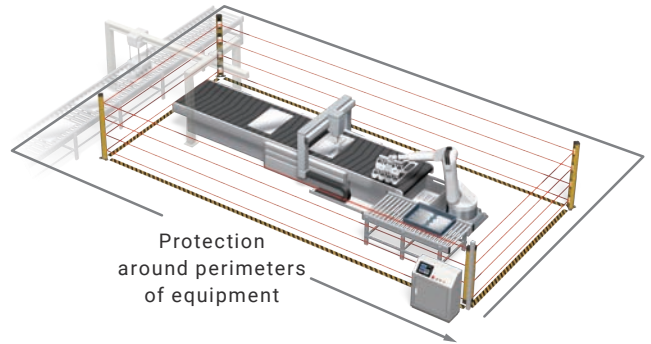
The long-distance sensing capability enables reliable detection even in harsh environments.



Safety Light Curtain
F3SG-SR
Series

20m Min.
30m Typ.

The high-power optical system provides stable detection up to 20 m even in harsh environments.



Safety Multi-Light Beam
F3SG-PG
Series

70 m Min.
110m Typ.

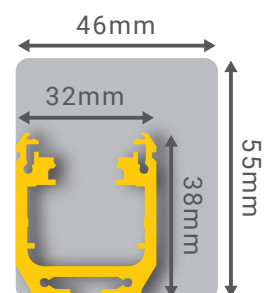
When mirror columns are installed in three corners: 50m Min./80m Typ.



Omron's unique compact design

The F3SG-SR Safety Light Curtain and F3SG-PG Safety Multi-Light Beam share the same compact housing. This makes mechanical design more flexible.

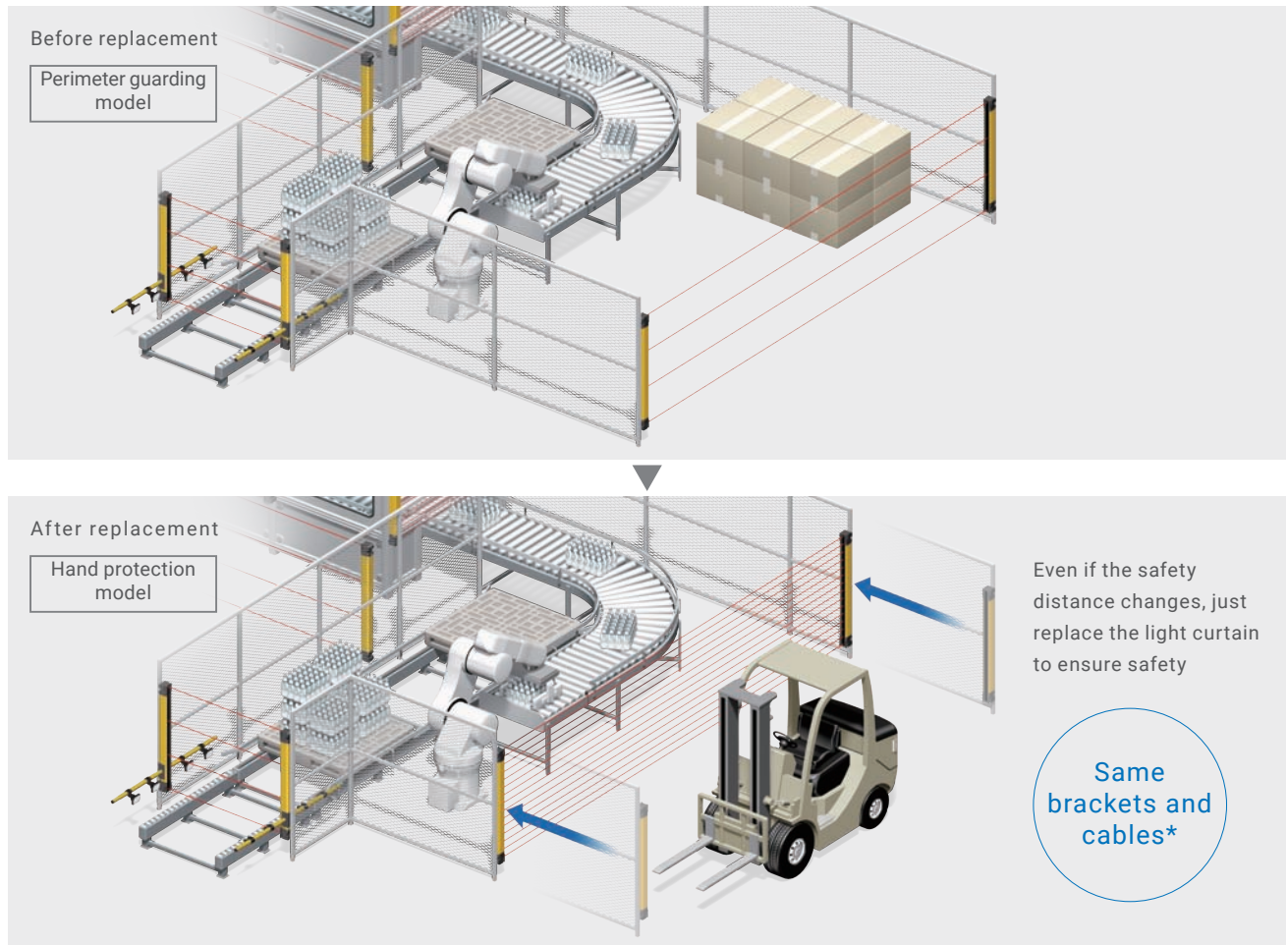
* Compared with OMRON Robotics and Safety Technologies, Inc's PA46 Perimeter Access Guarding Device. (Based on Omron investigation in June 2018)



Easy line layout changes

Simply replace a light curtain using the same accessories because the F3SG-SR Series and F3SG-PG Series share the same housing. There is no need to select and install optional accessories for a new light curtain.

Example : In order to secure a working space by installing the light curtain closer to the machine, the perimeter guarding model is replaced with the hand protection model



Just replace the light curtain with the same protective height*

F3SG-SR Series lineup

● Standard model ○ Flexible height model (Increments of 40 mm)

| Protective height (mm) | 160 | 200 | 240 | 280 | 320 | 360 | 400 | 440 | 480 | 520 | 560 | 600 | 640 | 670 | 680 | 720 | 760 | 800 | 840 | 880 | 920 | 960 | 970 | 1000 | 1040 | 1070 | 1120 | 1200 | 1280 | 1360 | 1370 |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| Finger Protection | ● | ○ | ● | ○ | ● | ○ | ● | ○ | ● | ○ | ● | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Hand Protection | ● | ○ | ● | ○ | ● | ○ | ● | ○ | ● | ○ | ● | ○ | ● | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Arm/Leg Protection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Body Protection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Protective height (mm) | 1400 | 1440 | 1520 | 1600 | 1680 | 1760 | 1800 | 1840 | 1920 | 2000 | 2080 | 2280 | 2480 |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Finger Protection | ● | | | | | | | | | | | | |
| Hand Protection | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Arm/Leg Protection | | | ● | | | | | | | | | | |
| Body Protection | | | | | | | | | | | | | |

F3SG-PG Series lineup

| Product length (mm) | 160 | 200 | 240 | 280 | 320 | 360 | 400 | 440 | 480 | 520 | 560 | 600 | 640 | 670 | 680 | 720 | 760 | 800 | 840 | 880 | 920 | 960 | 970 | 1000 | 1040 | 1070 | 1120 | 1200 | 1280 | 1360 | 1370 |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|
| Perimeter Access Guarding | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Perimeter Guarding Long Range | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Perimeter Guarding Passive Mirror | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

* Except for some models and optional accessories. See the F3SG-SR/PG Datasheet for details.

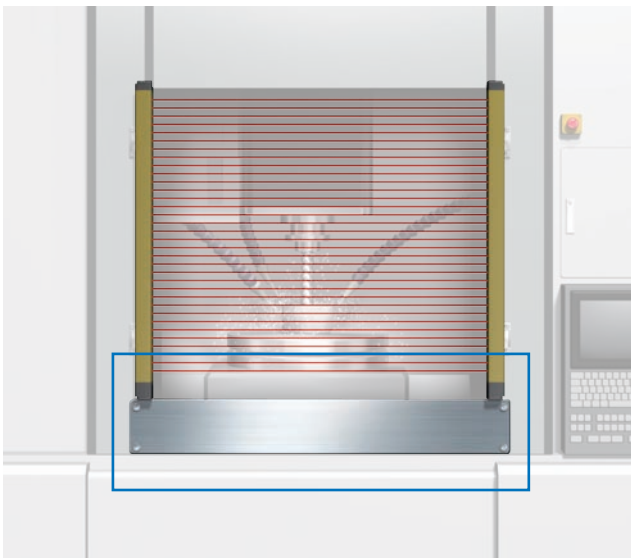
Flexible installation

Perfect fit

Protective heights are available in increments of 40 mm up to 1,000 mm*. The perfect protective height for any protected area ensures safety and eliminates the need for additional measures.

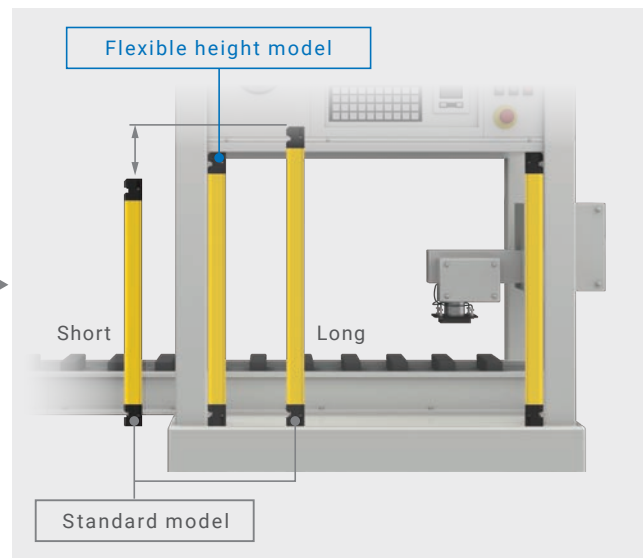
Problem

The light curtain that does not completely fit the protected area requires additional measures (e.g., adding a protection cover).



F3SG-SR*

The flexible height model requires no additional measures.



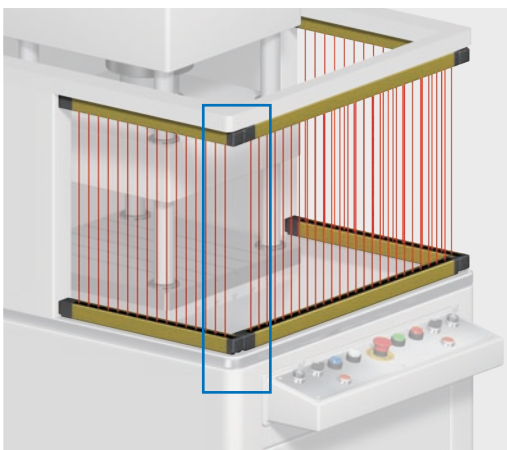
* F3SG-SR Finger and Hand Protection models only.

Protection without dead space

The F3SG-SR Series eliminates dead space that previously existed even when light curtains are series-connected or U-shape connected. Safer systems can be designed.

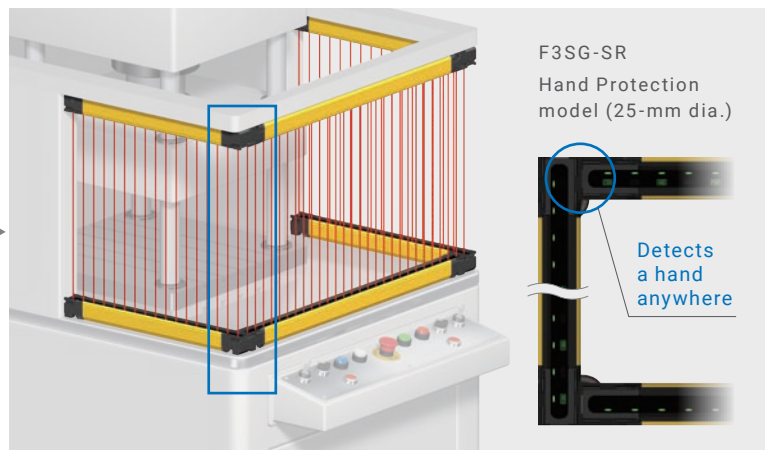
Problem

Dead space exists at the joint.



F3SG-SR*

Eliminates dead space and ensures safety.

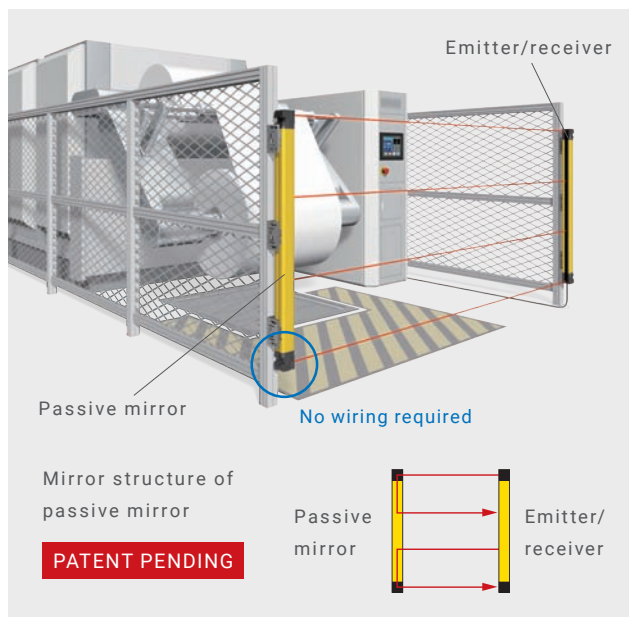


* Except for F3SG-SR Finger Protection models.

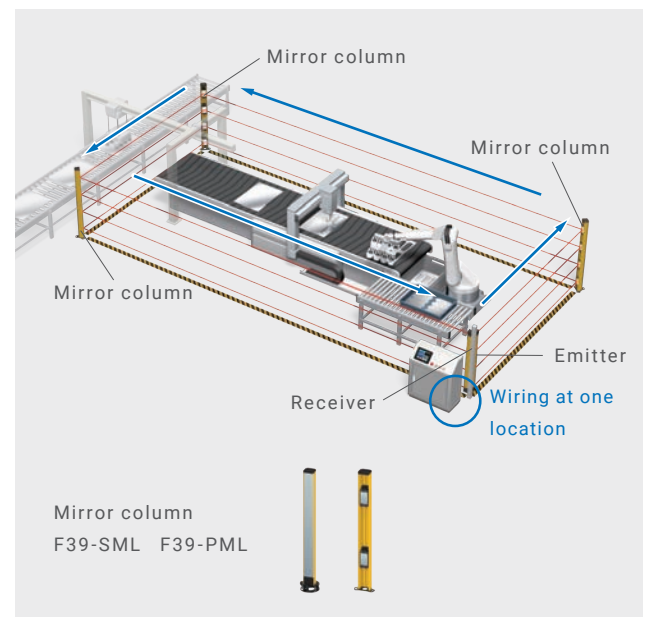
Simple wiring for flexible design

The F3SG-PG-C Perimeter Guarding Passive Mirror requires wiring of only the emitter/receiver. The use of mirror columns allows wiring at one location for protection around perimeters of equipment. They reduce wiring duct design and wiring time.

Wiring only the emitter/receiver

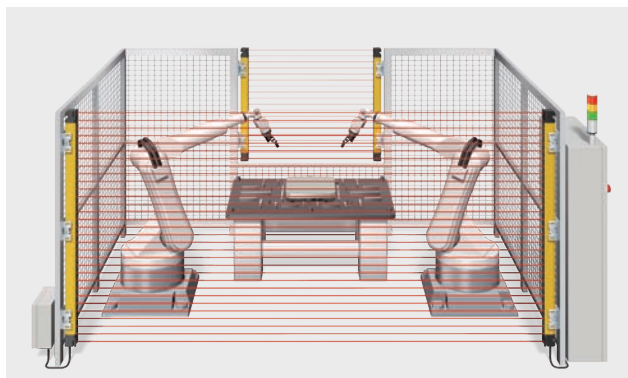


Wiring at one location for protection around perimeters of equipment



Two different synchronization systems

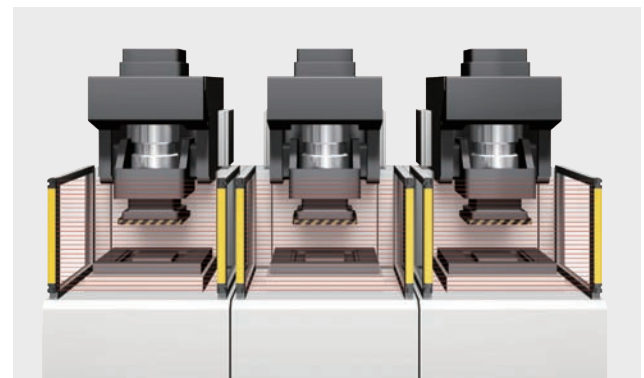
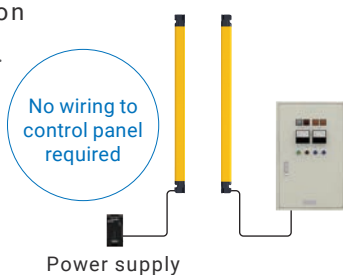
Choose from two different methods of synchronization between the emitter and receiver to suit your equipment.



Optical synchronization

No sync lines are required.
Connect emitter only to power supply.

Mutual interference prevention : Up to 2 sets



Wired synchronization

Mutual interference prevention : Up to 3 sets



Color indication of beam status for quick and easy beam adjustment

Reduce beam adjustment time.

Area Beam Indicator (ABI) for an at-a-glance check of beam status

PATENTED

The ON or OFF state of the light curtain and low light intensity can be checked.

The ABI also facilitates fine adjustment of beams for long-distance sensing.



Easy to see



Stable state

Green :
Safety outputs ON

The beams are unblocked.



Low light intensity

Orange :
Safety outputs ON

Adjust beams or check if the light curtain is dirty.



Beams blocked

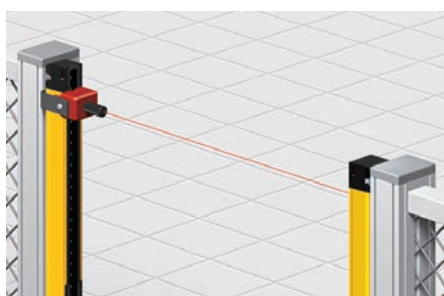
Red :
Safety outputs OFF*

The beams in the area are blocked.

* The indicator of an unblocked area is OFF.

Note : Factory default setting.

The images of indicator illumination may vary somewhat from the actual products.



Laser Alignment Pointer

F39-PTS



F39-PTG

Assists with beam adjustment.

Easy-to-see laser beam shows the sensor orientation. It can be attached on the spatter protection cover.

A variety of optional accessories for easy installation and angle adjustment

Reduce installation time and easily adjust beams after installation without relying on the expertise of experienced engineers.



Easy beam adjustment after installation

Problem

It is difficult to adjust beams after the light curtain is installed and the protection cover is attached.



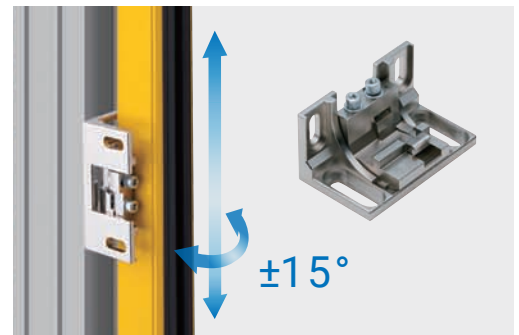
F3SG-SR/PG

The rugged metal housing of the light curtain does not need a protection cover. Beams can be adjusted using optional brackets.



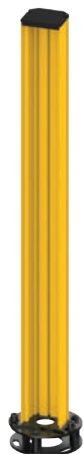
Adjustable Top / Bottom Bracket
F3SJ, F3SN Adapter
F39-LSGTB-SJ

This bracket used at the top and bottom of the light curtain provides horizontal adjustment of $\pm 22.5^\circ$.



Adjustable Side-Mount Bracket
(Intermediate Bracket)
F39-LSGA

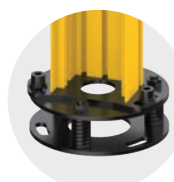
This bracket provides horizontal adjustment of $\pm 15^\circ$ as well as vertical position adjustment.



Floor Mount Column
F39-ST

This column can be installed independently of equipment or fences, almost anywhere.

Flexible protection



Mount-Column Adjustable Base
F39-STB

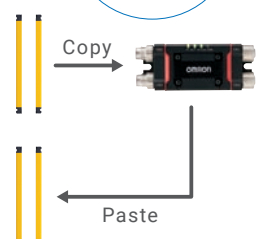
(The mount-column adjustable base is sold separately.)

Intelligent Tap
F39-SGIT-IL3

Settings can be copied and pasted between the same models of light curtains without using a PC, reducing time and effort to install many machines. Backed up settings are automatically restored at power on.



Setting without PC



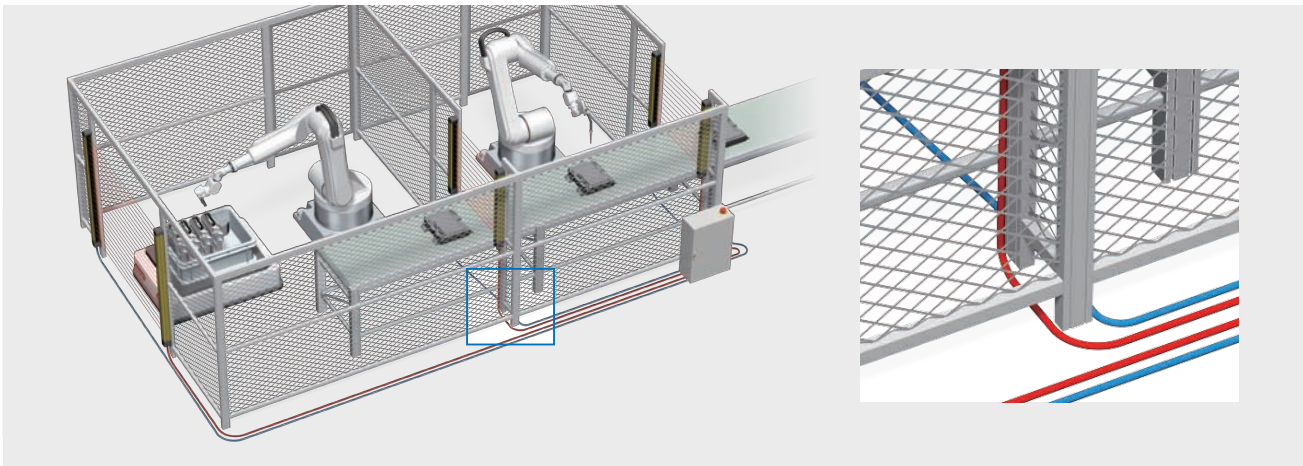
Reduced wiring system for various equipment

Wiring work during line installation and maintenance can be greatly reduced.

Simple wiring around large equipment

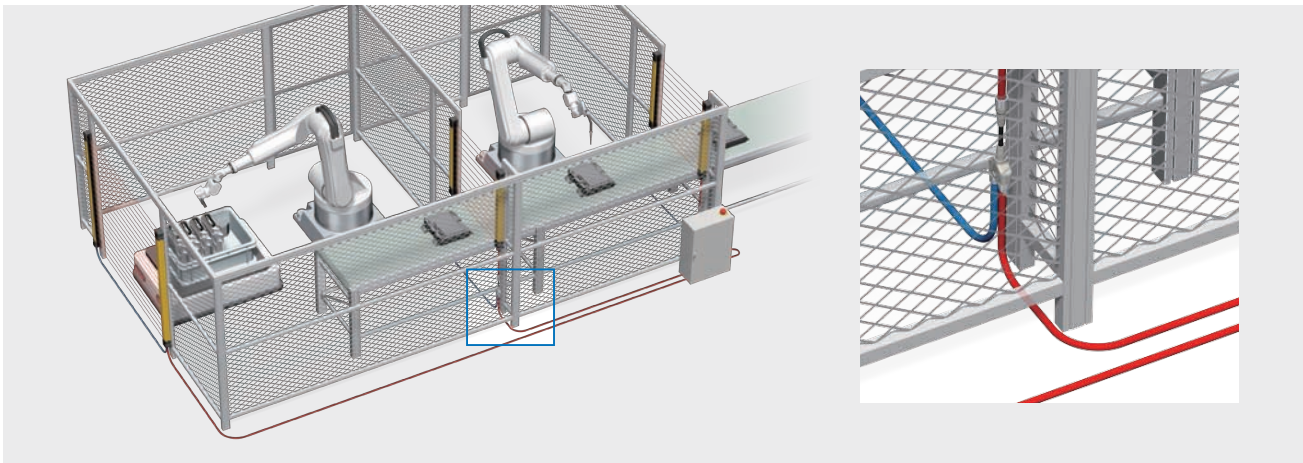
Problem

The distance of wiring around large facilities generally becomes long.



F3SG-SR/PG

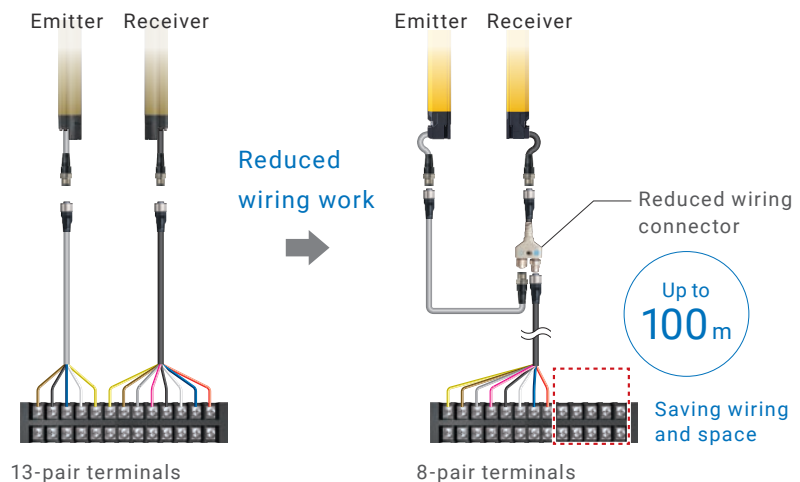
The reduced wiring system reduces the number of cables and terminal blocks and wiring time.



Reduced wiring connector



Y-Joint Plug /
Socket Connector
F39-GCNY2



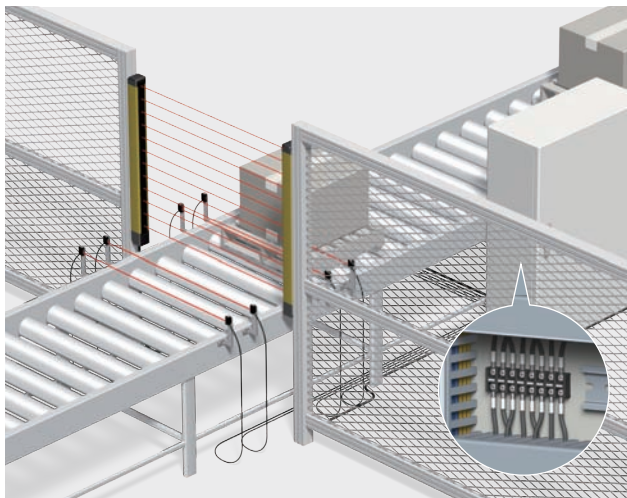
Note: Refer to the User's Manual (Cat. No. Z405) for more information on cable extension.

One cable connection to control panel

Options provide simple wiring for muting.

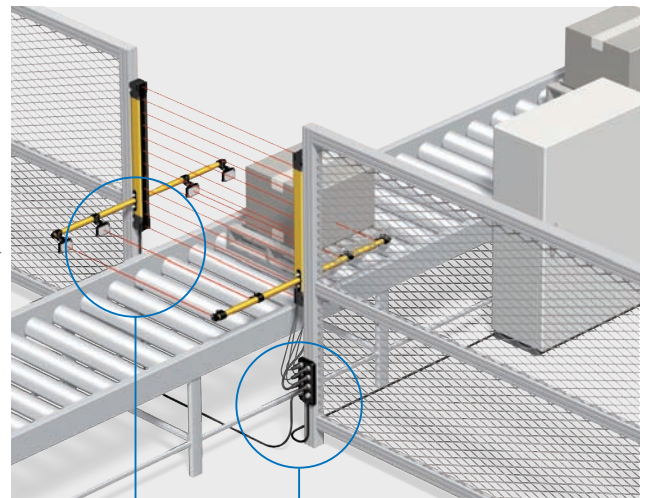
Problem

In order to maintain productivity, the light curtains are often used with muting sensors, which makes wiring in the control panel more complicated.



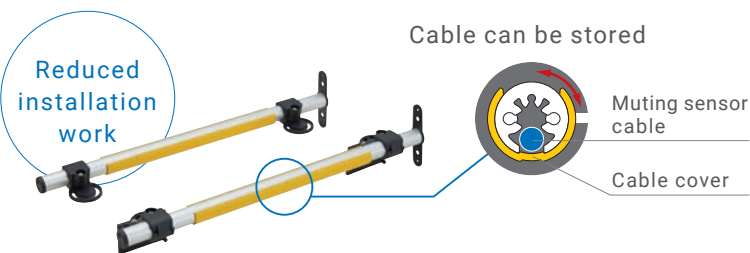
F3SG-SR/PG

Options to reduce wiring simplify wiring and installation of muting sensors.



Muting Sensor Arm Mounter F39-FMA

The muting sensor arm mounter facilitates installation of a muting sensor.



Muting Sensor Connection Box F39-GCN5

The connection box simplifies wiring for muting, and only one cable is used to connect to the control panel.



Note : The E3Z Muting Sensor is sold separately.

Smartclick connectors to quickly connect cables



Smartclick is a registered trademark of OMRON Corporation.

Insert fully



Robustness for operation in harsh environments

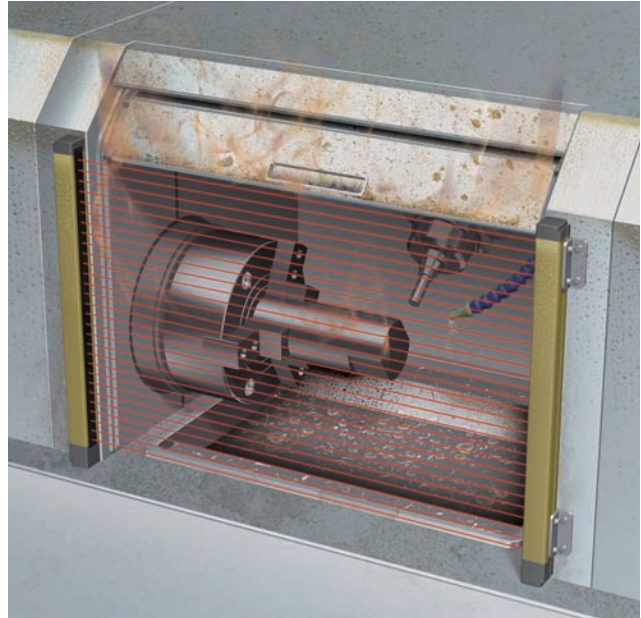
Specifications suitable for use in any environment contribute to stable operation.

Light curtains tend to malfunction in harsh environments where safety measures are required.



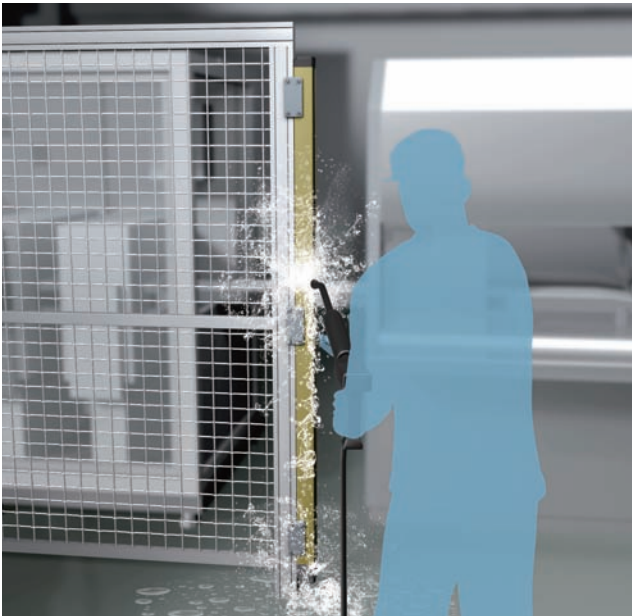
Cold storage warehouse

Safety measures cannot be implemented because there is no light curtain that can be used in cold environments.



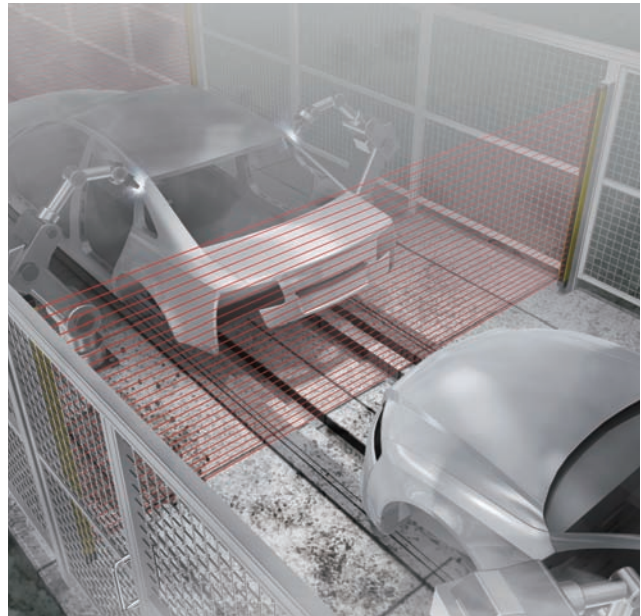
Metal working process

Oil that gets inside the light curtain causes failure at locations where oil mist is present.



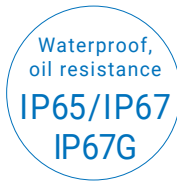
Food processing line

Cleaning solution that gets inside the light curtain during machine wash-down causes failure.



Use in harsh environments

The spattered or dusty optical surface of the light curtain causes a malfunction or an unplanned machine stop.



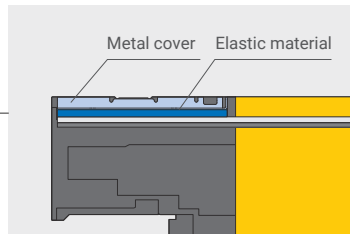
IEC 60529

JIS C 0920 Annex 1

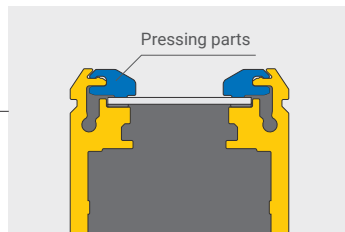
Tightly sealed structure improved environmental resistance

The unique structure firmly presses the optical surface. Stable sealing performance resists penetration of liquid inside the light curtain, which improves environmental resistance of the housing.

PATENTED



Technology 1 to tightly seal the cap



Technology 2 to tightly seal the housing

IP69K model for high-pressure wash-down applications

F3SG-SR-K



Waterproof
IP69K

ISO 20653

High-power optical system provides stable detection



The maximum operating range of the F3SG-SR Safety Light Curtain is 20 m and of the F3SG-PG Safety Multi-Light Beam 70 m. The high-power beam is robust in harsh environments.

Metal housing increases ruggedness

Laser marked information withstands harsh environments



Easy maintenance

Even inexperienced operators can easily check status and replace light curtains.

Easy error diagnosis with clear color indicators

The light curtain status can be checked at a glance.



Status indicator

Clear LED indicators with labels help perform predictive maintenance by dirt detection and determine the optimal replacement timing.

Colors and patterns indicate the status

| Status indicator* | Color | Status |
|-------------------|--------------------|-----------------------------------------------------------------------------------------|
| | Red/Illuminated | LOCKOUT state due to a recoverable error |
| | Red/Blinking | LOCKOUT state due to a replacement-recommended error |
| | Orange/Illuminated | Safety outputs are instantaneously turned OFF due to ambient light, vibration, or noise |
| | Orange/Blinking | The Intelligent Tap is in LOCKOUT state |

* The **M** status indicator is used for the 14-mm detection capability model.

Lamp

Output status can be checked at a glance.

F39-SGLP



Output information can be assigned to the lamp and ABI.



Status, such as light intensity drop, can be checked from a distance.

For information on other indicators, refer to the F3SG-SR/PG Datasheet *Indicator* or *Troubleshooting*.

Back up and restore settings with Intelligent Tap

Replacement and setting time during maintenance can be reduced to 1/10 or less*.

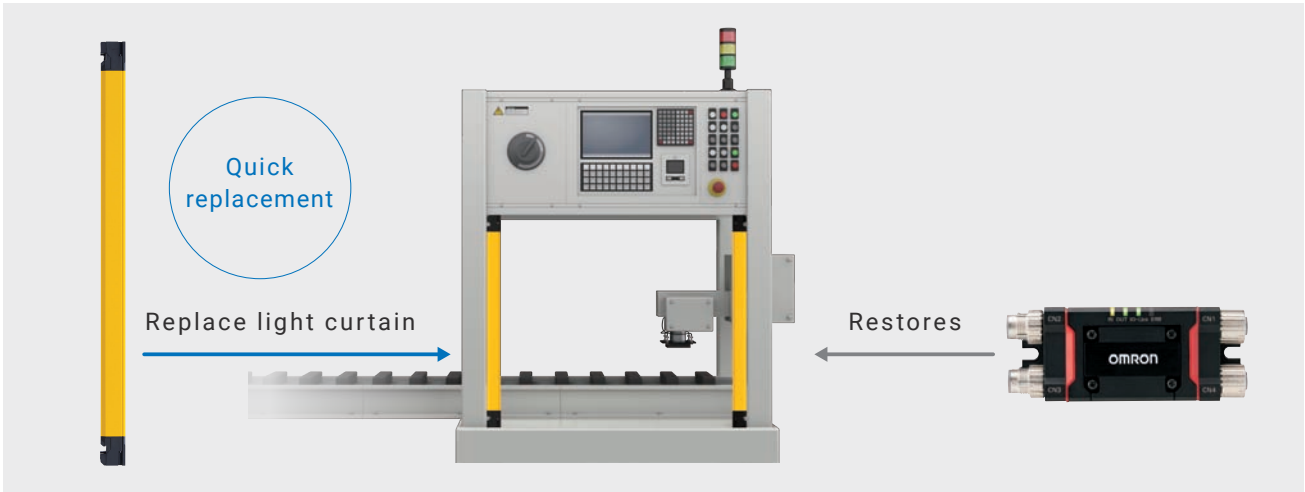
Plug & Work for quick replacement

Install the Intelligent Tap to automatically copy the settings of the replaced light curtain to a new one. Virtually anyone can easily replace light curtains and immediately restart the machine.

Replacement and setting time reduced to 1/10 or less*



Intelligent Tap
F39-SGIT-IL3



* Based on Omron investigation in June 2018.

Preventive maintenance

The status of the light curtain is monitored, and the abnormal state is displayed. This helps minimize machine downtime.

Visualization of status

Various devices can be connected via IO-Link.*¹
Low light intensity due to dirt on the light curtain can be displayed on the monitor, enabling preventive maintenance prior to erroneous detection.

IO-Link



No PC
required
on site

Easy on-site monitoring

The Bluetooth® communication unit allows you to monitor information about device stoppages on mobile devices.



SD Manager 3
Mobile APP



Note 1. Screen images for illustration purposes only.
2. You need to create screens.

Process data

- Auxiliary output status*²
- Muting input status
- Sequence error information
- Unstable state information (each ch)
- Power voltage information
- OSSD output status
- Reset/EDM/override input status
- Instantaneous block information (each ch)
- Light curtain/Intelligent Tap lockout information

Service data

- Light curtain information
- Light intensity information (1 byte: 0-255)
- Light curtain settings
- Light curtain internal status information
- Intelligent Tap power-on time information
- Intelligent Tap information
- Error log (4 errors)

Requirements

Android™ 7.0 or higher



Startup screen



Error log screen



Light level monitoring

System configuration example

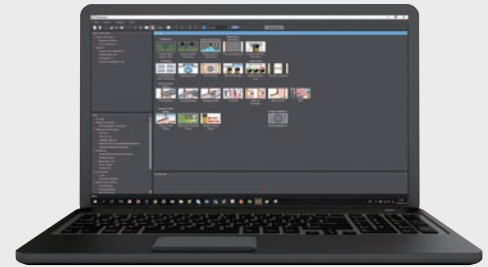


Note 1. Screen images for illustration purposes only.
2. You need to create screens.

*1. Refer to the IO-Link Series Catalog (Cat. No. Y229) for details. *2. Auxiliary output can be set using the SD Manager 3.

Easy setting via PC software SD Manager 3

The configuration tool allows you to easily monitor status and make settings without using a safety controller.



Manually loaded machining : PSDI



PSDI*, provided as standard, reduces operator effort and increases productivity

There is no need for the operator to press a two-hand control switch, saving operating time and increasing operating efficiency.

Single break

The machine restarts when the light curtain is interrupted and reset once.

Example : Manual loading and automatic unloading press

Double break

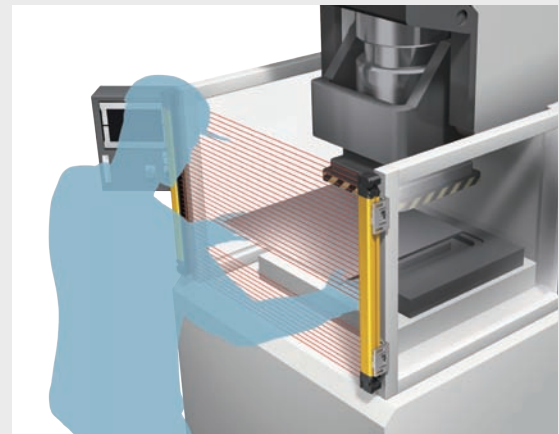
The machine restarts when the interruption and reset are repeated twice.

Example : Manual loading and manual unloading press

* PSDI : Presence Sensing Device Initiation

Read the *User's Manual* (Cat. No. Z405) before using.

Note: Comply with laws and regulations in the countries where the machine operates.



Dangerous restart prevention : Pre-Reset

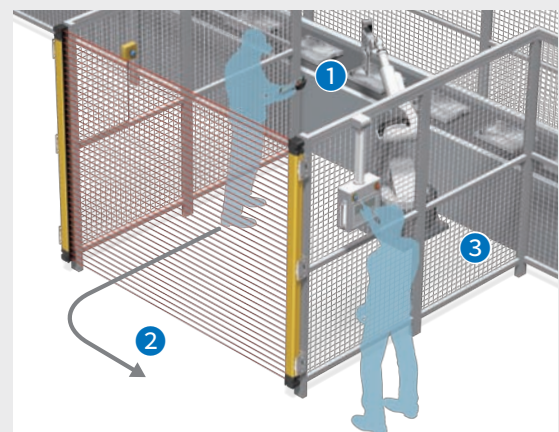


The Pre-Reset function prevents possible accidents

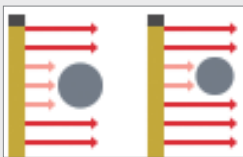
This function prevents the restart of equipment while an unseen worker is still near the robot, ensuring operators' safety.

- 1 Press the pre-reset switch inside the hazardous zone.
- 2 Get out of the hazardous zone.
- 3 Press the reset switch in the control panel to restart the light curtain.
The machine is ready for restart.

The equipment cannot be restarted until the pre-reset switch of the light curtain is pressed and the light curtain is reset.



Ignoring interrupted beams : Reduced Resolution

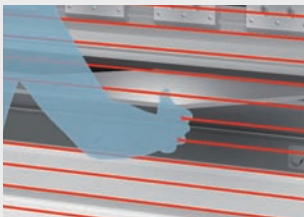


Reduced Resolution changes the detection capability of the light curtain

Even when objects (with a size of 1 to 3 interrupted beams) are present discontinuously, this function ignores them and keeps the safety outputs ON. This helps maintain productivity.

Example : Arm and body protection

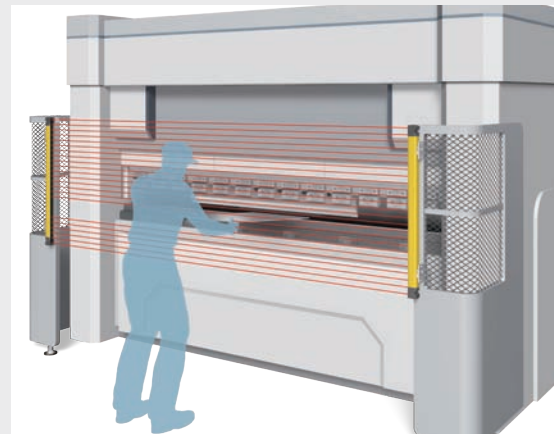
Safety output is kept ON even if worker's finger and an object interrupt 2 beams because they are allowed to enter.



When worker's arm or body, which interrupts 3 beams is detected, safety output is turned OFF.

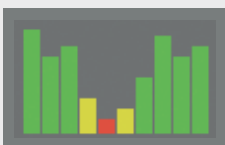


Note : Ensure that the desired safety distance is maintained.



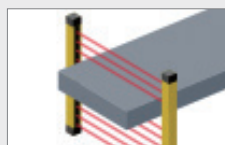
Built-in standard safety functions

Monitoring

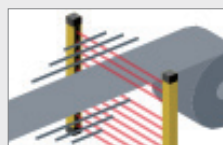


Incident / Ambient Light Level Information

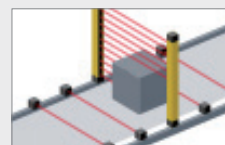
Safety function setting



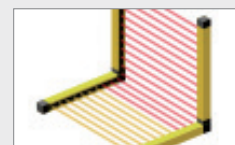
Fixed Blanking



Floating Blanking

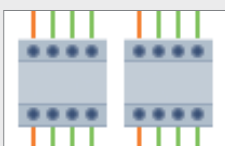


Muting/Override

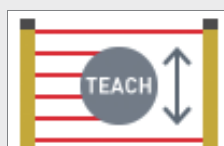


Warning Zone

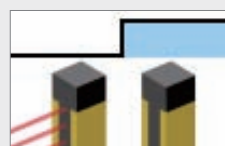
I/O setting



Interlock / External Device Monitoring



Teach-in Input



External Test Input

Operation state change


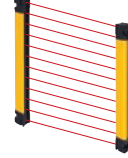
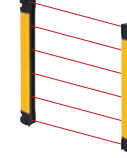
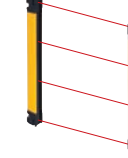





































Response Time Adjustment

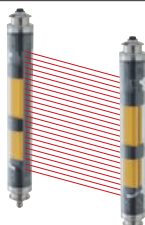
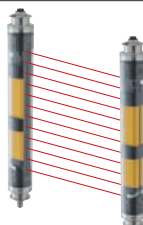
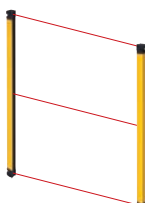
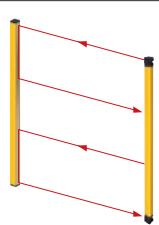
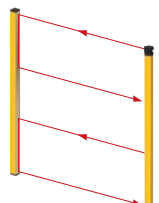













































Operating Range Selection

F3SG-SR/PG Series Features and specifications

| Series | | Protection at machine openings : | | | | |
|--------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--|
| | | Advanced/Standard | | | | |
| | |  |  |  |  | |
| Application |  Finger Protection |  | | | | |
| |  Hand Protection | |  | | | |
| |  Arm/Leg Protection | | |  | | |
| |  Body Protection | | | |  | |
| Specification | Detection capability | 14-mm dia. | 25-mm dia. | 45-mm dia. | 85-mm dia. | |
| | Beam gap | 10 mm | 20 mm | 40 mm | 80 mm | |
| | Max. operating range Min./Typ. | 10 m / 15 m | 20 m / 30 m | 20 m / 30 m | 20 m / 30 m | |
| | Protective height (Product length) | 160 to 2,000 mm | 160 to 2,480 mm | 240 to 1,520 mm | 280 to 920 mm | |
| | Number of beams | 15 to 199 | 8 to 124 | 6 to 38 | 4 to 12 | |
| | Degree of protection | IP65, IP67, and IP67G | | | | |
| Feature | Mutual interference prevention |  (No settings required for wired synchronization) | | | | |
| | PNP/NPN Selection | |  | | | |
| | External Test | |  | | | |
| | Interlock | |  /  | | | |
| | Lockout Reset | |  | | | |
| | Pre-Reset | |  /  | | | |
| | PSDI | |  | | | |
| | External Device Monitoring (EDM) | |  /  | | | |
| | Auxiliary Output | |  | | | |
| | Muting | |  | | | |
| | Blanking | |  /  | | | |
| | Reduced Resolution | |  | | | |
| | Warning Zone | |  | | | |
| | Operating Range Selection | |  /  /  | | | |
| | Response Time Adjustment | |  | | | |
| | Area Beam Indicator (ABI) | |  * Advanced models only | | | |
| | Designated Beam Output | |  | | | |
| Connection/wiring | Cascade connection | Available | Available | Available | Available | |
| | Reduced wiring system* ¹ | Available | Available | Available | Available | |
| Optional accessory | Laser Alignment Pointer | Available | Available | Available | Available | |
| | Lamp | Available | Available | Available | Available | |
| | Mirror Column | Available | Available | Available | Available | |
| | Muting Sensor Arm Mounter/Connection Box | Available | Available | Available | Available | |

 Setting by DIP switch on Intelligent Tap
  Setting by configuration tool SD Manager 3
  Setting by wiring
 Setting by end cap

| Safety Light Curtain F3SG-SR | | Protection around perimeters of equipment : Safety Multi-Light Beam F3SG-PG | | | |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| | IP69K model, Standard | | Perimeter Access Guarding | Perimeter Guarding Long Range | Perimeter Guarding Passive Mirror |
| |  |  |  |  |  |
| |  | | | | |
| | |  | | | |
| | | | | | |
| | | |  |  |  |
| | 14-mm dia. | 25-mm dia. | 30-mm dia. + beam gap | | |
| | 10 mm | 20 mm | 300 mm/400 mm/500 mm | | |
| | 8 m / 12 m | 16 m / 24 m | 20 m / 30 m | 70 m / 110 m | 5 m / 8 m |
| | 320 to 1,800 mm | 320 to 1,840 mm | 670 to 1,370 mm | | |
| | 31 to 179 | 16 to 92 | 2, 3 and 4 | | 2 and 4 |
| | IP65, IP67, and IP69K | | IP65 and IP67 | | |
| | No settings required for wired synchronization | |  (No settings required for wired synchronization) | | |
| |  | |  | | |
| |  | |  | | Not supported |
| |  /  *2 | |  /  | | |
| |  | |  | | |
| |  /  *2 | |  /  | | |
| |  *2 | | Not supported | | |
| |  /  *2 | |  /  | | |
| |  *2 | |  | | |
| |  *2 | |  | | |
| |  /  *2 | | Not supported | | |
| |  *2 | | Not supported | | |
| |  *2 | | Not supported | | |
| |  /  *2 | | Not supported |  /  /  | Not supported |
| |  *2 | |  | | |
| | Not supported | |  | | |
| |  *2 | |  | | |
| | Not available | | Not available | Not available | Not available |
| | Not available | | Available | Available | Available |
| | Not available | | Available | Available | Available |
| | Not available | | Available | Available | Available * ³ |
| | Not available | | Available | Available | Available * ⁴ |

*1. The reduced wiring system includes the Y-joint plug/socket connector, reset switch connector, muting sensor connection box, and muting sensor arm mounter. *2. When connecting F3SG-SR-K with open-ended cable to the intelligent tap, use a relay terminal block. *3. The lamp can be attached to the emitter/receiver. *4. The perimeter guarding passive mirror cannot be used with the mirror column.

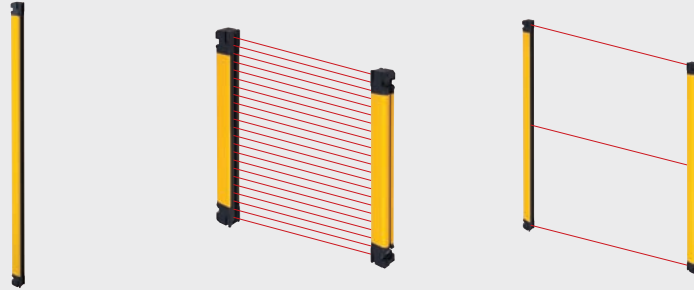
Safety Light Curtain/Safety Multi-Light Beam

F3SG-SR/PG Series Product selection

Choose your safety light curtain and optional accessories from our F3SG-SR/PG Series through a 4-step process.

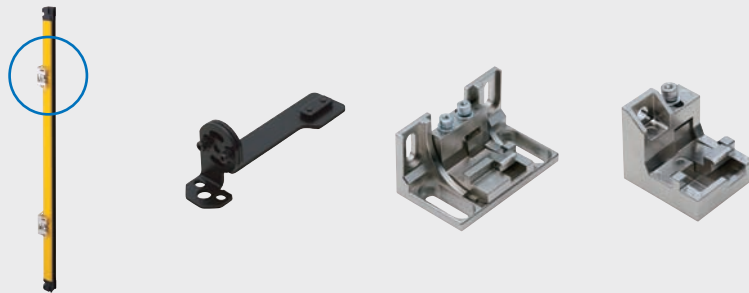
STEP 1

Choose a safety light curtain



STEP 2

Choose a mounting bracket



STEP 3*

Choose a wiring method



STEP 4*

Choose the optional accessories you need



* There is no need to follow STEP 3 and STEP 4 when the IP69K model is selected.

STEP 1 Choose a safety light curtain

Select a light curtain to suit your application.

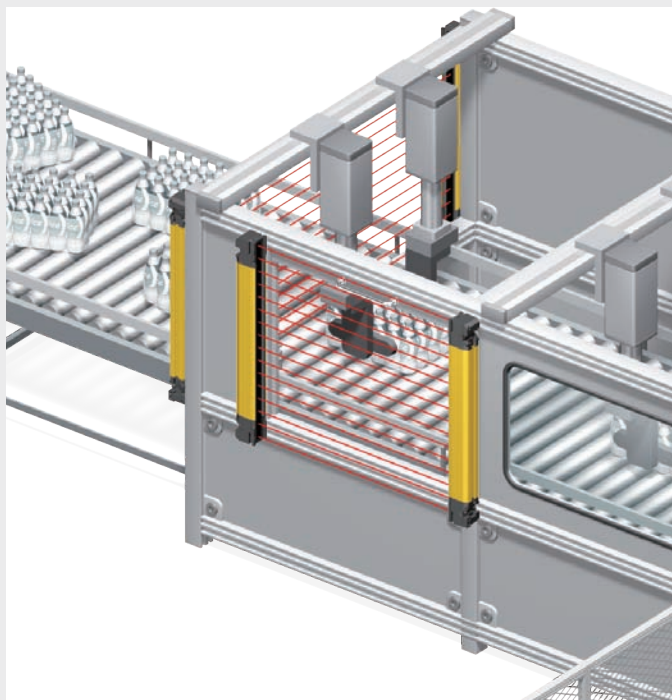
Protection at machine openings

SR

Safety Light Curtain

F3SG-SR Page 24

IP69K model Page 32

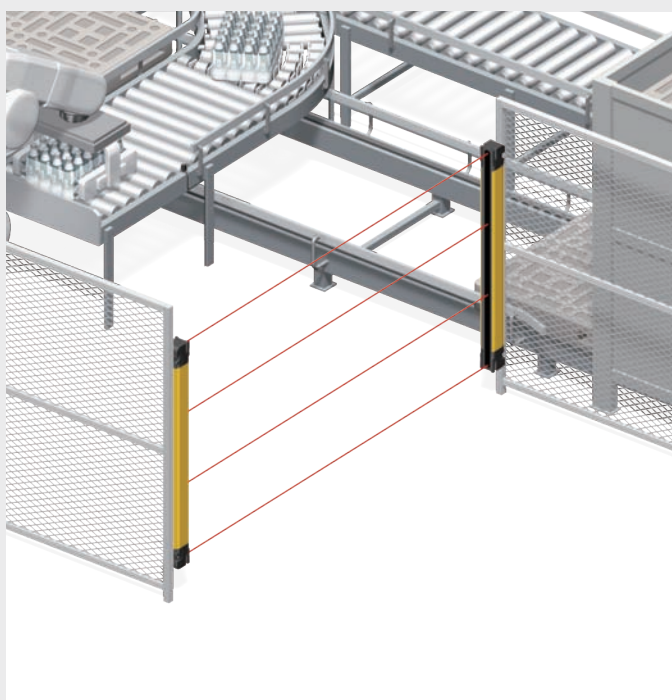


Protection around perimeters of equipment

PG

Safety Multi-Light Beam

F3SG-PG Page 26



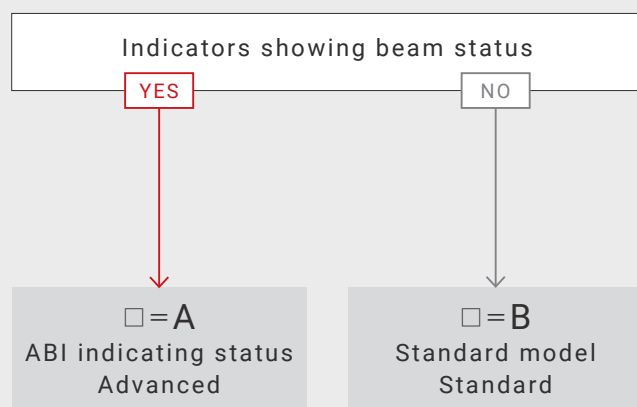
Protection at machine openings



Complete the model number.

F3SG-4SR - -
1 3 2 4

1 Select an application.



2 Select detection capability.

| Type | 2 |
|---------------------------------------------------------------------|------------------------------------------------|
| Finger Protection Detection capability 14-mm dia. | <input type="text"/> <input type="text"/> = 14 |
| Hand Protection Detection capability 25-mm dia. | <input type="text"/> <input type="text"/> = 25 |
| Arm/Leg Protection Detection capability 45-mm dia. | <input type="text"/> <input type="text"/> = 45 |
| Body Protection Detection capability 85-mm dia. | <input type="text"/> <input type="text"/> = 85 |

3 Select protective height.

Finger Protection

| Protective height (mm) | Number of beams | 3 | 4* |
|------------------------|-----------------|--------------------------------------------------------------------------------------------|----|
| 160 | 15 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0160 | |
| 200 | 19 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0200 | F |
| 240 | 23 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0240 | |
| 280 | 27 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0280 | F |
| 320 | 31 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0320 | |
| 360 | 35 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0360 | F |
| 400 | 39 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0400 | |
| 440 | 43 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0440 | F |
| 480 | 47 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0480 | |
| 520 | 51 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0520 | F |
| 560 | 55 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0560 | |
| 600 | 59 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0600 | F |
| 640 | 63 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0640 | |
| 680 | 67 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0680 | F |
| 720 | 71 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0720 | F |
| 760 | 75 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0760 | F |
| 800 | 79 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0800 | |
| 840 | 83 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0840 | F |
| 880 | 87 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0880 | F |
| 920 | 91 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0920 | F |
| 960 | 95 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 0960 | F |
| 1000 | 99 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 1000 | |
| 1200 | 119 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 1200 | |
| 1400 | 139 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 1400 | |
| 1600 | 159 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 1600 | |
| 1800 | 179 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 1800 | |
| 2000 | 199 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> = 2000 | |

* Flexible height model (Increments of 40 mm)

Hand Protection

| Protective height (mm) | Number of beams | 3 | 4* |
|------------------------|-----------------|-----------|----|
| 160 | 8 | □□□□=0160 | |
| 200 | 10 | □□□□=0200 | F |
| 240 | 12 | □□□□=0240 | |
| 280 | 14 | □□□□=0280 | F |
| 320 | 16 | □□□□=0320 | |
| 360 | 18 | □□□□=0360 | F |
| 400 | 20 | □□□□=0400 | |
| 440 | 22 | □□□□=0440 | F |
| 480 | 24 | □□□□=0480 | |
| 520 | 26 | □□□□=0520 | F |
| 560 | 28 | □□□□=0560 | |
| 600 | 30 | □□□□=0600 | F |
| 640 | 32 | □□□□=0640 | |
| 680 | 34 | □□□□=0680 | F |
| 720 | 36 | □□□□=0720 | |
| 760 | 38 | □□□□=0760 | F |
| 800 | 40 | □□□□=0800 | |
| 840 | 42 | □□□□=0840 | F |
| 880 | 44 | □□□□=0880 | |
| 920 | 46 | □□□□=0920 | F |
| 960 | 48 | □□□□=0960 | |
| 1000 | 50 | □□□□=1000 | F |
| 1040 | 52 | □□□□=1040 | |
| 1120 | 56 | □□□□=1120 | |
| 1200 | 60 | □□□□=1200 | |
| 1280 | 64 | □□□□=1280 | |
| 1360 | 68 | □□□□=1360 | |
| 1440 | 72 | □□□□=1440 | |
| 1520 | 76 | □□□□=1520 | |
| 1600 | 80 | □□□□=1600 | |
| 1680 | 84 | □□□□=1680 | |
| 1760 | 88 | □□□□=1760 | |
| 1840 | 92 | □□□□=1840 | |
| 1920 | 96 | □□□□=1920 | |
| 2080 | 104 | □□□□=2080 | |
| 2280 | 114 | □□□□=2280 | |
| 2480 | 124 | □□□□=2480 | |

Arm/Leg Protection

| Protective height (mm) | Number of beams | 3 |
|------------------------|-----------------|-----------|
| 240 | 6 | □□□□=0240 |
| 400 | 10 | □□□□=0400 |
| 560 | 14 | □□□□=0560 |
| 720 | 18 | □□□□=0720 |
| 880 | 22 | □□□□=0880 |
| 1200 | 30 | □□□□=1200 |
| 1520 | 38 | □□□□=1520 |

Body Protection

| Protective height (mm) | Number of beams | 3 |
|------------------------|-----------------|-----------|
| 280 | 4 | □□□□=0280 |
| 440 | 6 | □□□□=0440 |
| 600 | 8 | □□□□=0600 |
| 760 | 10 | □□□□=0760 |
| 920 | 12 | □□□□=0920 |

* Flexible height model (Increments of 40 mm)

Protection around perimeters of equipment



Safety Multi-Light Beam
F3SG-PG

Complete the model number.

F3SG-4PGA -

2

1

1 Select an application and then
select a beam gap and number of beams.

Select an application.

Protection around large equipment (operating range > 20 m)

NO
↓

YES
↓

Protection around small equipment (operating range < 5 m)

NO
↓

YES
↓

Standard model
Perimeter Access
Guarding



F3SG-PGA-□A

Simple wiring
Perimeter
Guarding
Passive Mirror



F3SG-PGA-□C

Protection up
to 70 m long
Perimeter
Guarding Long
Range



F3SG-PGA-□L

Select a beam gap and number of beams.

| Beam gap/ number of beams | 1 |
|------------------------------|-------|
| 500 mm/2 beams | □□=2A |
| 400 mm/3 beams | □□=3A |
| 300 or 400 mm/ 4 beams | □□=4A |

| Beam gap/ number of beams | 1 |
|------------------------------|-------|
| 500 mm/2 beams | □□=2C |
| - | - |
| 300 or 400 mm/ 4 beams | □□=4C |

| Beam gap/ number of beams | 1 |
|------------------------------|-------|
| 500 mm/2 beams | □□=2L |
| 400 mm/3 beams | □□=3L |
| 300 or 400 mm/ 4 beams | □□=4L |

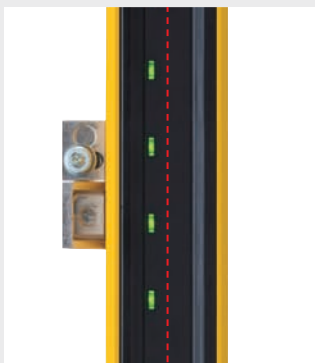
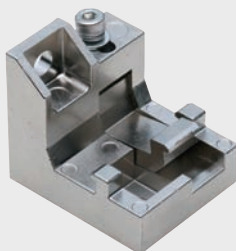
2 Select Product length.

| Product length (mm) | Number of beams | 2 |
|------------------------|--------------------|-------------------------------------------------------------------------------------------|
| 670 | 2 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> =0670 |
| 970 | 3 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> =0970 |
| 1070 | 4 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> =1070 |
| 1370 | 4 | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> =1370 |

STEP 2 Choose an optional mounting bracket (sold separately)

Brackets used when beam adjustment is not required after the light curtain is installed

Standard Bracket
(Intermediate Bracket)
F39-LSGF



- Side mounting and backside mounting
- Beams not adjustable after installation
- Two brackets per set

Suitable for mounting on an aluminum profile so that its center is aligned with the center of beams.

Brackets that allow beam adjustment after the light curtain is installed

Adjustable Side-Mount Bracket
(Intermediate Bracket)
F39-LSGA



- Vertical adjustment
Angle adjustment range : $\pm 15^\circ$
- Side mounting and backside mounting
- Two brackets per set

Adjustable Top/
Bottom Bracket
F3SJ, F3SN Adapter
F39-LSGTB-SJ



- Used at the top and bottom of the light curtain
- Angle adjustment range : $\pm 22.5^\circ$
- For replacement of F3SJ or F3SN Series
- Side mounting and backside mounting
- Two brackets per set

Mounting brackets to easily replace your existing Omron light curtains are also available.

For replacement of
F3SG-RA/RE Series
Adjustable Top/Bottom Bracket
F3SG-RA/RE Adapter
F39-LSGTB-RE



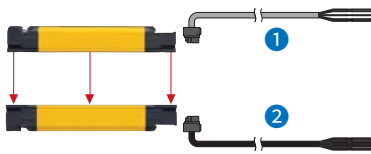
For replacement of MS4800 Series
and F3SR-B Series
Adjustable Top/Bottom Bracket
MS4800/F3SR Adapter
F39-LSGTB-MS



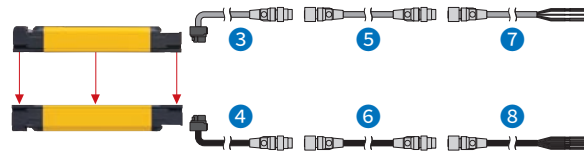
STEP 3 Choose a wiring method

One light curtain

* Emitter-side cables (1, 3, 5, 7) are not necessary with the F3SG-PG-C (passive mirror).

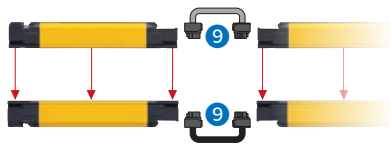


• Cable extension (up to 100 m)

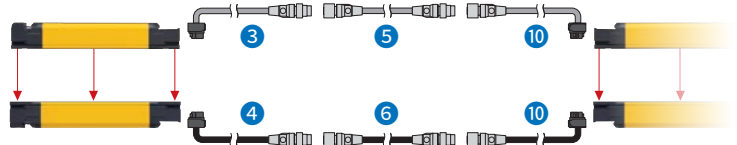


Series-connected

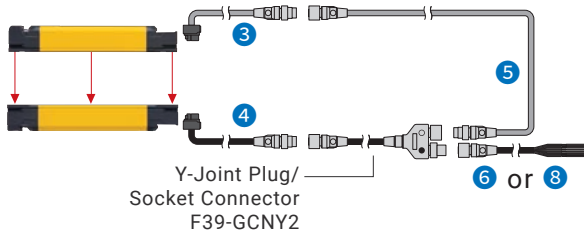
• Side-by-side cascading (12 cm)



• Cascading cable extension (up to 10 m)

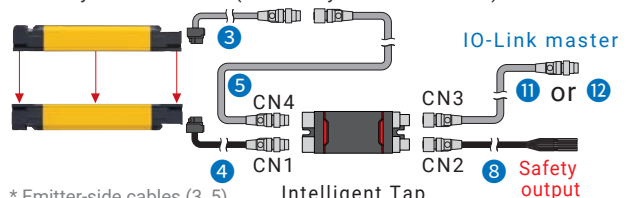


Use of reduced wiring connector



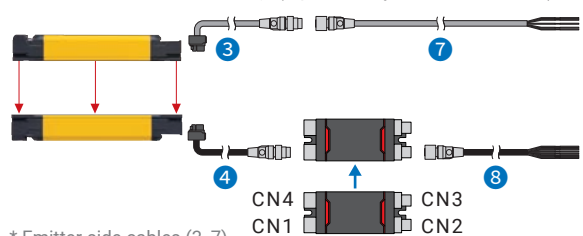
Use of Intelligent Tap

• Always connected (Wired synchronization)



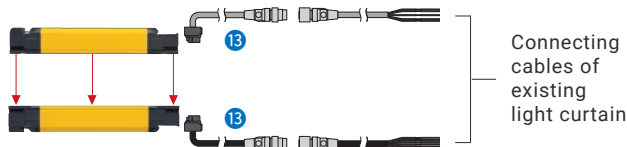
* Emitter-side cables (3, 5) are not necessary with the F3SG-PG-C (passive mirror).

• Connected for setting (optical synchronization)



* Emitter-side cables (3, 7) are not necessary with the F3SG-PG-C (passive mirror).

Replacement of Omron light curtain



Optional cables (sold separately)

| No. | Product name | Appearance | Model | Cable length | Remarks |
|-----|-----------------------------------|------------|------------------|--------------|------------------------------------------------|
| 1 | Root-Straight Cable | | F39-JG□C-L | 3, 7, 10 m | For emitter, gray |
| 2 | Root-Straight Cable | | F39-JG□C-D | 3, 7, 10 m | For receiver, black |
| 3 | Root-Plug Cable for Extended | | F39-JGR3K-L | 0.3 m | For emitter, gray |
| 4 | Root-Plug Cable for Extended | | F39-JGR3K-D | 0.3 m | For receiver, black |
| 5 | Extended Plug-Socket Cable | | F39-JG□B-L | 3, 10, 20 m | For emitter, gray |
| 6 | Extended Plug-Socket Cable | | F39-JG□B-D | 3, 10, 20 m | For receiver, black |
| 7 | Extended Socket-Straight Cable | | F39-JG□A-L | 3, 10 m | For emitter, gray |
| 8 | Extended Socket-Straight Cable | | F39-JG□A-D | 3, 10 m | For receiver, black |
| 9 | Side-by-side Cascading Cable | | F39-JGR12L | 12 cm | For emitter and receiver, two cables per set |
| 10 | Cascading Cable for Extended | | F39-JGR3W | 0.3 m | For emitter and receiver, two cables per set |
| 11 | Plug-Socket Cable for IO-Link | | F39-JG□B-L | 3, 10, 20 m | For connection to GX-ILM08C |
| 12 | Socket-Straight Cable for IO-Link | | XS5F-D521-DJ0-IL | 2 m | For connection to NX-ILM400 |
| 13 | Conversion Cable | | F39-JGR3K-SJ | 0.3 m | For use of wiring for F3SN, F3SJ-A/-B, or F3SR |
| | | | F39-JGR3K-RE | 0.3 m | For use of wiring for F3SG-RE |
| | | | F39-JGR3K-MS | 0.3 m | For use of wiring for MS4800 |

STEP 4 Choose the optional accessories (sold separately) you need

Intelligent Tap and configuration tool SD Manager 3

Easy monitoring, setting, and IO-Link connection with external devices

Intelligent Tap
F39-SGIT-IL3



Configuration tool for PC
SD Manager 3

Note : Use the SD Manager 3 with the F39-SGIT-IL3 Intelligent Tap.



Bluetooth®
Communication Unit
F39-SGBT



Monitoring tool for smartphones
SD Manager 3 Mobile APP

Requirements
Android 7.0 or higher

For details, refer to your local Omron website.



Reduced wiring system

Simple wiring of light curtains and reset switches

Y-Joint Plug/Socket Connector
F39-GCNY2



Reset Switch Connector
F39-GCNY3

Note : Please prepare a reset switch (NC contact).



Muting system

Easy installation and wiring of muting sensors

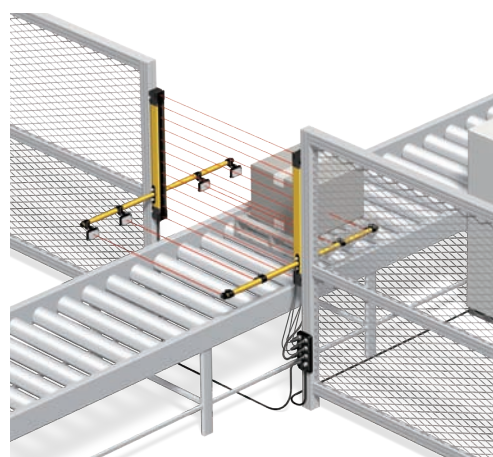
Muting Sensor Arm Mounter
F39-FMA□□□T
(Through-beam)

F39-FMA□□□R
(Retro-reflective)

Muting Sensor Connection Box
F39-GCN5

Muting Sensor Arm Mounter Bracket for SLC
F39-LMAF1

(The E3Z Muting Sensor is sold separately.)

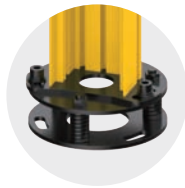


Floor mount system

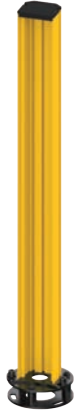
Easy installation of light curtains and mirrors on floors

Floor Mount Column
F39-ST

Mount-Column
Adjustable Base
F39-STB

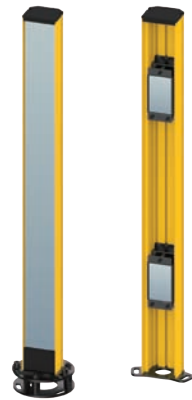


(The Safety light curtain is sold separately.)



Mirror Column
(For F3SG-SR/PG
Safety Light Curtain/
Safety Multi-Light Beam)
F39-SML

Mirror Column
(for F3SG-PG
Safety Multi-Light Beam)
F39-PML



(The mount-column adjustable base is sold separately.)

Laser Alignment Pointer

Easy beam adjustment with laser beam

F39-PTS



F39-PTG



Lamp

At-a-glance check of light curtain status

F39-SGLP

Note: The Lamp does not support Bluetooth® communication.



Spatter Protection Cover

Protection of optical surfaces against spatter

F39-HSG



Protection in high-pressure wash-down environments

SR

Safety Light Curtain
F3SG-SR-K IP69K model

Complete the model number.
F3SG-4SRB --K


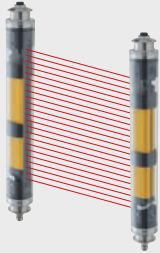

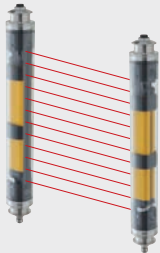
2

1

STEP 1 Choose a safety light curtain

Select detection capability and protective height.

1 Select detection capability.

| Type | 1 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| <div><div></div><div>Finger Protection</div><div>Detection capability 14-mm dia.</div><div></div></div> | <div><div></div><div></div><div>=14</div></div> |
| <div><div></div><div>Hand Protection</div><div>Detection capability 25-mm dia.</div><div></div></div> | <div><div></div><div></div><div>=25</div></div> |

2 Select protective height.

| Finger Protection | | |
|------------------------|-----------------|---------------------------------------------------------------|
| Protective height (mm) | Number of beams | 2 |
| 320 | 31 | <div><div></div><div></div><div></div><div></div></div> =0320 |
| 400 | 39 | <div><div></div><div></div><div></div><div></div></div> =0400 |
| 480 | 47 | <div><div></div><div></div><div></div><div></div></div> =0480 |
| 560 | 55 | <div><div></div><div></div><div></div><div></div></div> =0560 |
| 640 | 63 | <div><div></div><div></div><div></div><div></div></div> =0640 |
| 720 | 71 | <div><div></div><div></div><div></div><div></div></div> =0720 |
| 800 | 79 | <div><div></div><div></div><div></div><div></div></div> =0800 |
| 880 | 87 | <div><div></div><div></div><div></div><div></div></div> =0880 |
| 960 | 95 | <div><div></div><div></div><div></div><div></div></div> =0960 |
| 1000 | 99 | <div><div></div><div></div><div></div><div></div></div> =1000 |
| 1200 | 119 | <div><div></div><div></div><div></div><div></div></div> =1200 |
| 1400 | 139 | <div><div></div><div></div><div></div><div></div></div> =1400 |
| 1600 | 159 | <div><div></div><div></div><div></div><div></div></div> =1600 |
| 1800 | 179 | <div><div></div><div></div><div></div><div></div></div> =1800 |

| Hand Protection | | |
|------------------------|-----------------|---------------------------------------------------------------|
| Protective height (mm) | Number of beams | 3 |
| 320 | 16 | <div><div></div><div></div><div></div><div></div></div> =0320 |
| 400 | 20 | <div><div></div><div></div><div></div><div></div></div> =0400 |
| 480 | 24 | <div><div></div><div></div><div></div><div></div></div> =0480 |
| 560 | 28 | <div><div></div><div></div><div></div><div></div></div> =0560 |
| 640 | 32 | <div><div></div><div></div><div></div><div></div></div> =0640 |
| 720 | 36 | <div><div></div><div></div><div></div><div></div></div> =0720 |
| 800 | 40 | <div><div></div><div></div><div></div><div></div></div> =0800 |
| 880 | 44 | <div><div></div><div></div><div></div><div></div></div> =0880 |
| 960 | 48 | <div><div></div><div></div><div></div><div></div></div> =0960 |
| 1000 | 50 | <div><div></div><div></div><div></div><div></div></div> =1000 |
| 1040 | 52 | <div><div></div><div></div><div></div><div></div></div> =1040 |
| 1120 | 56 | <div><div></div><div></div><div></div><div></div></div> =1120 |
| 1200 | 60 | <div><div></div><div></div><div></div><div></div></div> =1200 |
| 1280 | 64 | <div><div></div><div></div><div></div><div></div></div> =1280 |
| 1360 | 68 | <div><div></div><div></div><div></div><div></div></div> =1360 |
| 1440 | 72 | <div><div></div><div></div><div></div><div></div></div> =1440 |
| 1520 | 76 | <div><div></div><div></div><div></div><div></div></div> =1520 |
| 1600 | 80 | <div><div></div><div></div><div></div><div></div></div> =1600 |
| 1680 | 84 | <div><div></div><div></div><div></div><div></div></div> =1680 |
| 1760 | 88 | <div><div></div><div></div><div></div><div></div></div> =1760 |
| 1840 | 92 | <div><div></div><div></div><div></div><div></div></div> =1840 |

STEP 2 Choose an optional mounting bracket (sold separately)

IP69K Model Mounting Bracket

F39-LSGTB-K

Two brackets per set



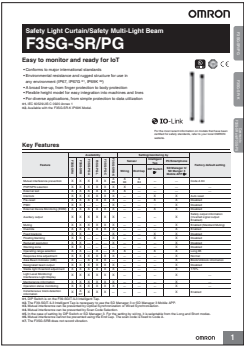
For details of mounting brackets, refer to the F3SG-SR/PG Datasheet.

Note: When connecting F3SG-SR-K with open-ended cable to the intelligent tap, use a relay terminal block. Read the User's Manual (Cat .No. Z405) before using the intelligent tap for setting and monitoring.



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Datasheet



Safety Light Curtain/
Safety Multi-Light Beam
F3SG-SR/PG

Cat. No. F117

Introduction of safety component catalogs



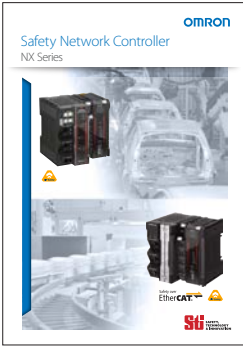
IO-Link Products
IO-Link Series

Cat. No. Y229



Safety Controller
G9SP

Cat. No. F090



Safety Network Controller
NX-Series

Cat. No. F104

Note: Do not use this document to operate the Unit.

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