Panasonic
INDUSTRY

Type 4

Compact Safety Light Curtain

SF4B-C SERIES

Category 4 PLe SIL3

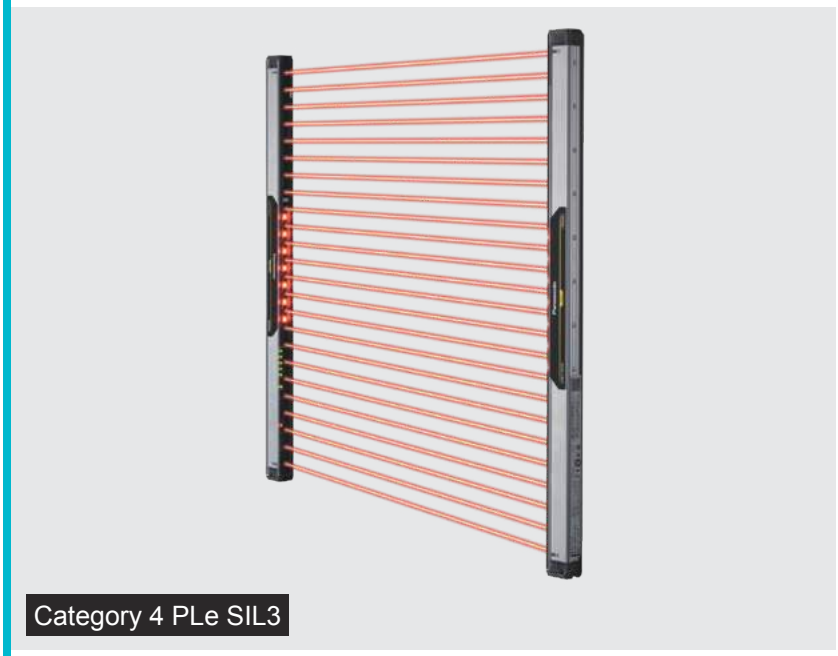
The control category differs depending on the configuration and wiring of the external circuit.

2023.8

* For the latest information, please visit our company website.

Compact Safety Light Curtain Type 4

SF4B-C SERIES



Category 4 PLe SIL3

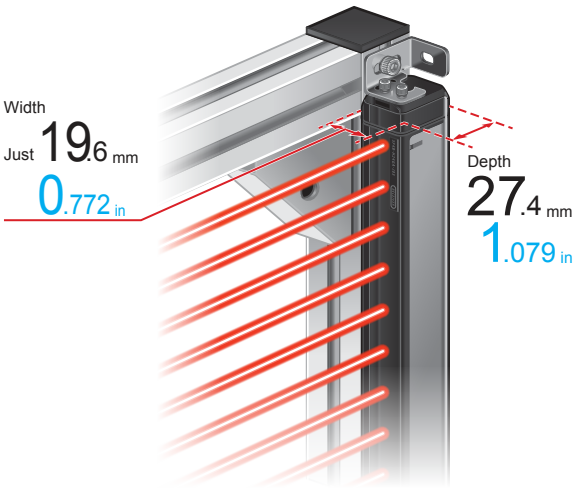
The control category differs depending on the configuration and wiring of the external circuit.

CE | UKCA | TÜV SÜD Certified | TÜV SÜD c us Certified by NRTL | Conforming to OSHA / ANSI | Certified

Compact, light weight design, and advanced functionality in one package

Compact profile design, maximize the machinery opening area

The **SF4B-C** series is designed to fit onto an aluminum frame, maximizing the machinery opening area.
It can even allow zero dead zone.

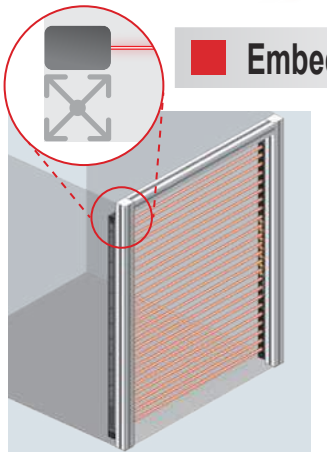


Side mounting

- The presence of safety light curtain does not narrow the opening area.
- The safety light curtain is thin, so its bulge from frame can be minimized.

* When using standard mounting brackets **MS-SF4BC-1** (optional)

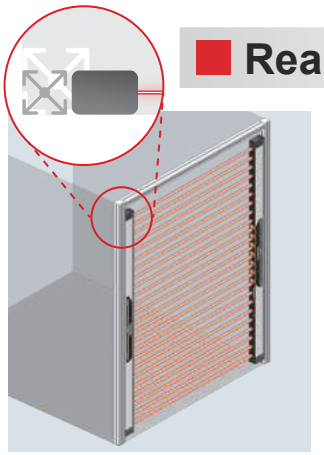
Embedded mounting (side)



- The safety light curtain fits onto frame perfectly, even in embedded installations.
- The safety light curtain protrudes neither into the machinery opening nor outside the frame.
- The safety light curtain will not be damaged due to collision with workpiece.

* When using standard mounting brackets **MS-SF4BC-1** (optional)

Rear mounting



- The safety light curtain fits onto a 20 × 20 mm 0.787 × 0.787 in aluminum frame perfectly.
- The safety light curtain does not protrude from the frame.

* When using standard mounting brackets **MS-SF4BC-1** (optional)

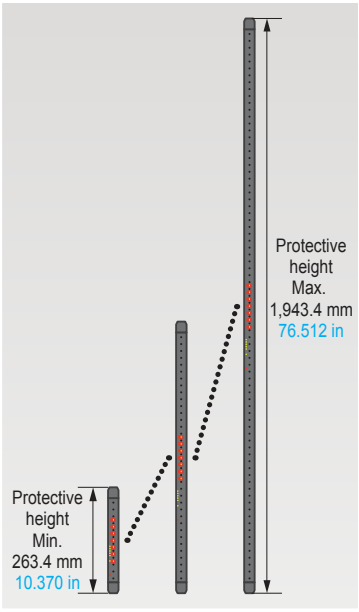
Plastic × metal

The **SF4B-C** series features a proprietary double structure of a “plastic body” with a “metal inner frame” which lightens the weight while maintaining the durability.

* This is an only image for seamless enclosure partially cut.

Maximum protective height of 1,943.4 mm 76.512 in

Despite its compact, plastic body, the **SF4B-C** series features a metal inner frame that increases toughness and also keeps its enclosure not to curve.
Protective heights range from 263.4 mm to 1,943.4 mm 10.370 in to 76.512 in.



45% lighter* for easy installation in high places and when mounting long models

Thanks to its plastic body, the **SF4B-C** series is 45 % lighter* than previous models with aluminum enclosures. This helps to reduce the overall weight of the equipment during transport and when shipping it overseas.

* Comparing **SF4B-H80<V2>** with **SF4B-H80CA-J05**

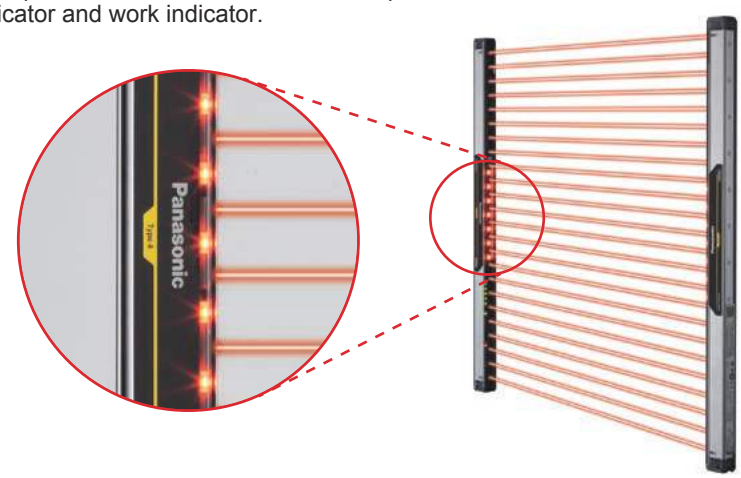
Large multi-purpose indicator

SF4B-□CA-J05

The **SF4B-C** series is equipped with the large multi-purpose indicator at the center of the unit. The indicator shows the presence of the safety light curtain, helping to prevent unintentional beam interruption. The indicator can be used in a variety of applications such as a muting indicator and work indicator.

Exceptional visibility with wide angle

The large multi-purpose indicator shines brightly through the plastic body to ensure exceptional visibility.



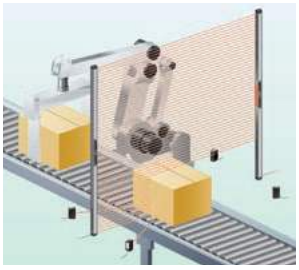
Handy-controller SFB-HC (optional) offers easy access to settings for a range of functionality

Muting control function for individual beams: Limit the muting area

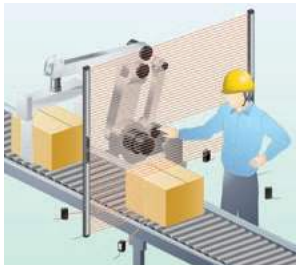
SF4B-□CA-J05

The **SFB-HC** handy-controller (optional) allows to perform muting control for certain beams. Since beam channels can be specified, so there is no need to install a guard to prevent intrusions. For example, according to the height of a sensing object, when muting control from the lowermost beam channel to the 10th beam channel is activated, the safety light curtain will detect any beam interruption at the 11th or higher beam channel as a human entry and stop the machinery.

During muting (line operating)

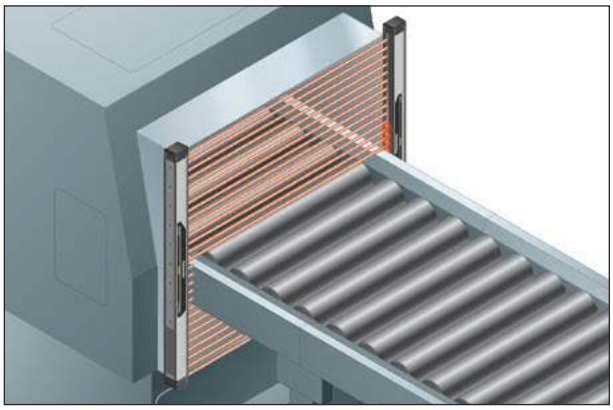


Line stopped



Fixed blanking function: Choose active beam channels

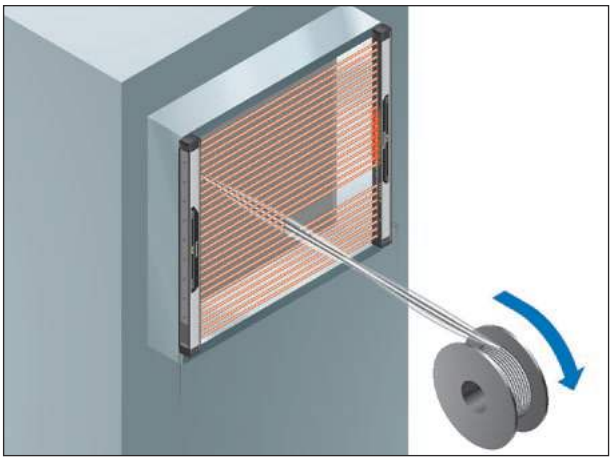
The **SFB-HC** handy-controller (optional) provides a fixed blanking function that prevents control output (OSSD) from turning off even if certain beam channels are interrupted. This function is convenient for applications where an obstacle always interrupts certain beam channels.
Additionally, it is safe since control output (OSSD) is forcibly turned off in the event the obstruction moves outside the detection area.



Floating blanking function: Disable unspecified beams

The floating blanking function allows to disable up to three unspecified beam channels. Control output (OSSD) will not turn off as long as the number of interrupted beam channels is less than the set number of beam channels. This function is convenient when an obstruction moves inside the detection area during setup changes or when loading materials within the detection area of safety light curtain.

* The min. sensing object will change when the floating blanking function is used.



Use output and indicators to achieve preventive maintenance when the incident light intensity gets unstable

By setting the auxiliary output switching function to off or on when light reception becomes unstable, the safety light curtain provides notification in the event of a reduction in the incident light intensity due to beam misalignment or dirt via auxiliary output (non-safety output) in addition to the incident light intensity indicator.

Incident light intensity indicator			Auxiliary output	
			Set to off for unstable incident light (Note 3)	Set to on for unstable incident light (Note 3)
Incident light intensity (Note 1) 130 %		Under stable light received condition: Green (Incident light intensity: 130 % or greater)	ON	OFF
100 %		Under unstable light received condition: Orange (Incident light intensity: 100 % to less than 130 %)	OFF	ON
		When light is interrupted (Note 2): Off	—	—

Notes: 1) An incident light intensity value of 100 % refers to the threshold value at which control outputs (OSSD1, OSSD2) change from off to on.
2) Interruption of the light refers to the presence of an object interrupts beam in the detection area.
3) This setting is not available when using muting control for individual beams, fixed blanking, or floating blanking.

Extensive array of other functions

PNP/NPN polarity support

Since a single model number can be switched between PNP and NPN input, fewer model numbers need to be registered.

External device monitor function

External devices (such as safety relays, etc.) can be directly connected to the handy-controller without any dedicated unit, simplifying installation, reducing costs, and helping to avoid various problems.

Extraneous light check & avoid (ELCA) function

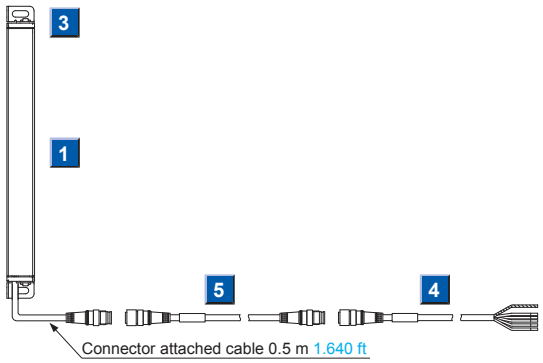
The ELCA function reduces interference without an interference prevention line.

Beam-axis alignment indicator

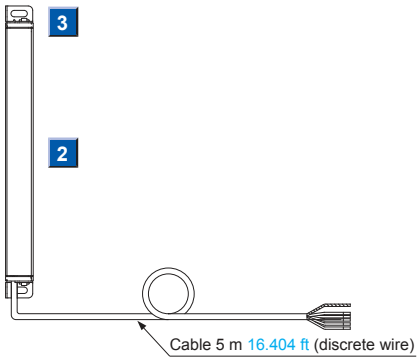
Beam-axis alignment indicators are indicated in 4 blocks, allowing to see at a glance where light is being received.

PRODUCT CONFIGURATION

Pigtailed type (with muting function)
(with 0.5 m 1.640 ft connector attached cable)

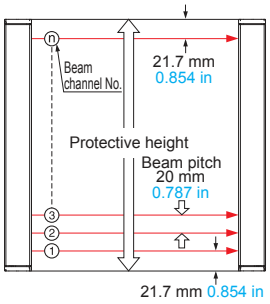
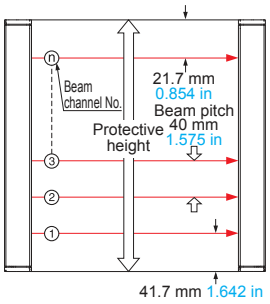


Cable type
(with 5 m 16.404 ft cable)

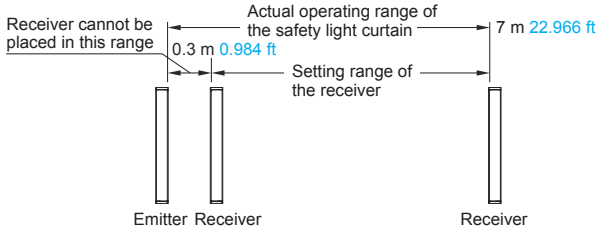


ORDER GUIDE

1 2 Safety light curtains

Type		Appearance	Operating range (Note 1)	Model No. (Note 2)		Number of beam channels	Protective height
				1 Pigtailed type (with muting function)	2 Cable type		
Hand protection type	Min. sensing object ø25 mm ø0.984 in (20 mm 0.787 in beam pitch)		0.3 to 7 m 0.984 to 22.966 ft	SF4B-H12CA-J05	SF4B-H12C	12	263.4 mm 10.370 in
				SF4B-H16CA-J05	SF4B-H16C	16	343.4 mm 13.520 in
				SF4B-H20CA-J05	SF4B-H20C	20	423.4 mm 16.669 in
				SF4B-H24CA-J05	SF4B-H24C	24	503.4 mm 19.819 in
				SF4B-H28CA-J05	SF4B-H28C	28	583.4 mm 22.969 in
				SF4B-H32CA-J05	SF4B-H32C	32	663.4 mm 26.118 in
				SF4B-H36CA-J05	SF4B-H36C	36	743.4 mm 29.268 in
				SF4B-H40CA-J05	SF4B-H40C	40	823.4 mm 32.417 in
				SF4B-H48CA-J05	SF4B-H48C	48	983.4 mm 38.717 in
				SF4B-H56CA-J05	SF4B-H56C	56	1,143.4 mm 45.016 in
				SF4B-H64CA-J05	SF4B-H64C	64	1,303.4 mm 51.315 in
				SF4B-H72CA-J05	SF4B-H72C	72	1,463.4 mm 57.614 in
				SF4B-H80CA-J05	SF4B-H80C	80	1,623.4 mm 63.913 in
				SF4B-H88CA-J05	SF4B-H88C	88	1,783.4 mm 70.212 in
				SF4B-H96CA-J05	SF4B-H96C	96	1,943.4 mm 76.512 in
Arm / Foot protection type	Min. sensing object ø45 mm ø1.772 in (40 mm 1.575 in beam pitch)		0.3 to 7 m 0.984 to 22.966 ft	SF4B-A8CA-J05	SF4B-A8C	8	343.4 mm 13.520 in
				SF4B-A12CA-J05	SF4B-A12C	12	503.4 mm 19.819 in
				SF4B-A16CA-J05	SF4B-A16C	16	663.4 mm 26.118 in
				SF4B-A20CA-J05	SF4B-A20C	20	823.4 mm 32.417 in
				SF4B-A24CA-J05	SF4B-A24C	24	983.4 mm 38.717 in
				SF4B-A28CA-J05	SF4B-A28C	28	1,143.4 mm 45.016 in
				SF4B-A32CA-J05	SF4B-A32C	32	1,303.4 mm 51.315 in
				SF4B-A36CA-J05	SF4B-A36C	36	1,463.4 mm 57.614 in
				SF4B-A40CA-J05	SF4B-A40C	40	1,623.4 mm 63.913 in
				SF4B-A44CA-J05	SF4B-A44C	44	1,783.4 mm 70.212 in
				SF4B-A48CA-J05	SF4B-A48C	48	1,943.4 mm 76.512 in

Notes: 1) The operating range is the distance possible to set between the emitter and the receiver.

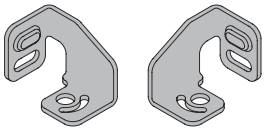
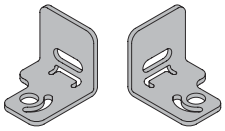
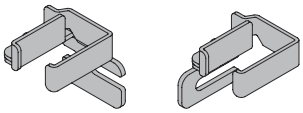
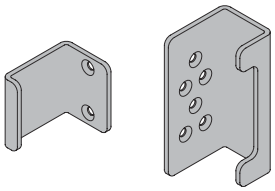
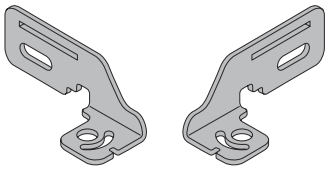
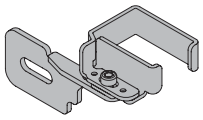


2) The model No. with **"E"** shown on the label affixed to the product is the emitter, **"D"** shown on the label is the receiver.

ORDER GUIDE

3 Mounting brackets

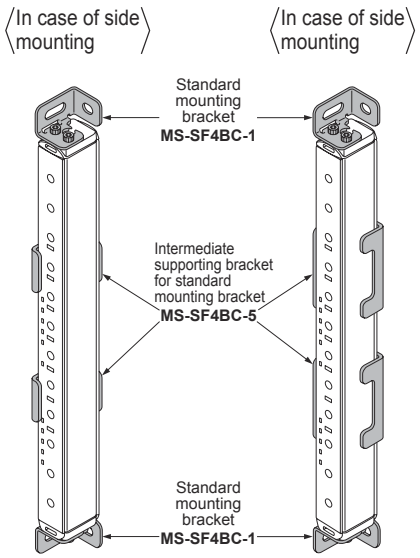
Mounting bracket is not supplied with the safety light curtain. Be sure to order it separately.

Designation	Appearance	Model No.	Description
Standard mounting bracket		**MS-SF4BC-1**	Allows the safety light curtain to be mounted on the rear or side of the target equipment. Designed for use with one M5 hexagon-socket head bolt. (4 pcs. per set for the emitter and receiver)
Rear utility mounting bracket		**MS-SF4BC-2**	Allows the safety light curtain to be mounted on the rear of the target equipment. Allows beam adjustment. Designed for use with one M5 hexagon-socket head bolt. For space-saving mounting, use one M5 hexagon head bolt. (4 pcs. per set for the emitter and receiver)
Side utility mounting bracket		**MS-SF4BC-3**	Allows the safety light curtain to be mounted on the side of the target equipment. Allows beam adjustment. Designed for use with one M5 hexagon-socket head bolt. For space-saving mounting, use one M5 hexagon head bolt. (4 pcs. per set for the emitter and receiver)
Intermediate supporting bracket for utility mounting bracket (Note)		**MS-SF4BC-4**	Supports the middle of the safety light curtain when installing it with utility mounting brackets. Allows the safety light curtain to be mounted on the rear or side of the target equipment. Allows beam adjustment. Designed for use with one M5 hexagon head bolt. (2 pcs. each per set for rear mounting and side mounting)
Intermediate supporting bracket for standard mounting bracket (Note)		**MS-SF4BC-5**	Supports the middle of the safety light curtain when installing it with standard mounting brackets. Allows the safety light curtain to be mounted on the rear or side of the target equipment. Designed for use with two M3 countersunk screws. (2 pcs. each per set for rear mounting and side mounting)
Side mounting bracket		**MS-SF4BC-6**	Allows beam axis alignment and the safety light curtain to be mounted on the device in confined spaces. Designed for use with one M5 hexagon-socket head bolt. (4 pcs. per set for the emitter and receiver)
Intermediate supporting bracket for use with side mounting bracket (Note)		**MS-SF4BC-7**	Supports the middle of the safety light curtain when installing it with side mounting brackets. Allows beam axis alignment and the safety light curtain to be mounted on the device in confined spaces. Designed for use with one M5 hexagon-socket head bolt. (2 pcs. per set)

Note: The numbers of sets required by **SF4B-H□C(A-J05)**(40 or more beam axes) and **SF4B-A□C(A-J05)** (20 or more beam axes) are as follows:
SF4B-H40C(A-J05), **SF4B-H48C(A-J05)**, **SF4B-H56C(A-J05)**, **SF4B-A20C(A-J05)**, **SF4B-A24C(A-J05)**, **SF4B-A28C(A-J05)**: 1 set
SF4B-H64C(A-J05), **SF4B-H72C(A-J05)**, **SF4B-H80C(A-J05)**, **SF4B-H88C(A-J05)**, **SF4B-H96C(A-J05)**, **SF4B-A32C(A-J05)**, **SF4B-A36C(A-J05)**, **SF4B-A40C(A-J05)**, **SF4B-A44C(A-J05)**, **SF4B-A48C(A-J05)**: 2 sets

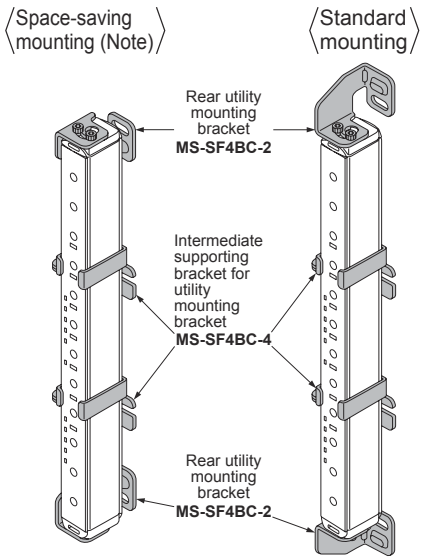
ORDER GUIDE

Standard mounting bracket and intermediate supporting bracket for standard mounting bracket



- **MS-SF4BC-1**
  Four brackets (two each R and L type) per set
  (Eight M3 (length: 5 mm 0.197 in) hexagon-socket head bolts and four M5 flat washers are attached.)
- **MS-SF4BC-5**
  Two pcs. for rear mounting, two pcs. for side mounting

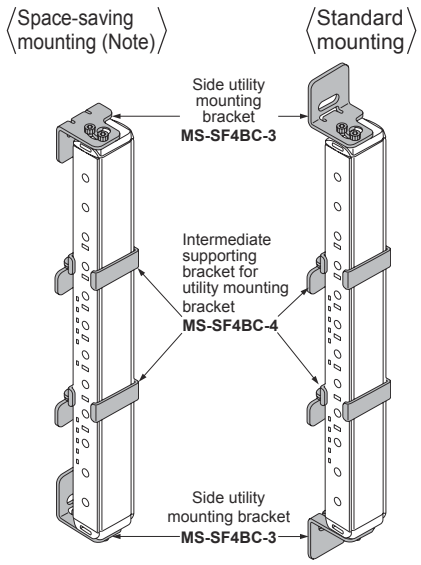
Rear utility mounting bracket and intermediate supporting bracket for utility mounting bracket



- **MS-SF4BC-2**
  Four brackets (two each R and L type) per set
  (Eight M3 (length: 6 mm 0.236 in) hexagon-socket head bolts and four M5 flat washers are attached.)
- **MS-SF4BC-4**
  Two brackets per set
  (M5 flat washers, two pcs. assembled M3 (length: 6 mm 0.236 in) hexagon-socket head bolts for rear mounting, two pcs. attachments for side mounting

Note: For space-saving mounting, use an M5 hexagon head bolt.

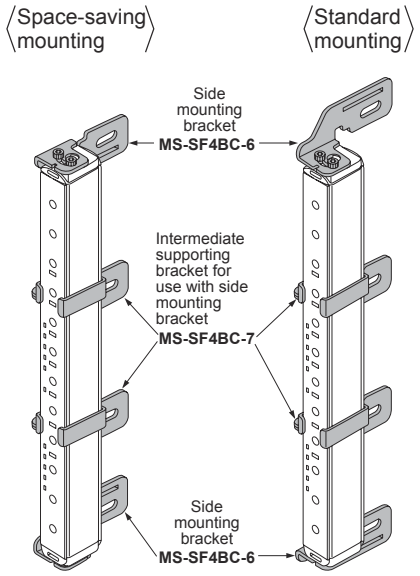
Side utility mounting bracket and intermediate supporting bracket for utility mounting bracket



- **MS-SF4BC-3**
  Four brackets (two each R and L type) per set
  (Eight M3 (length: 6 mm 0.236 in) hexagon-socket head bolts and four M5 flat washers are attached.)
- **MS-SF4BC-4**
  Two brackets per set
  (M5 flat washers, two pcs. assembled M3 (length: 6 mm 0.236 in) hexagon-socket head bolts for rear mounting, two pcs. attachments for side mounting

Note: For space-saving mounting, use an M5 hexagon head bolt.

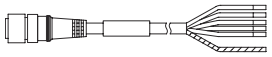
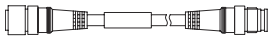
Side mounting bracket and intermediate supporting bracket for use with side mounting bracket



- **MS-SF4BC-6**
  Four brackets (two each R and L type) per set
  (Eight M3 (length: 6 mm 0.236 in) hexagon-socket head bolts and four M5 flat washers are attached.)
- **MS-SF4BC-7**
  Two brackets per set
  (Two pcs. M5 flat washers, two pcs. assembled M3 (length: 6 mm 0.236 in) hexagon-socket head bolts for side mounting)

ORDER GUIDE

4 5 Mating cables

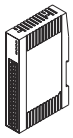
Type			Appearance	Model No.	Description	
Mating cables	4 With connector on one end			**SFB-CC3-MU**	Length: 3 m 9.843 ft Net weight: 430 g approx. (2 cables)	Cable with connector on one end for pigtailed type (with muting function) Two cables per set for emitter and receiver Cable color: Gray for emitter, Gray with black line for receiver Connector color: Gray for emitter, Black for receiver Min. bending radius: R6 mm R0.236 in
				SFB-CC7-MU	Length: 7 m 22.966 ft Net weight: 1,000 g approx. (2 cables)	
				SFB-CC10-MU	Length: 10 m 32.808 ft Net weight: 1,300 g approx. (2 cables)	
	With connectors on both ends 5	For emitter		**SFB-CCJ3E-MU**	Length: 3 m 9.843 ft Net weight: 190 g approx. (1 cable)	Cable with connectors on both ends for pigtailed type (with muting function) Cable color: Gray for emitter, Gray with black line for receiver Connector color: Gray for emitter, Black for receiver Min. bending radius: R6 mm R0.236 in
				SFB-CCJ10E-MU	Length: 10 m 32.808 ft Net weight: 660 g approx. (1 cable)	
		For receiver		**SFB-CCJ3D-MU**	Length: 3 m 9.843 ft Net weight: 210 g approx. (1 cable)	
				SFB-CCJ10D-MU	Length: 10 m 32.808 ft Net weight: 680 g approx. (1 cable)	

Spare parts (Accessories for safety light curtain)

Designation	Model No.	Description
Test rod ø25	**SF4B-TR25**	Min. sensing object for regular checking (ø25 mm ø0.984 in), for hand protection type (min. sensing object ø25 mm ø0.984 in)

OPTIONS

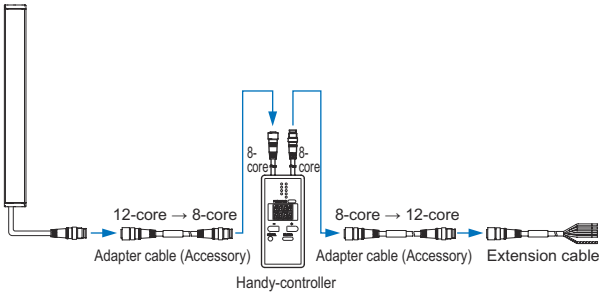
Control units

Designation	Appearance	Model No.	Description
Slim type control unit		**SF-C13**	Use a discrete wire cable to connect to the safety light curtain. Muting function can be used. Compatible with up to Control Category 4. When connecting pigtailed type (with muting function) **SF4B-□CA-J05**, be sure to order a mating cable separately. • Mating cable: **SFB-CC□-MU** • Extension cable: **SFB-CCJ□-MU**

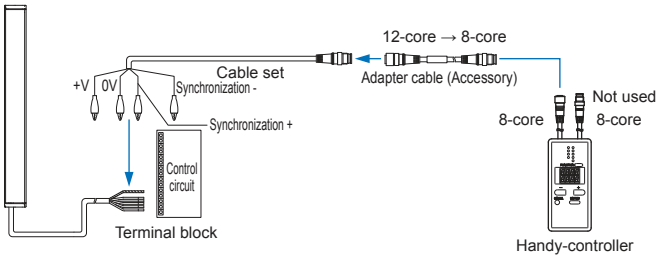
Handy-controller

Designation	Appearance	Model No.
Handy-controller	 * 2 adapter cables included	**SFB-HC**
Cable set for cable type connection		**SFC-WNC1**

Pigtailed type (with muting function)

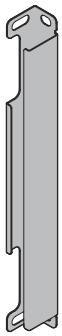


Cable type



OPTIONS

Metal protection case

Applicable beam channels: Hand protection type	Applicable beam channels: Arm / Foot protection type	Appearance	Metal protection case (2 pcs. per set) (Note) Model No.
12	———		**MS-SF4BCH-12**
16	8		**MS-SF4BCH-16**
20	———		**MS-SF4BCH-20**
24	12		**MS-SF4BCH-24**
28	———		**MS-SF4BCH-28**
32	16		**MS-SF4BCH-32**
36	———		**MS-SF4BCH-36**
40	20		**MS-SF4BCH-40**
48	24		**MS-SF4BCH-48**
56	28		**MS-SF4BCH-56**
64	32		**MS-SF4BCH-64**
72	36		**MS-SF4BCH-72**
80	40		**MS-SF4BCH-80**
88	44		**MS-SF4BCH-88**
96	48		**MS-SF4BCH-96**

Note: In the case of using a metal protection case **MS-SF4BCH-□** (optional), make sure to assemble it with a standard mounting bracket **MS-SF4BC-1** (optional).

Others

Designation	Model No.	Description
Test rod ø45	**SF4B-TR45**	Min. sensing object for regular checking (ø45 mm ø1.772 in), for arm / foot protection type (min. sensing object ø45 mm ø1.772 in)

●Recommended safety relay

SF relay, slim type

Note: Please contact our sales office for details on the recommended products.

Item \ Type	With LED indicator	
Model No.	SFS3-L-DC24V	SFS4-L-DC24V
Part No.	AG1S132	AG1S142
Contact arrangement	3a1b	4a2b
Rated nominal switching capacity	6 A / 250 V AC, 6 A / 30 V DC	
Min. switching capacity	1 mA / 5 V DC	
Coil rating	15 mA / 24 V DC	20.8 mA / 24 V DC
Rated power consumption	360 mW	500 mW
Operation time	20 ms or less	
Release time	20 ms or less	
Ambient temperature	–40 to +85 °C –40 to +185 °F (Humidity: 5 to 85 % RH)	
Applicable certifications	UL/c-UL, TÜV, Korea S-mark	

Safety control unit

Creating safety circuits is easier than ever.

SF-C21

Safety control unit
SF-C21

SPECIFICATIONS

Safety light curtain individual specifications

SF4B-H□C(A-J05)

Item		Type	Min. sensing object ø25 mm ø0.984 in (20 mm 0.787 in beam pitch)						
	Model No.	Pigtailed type	SF4B-H12CA-J05	SF4B-H16CA-J05	SF4B-H20CA-J05	SF4B-H24CA-J05	SF4B-H28CA-J05	SF4B-H32CA-J05	SF4B-H36CA-J05
		Cable type	SF4B-H12C	SF4B-H16C	SF4B-H20C	SF4B-H24C	SF4B-H28C	SF4B-H32C	SF4B-H36C
Number of beam channels			12	16	20	24	28	32	36
Protective height			263.4 mm 10.37 in	343.4 mm 13.52 in	423.4 mm 16.669 in	503.4 mm 19.819 in	583.4 mm 22.969 in	663.4 mm 26.118 in	743.4 mm 29.268 in
Current consumption	Cable type								
	Pigtailed type	When large multi-purpose indicator turns OFF	Emitter: 65 mA or less, Receiver: 75 mA or less			Emitter: 70 mA or less Receiver: 85 mA or less		Emitter: 75 mA or less Receiver: 95 mA or less	
		When large multi-purpose indicator lights up	Emitter: 75 mA or less, Receiver: 85 mA or less			Emitter: 80 mA or less Receiver: 95 mA or less		Emitter: 85 mA or less Receiver: 105 mA or less	
PFHD			1.9×10^{-9}	2.1×10^{-9}	2.4×10^{-9}	2.6×10^{-9}	2.8×10^{-9}	3.0×10^{-9}	3.3×10^{-9}
MTTFD			100 years or more						
Net weight (Total of emitter and receiver)		Pigtailed type	360 g approx.	430 g approx.	520 g approx.	590 g approx.	680 g approx.	750 g approx.	840 g approx.
		Cable type	700 g approx.	770 g approx.	860 g approx.	930 g approx.	1,000 g approx.	1,100 g approx.	1,200 g approx.

Item		Type	Min. sensing object ø25 mm ø0.984 in (20 mm 0.787 in beam pitch)						
	Model No.	Pigtailed type	SF4B-H40CA-J05	SF4B-H48CA-J05	SF4B-H56CA-J05	SF4B-H64CA-J05	SF4B-H72CA-J05	SF4B-H80CA-J05	SF4B-H88CA-J05
		Cable type	SF4B-H40C	SF4B-H48C	SF4B-H56C	SF4B-H64C	SF4B-H72C	SF4B-H80C	SF4B-H88C
Number of beam channels			40	48	56	64	72	80	88
Protective height			823.4 mm 32.417 in	983.4 mm 38.717 in	1,143.4 mm 45.016 in	1,303.4 mm 51.315 in	1,463.4 mm 57.614 in	1,623.4 mm 63.913 in	1,783.4 mm 70.212 in
Current consumption	Cable type								
	Pigtailed type	When large multi-purpose indicator turns OFF	Emitter: 80 mA or less Receiver: 100 mA or less		Emitter: 85 mA or less Receiver: 120 mA or less		Emitter: 95 mA or less Receiver: 130 mA or less		Emitter: 100 mA or less Receiver: 140 mA or less
		When large multi-purpose indicator lights up	Emitter: 90 mA or less Receiver: 110 mA or less		Emitter: 95 mA or less Receiver: 130 mA or less		Emitter: 105 mA or less Receiver: 140 mA or less		Emitter: 110 mA or less Receiver: 155 mA or less
PFHD			3.5×10^{-9}	3.9×10^{-9}	4.4×10^{-9}	4.8×10^{-9}	5.3×10^{-9}	5.7×10^{-9}	6.2×10^{-9}
MTTFD			100 years or more						
Net weight (Total of emitter and receiver)		Pigtailed type	910 g approx.	1,100 g approx.	1,300 g approx.	1,400 g approx.	1,600 g approx.	1,700 g approx.	1,800 g approx.
		Cable type	1,300 g approx.	1,400 g approx.	1,600 g approx.	1,700 g approx.	2,000 g approx.	2,000 g approx.	2,100 g approx.

SF4B-A□C(A-J05)

Item		Type	Min. sensing object ø25 mm ø0.984 in (20 mm 0.787 in beam pitch)	Min. sensing object ø45 mm ø1.772 in (40 mm 1.575 in beam pitch)			
	Model No.	Pigtailed type	SF4B-H96CA-J05	SF4B-A8CA-J05	SF4B-A12CA-J05	SF4B-A16CA-J05	SF4B-A20CA-J05
		Cable type	SF4B-H96C	SF4B-A8C	SF4B-A12C	SF4B-A16C	SF4B-A20C
Number of beam channels			96	8	12	16	20
Protective height			1,943.4 mm 76.512 in	343.4 mm 13.52 in	503.4 mm 19.819 in	663.4 mm 26.118 in	823.4 mm 32.417 in
Current consumption	Cable type						
	Pigtailed type	When large multi-purpose indicator turns OFF	Emitter: 105 mA or less Receiver: 145 mA or less	Emitter: 60 mA or less Receiver: 70 mA or less		Emitter: 65 mA or less Receiver: 75 mA or less	
		When large multi-purpose indicator lights up	Emitter: 115 mA or less Receiver: 155 mA or less	Emitter: 70 mA or less Receiver: 80 mA or less		Emitter: 75 mA or less Receiver: 85 mA or less	
PFHD			6.6×10^{-9}	1.7×10^{-9}	1.9×10^{-9}	2.2×10^{-9}	2.4×10^{-9}
MTTFD			100 years or more	100 years or more			
Net weight (Total of emitter and receiver)		Pigtailed type	1,900 g approx.	430 g approx.	590 g approx.	750 g approx.	910 g approx.
		Cable type	2,200 g approx.	770 g approx.	930 g approx.	1,100 g approx.	1,300 g approx.

Item		Type	Min. sensing object ø45 mm ø1.772 in (40 mm 1.575 in beam pitch)						
	Model No.	Pigtailed type	SF4B-A24CA-J05	SF4B-A28CA-J05	SF4B-A32CA-J05	SF4B-A36CA-J05	SF4B-A40CA-J05	SF4B-A44CA-J05	SF4B-A48CA-J05
		Cable type	SF4B-A24C	SF4B-A28C	SF4B-A32C	SF4B-A36C	SF4B-A40C	SF4B-A44C	SF4B-A48C
Number of beam channels			24	28	32	36	40	44	48
Protective height			983.4 mm 38.717 in	1,143.4 mm 45.016 in	1,303.4 mm 51.315 in	1,463.4 mm 57.614 in	1,623.4 mm 63.913 in	1,783.4 mm 70.212 in	1,943.4 mm 76.512 in
Current consumption	Cable type								
	Pigtailed type	When large multi-purpose indicator turns OFF	Emitter: 70 mA or less Receiver: 85 mA or less		Emitter: 75 mA or less Receiver: 95 mA or less			Emitter: 80 mA or less Receiver: 100 mA or less	
		When large multi-purpose indicator lights up	Emitter: 80 mA or less Receiver: 95 mA or less		Emitter: 85 mA or less Receiver: 105 mA or less			Emitter: 90 mA or less Receiver: 110 mA or less	
PFHD			2.7×10^{-9}	2.9×10^{-9}	3.2×10^{-9}	3.4×10^{-9}	3.7×10^{-9}	3.9×10^{-9}	4.2×10^{-9}
MTTFD			100 years or more						
Net weight (Total of emitter and receiver)		Pigtailed type	1,100 g approx.	1,300 g approx.	1,400 g approx.	1,600 g approx.	1,700 g approx.	1,800 g approx.	1,900 g approx.
		Cable type	1,400 g approx.	1,600 g approx.	1,700 g approx.	2,000 g approx.	2,000 g approx.	2,100 g approx.	2,200 g approx.

Note: Where measurement conditions have not been specified precisely, the conditions used were an ambient temperature of +20 °C +68 °F.
PFHD: Probability of dangerous failure per hour, MTTFD: Mean time to dangerous failure (in years)

SPECIFICATIONS

Safety light curtain common specifications

Item \ Type		Pigtailed type (with muting function)		Cable type	
		Min. sensing object ø25 mm ø0.984 in (20 mm 0.787 in beam pitch)	Min. sensing object ø45 mm ø1.772 in (40 mm 1.575 in beam pitch)	Min. sensing object ø25 mm ø0.984 in (20 mm 0.787 in beam pitch)	Min. sensing object ø45 mm ø1.772 in (40 mm 1.575 in beam pitch)
Model No.		**SF4B-H□CA-J05**	**SF4B-A□CA-J05**	**SF4B-H□C**	**SF4B-A□C**
Applicable standards	International standard	IEC 61496-1/2 (Type 4), ISO 13849-1 (Category 4, PLe), IEC 61508-1 to 7 (SIL3)			
	Japan	JIS B 9704-1/2 (Type 4), JIS B 9705-1 (Category 4), JIS C 0508 (SIL3)			
	Europe (Note 2)	EN 61496-1 (Type 4), EN ISO 13849-1 (Category 4, PLe), EN 61508-1 to 7 (SIL3), EN 55011, EN 50178, EN 61000-6-2			
	North America (Note 3)	ANSI/UL 61496-1/2 (Type 4), ANSI/UL 508, CAN/CSA 61496-1/2 (Type 4), CAN/CSA C22.2 No.14, OSHA 1910.212, OSHA 1910.217(C), ANSI B11.1 to B11.19, ANSI/RIA 15.06			
	South Korea (S-Mark)	S1-G-35-2005, S2-W-11-2003			
Applicable regulations and certifications		CE Marking (Machinery Directive, EMC Directive, RoHS Directive), UKCA Marking [Supply of Machinery (Safety) Regulations, EMC Regulations, RoHS Regulations], TÜV SÜD certification, TÜV SÜD NRTL certification			
Operating range (Note 4)		0.3 to 7 m 0.984 to 22.966 ft			
Beam pitch		20 mm 0.787 in	40 mm 1.575 in	20 mm 0.787 in	40 mm 1.575 in
Min. sensing object (Note 5)		ø25 mm ø0.984 in opaque object	ø45 mm ø1.772 in opaque object	ø25 mm ø0.984 in opaque object	ø45 mm ø1.772 in opaque object
Effective aperture angle		±2.5° or less [for an operating range exceeding 3 m 9.843 ft (conforming to IEC 61496-2 / ANSI/UL 61496-2)]			
Supply voltage		24 V DC ±10 % Ripple P-P 10 % or less			
Control outputs (OSSD 1, OSSD 2)		PNP open-collector transistor / NPN open-collector transistor (switching method) <For PNP output> • Maximum source current: 200 mA • Applied voltage: Same as supply voltage (between the control output and +V) • Residual voltage: 2.5 V or less (source current 200 mA, when using 20 m 65.617 ft length cable) • Leakage current: 0.1 mA or less (Including power supply OFF condition) • Maximum load capacity: 0.22 µF (No load to maximum output current) • Load wiring resistance: 3 Ω or less		<For NPN output> • Maximum sink current: 200 mA • Applied voltage: Same as supply voltage (between the control output and 0 V) • Residual voltage: 2.5 V or less (sink current 200 mA, when using 20 m 65.617 ft length cable) • Leakage current: 0.1 mA or less (Including power supply OFF condition) • Maximum load capacity: 0.22 µF (No load to maximum output current) • Load wiring resistance: 3 Ω or less	
	Operation mode	ON when all beam channels are received, OFF when one or more beam channels are interrupted (OFF also in case of any malfunction in the safety light curtain or the synchronization signal) (Note 6, 7)			
	Protection circuit	Incorporated			
Response time		OFF response: 14 ms or less, ON response: 80 to 90 ms			
Auxiliary output (Non-safety output)		PNP open-collector transistor / NPN open-collector transistor (switching method) <For PNP output> • Maximum source current: 60 mA • Applied voltage: Same as supply voltage (between the auxiliary output and +V) • Residual voltage: 2.5 V or less (source current 60 mA, when using 20 m 65.617 ft length cable)		<For NPN output> • Maximum sink current: 60 mA • Applied voltage: Same as supply voltage (between the auxiliary output and 0 V) • Residual voltage: 2.5 V or less (sink current 60 mA, when using 20 m 65.617 ft length cable)	
	Operation mode	OFF when control outputs are ON, ON when control outputs are OFF [Factory setting, operating mode can be changed using the **SFB-HC** (optional) handy-controller.]			
	Protection circuit	Incorporated			
Muting auxiliary output		NPN open-collector transistor • Maximum sink current: 100 mA • Applied voltage: Same as supply voltage (between the muting auxiliary output and 0 V) • Residual voltage: 2.5 V or less (sink current 100 mA, when using 20 m 65.617 ft length cable)		————	
	Operation mode	When muting auxiliary output: ON			
	Protection circuit	Incorporated			
ELCA function		Incorporated (reducing mutual interference automatically)			
Emission halt function		Incorporated			
Interlock function		Incorporated [Manual reset / Auto reset (Note 8)]			
External device monitoring function		Incorporated			
Override function		Incorporated		————	
Muting function		Incorporated		————	
Large multi-purpose indicator function		Incorporated		————	
Optional functions (Note 9)		Muting setting changing, override setting changing, fixed blanking, floating blanking, light emitting amount control, auxiliary output switching, protecting, interlock setting changing, external relay monitor setting changing		Fixed blanking, floating blanking, light emitting amount control, auxiliary output switching, protecting, interlock setting changing, external relay monitor setting changing	
Pollution degree		3			
Operating altitude		2,000 m 6,561.68 ft or less (Note 10)			
Environmental resistance	Degree of protection	IP65 (IEC)			
	Ambient temperature	–10 to +55 °C +14 to +131 °F (No dew condensation or icing allowed), Storage: –25 to +60 °C –3 to +140 °F			
	Ambient humidity	30 to 85 % RH, Storage: 30 to 85 % RH			
	Ambient illuminance	Incandescent light: 3,500 ℓx or less at the light-receiving face			
	Dielectric strength voltage / Insulation resistance	1,000 V AC for one min. between all supply terminals connected together and enclosure / 20 MΩ or more, with 500 V DC megger between all supply terminals connected together and enclosure			
	Vibration resistance / Shock resistance	10 to 55 Hz frequency, 0.75 mm 0.030 in amplitude in X, Y and Z directions for two hours each / 300 m/s² acceleration (30 G approx.) in X, Y and Z directions for three times each			

Notes: 1) Where measurement conditions have not been specified precisely, the conditions used were an ambient temperature of +20 °C +68 °F.
2) Regarding EU Machinery Directive, a Notified Body, TÜV SÜD, has certified with the type examination certificate.
3) The product has been safety-certified in accordance with UL, ANSI, CSA, and other standards by TÜV SÜD America, a nationally recognized safety laboratory (NRTL) that has been approved by the Occupational Safety and Health Administration (OSHA) as defined by 29 CFR 1910.7
4) The operating range is the possible setting distance between the emitter and the receiver.
5) In case the blanking function is valid, the operation mode is changed.
6) During muting, control output will not turn off even if the beams are interrupted.
7) When the blanking function is enabled, the operating mode will change.
8) The manual reset and automatic reset are possible to be switched depending on the wiring status.
9) In case of using optional function, the handy-controller **SFB-HC** (optional) is required.
10) Do not use or store in an environment pressurized to atmospheric pressure or higher at an altitude of 0 m.

SPECIFICATIONS

Safety light curtain common specifications

Item \ Type	Pigtailed type (with muting function)		Cable type	
	Min. sensing object ø25 mm ø0.984 in (20 mm 0.787 in beam pitch)	Min. sensing object ø45 mm ø1.772 in (40 mm 1.575 in beam pitch)	Min. sensing object ø25 mm ø0.984 in (20 mm 0.787 in beam pitch)	Min. sensing object ø45 mm ø1.772 in (40 mm 1.575 in beam pitch)
Model No.	**SF4B-H□CA-J05**	**SF4B-A□CA-J05**	**SF4B-H□C**	**SF4B-A□C**
Emitting element	Infrared LED (Peak emission wavelength: 850 nm 0.033 mil)			
Material	Enclosure: Polycarbonate			
Cable	0.15 mm² (power line: 0.2 mm²) 12-core heat-resistant PVC cable with connector, 0.5 m 1.640 ft long		0.15 mm² (power line: 0.2 mm²) 8-core heat-resistant PVC cable, 5 m 16.404 ft long	
Cable extension	Extension up to total 50 m 164.042 ft is possible for both emitter and receiver optional mating cables		Extension up to total 50 m 164.042 ft is possible for 0.2 mm² or more, cable (Note)	
Accessories	**SF4B-TR25** (Test rod): 1 pc.	————	**SF4B-TR25** (Test rod): 1 pc.	————

Note: When the synchronization + wire (orange) and synchronization - wire (orange / black) is extended with a cable other than exclusive cable, use a 0.2 mm² or more shielded twisted pair cable.

Handy-controller

Item \ Model No.	SFB-HC
Supply voltage	24 V DC ±10 % Ripple P-P10 % or less (common to safety light curtain power supply)
Current consumption	65 mA or less
Communication method	RS-485 two-way communications (Specific procedure)
Digital display	4-digit red LED display × 2 (Selected beam channels, setting contents etc. are displayed.)
Function indicator	Green LED × 9 (set function is displayed.)
Functions	Fixed blanking (Factory setting: Disabled) **/** Floating blanking (Factory setting: Disabled) **/** Auxiliary output changing (Factory setting: Negative Logic of OSSD) **/** Light emitting amount control (Factory setting: Disabled) **/** Muting setting changing [Factory setting: All beam channels enabled, A = B, Setting of the muting lamp diagnosis function enabled (Ver. 2 or later), Muting sensor output operation setting N.O. / N.C. (Ver. 2.1 or later)] **/** Interlock setting changing (Factory setting: start **/** restart) **/** External device monitoring setting change (Factory setting: Enabled, 300 ms) **/** Override setting changing 60 sec. (Ver. 2.1 or later) **/** Setting detail monitoring **/** Protecting (Factory setting: Disabled) (Factory password setting: 0000) **/** Initialization **/** Copy
Ambient temperature	–10 to +55 °C +14 to +131 °F (No dew condensation or icing allowed), Storage: –25 to +70 °C –13 to +158 °F
Ambient humidity	30 to 85 % RH, Storage: 30 to 85 % RH
Voltage withstandability	1,000 V AC for one min. between all supply terminals connected together and enclosure
Insulation resistance	20 MΩ , or more, with 500 V DC megger between all supply terminals connected together and enclosure
Cable	8-core shielded cable, 0.5 m 1.640 ft long, with a connector at the end (2 cables)
Weight	Net weight: 200 g approx.
Accessory	Adapter cable: 2 cables

Note: Where measurement conditions have not been specified precisely, the conditions used were an ambient temperature of +20 °C +68 °F.

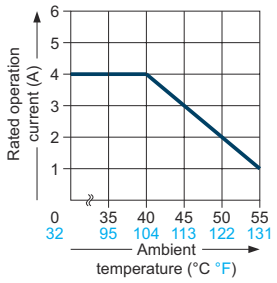
SPECIFICATIONS

Control unit

Item \ Model No.		SF-C13
Connectable safety light curtains		Safety light curtains manufactured by Panasonic Industry
Applicable standards		EN 61496-1 (Type 4), EN 55011, EN ISO 13849-1 (Category 4, PLe), IEC 61496-1 (Type 4), ISO 13849-1 (Category 4, PLe), JIS B 9704-1 (Type 4), JIS B 9705-1 (Category 4), ANSI/UL 61496-1 (Type 4), UL 1998 (Class 2)
Applicable regulations and certifications		CE Marking (Machinery Directive, EMC Directive, RoHS Directive), UKCA Marking [Supply of Machinery (Safety) Regulations, EMC Regulations, RoHS Regulations], UL/c-UL Listing certification, TÜV SÜD certification, Korea S-mark
Control category		ISO 13849-1 (EN ISO 13849-1, JIS B 9705-1) compliance up to Category 4, PLe standards
Supply voltage		24 V DC ±10 % Ripple P-P 10 % or less
Current consumption		100 mA or less (without safety light curtain)
Fuse (rating)		Built-in electronic fuse, Triggering current: 0.5 A or more, Reset after power down
Safety output		NO contact × 3 (13-14, 23-24, 33-34)
	Utilization category	AC-15, DC-13 (IEC 60947-5-1)
	Rated operation voltage (Ue) / Rated operation current (Ie)	30 V DC / 4 A, 230 V AC / 4 A, resistive load (For inductive load, during contact protection) Min. applicable load: 10 mA (at 24 V DC) (Note 2)
	Contact material / contacts	AgSnO, self cleaning, positively driven
	Contact resistance	100 mΩ or less (initial value)
	Contact protection fuse rating	4 A (slow blow)
	Mechanical lifetime	10,000,000 times or more (open/close frequency of 180 times/min) (Note 3)
	Electrical lifetime	100,000 times or more (open/close frequency of 20 times/min, 230 V AC, 3 A, using resistance load) (Note 3)
Pick-up delay (Auto reset/Manual reset)		80 ms or less / 90 ms or less
Response time		10 ms or less
Auxiliary output		Safety relay contact (NC contact) × 1 (41-42) (Related to safety output)
	Rated operation voltage/current	24 V DC / 2 A, Min. applicable load: 10 mA (at 24 V DC)
	Contact protection fuse rating	2 A (slow blow)
Semiconductor auxiliary output (AUX)		PNP open-collector transistor • Maximum source current: 60 mA • Applied voltage: Same as supply voltage (between the semiconductor auxiliary output and +V) • Residual voltage: 2.3 V or less (at source current 60 mA) • Leakage current: 2 mA or less
	Output operation	ON when the safety light curtain is interrupted
Excess voltage category		II
Indicators	Power supply (Ui)	Green LED (lights up when the power is ON)
	Safety output [OUT]	Green LED (lights up when enabling contacts are closed)
	Interlock (INTER_LOCK)	Yellow LED (lights up when enabling contacts are opened)
	Fault (FAULT)	Yellow LED (blinks when fault occurs)
External relay monitor function		Incorporated
Trailing edge function		Incorporated
Polarity selection function (Note 4)		Incorporated (Cable connection allows selection of plus/minus ground) Minus ground: Correspond to PNP output safety light curtain Plus ground: Correspond to NPN output safety light curtain
Pollution degree		2
Environmental resistance	Protection	Enclosure: IP40, Terminal: IP20
	Ambient temperature	–10 to +55 °C +14 to +131 °F (No dew condensation or icing allowed), Storage: –25 to +70 °C –13 to +158 °F
	Ambient humidity	30 to 85 % RH, Storage: 30 to 95 % RH
	Vibration resistance	Resistance/malfunction 10 to 55 Hz frequency, 0.35 mm 0.014 in amplitude in X, Y, and Z directions for twenty times each
Connection terminal		Spring-cage terminal
Enclosure material		ABS
Weight		Net weight: 200 g approx.

Notes: 1) Where measurement conditions have not been specified precisely, the conditions used were an ambient temperature of +20 °C +68 °F.
2) If several **SF-C13** units are being used in line together, leave a space of 5 mm 0.197 in or more between each unit.
If the units are touching each other, reduce the rated operating current for safety output in accordance with the ambient operating temperature as shown in the graphs at right.
3) Relay switching lifetime will vary depending on factors such as the type of load, the switching frequency, and ambient conditions.
4) Please switch the sliding switch to the PNP side for minus ground and to the NPN side for plus ground.

〈 Dilating when SF-C13 units are mounted close together 〉



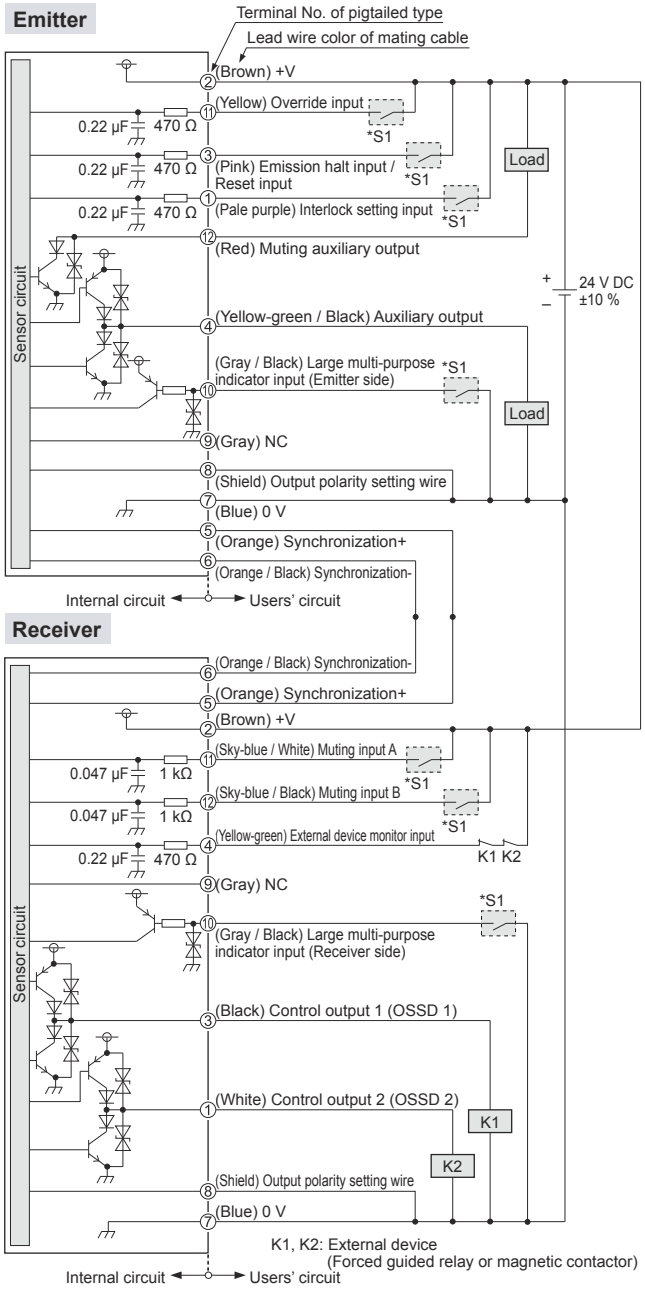
I/O CIRCUIT AND WIRING DIAGRAMS

SF4B-□CA-J05

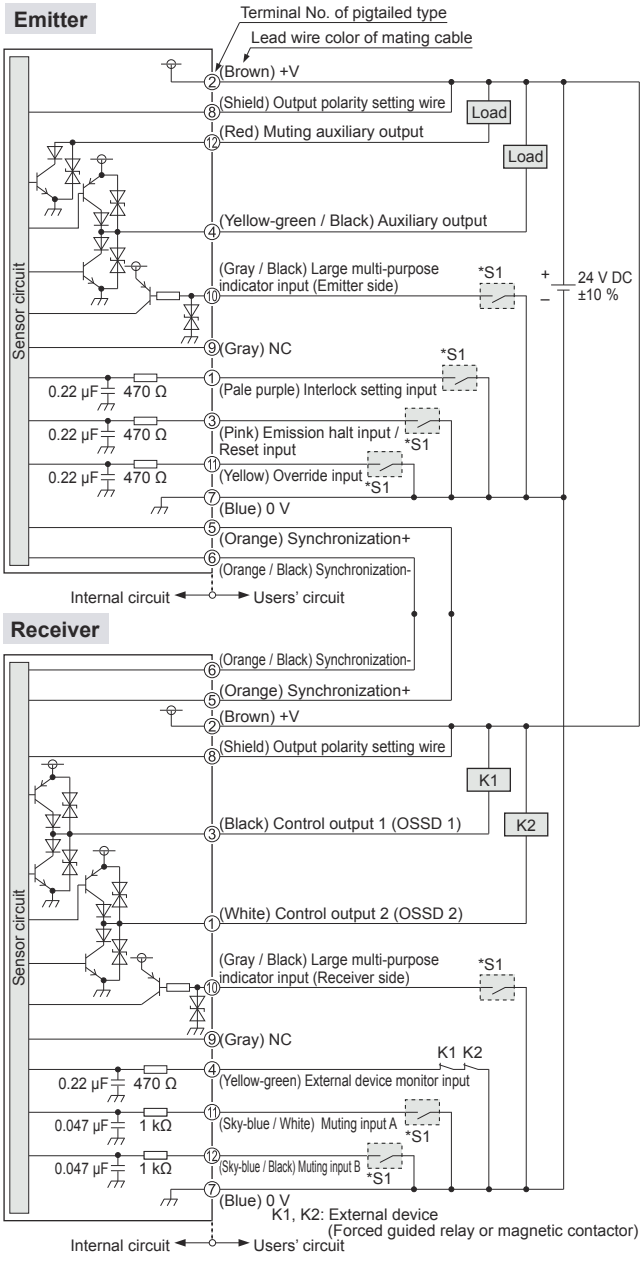
Pigtailed type (with muting function)

I/O circuit diagrams

<In case of using I/O circuit for PNP output>



<In case of using I/O circuit for NPN output>



*S1

Switch S1

- Emission halt input / Reset input
  For manual reset
  Vs to Vs – 2.5 V (sink current 5 mA or less): Emission halt (Note)
  Open: Emission
  For automatic reset
  Vs to Vs – 2.5 V (sink current 5 mA or less): Emission (Note)
  Open: Emission halt
- Interlock setting input, Override input, Muting input A / B, External device monitor input
  Vs to Vs – 2.5 V (sink current 5 mA or less): Valid (Note)
  Open: Invalid
- Large multi-purpose indicator input
  0 to +1.5 V (source current 5 mA or less): Lights up, Open: Turns OFF

Note: Vs is the applying supply voltage.

*S1

Switch S1

- Emission halt input / Reset input
  For manual reset
  0 to +1.5 V (source current 5 mA or less): Emission halt
  Open: Emission
  For automatic reset
  0 to +1.5 V (source current 5 mA or less): Emission
  Open: Emission halt
- Interlock setting input, Override input, Muting input A / B, External device monitor input
  0 to +1.5 V (source current: 5 mA or less): Valid, Open: Invalid
- Large multi-purpose indicator input
  0 to +1.5 V (source current 5 mA or less): Lights up, Open: Turns OFF

I/O CIRCUIT AND WIRING DIAGRAMS

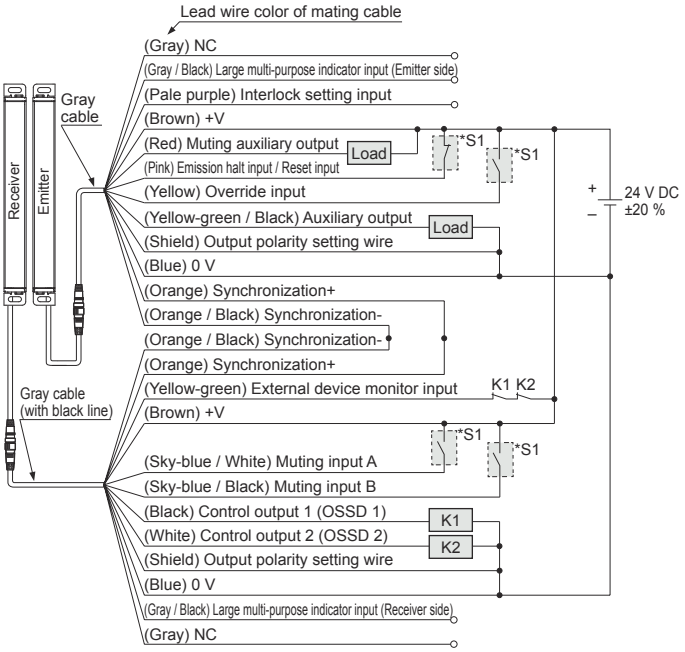
SF4B-□CA-J05

Pigtailed type (with muting function)

Connection examples

Muting control components: Interlock function “disabled (automatic reset)”, external device monitoring function “enabled”

<In case of using I/O circuit for PNP output>



K1, K2: External device (Forced guided relay or magnetic contactor)

*S1

Switch S1

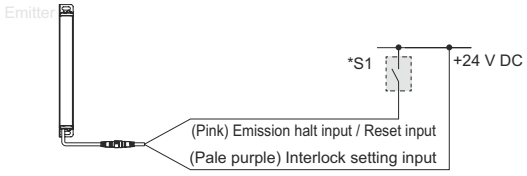
- Emission halt input / Reset input
  For automatic reset: Vs to Vs – 2.5 V (sink current 5 mA or less): Emission (Note)
  Open: Emission halt
  For manual reset: Vs to Vs – 2.5 V (sink current 5 mA or less): Emission halt (Note)
  Open: Emission
- Muting input A / B, Override input
  Vs to Vs – 2.5 V (sink current 5 mA or less): Valid (Note), Open: Invalid

Note: Vs is the applying supply voltage.

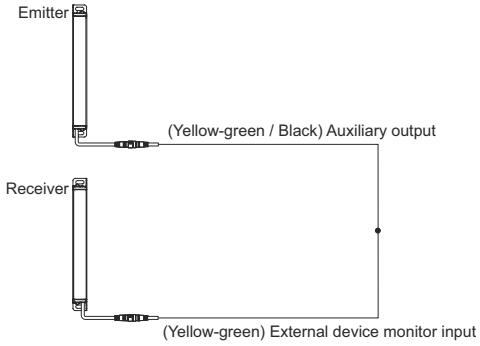
The diagram at left shows the configuration when using PNP output, interlock function “disabled (automatic reset)” and external device monitoring function “enabled”.

In case of setting the interlock function to “enabled (manual reset)”

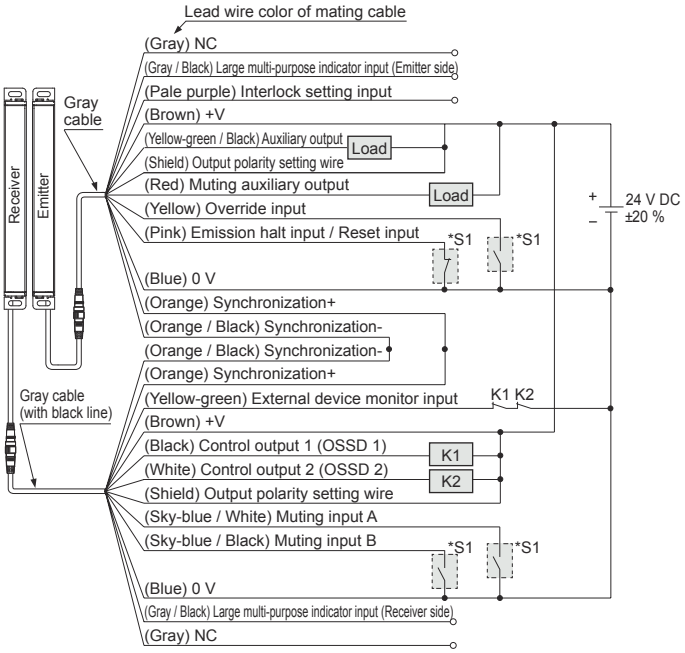
- When the interlock function is set to “Enable (manual reset),” the override function cannot be used.



In case of setting the external device monitoring function to “disabled”



<In case of using I/O circuit for NPN output>



K1, K2: External device (Forced guided relay or magnetic contactor)

*S1

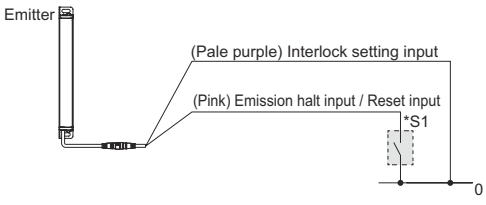
Switch S1

- Emission halt input / Reset input
  For automatic reset: 0 to +1.5 V (source current 5 mA or less): Emission, Open: Emission halt
  For manual reset: 0 to +1.5 V (source current 5 mA or less): Emission halt, Open: Emission
- Muting input A / B, Override input
  0 to + 1.5 V (source current 5 mA or less): Valid, Open: Invalid

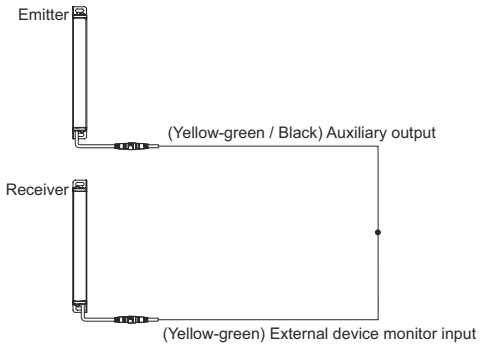
The diagram at left shows the configuration when using NPN output, interlock function “disabled (automatic reset)” and external device monitoring function “enabled”.

In case of setting the interlock function to “enabled (manual reset)”

- When the interlock function is set to “Enable (manual reset),” the override function cannot be used.



In case of setting the external device monitoring function to “disabled”



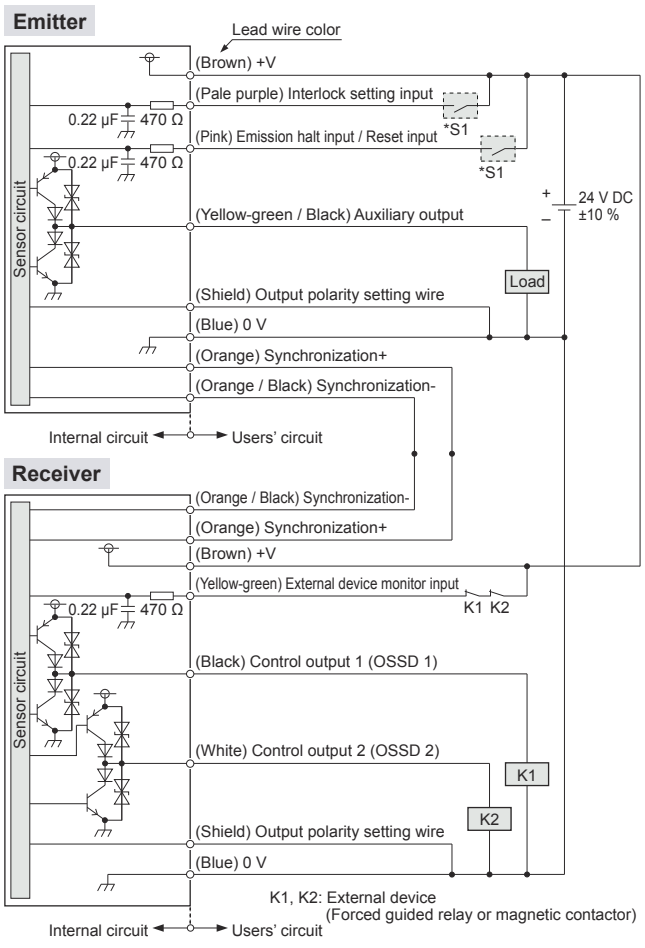
I/O CIRCUIT AND WIRING DIAGRAMS

SF4B-□C

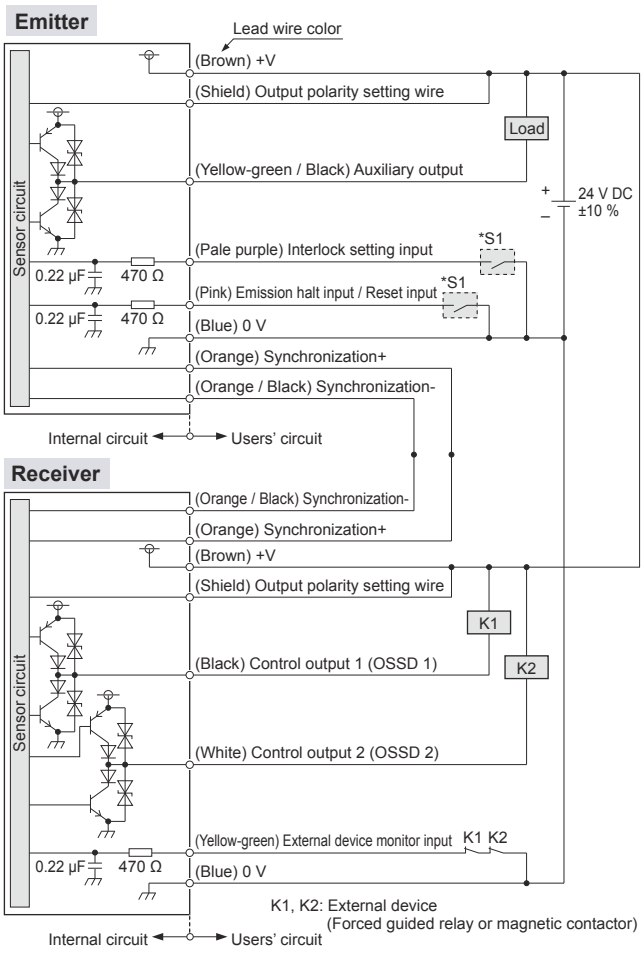
Cable type

I/O circuit diagrams

<In case of using I/O circuit for PNP output>



<In case of using I/O circuit for NPN output>



*S1

Switch S1

- Emission halt input / Reset input
  For manual reset
  Vs to Vs – 2.5 V (sink current 5 mA or less): Emission halt (Note)
  Open: Emission
  For automatic reset
  Vs to Vs – 2.5 V (sink current 5 mA or less): Emission (Note)
  Open: Emission halt
- Interlock setting input
  Vs to Vs – 2.5 V (sink current 5 mA or less): Valid (Note)
  Open: Invalid

Note: Vs is the applying supply voltage.

*S1

Switch S1

- Emission halt input / Reset input
  For manual reset
  0 to +1.5 V (source current 5 mA or less): Emission halt
  Open: Emission
  For automatic reset
  0 to +1.5 V (source current 5 mA or less): Emission
  Open: Emission halt
- Interlock setting input
  0 to +1.5 V (source current 5 mA or less): Valid, Open: Invalid

I/O CIRCUIT AND WIRING DIAGRAMS

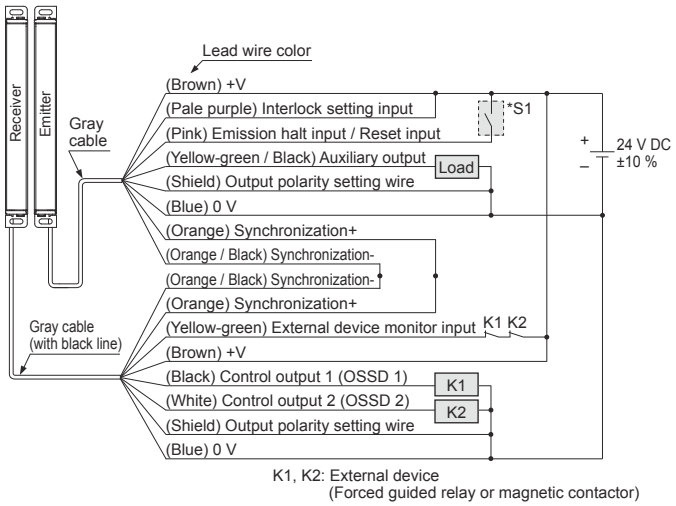
SF4B-□C

Cable type

Connection examples

Interlock function “enabled (manual reset)”, external device monitoring function “enabled”

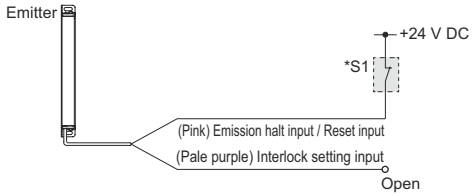
<In case of using I/O circuit for PNP output>



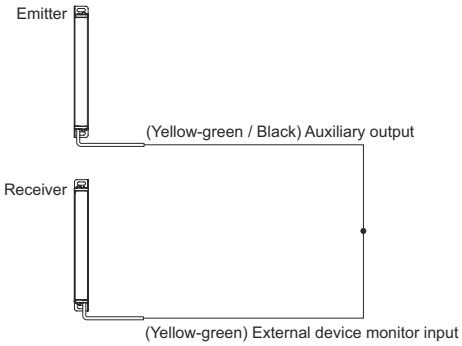
K1, K2: External device
(Forced guided relay or magnetic contactor)

The diagram at left shows the configuration when using PNP output, interlock function “enabled (manual reset)” and external device monitoring function “enabled”.

In case of setting the interlock function to “disabled (automatic reset)”



In case of setting the external device monitoring function to “disabled”

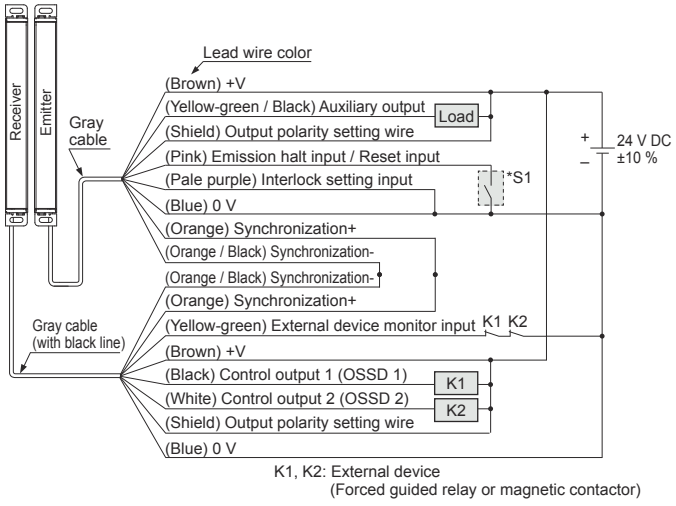


*S1

Switch S1
- Emission halt input / Reset input
  For manual reset
  Vs to Vs – 2.5 V (sink current 5 mA or less): Emission halt (Note)
  Open: Emission
  For automatic reset
  Vs to Vs – 2.5 V (sink current 5 mA or less): Emission (Note)
  Open: Emission halt
- Interlock setting input
  Vs to Vs – 2.5 V (sink current 5 mA or less): Valid (Note)
  Open: Invalid

Note: Vs is the applying supply voltage.

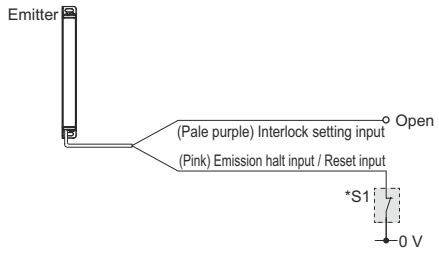
<In case of using I/O circuit for NPN output>



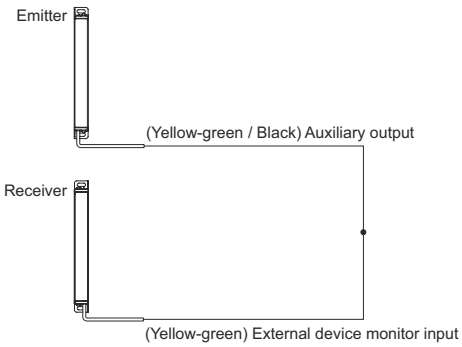
K1, K2: External device
(Forced guided relay or magnetic contactor)

The diagram at left shows the configuration when using NPN output, interlock function “enabled (manual reset)” and external device monitoring function “enabled”.

In case of setting the interlock function to “disabled (automatic reset)”



In case of setting the external device monitoring function to “disabled”



*S1

Switch S1
- Emission halt input / Reset input
  For manual reset
  0 to +1.5 V (source current 5 mA or less): Emission halt
  Open: Emission
  For automatic reset
  0 to +1.5 V (source current 5 mA or less): Emission
  Open: Emission halt
- Interlock setting input
  0 to +1.5 V (source current 5 mA or less): Valid, Open: Invalid

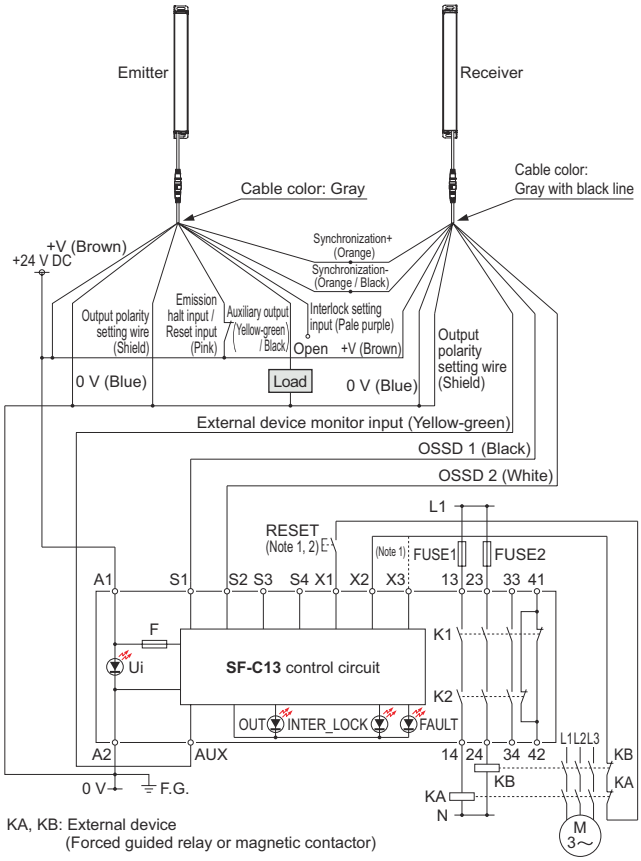
I/O CIRCUIT AND WIRING DIAGRAMS

SF-C13

SF4B-□C wiring diagrams (Control Category 4)

For PNP output (minus ground)

• Connect the safety light curtain control outputs OSSD 1 and OSSD 2 to S1 and S2 respectively.

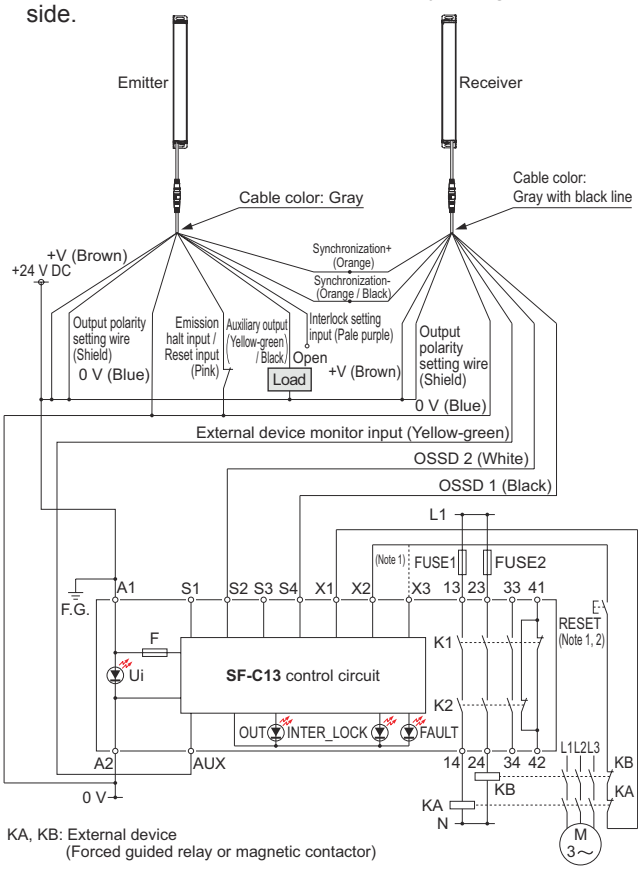


KA, KB: External device (Forced guided relay or magnetic contactor)

Notes: 1) The above diagram is when using manual reset. If automatic reset is used, disconnect the lead from X2 and connect it to X3. In this case, a reset (RESET) button is not needed.
2) Use a momentary-type switch as the reset (RESET) button.

For NPN output (plus ground)

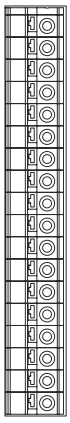
• Connect the safety light curtain control outputs OSSD 1 and OSSD 2 to S4 and S2 respectively and ground the + side.



KA, KB: External device (Forced guided relay or magnetic contactor)

Notes: 1) The above diagram is when using manual reset. If automatic reset is used, disconnect the lead from X2 and connect it to X3. In this case, a reset (RESET) button is not needed.
2) Use a momentary-type switch as the reset (RESET) button.

Terminal arrangement diagram



Terminal	Description
A1	+24 V DC
A2	0 V
S1 to S4	Safety light curtain control output (OSSD) input terminal
AUX	Semiconductor auxiliary output
X1	Reset output terminal
X2	Reset input terminal (Manual)
X3	Reset input terminal (Automatic)
13-14, 23-24, 33-34	Safety output (NO contact × 3)
41-42	Auxiliary output (NC contact × 1)

A terminal block is required for wiring of safety light curtain side.

PRECAUTIONS FOR PROPER USE

Refer to the instruction manual for details.
The instruction manual can be downloaded from our website.

Wiring

Refer to the applicable regulations for the region where this device is to be used when setting up the device. In addition, make sure that all necessary measures are taken to prevent possible dangerous operating errors resulting from earth faults.

- Make sure to carry out the wiring in the power supply off condition.
- Verify that the supply voltage variation is within the rating.
- If power is supplied from a commercial switching regulator, ensure that the frame ground (F.G.) terminal of the power supply is connected to an actual ground.
- In case noise generating equipment (switching regulator, inverter motor, etc.) is used in the vicinity of this sensor, connect the frame ground (F.G.) terminal of the equipment to an actual ground.
- Do not run the wires together with high-voltage lines or power lines or put them in the same raceway. This can cause malfunction due to induction.

Others

- This device has been developed / produced for industrial use only.
- Do not use this device with mobile equipment such as an automated guided vehicle (AGV).
- Do not use during the initial transient time (2 sec.) after the power supply is switched on.
- Avoid dust, dirt and steam.
- Take care that the safety light curtain does not come in direct contact with water, oil, grease, or organic solvents, such as, thinner, etc.
- Take care that the safety light curtain is not directly exposed to fluorescent light from a rapid-starter lamp or a high frequency lighting device, as it may affect the sensing performance.

- When this device is used in the “PSDI mode”, an appropriate control circuit must be configured between this device and the machinery. For details, be sure to refer to the standards or regulations applicable in each region or country.

- This catalog is a guide to select a suitable product. Be sure to read instruction manual prior to its use.
- Both emitter and receiver are adjusted before shipment, please apply both emitter and receiver with the same serial No. The serial No. is indicated on the plates of both emitter and receiver. (Indicated under model No.)

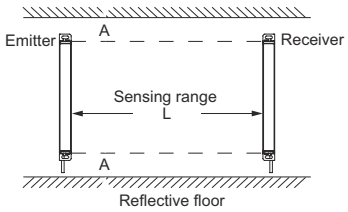
- Make sure to carry out the test run before regular operation.
- Do not use this product with machinery that cannot be stopped immediately during the operating cycle by means of an emergency stop system.

Influence of reflective surfaces

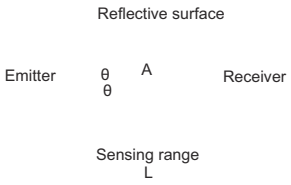
Install the safety light curtain by considering the effect of nearby reflective surfaces, and take countermeasures such as painting, masking, or changing the material of the reflective surface, etc. Failure to do so may cause the safety light curtain not to detect, resulting in serious body injury or death.

- Install this device at a distance of at least A (m) (given below) away from reflective surfaces such as metal walls, floors, ceilings, workpiece, covers, panels or glass surfaces.

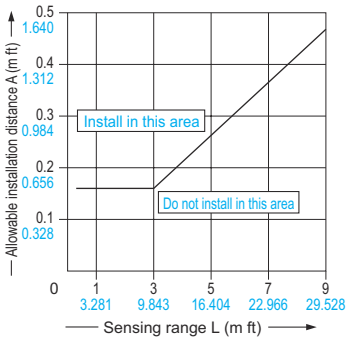
Side view



Top view



Distance between emitter and receiver (Setting distance L)	Allowable installation distance A
0.3 to 3 m 0.984 to 9.843 ft	0.16 m 0.525 ft
3 to 7 m 9.843 to 22.966 ft	L/2 × tan2θ = L/2 × 0.105 (m) 0.344 (ft) (θ = 3°)



Note: The effective aperture angle for this device is ±2.5° or less (when L > 3 m 9.843 ft) as required by IEC 61496-2, ANSI/UL 61496-2. However, install this device away from reflective surfaces considering an effective aperture angle of ±3° to take care of beam misalignment, etc. during installation.

Handy-controller

This device enables to set each function using the handy-controller **SFB-HC** (optional). Among the functions, the contents related to the safety distance such as the size of the minimum sensing object and response time are varied depending on the setting condition. When setting each function, re-calculate the safety distance, and make enough space larger than the calculated safety distance. Failure to do so might cause the accident that the device cannot stop quickly before reaching the dangerous area of the machinery, resulting in the serious injury or death.

- Refer to the instruction manual of the handy-controller for details of the function settings for using handy-controller **SFB-HC** (optional).

DIMENSIONS (Unit: mm in)

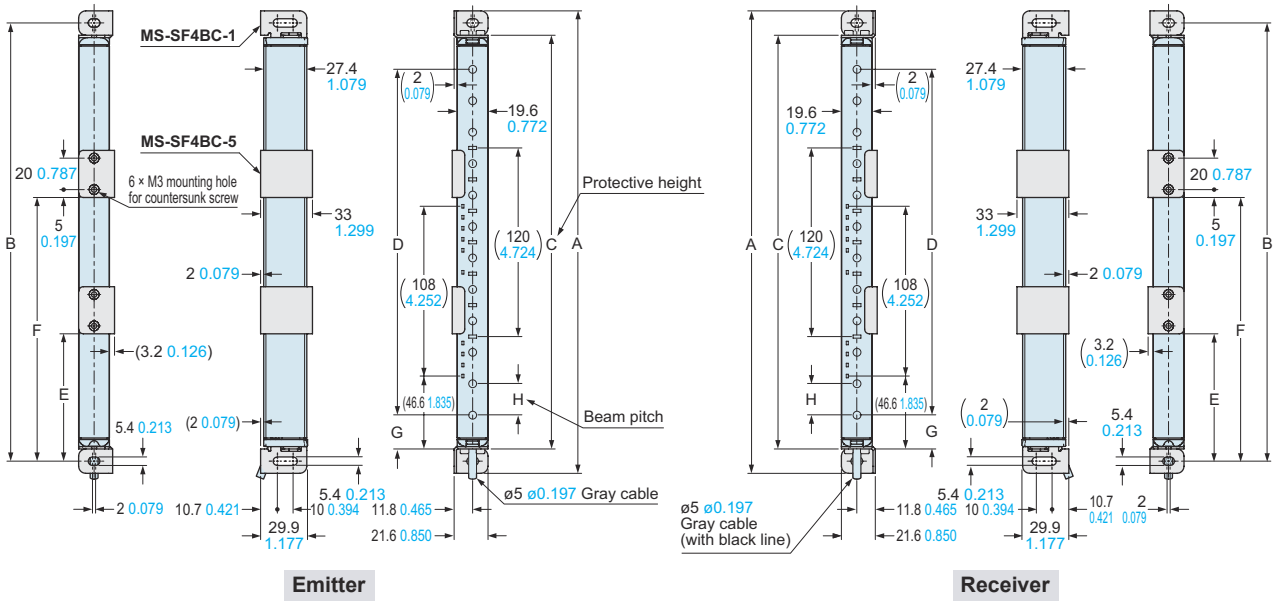
The CAD data can be downloaded from our website.

SF4B-□CA-J05 SF4B-□C

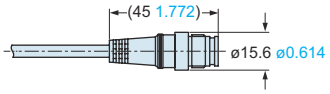
Safety light curtain

Assembly dimensions

The figure depicts rear mounting using the standard mounting bracket **MS-SF4BC-1** (optional) and the intermediate supporting bracket for standard mounting bracket **MS-SF4BC-5** (optional).



<Connector of the pigtailed type (with muting function) SF4B-□CA-J05>



Model No.		A	B	C	D		E	F
					SF4B-H□C(A-J05)	SF4B-A□C(A-J05)		
SF4B-H12C(A-J05)	———	294.4 11.591	279 10.984	263.4 10.370	220 8.661	—	—	—
SF4B-H16C(A-J05)	SF4B-A8C(A-J05)	374.4 14.740	359 14.134	343.4 13.520	300 11.811	280 11.024	—	—
SF4B-H20C(A-J05)	———	454.4 17.890	439 17.283	423.4 16.669	380 14.961	—	—	—
SF4B-H24C(A-J05)	SF4B-A12C(A-J05)	534.4 21.039	519 20.433	503.4 19.819	460 18.110	440 17.323	—	—
SF4B-H28C(A-J05)	———	614.4 24.189	599 23.583	583.4 22.969	540 21.260	—	—	—
SF4B-H32C(A-J05)	SF4B-A16C(A-J05)	694.4 27.339	679 26.732	663.4 26.118	620 24.409	600 23.622	—	—
SF4B-H36C(A-J05)	———	774.4 30.488	759 29.882	743.4 29.268	700 27.559	—	—	—
SF4B-H40C(A-J05)	SF4B-A20C(A-J05)	854.4 33.638	839 33.031	823.4 32.417	780 30.709	760 29.921	395 15.551	—
SF4B-H48C(A-J05)	SF4B-A24C(A-J05)	1,014.4 39.937	999 39.331	983.4 38.717	940 37.008	920 36.220	475 18.701	—
SF4B-H56C(A-J05)	SF4B-A28C(A-J05)	1,174.4 46.236	1,159 45.630	1,143.4 45.016	1,100 43.307	1,080 42.520	555 21.850	—
SF4B-H64C(A-J05)	SF4B-A32C(A-J05)	1,334.4 52.535	1,319 51.929	1,303.4 51.315	1,260 49.606	1,240 48.819	415 16.339	854 33.622
SF4B-H72C(A-J05)	SF4B-A36C(A-J05)	1,494.4 58.835	1,479 58.228	1,463.4 57.614	1,420 55.906	1,400 55.118	468 18.425	961 37.835
SF4B-H80C(A-J05)	SF4B-A40C(A-J05)	1,654.4 65.134	1,639 64.528	1,623.4 63.913	1,580 62.205	1,560 61.417	521 20.512	1,068 42.047
SF4B-H88C(A-J05)	SF4B-A44C(A-J05)	1,814.4 71.433	1,799 70.827	1,783.4 70.212	1,740 68.504	1,720 67.716	574 22.598	1,175 46.260
SF4B-H96C(A-J05)	SF4B-A48C(A-J05)	1,974.4 77.732	1,959 77.126	1,943.4 76.512	1,900 74.803	1,880 74.016	627 24.685	1,282 50.472

Model No.	G	H
SF4B-H□C(A-J05)	21.7 0.854	20 0.787
SF4B-A□C(A-J05)	41.7 1.642	40 1.575

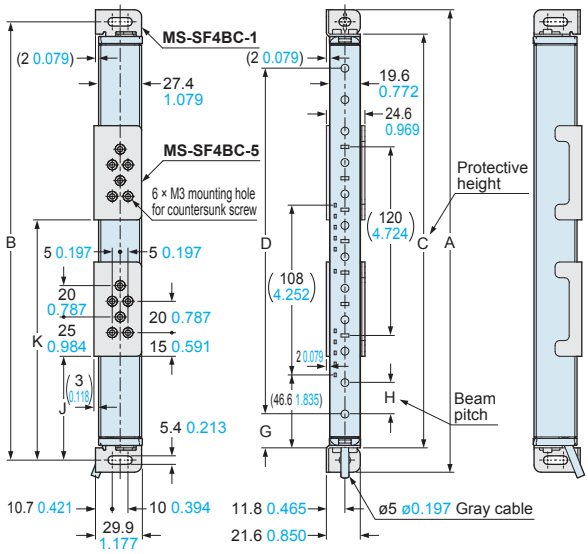
DIMENSIONS (Unit: mm in)

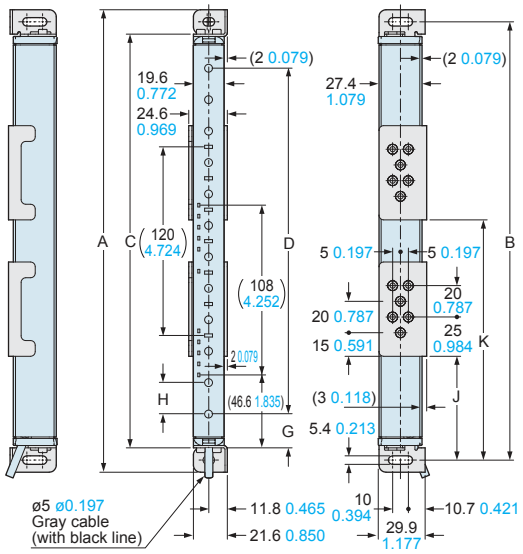
The CAD data can be downloaded from our website.

SF4B-□CA-J05 SF4B-□C Safety light curtain

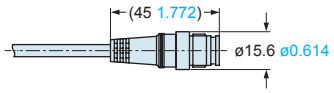
Assembly dimensions

The figure depicts side mounting using the standard mounting bracket **MS-SF4BC-1** (optional) and the intermediate supporting bracket for standard mounting bracket **MS-SF4BC-5** (optional).





<Connector of the pigtailed type (with muting function) SF4B-□CA-J05>



Model No.		A	B	C	D		J	K
					SF4B-H□C(A-J05)	SF4B-A□C(A-J05)		
SF4B-H12C(A-J05)	———	294.4 11.591	279 10.984	263.4 10.370	220 8.661	—	—	—
SF4B-H16C(A-J05)	SF4B-A8C(A-J05)	374.4 14.740	359 14.134	343.4 13.520	300 11.811	280 11.024	—	—
SF4B-H20C(A-J05)	———	454.4 17.890	439 17.283	423.4 16.669	380 14.961	—	—	—
SF4B-H24C(A-J05)	SF4B-A12C(A-J05)	534.4 21.039	519 20.433	503.4 19.819	460 18.110	440 17.323	—	—
SF4B-H28C(A-J05)	———	614.4 24.189	599 23.583	583.4 22.969	540 21.260	—	—	—
SF4B-H32C(A-J05)	SF4B-A16C(A-J05)	694.4 27.339	679 26.732	663.4 26.118	620 24.409	600 23.622	—	—
SF4B-H36C(A-J05)	———	774.4 30.488	759 29.882	743.4 29.268	700 27.559	—	—	—
SF4B-H40C(A-J05)	SF4B-A20C(A-J05)	854.4 33.638	839 33.031	823.4 32.417	780 30.709	760 29.921	390 15.354	—
SF4B-H48C(A-J05)	SF4B-A24C(A-J05)	1,014.4 39.937	999 39.331	983.4 38.717	940 37.008	920 36.220	470 18.504	—
SF4B-H56C(A-J05)	SF4B-A28C(A-J05)	1,174.4 46.236	1,159 45.630	1,143.4 45.016	1,100 43.307	1,080 42.520	550 21.654	—
SF4B-H64C(A-J05)	SF4B-A32C(A-J05)	1,334.4 52.535	1,319 51.929	1,303.4 51.315	1,260 49.606	1,240 48.819	410 16.142	849 33.425
SF4B-H72C(A-J05)	SF4B-A36C(A-J05)	1,494.4 58.835	1,479 58.228	1,463.4 57.614	1,420 55.906	1,400 55.118	463 18.228	956 37.638
SF4B-H80C(A-J05)	SF4B-A40C(A-J05)	1,654.4 65.134	1,639 64.528	1,623.4 63.913	1,580 62.205	1,560 61.417	516 20.315	1,063 41.850
SF4B-H88C(A-J05)	SF4B-A44C(A-J05)	1,814.4 71.433	1,799 70.827	1,783.4 70.212	1,740 68.504	1,720 67.716	569 22.402	1,170 46.063
SF4B-H96C(A-J05)	SF4B-A48C(A-J05)	1,974.4 77.732	1,959 77.126	1,943.4 76.512	1,900 74.803	1,880 74.016	622 24.488	1,277 50.275

Model No.	G	H
SF4B-H□C(A-J05)	21.7 0.854	20 0.787
SF4B-A□C(A-J05)	41.7 1.642	40 1.575

DIMENSIONS (Unit: mm in)

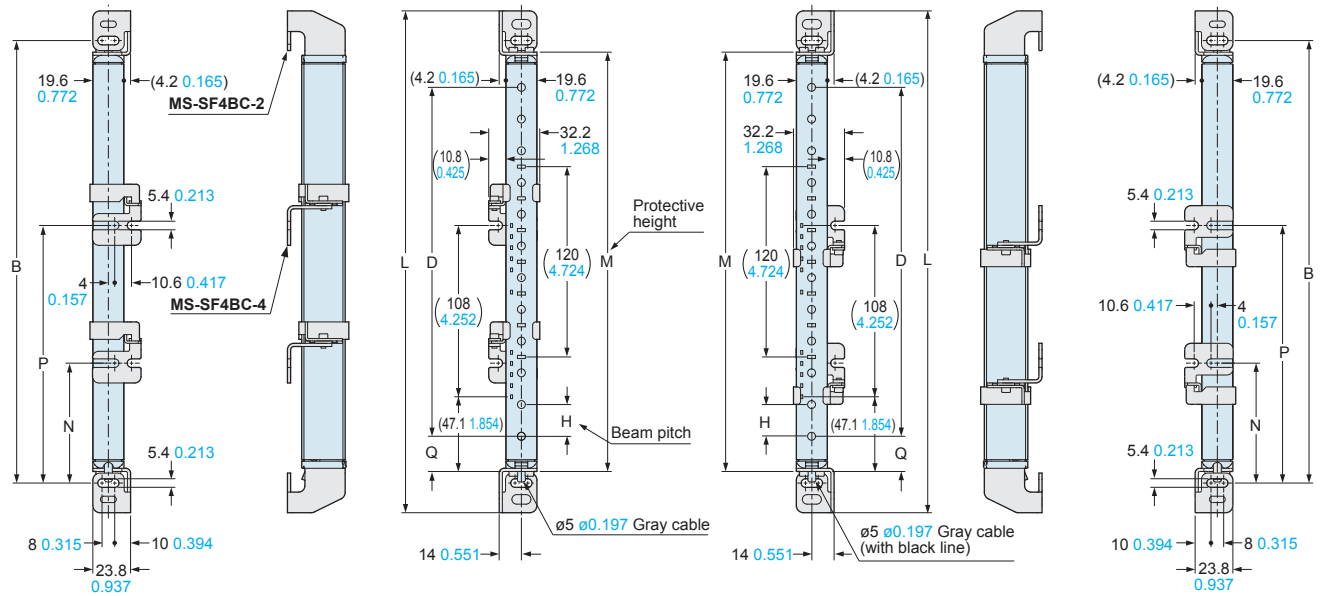
The CAD data can be downloaded from our website.

SF4B-□CA-J05 SF4B-□C

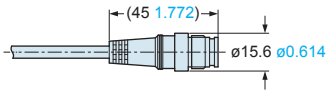
Safety light curtain

Assembly dimensions

The figure depicts rear mounting using the rear utility mounting bracket **MS-SF4BC-2** (optional) and the intermediate supporting bracket for utility mounting bracket **MS-SF4BC-4** (optional).



<Connector of the pigtailed type (with muting function) SF4B-□CA-J05>



Model No.		B	D		L	M	N	P
			SF4B-H□C(A-J05)	SF4B-A□C(A-J05)				
SF4B-H12C(A-J05)	———	279 10.984	220 8.661	—	316.4 12.457	264.4 10.409	—	—
SF4B-H16C(A-J05)	SF4B-A8C(A-J05)	359 14.134	300 11.811	280 11.024	396.4 15.606	344.4 13.559	—	—
SF4B-H20C(A-J05)	———	439 17.283	380 14.961	—	476.4 18.756	424.4 16.709	—	—
SF4B-H24C(A-J05)	SF4B-A12C(A-J05)	519 20.433	460 18.110	440 17.323	556.4 21.906	504.4 19.858	—	—
SF4B-H28C(A-J05)	———	599 23.583	540 21.260	—	636.4 25.055	584.4 23.008	—	—
SF4B-H32C(A-J05)	SF4B-A16C(A-J05)	679 26.732	620 24.409	600 23.622	716.4 28.205	664.4 26.157	—	—
SF4B-H36C(A-J05)	———	759 29.882	700 27.559	—	796.4 31.354	744.4 29.307	—	—
SF4B-H40C(A-J05)	SF4B-A20C(A-J05)	839 33.031	780 30.709	760 29.921	876.4 34.504	824.4 32.457	399.5 15.728	—
SF4B-H48C(A-J05)	SF4B-A24C(A-J05)	999 39.331	940 37.008	920 36.220	1,036.4 40.803	984.4 38.756	479.5 18.878	—
SF4B-H56C(A-J05)	SF4B-A28C(A-J05)	1,159 45.630	1,100 43.307	1,080 42.520	1,196.4 47.102	1,144.4 45.055	559.5 22.028	—
SF4B-H64C(A-J05)	SF4B-A32C(A-J05)	1,319 51.929	1,260 49.606	1,240 48.819	1,356.4 53.402	1,304.4 51.354	419.5 16.516	858.5 33.799
SF4B-H72C(A-J05)	SF4B-A36C(A-J05)	1,479 58.228	1,420 55.906	1,400 55.118	1,516.4 59.701	1,464.4 57.654	472.5 18.602	965.5 38.012
SF4B-H80C(A-J05)	SF4B-A40C(A-J05)	1,639 64.528	1,580 62.205	1,560 61.417	1,676.4 66.000	1,624.4 63.953	525.5 20.689	1,072.5 42.224
SF4B-H88C(A-J05)	SF4B-A44C(A-J05)	1,799 70.827	1,740 68.504	1,720 67.716	1,836.4 72.299	1,784.4 70.252	578.5 22.776	1,179.5 46.437
SF4B-H96C(A-J05)	SF4B-A48C(A-J05)	1,959 77.126	1,900 74.803	1,880 74.016	1,996.4 78.598	1,944.4 76.551	631.5 24.862	1,286.5 50.650

Model No.	H	Q
SF4B-H□C(A-J05)	20 0.787	22.2 0.874
SF4B-A□C(A-J05)	40 1.575	42.2 1.661

DIMENSIONS (Unit: mm in)

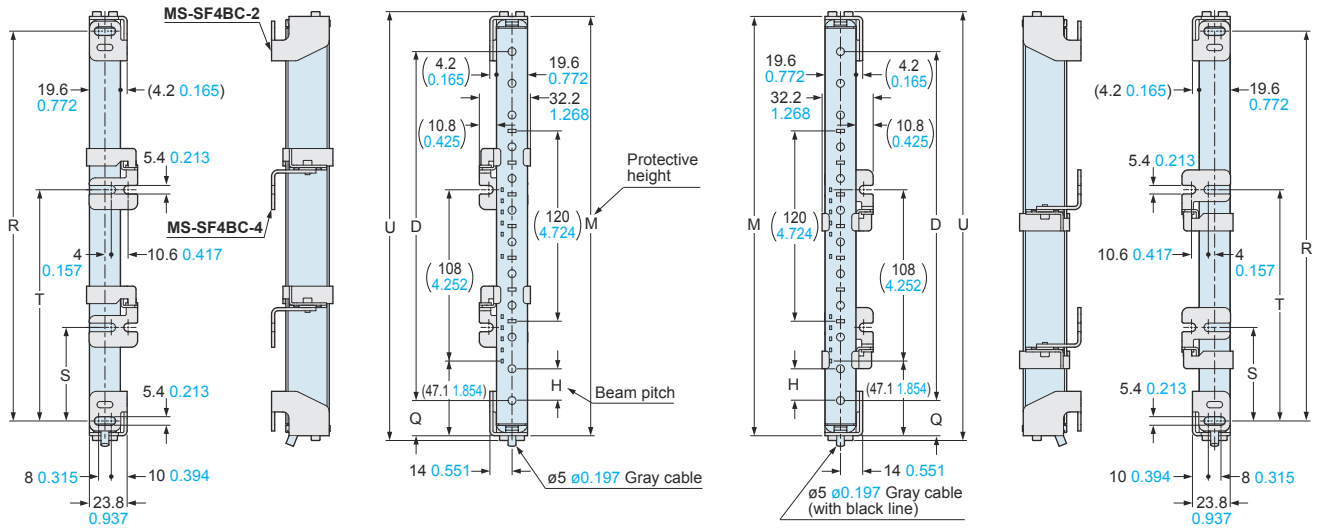
The CAD data can be downloaded from our website.

SF4B-□CA-J05 SF4B-□C

Safety light curtain

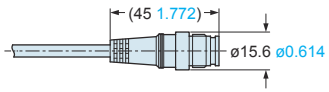
Assembly dimensions

The figure depicts space-saving mounting using the rear utility mounting bracket **MS-SF4BC-2** (optional) and the intermediate supporting bracket for utility mounting bracket **MS-SF4BC-4** (optional).



Emitter Receiver

<Connector of the pigtailed type (with muting function) SF4B-□CA-J05>



Model No.		D		M	R	S	T	U
		SF4B-H□C(A-J05)	SF4B-A□C(A-J05)					
SF4B-H12C(A-J05)	———	220 8.661	—	264.4 10.409	245.8 9.677	—	—	270.4 10.646
SF4B-H16C(A-J05)	SF4B-A8C(A-J05)	300 11.811	280 11.024	344.4 13.559	325.8 12.827	—	—	350.4 13.795
SF4B-H20C(A-J05)	———	380 14.961	—	424.4 16.709	405.8 17.748	—	—	430.4 16.945
SF4B-H24C(A-J05)	SF4B-A12C(A-J05)	460 18.110	440 17.323	504.4 19.858	485.8 19.126	—	—	510.4 20.094
SF4B-H28C(A-J05)	———	540 21.260	—	584.4 23.008	565.8 22.276	—	—	590.4 23.244
SF4B-H32C(A-J05)	SF4B-A16C(A-J05)	620 24.409	600 23.622	664.4 26.157	645.8 25.425	—	—	670.4 26.394
SF4B-H36C(A-J05)	———	700 27.559	—	744.4 29.307	725.8 28.575	—	—	750.4 29.543
SF4B-H40C(A-J05)	SF4B-A20C(A-J05)	780 30.709	760 29.921	824.4 32.457	805.8 31.724	382.9 15.075	—	830.4 32.693
SF4B-H48C(A-J05)	SF4B-A24C(A-J05)	940 37.008	920 36.220	984.4 38.756	965.8 38.024	462.9 18.224	—	990.4 38.992
SF4B-H56C(A-J05)	SF4B-A28C(A-J05)	1,100 43.307	1,080 42.520	1,144.4 45.055	1,125.8 44.323	542.9 21.374	—	1,150.4 45.291
SF4B-H64C(A-J05)	SF4B-A32C(A-J05)	1,260 49.606	1,240 48.819	1,304.4 51.354	1,285.8 50.622	402.9 15.862	841.9 33.146	1,310.4 51.590
SF4B-H72C(A-J05)	SF4B-A36C(A-J05)	1,420 55.906	1,400 55.118	1,464.4 57.654	1,445.8 56.921	455.9 17.949	948.9 37.358	1,470.4 57.890
SF4B-H80C(A-J05)	SF4B-A40C(A-J05)	1,580 62.205	1,560 61.417	1,624.4 63.953	1,605.8 63.220	508.9 20.035	1,055.9 41.571	1,630.4 64.189
SF4B-H88C(A-J05)	SF4B-A44C(A-J05)	1,740 68.504	1,720 67.716	1,784.4 70.252	1,765.8 69.520	561.9 22.122	1,162.9 45.783	1,790.4 70.488
SF4B-H96C(A-J05)	SF4B-A48C(A-J05)	1,900 74.803	1,880 74.016	1,944.4 76.551	1,925.8 75.819	614.9 24.209	1,269.9 49.996	1,950.4 76.787

Model No.	H	Q
SF4B-H□C(A-J05)	20 0.787	22.2 0.874
SF4B-A□C(A-J05)	40 1.575	42.2 1.661

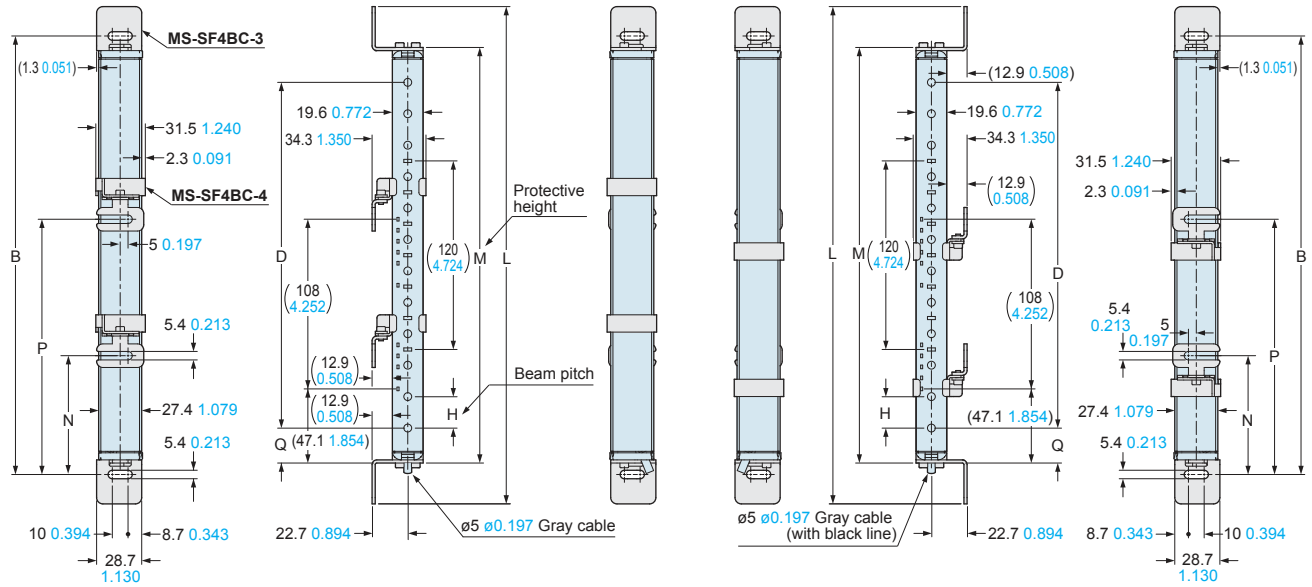
DIMENSIONS (Unit: mm in)

The CAD data can be downloaded from our website.

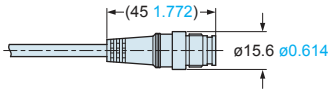
SF4B-□CA-J05 SF4B-□C Safety light curtain

Assembly dimensions

The figure depicts side mounting using the side utility mounting bracket **MS-SF4BC-3** (optional) and the intermediate supporting bracket for utility mounting bracket **MS-SF4BC-4** (optional).



<Connector of the pigtailed type (with muting function) SF4B-□CA-J05>



Model No.		B	D		L	M	N	P
			SF4B-H□C(A-J05)	SF4B-A□C(A-J05)				
SF4B-H12C(A-J05)	————	279 10.984	220 8.661	—	316.4 12.457	264.4 10.409	—	—
SF4B-H16C(A-J05)	SF4B-A8C(A-J05)	359 14.134	300 11.811	280 11.024	396.4 15.606	344.4 13.559	—	—
SF4B-H20C(A-J05)	————	439 17.283	380 14.961	—	476.4 18.756	424.4 16.709	—	—
SF4B-H24C(A-J05)	SF4B-A12C(A-J05)	519 20.433	460 18.110	440 17.323	556.4 21.906	504.4 19.858	—	—
SF4B-H28C(A-J05)	————	599 23.583	540 21.260	—	636.4 25.055	584.4 23.008	—	—
SF4B-H32C(A-J05)	SF4B-A16C(A-J05)	679 26.732	620 24.409	600 23.622	716.4 28.205	664.4 26.157	—	—
SF4B-H36C(A-J05)	————	759 29.882	700 27.559	—	796.4 31.354	744.4 29.307	—	—
SF4B-H40C(A-J05)	SF4B-A20C(A-J05)	839 33.031	780 30.709	760 29.921	876.4 34.504	824.4 32.457	399.5 15.728	—
SF4B-H48C(A-J05)	SF4B-A24C(A-J05)	999 39.331	940 37.008	920 36.220	1,036.4 40.803	984.4 38.756	479.5 18.878	—
SF4B-H56C(A-J05)	SF4B-A28C(A-J05)	1,159 45.630	1,100 43.307	1,080 42.520	1,196.4 47.102	1,144.4 45.055	559.5 22.028	—
SF4B-H64C(A-J05)	SF4B-A32C(A-J05)	1,319 51.929	1,260 49.606	1,240 48.819	1,356.4 53.402	1,304.4 51.354	419.5 16.516	858.5 33.799
SF4B-H72C(A-J05)	SF4B-A36C(A-J05)	1,479 58.228	1,420 55.906	1,400 55.118	1,516.4 59.701	1,464.4 57.654	472.5 18.602	965.5 38.012
SF4B-H80C(A-J05)	SF4B-A40C(A-J05)	1,639 64.528	1,580 62.205	1,560 61.417	1,676.4 66.000	1,624.4 63.953	525.5 20.689	1,072.5 42.224
SF4B-H88C(A-J05)	SF4B-A44C(A-J05)	1,799 70.827	1,740 68.504	1,720 67.716	1,836.4 72.299	1,784.4 70.252	578.5 22.776	1,179.5 46.437
SF4B-H96C(A-J05)	SF4B-A48C(A-J05)	1,959 77.126	1,900 74.803	1,880 74.016	1,996.4 78.598	1,944.4 76.551	631.5 24.862	1,286.5 50.650

Model No.	H	Q
SF4B-H□C(A-J05)	20 0.787	22.2 0.874
SF4B-A□C(A-J05)	40 1.575	42.2 1.661

DIMENSIONS (Unit: mm in)

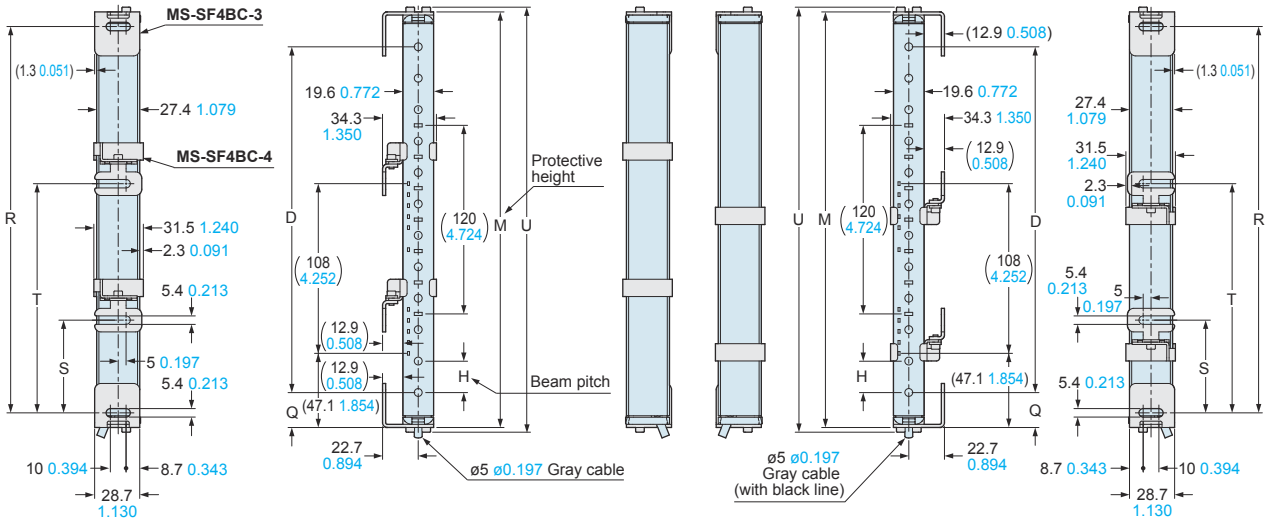
The CAD data can be downloaded from our website.

SF4B-□CA-J05 SF4B-□C

Safety light curtain

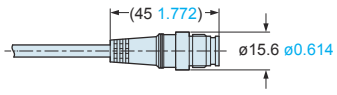
Assembly dimensions

The figure depicts space-saving mounting using the side utility mounting bracket **MS-SF4BC-3** (optional) and the intermediate supporting bracket for utility mounting bracket **MS-SF4BC-4** (optional).



Emitter **Receiver**

<Connector of the pigtailed type (with muting function) SF4B-□CA-J05>



Model No.		D		M	R	S	T	U
		SF4B-H□C(A-J05)	SF4B-A□C(A-J05)					
SF4B-H12C(A-J05)	————	220 8.661	—	264.4 10.409	245.8 9.677	—	—	270.4 10.646
SF4B-H16C(A-J05)	SF4B-A8C(A-J05)	300 11.811	280 11.024	344.4 13.559	325.8 12.827	—	—	350.4 13.795
SF4B-H20C(A-J05)	————	380 14.961	—	424.4 16.709	405.8 17.748	—	—	430.4 16.945
SF4B-H24C(A-J05)	SF4B-A12C(A-J05)	460 18.110	440 17.323	504.4 19.858	485.8 19.126	—	—	510.4 20.094
SF4B-H28C(A-J05)	————	540 21.260	—	584.4 23.008	565.8 22.276	—	—	590.4 23.244
SF4B-H32C(A-J05)	SF4B-A16C(A-J05)	620 24.409	600 23.622	664.4 26.157	645.8 25.425	—	—	670.4 26.394
SF4B-H36C(A-J05)	————	700 27.559	—	744.4 29.307	725.8 28.575	—	—	750.4 29.543
SF4B-H40C(A-J05)	SF4B-A20C(A-J05)	780 30.709	760 29.921	824.4 32.457	805.8 31.724	382.9 15.075	—	830.4 32.693
SF4B-H48C(A-J05)	SF4B-A24C(A-J05)	940 37.008	920 36.220	984.4 38.756	965.8 38.024	462.9 18.224	—	990.4 38.992
SF4B-H56C(A-J05)	SF4B-A28C(A-J05)	1,100 43.307	1,080 42.520	1,144.4 45.055	1,125.8 44.323	542.9 21.374	—	1,150.4 45.291
SF4B-H64C(A-J05)	SF4B-A32C(A-J05)	1,260 49.606	1,240 48.819	1,304.4 51.354	1,285.8 50.622	402.9 15.862	841.9 33.146	1,310.4 51.590
SF4B-H72C(A-J05)	SF4B-A36C(A-J05)	1,420 55.906	1,400 55.118	1,464.4 57.654	1,445.8 56.921	455.9 17.949	948.9 37.358	1,470.4 57.890
SF4B-H80C(A-J05)	SF4B-A40C(A-J05)	1,580 62.205	1,560 61.417	1,624.4 63.953	1,605.8 63.220	508.9 20.035	1,055.9 41.571	1,630.4 64.189
SF4B-H88C(A-J05)	SF4B-A44C(A-J05)	1,740 68.504	1,720 67.716	1,784.4 70.252	1,765.8 69.520	561.9 22.122	1,162.9 45.783	1,790.4 70.488
SF4B-H96C(A-J05)	SF4B-A48C(A-J05)	1,900 74.803	1,880 74.016	1,944.4 76.551	1,925.8 75.819	614.9 24.209	1,269.9 49.996	1,950.4 76.787

Model No.	H	Q
SF4B-H□C(A-J05)	20 0.787	22.2 0.874
SF4B-A□C(A-J05)	40 1.575	42.2 1.661

DIMENSIONS (Unit: mm in)

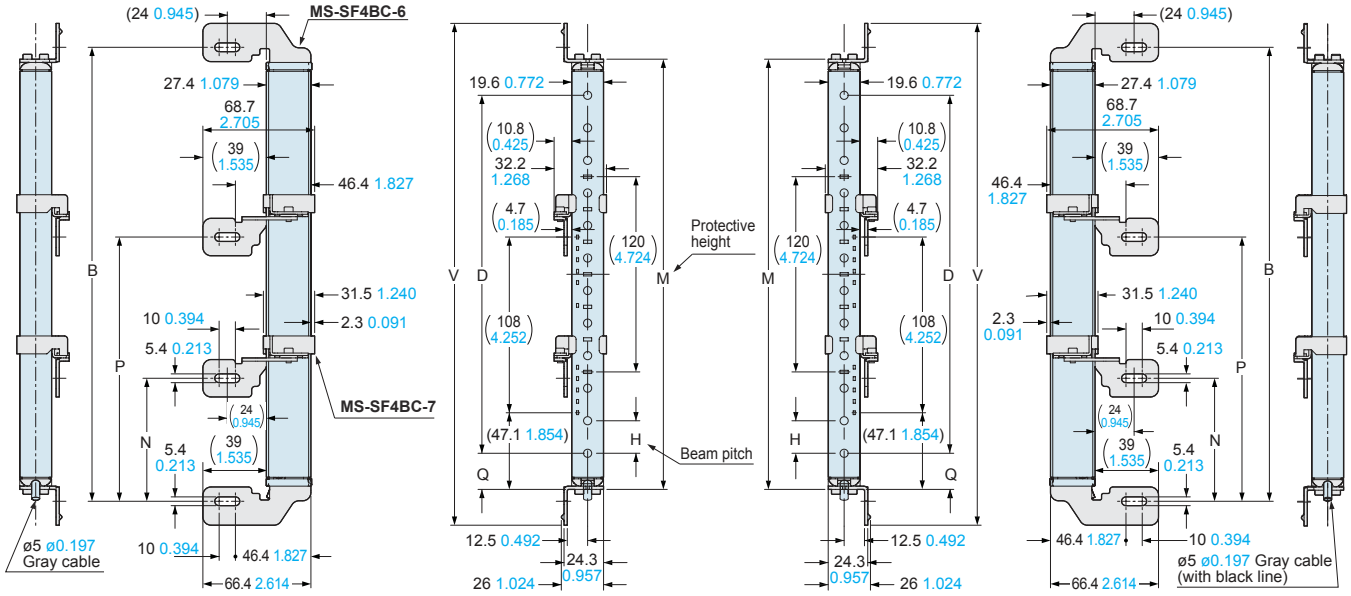
The CAD data can be downloaded from our website.

SF4B-□CA-J05 SF4B-□C

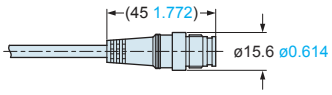
Safety light curtain

Assembly dimensions

The figure depicts side mounting using the side mounting bracket **MS-SF4BC-6** (optional) and the intermediate supporting bracket for side mounting bracket **MS-SF4BC-7** (optional).



<Connector of the pigtailed type (with muting function) SF4B-□CA-J05>



Model No.		B	D		M	N	P	V
			SF4B-H□C(A-J05)	SF4B-A□C(A-J05)				
SF4B-H12C(A-J05)	———	279 10.984	220 8.661	—	264.4 10.409	—	—	308.4 12.142
SF4B-H16C(A-J05)	SF4B-A8C(A-J05)	359 14.134	300 11.811	280 11.024	344.4 13.559	—	—	388.4 15.291
SF4B-H20C(A-J05)	———	439 17.283	380 14.961	—	424.4 16.709	—	—	468.4 18.441
SF4B-H24C(A-J05)	SF4B-A12C(A-J05)	519 20.433	460 18.110	440 17.323	504.4 19.858	—	—	548.4 21.591
SF4B-H28C(A-J05)	———	599 23.583	540 21.260	—	584.4 23.008	—	—	628.4 24.740
SF4B-H32C(A-J05)	SF4B-A16C(A-J05)	679 26.732	620 24.409	600 23.622	664.4 26.157	—	—	708.4 27.890
SF4B-H36C(A-J05)	———	759 29.882	700 27.559	—	744.4 29.307	—	—	788.4 31.039
SF4B-H40C(A-J05)	SF4B-A20C(A-J05)	839 33.031	780 30.709	760 29.921	824.4 32.457	399.5 15.728	—	868.4 34.189
SF4B-H48C(A-J05)	SF4B-A24C(A-J05)	999 39.331	940 37.008	920 36.220	984.4 38.756	479.5 18.878	—	1,028.4 40.488
SF4B-H56C(A-J05)	SF4B-A28C(A-J05)	1,159 45.630	1,100 43.307	1,080 42.520	1,144.4 45.055	559.5 22.028	—	1,188.4 46.787
SF4B-H64C(A-J05)	SF4B-A32C(A-J05)	1,319 51.929	1,260 49.606	1,240 48.819	1,304.4 51.354	419.5 16.516	858.5 33.799	1,348.4 53.087
SF4B-H72C(A-J05)	SF4B-A36C(A-J05)	1,479 58.228	1,420 55.906	1,400 55.118	1,464.4 57.654	472.5 18.602	965.5 38.012	1,508.4 59.386
SF4B-H80C(A-J05)	SF4B-A40C(A-J05)	1,639 64.528	1,580 62.205	1,560 61.417	1,624.4 63.953	525.5 20.689	1,072.5 42.224	1,668.4 65.685
SF4B-H88C(A-J05)	SF4B-A44C(A-J05)	1,799 70.827	1,740 68.504	1,720 67.716	1,784.4 70.252	578.5 22.776	1,179.5 46.437	1,828.4 71.984
SF4B-H96C(A-J05)	SF4B-A48C(A-J05)	1,959 77.126	1,900 74.803	1,880 74.016	1,944.4 76.551	631.5 24.862	1,286.5 50.650	1,988.4 78.283

Model No.	H	Q
SF4B-H□C(A-J05)	20 0.787	22.2 0.874
SF4B-A□C(A-J05)	40 1.575	42.2 1.661

DIMENSIONS (Unit: mm in)

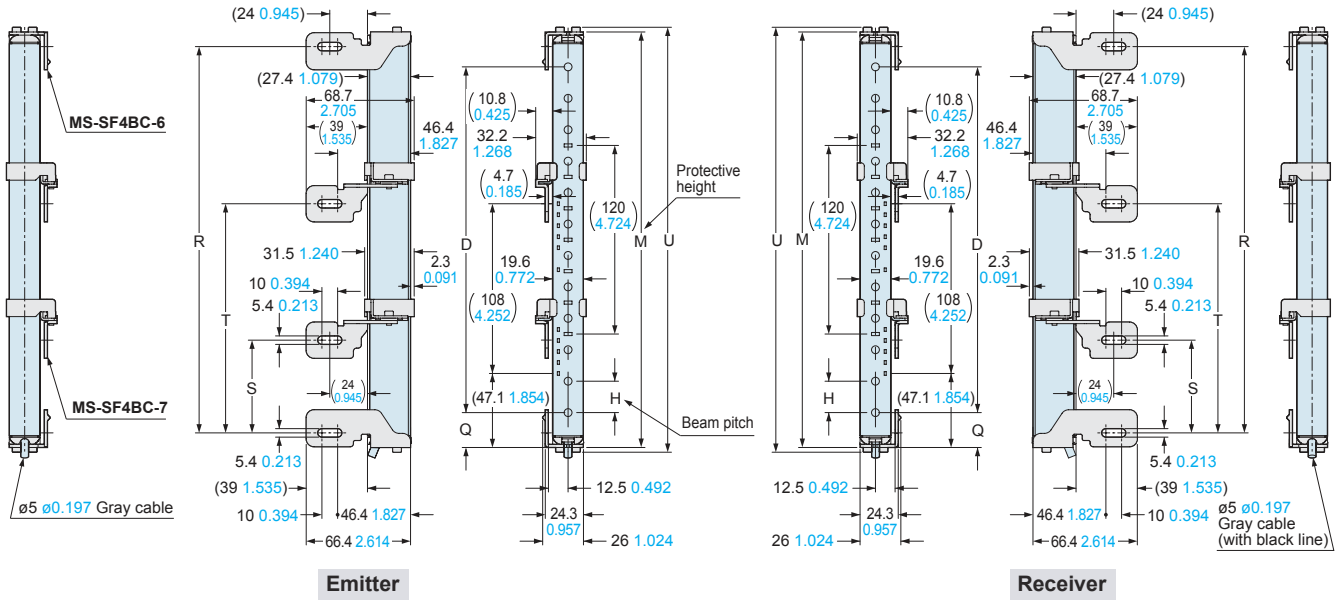
The CAD data can be downloaded from our website.

SF4B-□CA-J05 SF4B-□C

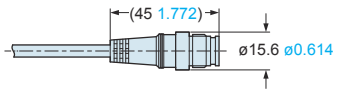
Safety light curtain

Assembly dimensions

The figure depicts space-saving mounting using the side mounting bracket **MS-SF4BC-6** (optional) and the intermediate supporting bracket for side mounting bracket **MS-SF4BC-7** (optional).



<Connector of the pigtailed type (with muting function) SF4B-□CA-J05>



Model No.		D		M	R	S	T	U
		SF4B-H□C(A-J05)	SF4B-A□C(A-J05)					
SF4B-H12C(A-J05)	———	220 8.661	—	264.4 10.409	245.8 9.677	—	—	270.4 10.646
SF4B-H16C(A-J05)	SF4B-A8C(A-J05)	300 11.811	280 11.024	344.4 13.559	325.8 12.827	—	—	350.4 13.795
SF4B-H20C(A-J05)	———	380 14.961	—	424.4 16.709	405.8 17.748	—	—	430.4 16.945
SF4B-H24C(A-J05)	SF4B-A12C(A-J05)	460 18.110	440 17.323	504.4 19.858	485.8 19.126	—	—	510.4 20.094
SF4B-H28C(A-J05)	———	540 21.260	—	584.4 23.008	565.8 22.276	—	—	590.4 23.244
SF4B-H32C(A-J05)	SF4B-A16C(A-J05)	620 24.409	600 23.622	664.4 26.157	645.8 25.425	—	—	670.4 26.394
SF4B-H36C(A-J05)	———	700 27.559	—	744.4 29.307	725.8 28.575	—	—	750.4 29.543
SF4B-H40C(A-J05)	SF4B-A20C(A-J05)	780 30.709	760 29.921	824.4 32.457	805.8 31.724	382.9 15.075	—	830.4 32.693
SF4B-H48C(A-J05)	SF4B-A24C(A-J05)	940 37.008	920 36.220	984.4 38.756	965.8 38.024	462.9 18.224	—	990.4 38.992
SF4B-H56C(A-J05)	SF4B-A28C(A-J05)	1,100 43.307	1,080 42.520	1,144.4 45.055	1,125.8 44.323	542.9 21.374	—	1,150.4 45.291
SF4B-H64C(A-J05)	SF4B-A32C(A-J05)	1,260 49.606	1,240 48.819	1,304.4 51.354	1,285.8 50.622	402.9 15.862	841.9 33.146	1,310.4 51.590
SF4B-H72C(A-J05)	SF4B-A36C(A-J05)	1,420 55.906	1,400 55.118	1,464.4 57.654	1,445.8 56.921	455.9 17.949	948.9 37.358	1,470.4 57.890
SF4B-H80C(A-J05)	SF4B-A40C(A-J05)	1,580 62.205	1,560 61.417	1,624.4 63.953	1,605.8 63.220	508.9 20.035	1,055.9 41.571	1,630.4 64.189
SF4B-H88C(A-J05)	SF4B-A44C(A-J05)	1,740 68.504	1,720 67.716	1,784.4 70.252	1,765.8 69.520	561.9 22.122	1,162.9 45.783	1,790.4 70.488
SF4B-H96C(A-J05)	SF4B-A48C(A-J05)	1,900 74.803	1,880 74.016	1,944.4 76.551	1,925.8 75.819	614.9 24.209	1,269.9 49.996	1,950.4 76.787

Model No.	H	Q
SF4B-H□C(A-J05)	20 0.787	22.2 0.874
SF4B-A□C(A-J05)	40 1.575	42.2 1.661

DIMENSIONS (Unit: mm in)

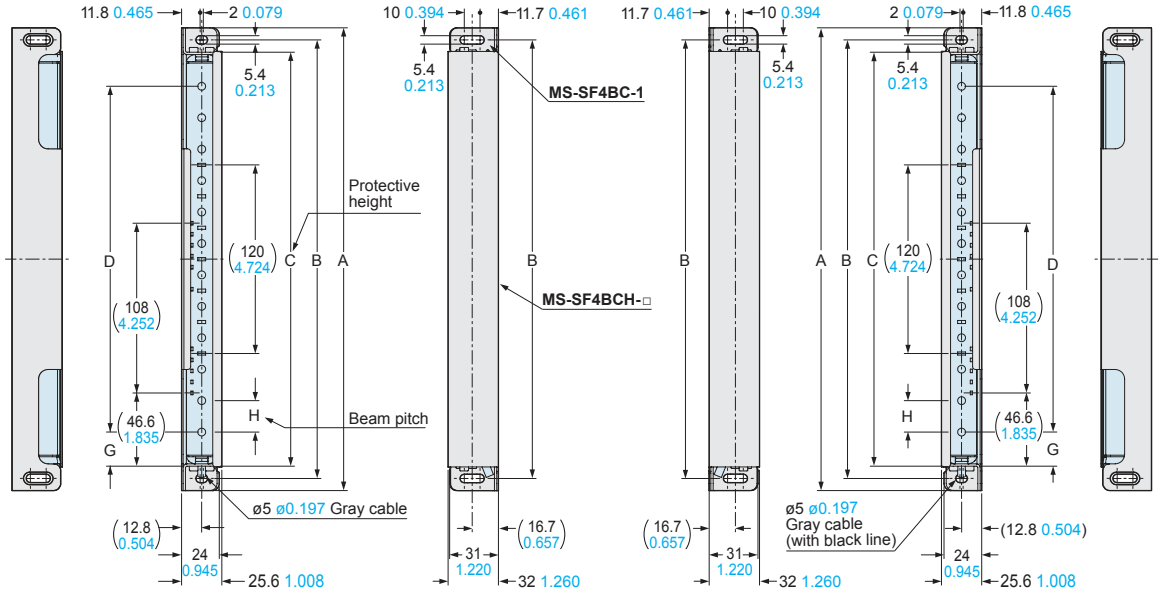
The CAD data can be downloaded from our website.

SF4B-□CA-J05 SF4B-□C

Safety light curtain

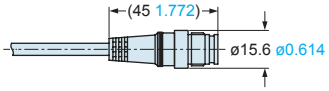
Assembly dimensions

The figure depicts mounting using the metal protection case **MS-SF4BCH-□** (optional) and the standard mounting bracket (optional).



Note: In the case of using a metal protection case **MS-SF4BCH-□** (optional), make sure to assemble it with a standard mounting bracket **MS-SF4BC-1** (optional).

<Connector of the pigtailed type (with muting function) SF4B-□CA-J05>



Model No.		A	B	C	D	
					SF4B-H□C (A-J05)	SF4B-A□C (A-J05)
SF4B-H12C (A-J05)	————	294.4 11.591	279 10.984	263.4 10.370	220 8.661	—
SF4B-H16C (A-J05)	SF4B-A8C (A-J05)	374.4 14.740	359 14.134	343.4 13.520	300 11.811	280 11.024
SF4B-H20C (A-J05)	————	454.4 17.890	439 17.283	423.4 16.669	380 14.961	—
SF4B-H24C (A-J05)	SF4B-A12C (A-J05)	534.4 21.039	519 20.433	503.4 19.819	460 18.110	440 17.323
SF4B-H28C (A-J05)	————	614.4 24.189	599 23.583	583.4 22.969	540 21.260	—
SF4B-H32C (A-J05)	SF4B-A16C (A-J05)	694.4 27.339	679 26.732	663.4 26.118	620 24.409	600 25.984
SF4B-H36C (A-J05)	————	774.4 30.488	759 29.882	743.4 29.268	700 27.559	—
SF4B-H40C (A-J05)	SF4B-A20C (A-J05)	854.4 33.638	839 33.031	823.4 32.417	780 30.709	760 29.921
SF4B-H48C (A-J05)	SF4B-A24C (A-J05)	1,014.4 39.937	999 39.331	983.4 38.717	940 37.008	920 36.220
SF4B-H56C (A-J05)	SF4B-A28C (A-J05)	1,174.4 46.236	1,159 45.630	1,143.4 45.016	1,100 43.307	1,080 42.520
SF4B-H64C (A-J05)	SF4B-A32C (A-J05)	1,334.4 52.534	1,319 51.929	1,303.4 51.315	1,260 49.606	1,240 48.819
SF4B-H72C (A-J05)	SF4B-A36C (A-J05)	1,494.4 58.835	1,479 58.228	1,463.4 57.614	1,420 55.906	1,400 55.118
SF4B-H80C (A-J05)	SF4B-A40C (A-J05)	1,654.4 65.134	1,639 64.528	1,623.4 63.913	1,580 62.205	1,560 61.417
SF4B-H88C (A-J05)	SF4B-A44C (A-J05)	1,814.4 71.433	1,799 70.827	1,783.4 70.213	1,740 68.504	1,720 67.717
SF4B-H96C (A-J05)	SF4B-A48C (A-J05)	1,974.4 77.732	1,959 77.126	1,943.4 76.512	1,900 74.803	1,880 74.016

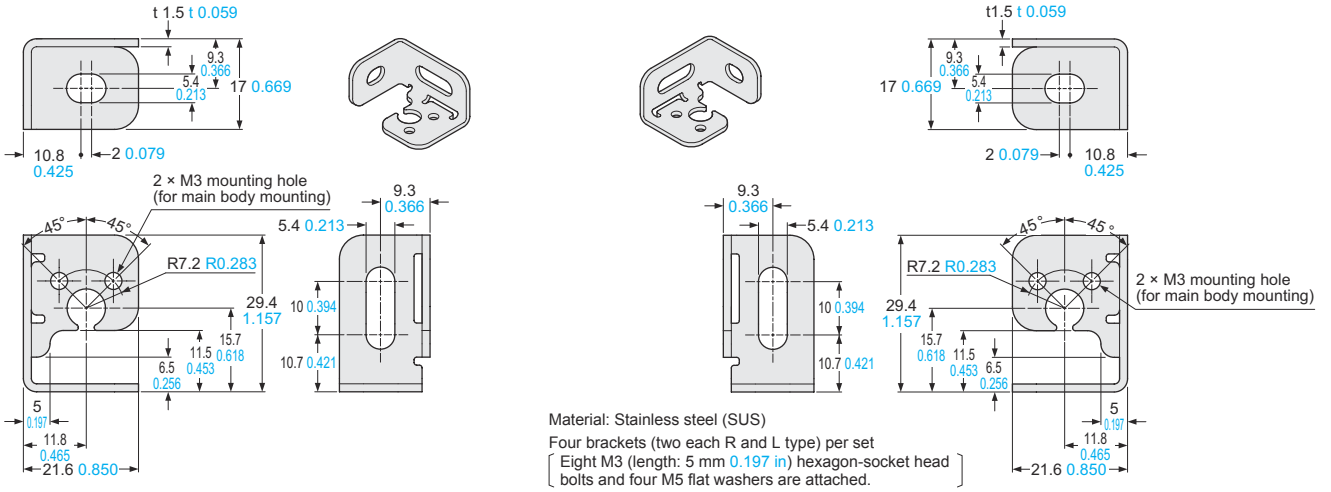
Model No.	G	H
SF4B-H□C (A-J05)	21.7 0.854	20 0.787
SF4B-A□C (A-J05)	41.7 1.642	40 1.575

DIMENSIONS (Unit: mm in)

The CAD data can be downloaded from our website.

MS-SF4BC-1

Standard mounting bracket (optional)



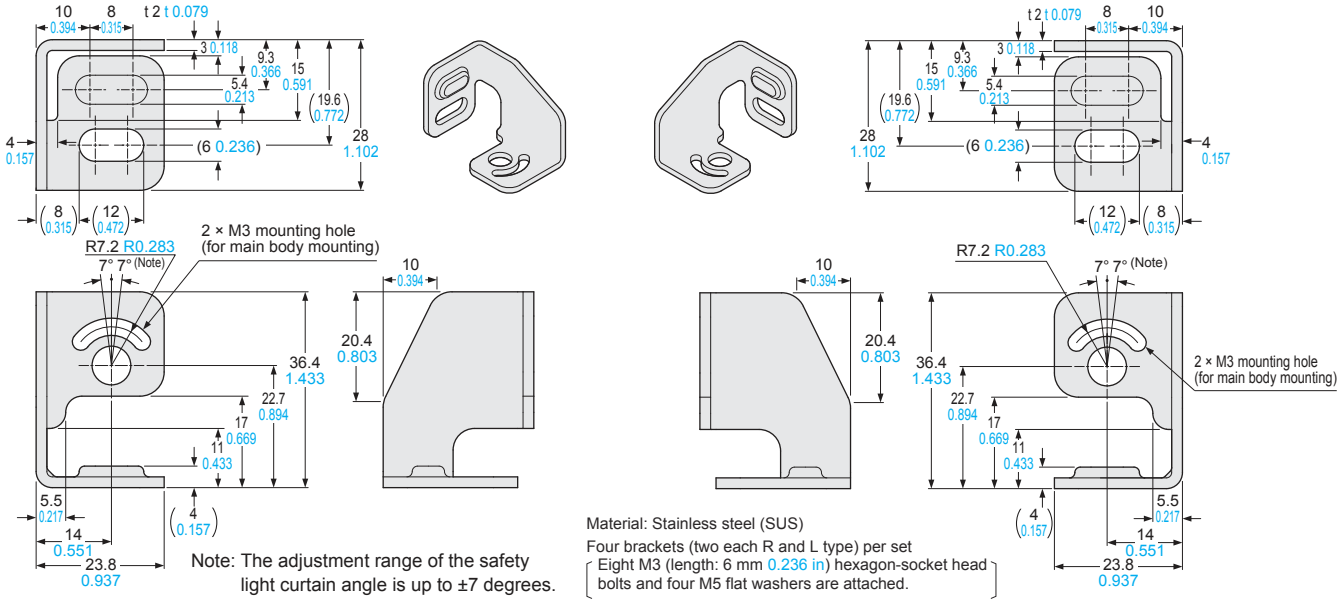
Material: Stainless steel (SUS)

Four brackets (two each R and L type) per set

[Eight M3 (length: 5 mm 0.197 in) hexagon-socket head bolts and four M5 flat washers are attached.]

MS-SF4BC-2

Rear utility mounting bracket (optional)



Note: The adjustment range of the safety light curtain angle is up to ±7 degrees.

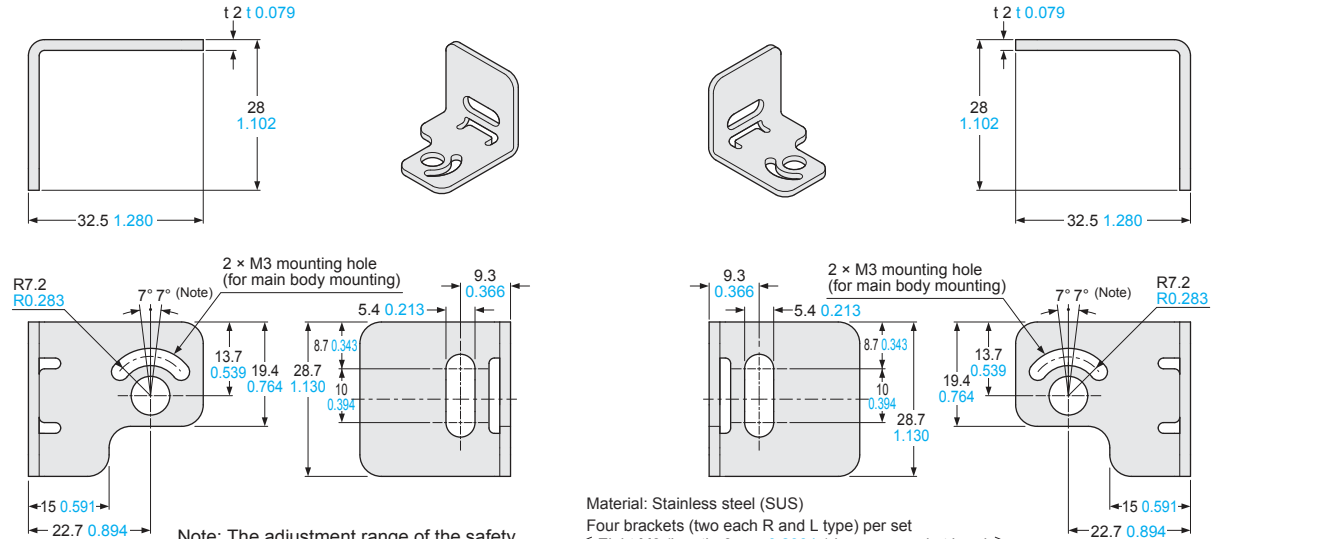
Material: Stainless steel (SUS)

Four brackets (two each R and L type) per set

[Eight M3 (length: 6 mm 0.236 in) hexagon-socket head bolts and four M5 flat washers are attached.]

MS-SF4BC-3

Side utility mounting bracket (optional)



Note: The adjustment range of the safety light curtain angle is up to ±7 degrees.

Material: Stainless steel (SUS)

Four brackets (two each R and L type) per set

[Eight M3 (length: 6 mm 0.236 in) hexagon-socket head bolts and four M5 flat washers are attached.]

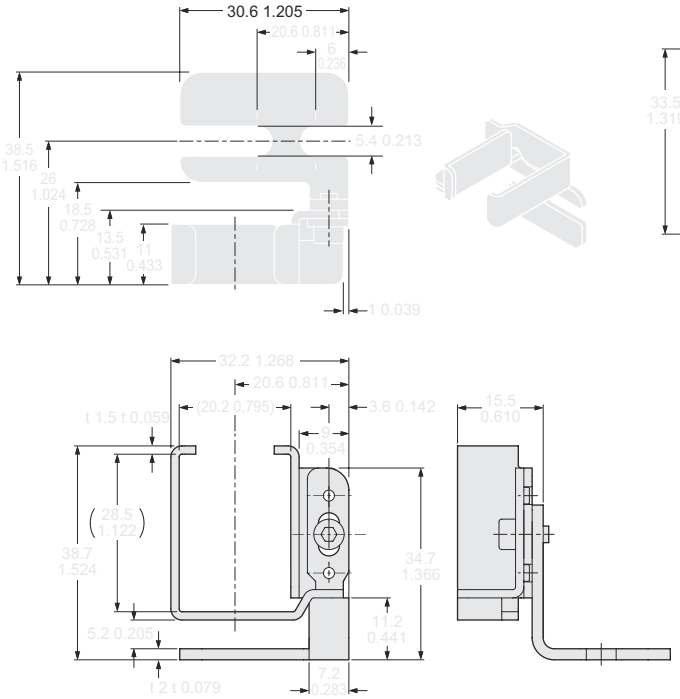
DIMENSIONS (Unit: mm in)

The CAD data can be downloaded from our website.

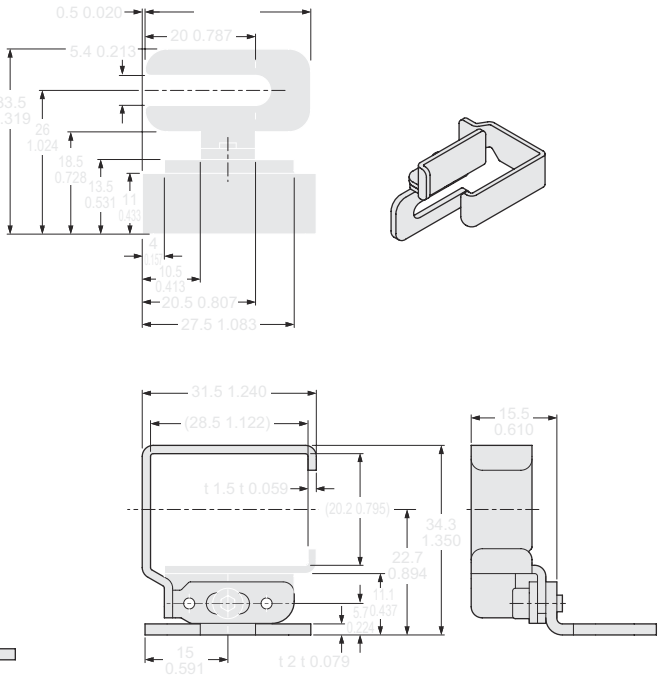
MS-SF4BC-4

Intermediate supporting bracket for utility mounting bracket (optional)

<For rear mounting>



<For side mounting>



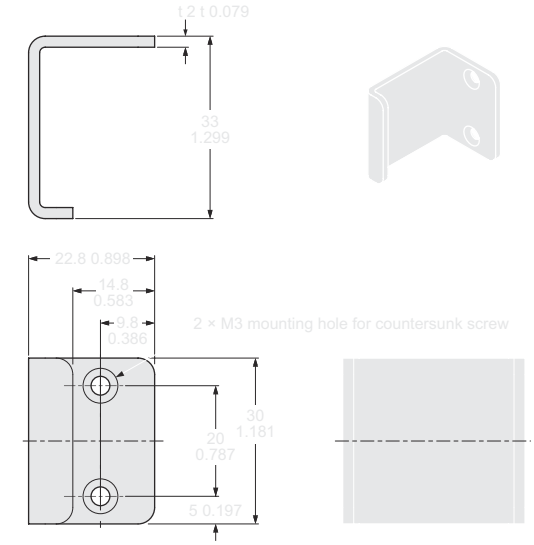
Material: Stainless steel (SUS)
Two pcs. M5 flat washers, two pcs. assembled M3 (length: 6 mm 0.236 in) hexagon-socket head bolts for rear mounting, two pcs. attachments for side mounting

Note: The numbers of sets required by **SF4B-H□C(A-J05)**(40 or more beam axes) and **SF4B-A□C(A-J05)** (20 or more beam axes) are as follows:
SF4B-H40C(A-J05), **SF4B-H48C(A-J05)**, **SF4B-H56C(A-J05)**, **SF4B-A20C(A-J05)**, **SF4B-A24C(A-J05)**, **SF4B-A28C(A-J05)**: 1 set
SF4B-H64C(A-J05), **SF4B-H72C(A-J05)**, **SF4B-H80C(A-J05)**, **SF4B-H88C(A-J05)**, **SF4B-H96C(A-J05)**, **SF4B-A32C(A-J05)**, **SF4B-A36C(A-J05)**, **SF4B-A40C(A-J05)**, **SF4B-A44C(A-J05)**, **SF4B-A48C(A-J05)**: 2 sets

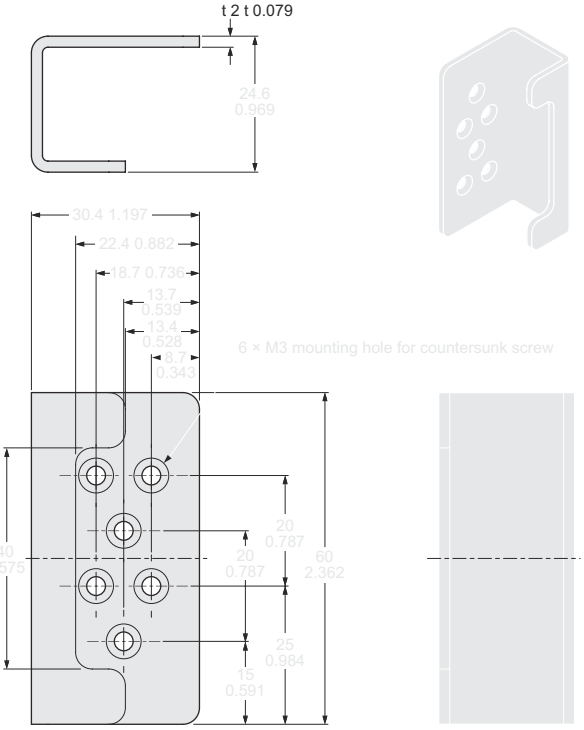
MS-SF4BC-5

Intermediate supporting bracket for standard mounting bracket (optional)

<For rear mounting>



<For side mounting>



Material: Stainless steel (SUS)
Two pcs. for rear mounting, two pcs. for side mounting

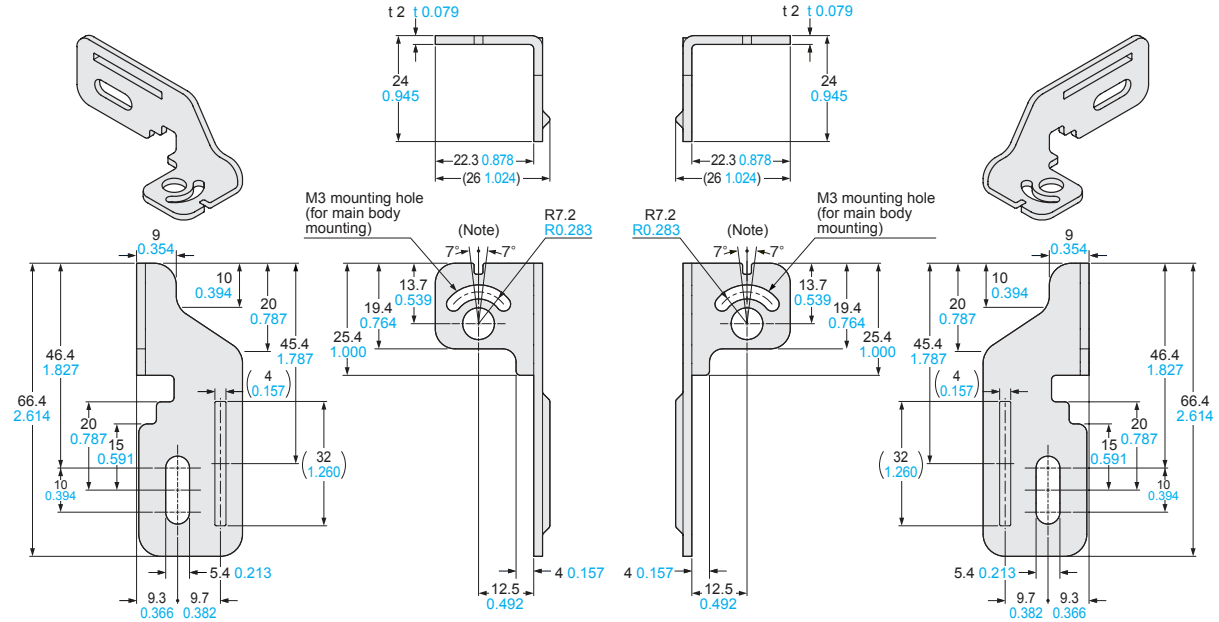
Note: The numbers of sets required by **SF4B-H□C(A-J05)**(40 or more beam axes) and **SF4B-A□C(A-J05)** (20 or more beam axes) are as follows:
SF4B-H40C(A-J05), **SF4B-H48C(A-J05)**, **SF4B-H56C(A-J05)**, **SF4B-A20C(A-J05)**, **SF4B-A24C(A-J05)**, **SF4B-A28C(A-J05)**: 1 set
SF4B-H64C(A-J05), **SF4B-H72C(A-J05)**, **SF4B-H80C(A-J05)**, **SF4B-H88C(A-J05)**, **SF4B-H96C(A-J05)**, **SF4B-A32C(A-J05)**, **SF4B-A36C(A-J05)**, **SF4B-A40C(A-J05)**, **SF4B-A44C(A-J05)**, **SF4B-A48C(A-J05)**: 2 sets

DIMENSIONS (Unit: mm in)

The CAD data can be downloaded from our website.

MS-SF4BC-6

Side mounting bracket (optional)

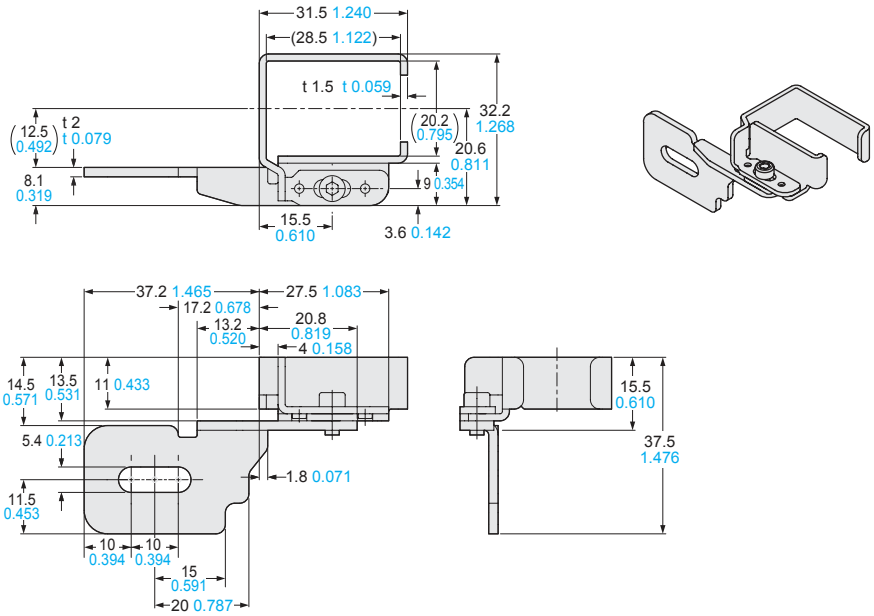


Material: Stainless steel (SUS)
Four brackets (two each L and R type) per set
[Eight M3 (length: 6 mm 0.236 in) hexagon-socket head bolts and four M5 flat washers are attached.]

Note: The adjustment range of the safety light curtain angle is up to ±7 degrees.

MS-SF4BC-7

Intermediate supporting bracket for side mounting bracket (optional)



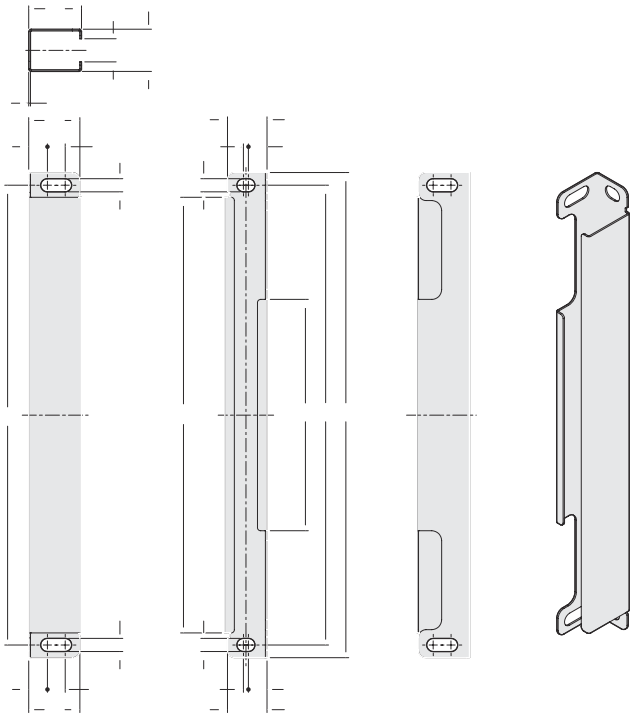
Material: Stainless steel (SUS)
Two brackets per set
[Two M5 flat washers and M3 (length: 6 mm 0.236 in) hexagon-socket head bolts in assembled state are attached.]

DIMENSIONS (Unit: mm in)

The CAD data can be downloaded from our website.

MS-SF4BCH-□

Metal protection case (optional)



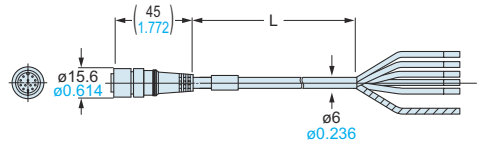
Material: Stainless steel (SUS304)

Model No.	A	B	C	D
MS-SF4BCH-12	294.4 11.591	279 10.984	264.4 10.409	140.4 5.528
MS-SF4BCH-16	374.4 14.740	359 14.134	344.4 13.559	220.4 8.677
MS-SF4BCH-20	454.4 17.890	439 17.283	424.4 16.709	300.4 11.827
MS-SF4BCH-24	534.4 21.039	519 20.433	504.4 19.858	380.4 14.976
MS-SF4BCH-28	614.4 24.189	599 23.583	584.4 23.008	460.4 18.126
MS-SF4BCH-32	694.4 27.339	679 26.732	664.4 26.157	540.4 21.276
MS-SF4BCH-36	774.4 30.488	759 29.882	744.4 29.307	620.4 24.425
MS-SF4BCH-40	854.4 33.638	839 33.031	824.4 32.457	700.4 27.575
MS-SF4BCH-48	1,014.4 39.937	999 39.331	984.4 38.756	860.4 33.874
MS-SF4BCH-56	1,174.4 46.236	1,159 45.630	1,144.4 45.055	1,020.4 40.173
MS-SF4BCH-64	1,334.4 52.535	1,319 51.929	1,304.4 51.354	1,180.4 46.472
MS-SF4BCH-72	1,494.4 58.835	1,479 58.228	1,464.4 57.654	1,340.4 52.772
MS-SF4BCH-80	1,654.4 65.134	1,639 64.528	1,624.4 63.953	1,500.4 59.071
MS-SF4BCH-88	1,814.4 71.433	1,799 70.827	1,784.4 70.252	1,660.4 65.370
MS-SF4BCH-96	1,974.4 77.732	1,959 77.126	1,944.4 76.551	1,820.4 71.669

DIMENSIONS (Unit: mm in)

The CAD data can be downloaded from our website.

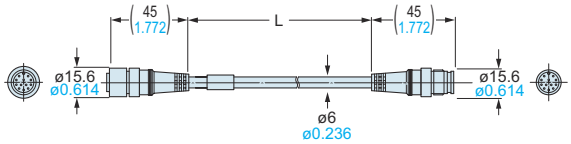
SFB-CC□-MU Mating cable with connector on one end (optional)



• Length: L

Model No.	Length: L
SFB-CC3-MU	3,000 118.110
SFB-CC7-MU	7,000 275.591
SFB-CC10-MU	10,000 393.701

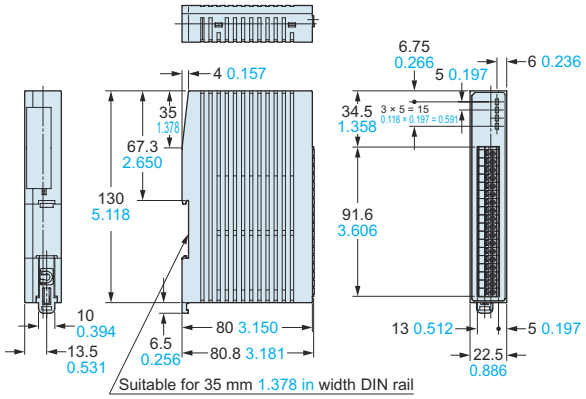
SFB-CCJ□-MU Mating cable with connectors on both ends (optional)



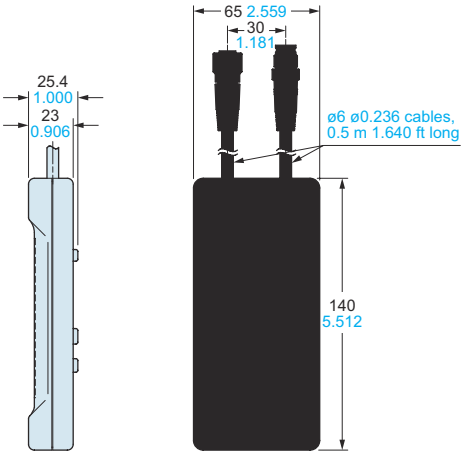
• Length: L

Model No.	Length: L
SFB-CCJ3D-MU	3,000 118.110
SFB-CCJ3E-MU	
SFB-CCJ10D-MU	10,000 393.701
SFB-CCJ10E-MU	

SF-C13 Control unit (optional)



SFB-HC Handy-controller (optional)



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No. PCE-GENSF4BC-1
2023.8