Honeywell

Safety multibeam system for access detection

Compact, Universal, Smart and Full-featured

FF-SYA234 Series

FF-SYA

New design

FEATURES

- Active Optoelectronic Protective Device compliant with the requirements of the IEC/EN 61496 - parts 1 and 2 European norms for Type 4 electrosensitive protective equipment
- Meets applicable parts of North American standards and regulations OSHA 1910.212 and 217; ANSI B11.1.2 and .19; ANSI RIA 15.06 for Control Reliability; CSA standards
- Self-contained with optical synchro-nisation
- 2 static safety outputs with short-circuit and cross-fault detection
- Selection of the infrared emission power allows cross-talk reduction
- Enhanced diagnostic information includes: a signal strength indicator, a cross-talk indicator and a failure diagnostic indicator
- Test input with selectable test input type
- Two, three and four beam versions for access and beam detection
- Scanning range up to 80 m / 262.4 ft
- Electrical connection:
  - Hirschmann N6RFF type connectors,
  - Brad Harrison Mini-Change® connectors
  - terminal strips
- Mounting brackets included allowing multiple mounting positions
- Safety relay modules for more switching capability or additional features (to be ordered separately).

TYPICAL APPLICATIONS

- Access detection to robot areas
- Stacking machines, transporting and conveyor technology
- Handling equipment and assembly lines

c (UL) US LISTED

CSA® C US

CE

INRS

Approved as Type 4 per IEC/EN 61496-1/2

B
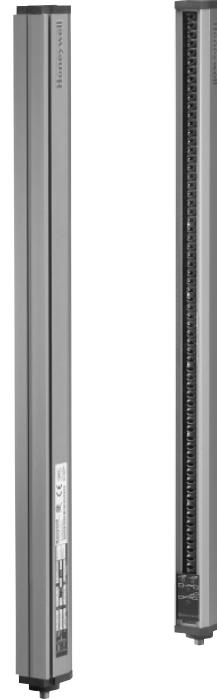
The Honeywell FF-SYA234 multibeam system is in compliance with IEC/EN 61496 - parts 1 and 2 standard and meets the requirements for a Type 4 Active Optoelectronic Protective Device, the highest level for safety products.

The product received an EC type test certificate from the French INRS notified body, required for safety equipment as per the 98/37/EC Machinery Directive. It meets the applicable parts of North American standards and regulations (OSHA 1910.212, OSHA 1910.217, ANSI standards including ANSI RIA 15.06 for Control Reliability and CSA Z434). Its UL and CSA mark makes it a product usable in most parts of the world.

As soon as a person is detected inside the protection field, the FF-SYA de-energizes its two static safety outputs to signal the dangerous motion to stop. The FF-SYA is a self-contained light curtain that does not require a separate control unit for operation. Safety relay modules are available to provide higher current capability and additional functionality. This light curtain has been de-signed to satisfy the requirements of worldwide machine manufacturers and users: its compact size combined with its universal and smart features makes it full-featured and easy to use.

The long scanning distance ensures that most perimeter guarding applications are covered. The optional FF-SYZPF floor mounting posts with individual mir-rors can be used to protect several sides of a machine with only one system.

R

FF-SYA

The FF-SYA main features are:

- *COMPACT SIZE*

The cross section of 42 mm^2 x 55 mm^2 / 1.65 in^2 x 2.16 in^2 makes installation possible in tight spaces, especially with the help of the small brackets supplied with the light curtains. The available safety relay modules easily fit inside the machine control panel with its small width DIN rail mount housing.

- *UNIVERSAL*

The housing dimensions are the same for the whole FF-SYA series. The scanning range makes it possible to use mirrors in order to protect several sides of a machine with only one system.

- *SMART*

The FF-SYA is equipped with 2 static safety outputs. Compatible safety relay modules are available for a greater output current capability and manual restart functionality. An integrated cross talk reduction system allows the scanning range to be selected for the application distance. A cross talk indicator flickers when emission from other systems is detected, indicat-

ing that a different selection of the scanning range is needed. The light curtain also has a signal strength indicator which flickers if there is a slight misalignment of the beams or front window contamination. Additional indicators provide information on the outputs status, on the selected scanning range and on failure diagnostic. Standard brackets are delivered with the light curtain to ease the order process. The housing has a T-slot mounting system to adapt brackets anywhere along the lateral sides, the rear sides or at the top and the bottom of the light curtain. Hirschmann connectors are delivered with the FF-SYA❑❑❑❑C2 light curtains.

- *FULL FEATURED*

The integrated test input can be used to test the entire safety chain. The test contact type (NO or NC characteristics) can be selected by internal jumpers. When connected to the compatible safety relay modules, the FF-SYA provides a wide variety of advanced functions: cross-monitored relays, final switching devices monitoring for the control of external contactors or relays, choice between automatic restart or start and restart interlock as well as relay status indicators.

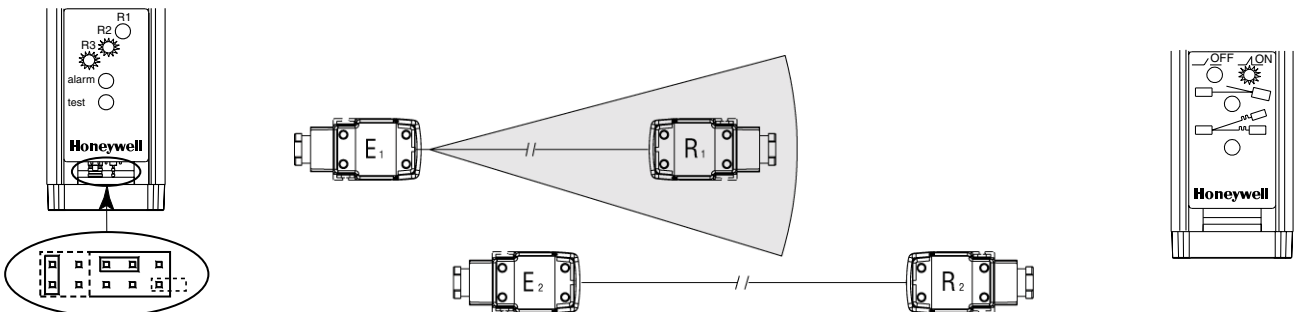## Cross-talk reduction system

The FF-SYA light curtain is based upon an infrared transmission between an emitter unit and a receiver unit. It is a requirement of the IEC/pr EN 61496-2 standard that if a receiver R2 receives two signals transmitted by two different emitters E1 and E2, the receiver R2 must turn to the alarm state. This happens if the receiver R2 is within the beam aperture angle and within the nominal scanning range of the second emitter E1. The cross-talk detection indicator flickers on the receiver R2 to warn the installer.
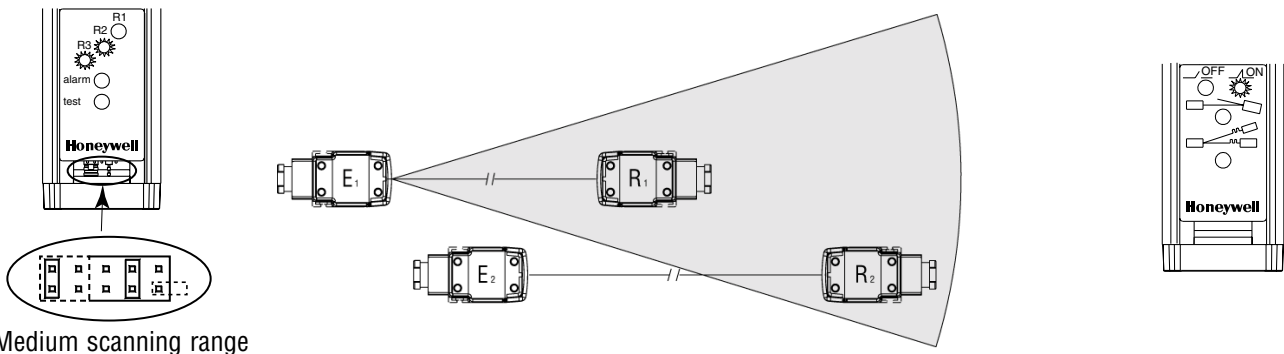
Medium scanning range

An internal jumper is available on the emitter units for the selection of the adequate emission power. This jumper can be used to eliminate this cross-talk phenomenon by decreasing the maximum scanning range down to minimum. The end cap can be easily removed, and there is no need to remove the unit from the machinery to select a different scanning range. Products are delivered with a minimum scanning range to minimize cross-talk upon installation.
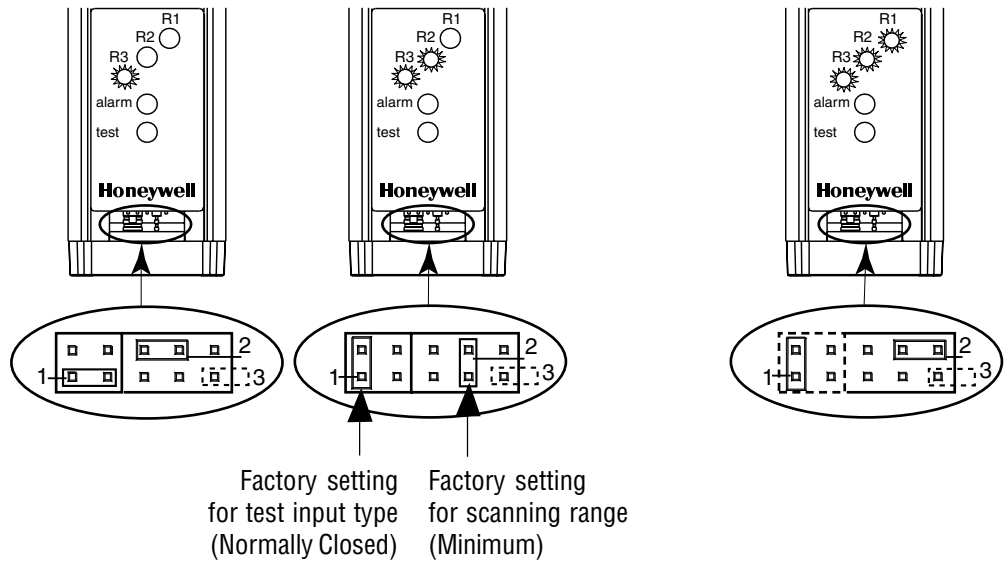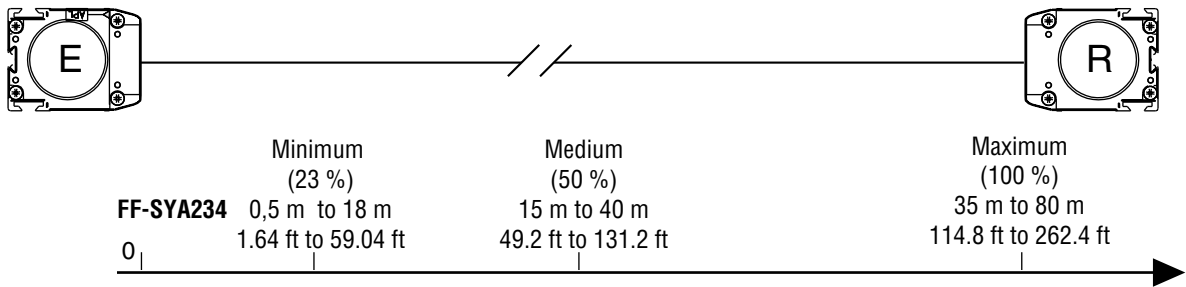
LED status indicators
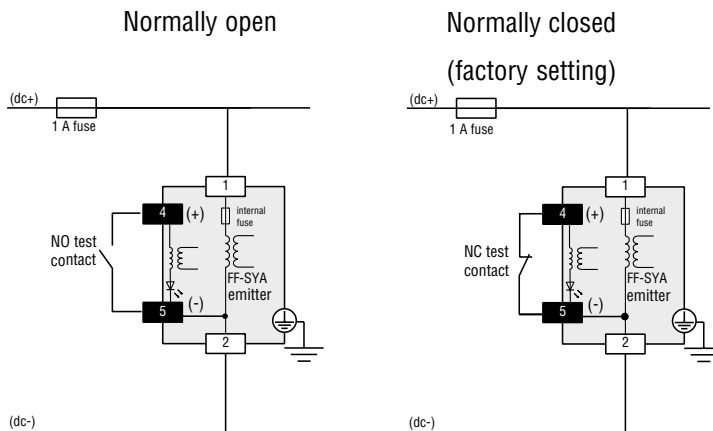

Minimum scanning range
(factory setting)

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Scanning range selection
Test input type selection

	Minimum (23 %)	Medium (50 %)	Maximum (100 %)
FF-SYA234	0,5 m to 18 m 1.64 ft to 59.04 ft	15 m to 40 m 49.2 ft to 131.2 ft	35 m to 80 m 114.8 ft to 262.4 ft

Factory setting
for test input type
(Normally Closed)

Factory setting
for scanning range
(Minimum)

1: Jumper for test input type setting   -   2: Jumper for scanning range setting   -   3: Spare jumper without function

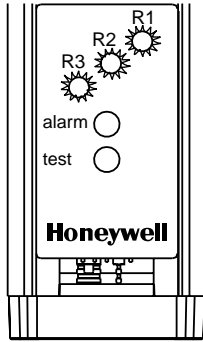Remove the end cap, in order to access to the internal jumpers.

Test input type

Normally open

Normally closed
(factory setting)

(dc+)
1 A fuse

(+)
internal fuse

NO test
contact

FF-SYA
emitter

(-)

(dc-)

(dc+)
1 A fuse

(+)
internal fuse

NC test
contact

FF-SYA
emitter

(-)

(dc-)

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LED status indicators
Emitter

FF-SYA

3 scanning range indicators (yellow)

Alarm indicator (red)

Test indicator (red)

R3 R2 R1
Maximum scanning range (yellow)

Medium scanning range (yellow)

Minimum scanning range (yellow)
(factory setting)

Alarm — Normal operation

Alarm — Device failure

Test — Normal operation

Test — Device in test mode

Receiver
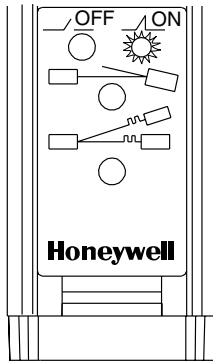
2 operation indicators (red and green)

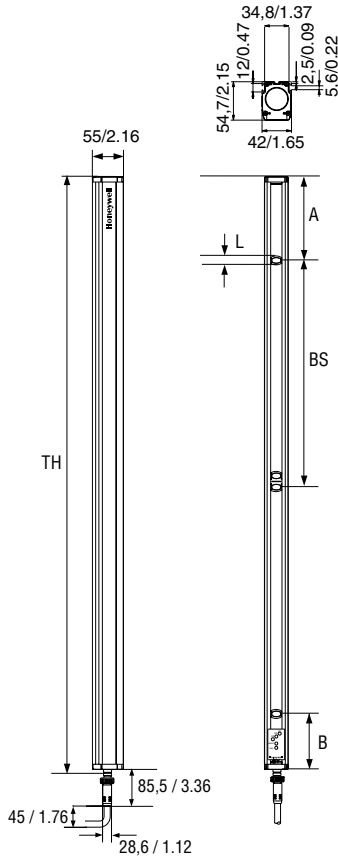Signal strength indicator (yellow)

Cross-talk indicator (red)

OFF ON OFF ON
Outputs are open   Outputs are closed

Perfect beam alignment   Slight beam misalignment   Total beam misalignment

No cross-talk detected   Cross-talk detected

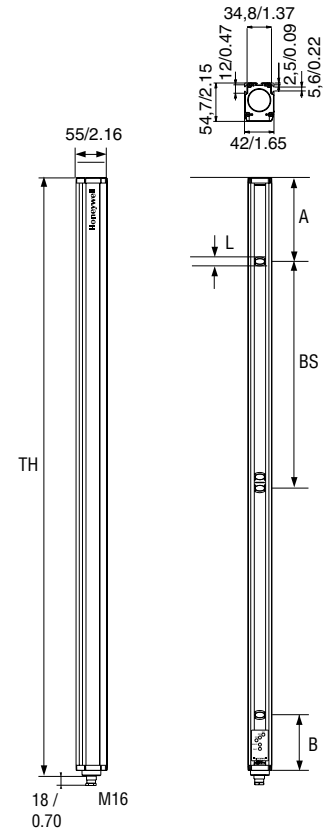Light OFF   Light ON   Flickering light

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Dimensions (mm / in)

| FF-SYA with Hirschmann N6RFF connectors (FF-SYA☐☐☐☐☐C2) | FF-SYA with Brad Harrison Mini-Change® connectors (FF-SYA☐☐☐☐☐Q2) | FF-SYA with terminal strips (FF-SYA☐☐☐☐☐T2) |
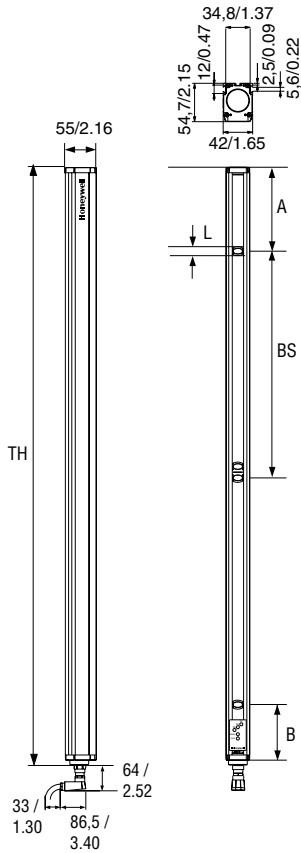
Reference	Number of beams (N)	Beam Spacing (BS) mm / in	Total height TH (1) mm / in	A (mm / in)	B (mm / in)	Weight per device kg / lbs
FF-SYA02500C2	2	500 / 19.70	803 / 31.63	117 / 4.61	122 / 4.81	1,76 / 3.52
FF-SYA02500Q2	2	500 / 19.70	763 / 30.06	117 / 4.61	122 / 4.81	1,76 / 3.52
FF-SYA02500T2	2	500 / 19.70	758 / 29.80	117 / 4.61	122 / 4.81	1,76 / 3.52
FF-SYA03400C2	3	400 / 15.76	1123 / 44.24	147 / 5.79	112 / 4.41	2,52 / 5.54
FF-SYA03400Q2	3	400 / 15.76	1083 / 42.67	147 / 5.79	112 / 4.41	2,52 / 5.54
FF-SYA03400T2	3	400 / 15.76	1078 / 42.40	147 / 5.79	112 / 4.41	2,52 / 5.54
FF-SYA04300C2	4	300 / 11.82	1123 / 44.24	67 / 2.63	92 / 3.62	2,52 / 5.54
FF-SYA04300Q2	4	300 / 11.82	1083 / 42.67	67 / 2.63	92 / 3.62	2,52 / 5.54
FF-SYA04300T2	4	300 / 11.82	1078 / 42.40	67 / 2.63	92 / 3.62	2,52 / 5.54

TH: Total Height (including plugs for the FF-SYA☐☐☐☐☐C2, male receptacles only for the FF-SYA☐☐☐☐☐Q2 and cable glands for the FF-SYA☐☐☐☐☐T2 versions)

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FF-SYA

Safety multibeam system for access detection

- **Type 4 according to the IEC/EN 61496 - parts 1 and 2 standards**
- **Two, three and four beam systems for access and body detection**
- **Beam spacing per EN 999 and ANSI/RIA/R15.06-1999 (see notice below)**
- **Enhanced diagnostic information**

Approved as **Type 4** per IEC/EN 61496-1/2   CE   CSA   c us   INRS   c UL us LISTED   B
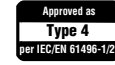
Dimensions in millimeters / inches, meters / feet, weights in kg / lbs

Features	Type	FF-SYA02500	FF-SYA03400	FF-SYA04300
	Number of beams	2	3	4
	Beam spacing	500 mm / 19.7 in	400 mm / 15.76 in	300 mm / 11.82 in
	Nominal scanning ranges	0,5 m to 80 m / 1.64 ft to 262.4 ft		
	Supply voltage	24 Vdc (± 15 %)		
	Power consumption	*Emitter*: 3,6 W max. • *Receiver*: 3,3 W max.		
	Outputs	2 PNP safety static outputs (switching capacity: 0,5 A / 24 Vdc)		
	Test input	Normally open or Normally closed (Factory setting)		
	Response time	11,5 ms		
	LED status indicators	*Emitter*: test mode, failure alarm, selected scanning range		
		Receiver: outputs status, optical signal margin, cross-talk detection		
	Cross sectional area	W 42 mm^2 x D 55 mm^2 / W 1.65 in^2 x D 2.16 in^2		
	Emission	Infrared modulated light source (880 nm)		
	Effective aperture angle	± 2°, ± 25 % (in compliance with the IEC/EN 61496 - Part 2)		
	Light immunity	*Sun:* 20 000 lux • *Lamp:* 15 000 lux		
	Electrical noise immunity	IEC 61000-4-4: level III / IEC 61000-4-3: level III		
	Ambient temperature	*Operating temperature*: 0 °C to 55 °C / 32 °F to 131 °F		
		Storage temperature: -20 °C to 75 °C / -4 °F to 167 °F		
	Vibrations	IEC/EN 61496-1: 10 to 55 Hz frequency range, 1 octave/min.sweep rate,		
		0,35 mm ± 0,05 amplitude, 20 sweeps per axis, for 3 axes		
	Sealing	IP 65, NEMA 4, 13		
	Material	*Housing:* aluminium alloy • *Front plate:* polymethyl metacrylate (PMMA) • *End caps:* polycarbonate		
	Electrical connection	FF-SYA❑❑❑❑❑C2: EN 60423 plastic 7-pin right-angle plugs with crimping contacts (Hirschmann N6RFF type)		
		FF-SYA❑❑❑❑❑Q2: 5 and 7 pole straight male receptacles compatible with Brad Harrison Mini-Change® plugs (not included)		
		FF-SYA❑❑❑❑❑T2: terminal strip version with M16 cable glands		

Ordering information

Each listing consists of an emitter, a receiver, 2 pairs of right-angle brackets, a test rod and a pair of Hirschmann N6RFF connector (FF-SYA❑❑❑❑❑❑C2 version only)

FF-SYA❑❑❑❑❑❑2

- **C:** EN 60423 Hirschmann N6RFF plastic plugs (included)
- **Q:** male receptacles compatible with Brad Harrison Mini-Change® plugs (not included)
- **T:** terminal strips (cable glands included)

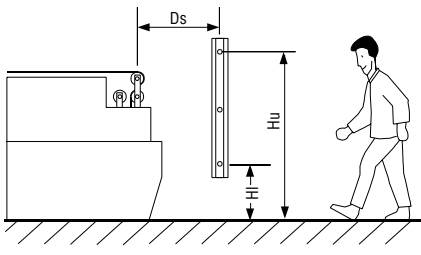| Model	Number of beams	Beam spacing mm / in
02500	2	500 / 19.70
03400	3	400 / 15.76
04300	4	300 / 11.82

NOTICE

NON COMPLIANCE TO ANSI/RIA 15.6-1999 WITH FF-SYA02500

Only the three beam (FF-SYA03400 Series) and the four beam versions (FF-SYA04300 series) are in compliance with the beam heights, specified in the US Standard ANSI/RIA R15.06-1999 (Industrial Robots and Robot Systems - Safety Requirements). The two beam version (FF-SYA02500 Series) does NOT comply with ANSI/RIA R15.06 and may require additional protection.

Refer to applicable standards. In the absence of an applicable standard, ANSI B11.19 and ANSI R15.06 may be used as reference for the USA, as well as EN 999 (or the relevant Type C machine standard) for Europe.

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■ Safety distances

European EN 999 standard (in mm, 100 mm = 3.9 in)

Normal approach	FF-SYA234			
	$S \geq 1600 \ (t1 + t2) + 850$			
	Reference	Number of beams (N)	Beam heights above the reference floor mm	i n
	FF-SYA02500❏2	2	400 / 900	15.7 / 35.4
	FF-SYA03400❏2	3	300 / 700 / 1100	11.8 / 27.6 / 43.3
	FF-SYA04300❏2	4	300 / 600 / 900 / 1200	11.8 / 23.6 / 35.4 / 47.2

Where
S: Minimum safety distance (in mm, 100 mm = 3.9 in)
t1: Light curtain response time (s)
t2: Machine stopping time (s)
Hu: Height of the uppermost beam above the reference floor (mm)
Hl: Height of the lowest beam above the reference floor (mm)
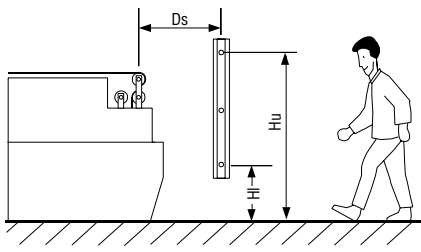
For more information, refer to the EN 999 European standard or comply with the requirements on safety distances given by the type C European standard if existing for the considered machine.

USA ANSI/RIA 15.06 requirements (in inches, 1 in = 25,4 mm)

Normal approach	FF-SYA234			
	$Ds = 63 \ (Ts + Tc + Tr) + Dpf$			
	Reference	Number of beams (N)	Beam heights above the reference floor	Dpf
	FF-SYA02500❏2	2	1st beam at 300 mm / 12 in max.(Hl) (1) Top beam at 900 mm / 36 in min. (Hu)(1)	1,2 m / 48 in (Reach over)
	FF-SYA03400❏2	3	1st beam at 300 mm / 12 in max. (Hl) Top beam at 900 / 36 in min. (Hu)	1,2 m / 48 in (Reach over)
	FF-SYA04300❏2	4	1st beam at 300 mm / 12 in (Hl) Top beam at 1200 mm / 48 in (Hu)	0,9 m / 36 in (Reach thru)

(1) Additional safeguard(s) is (are) required, when using the FF-SYA02500❏2 two beam systems, as beam heights do not fully comply to ANSI/RIA 15.06 requirements.

Ds = K (Ts + Tc + Tr) + Dpf

Where
Ds: Minimum safety distance (in inches, 1 in = 25,4 mm)
K: Approach speed
Ts: Worst case stopping time of the machine (s)
Tc: Worst case response of the machine's control (s)
Tr: Response time of the safety devices (light curtain plus its interface – meaning the response time including the mechanical relay outputs in s)
*Dpf: Depth penetration factor (in)*
Hu: Height of the uppermost beam above the reference floor (in)
Hl: Height of the lowest beam above the reference floor (in). For Normal approach, assumption is that Hl is not greater than 12 in unless the application prevents access even with Hl at a distance greater than 12 in.

For more information, refer to the US regulations and standards (OSHA 29 CFR 1919.212 and 1910.217, ANSI B11.1, B11.2, B11.19 and ANSI RIA R15.06).

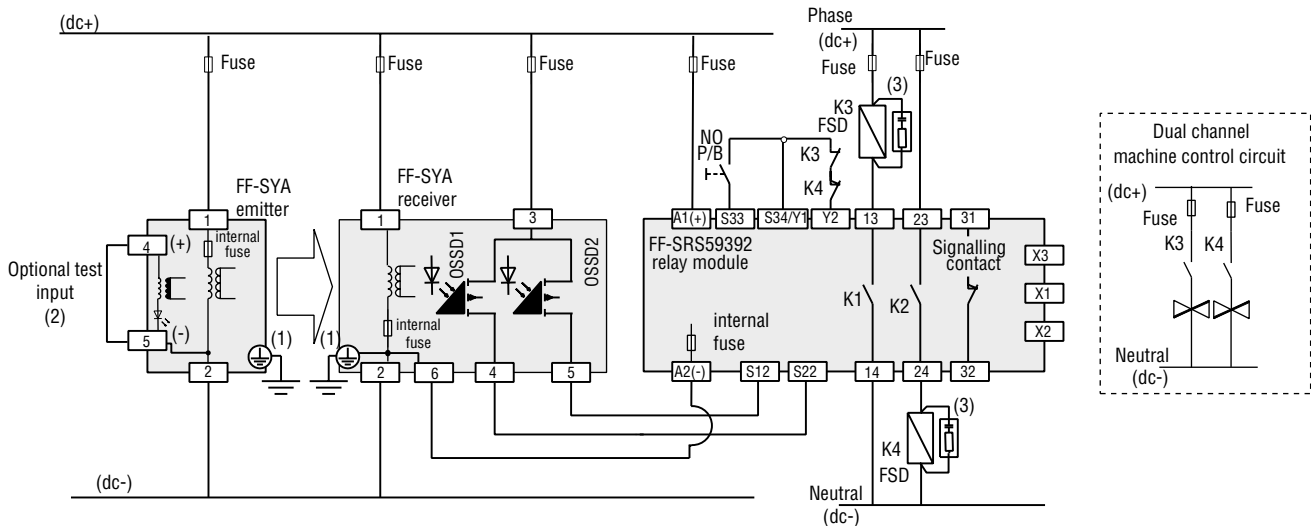• **Safety Products for Machine Safeguarding** •

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FF-SYA

Wiring diagram using external safety relays with guided contacts
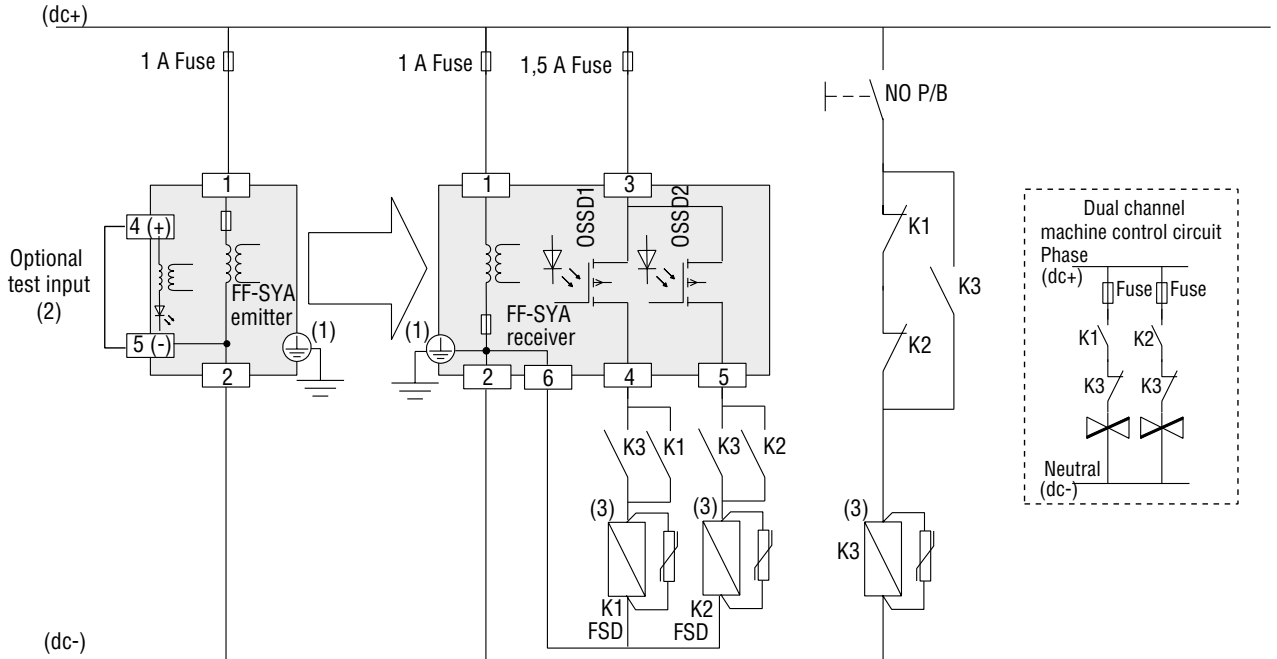
Wiring diagram using the FF-SRS59392 Dual Channel Relay Module for ESPE with static safety outputs
The FF-SRS59392 safety control module is set in the manual restart mode with FSD monitoring.

NOTICE

IMPROPER USE OF FF-SYA CURTAIN

The cross-monitoring of the FF-SYA static outputs is based upon a self-checking principle which guarantees the detection of an output short-circuit and the detection of a short-circuit between the outputs (cross-fault detection). The FF-SRL5925 and the FF-SRS59392 interface control modules are primarily designed to be interfaced with Honeywell static safety outputs devices.

Compatibility of the FF-SYA with any other emergency stop safety control module is not guaranteed.

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(1) Use pin 3 for the FF-SYA□□□□□Q2E emitter and pin 7 for the FF-SYA□□□□□Q2R receiver
(2) Optional test input jumpered when unused (see chapter "Test input Selection" for details).
(3) Install arc suppressors (31 Vdc varistors, customer supplied)
OSSD1 and OSSD2: Output Signal Switching Devices (static safety outputs)
FSD: Final Switching Devices (external safety relays with guided contacts)
NO P/B: normally open contact of a start push-button

Wiring diagram using the FF-SRL59252 Dual Channel Relay Module for ESPE with static safety outputs

Example: the FF-SRL59252 safety control module is set in the manual start mode with FSD monitoring.
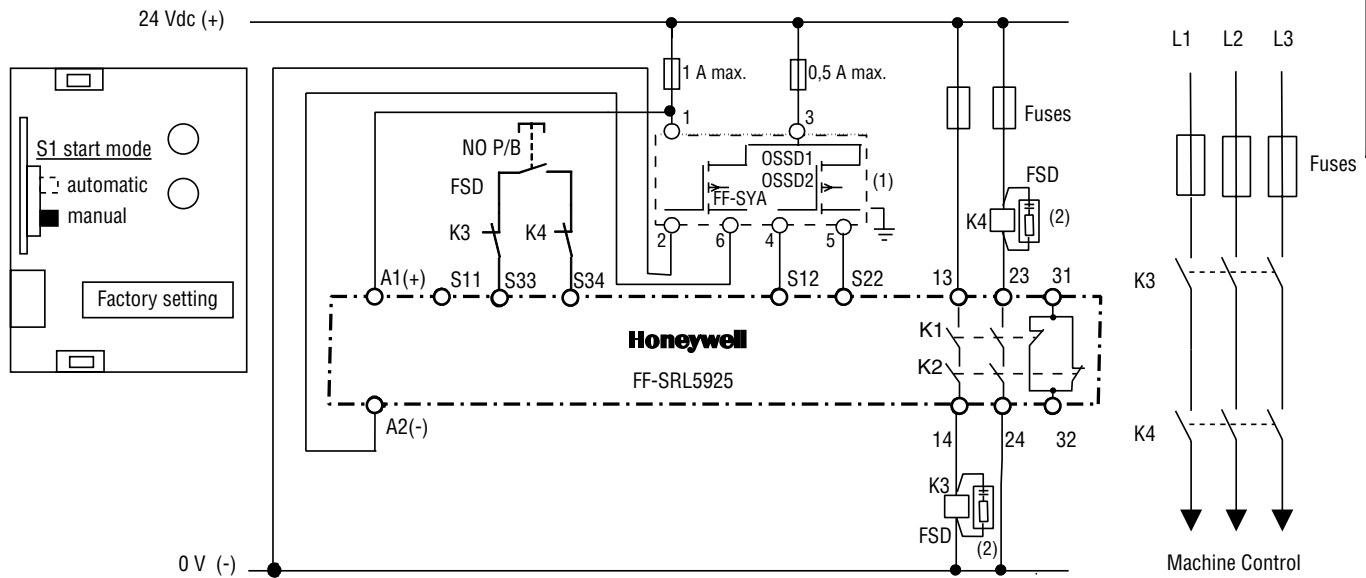
NOTICE
IMPROPER USE OF FF-SYA CURTAIN

The cross-monitoring of the FF-SYA static outputs is based upon a self-checking principle which guarantees the detection of an output short-circuit and the detection of a short-circuit between the outputs (cross-fault detection). The FF-SRL59252 and the FF-SRS59392 interface control modules are primarily designed to be interfaced with Honeywell static safety outputs devices.

Compatibility of the FF-SYA with any other emergency stop safety control module is not guaranteed.

(1) Use pin 3 for the FF-SYA❑❑❑❑Q2E emitter and pin 7 for the FF-SYA❑❑❑❑Q2R receiver
(2) Install arc suppressors (31 Vdc varistors, customer supplied)
OSSD1 and OSSD2: Output Signal Switching Devices (static safety outputs)
FSD: Final Switching Devices (external safety relays with guided contacts)
NO P/B: normally open contact of a start push-button

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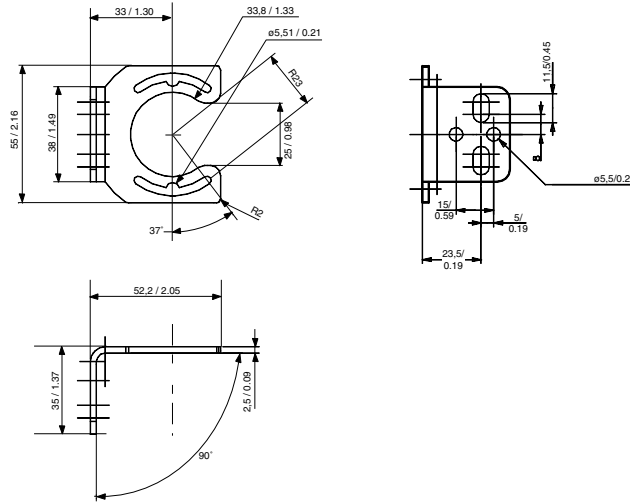
Accessories

FF-SYA (side tab)

New
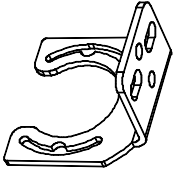
FF-SYZ634178

Kit of 2 right angle mounting brackets with screws, bolts, nuts and washers to mount one emitter or one receiver unit.

Possible mounting positions:

1. At the top and the bottom of the FF-SYA (allowing adjustments in azimuth directions of ±10°).
2. At one of the two lateral dovetail slots (allowing adjustments in vertical directions along the slot)
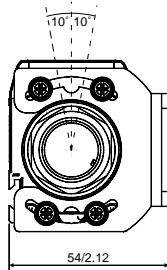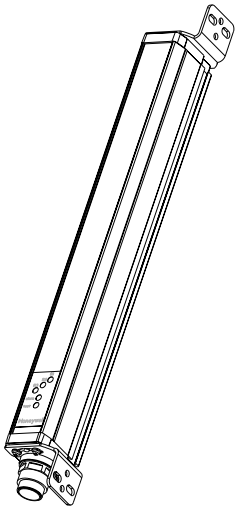3. At the rear dovetail slot (allowing adjustments in vertical directions along the slot)

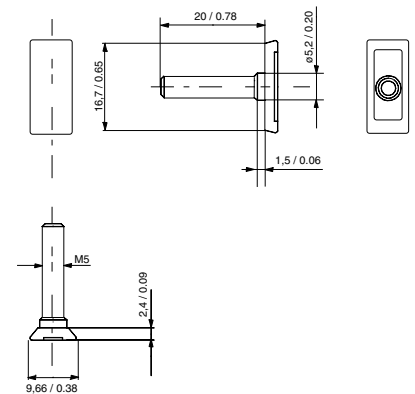Order 2 kits for a complete set of emitter and receiver
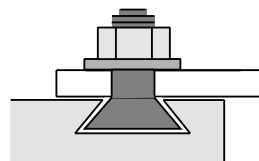
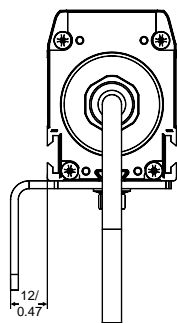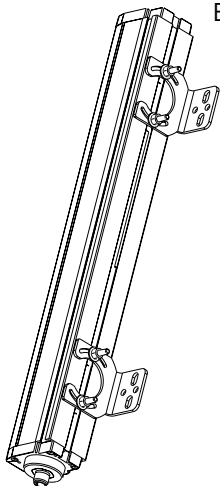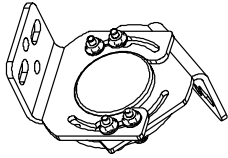(**already included in the FF-SYA package**).

Bracket mounting at the top and the bottom

Bracket mounting at the lateral dovetail slots
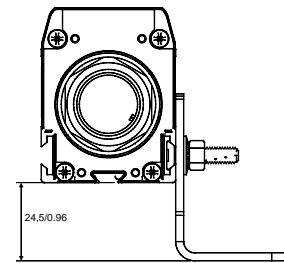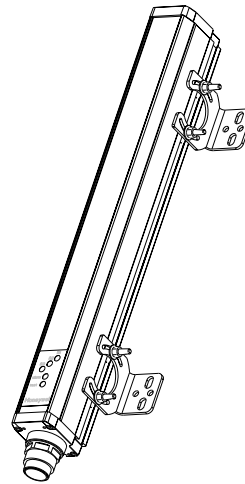
Bracket mounting at the rear dovetail slots

M5 dovetail shape bolt

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New

FF-SYZ634179

Kit of 2 adjustable mounting brackets (FF-SYZ634178 type) with rotating plate, screws, bolts, nuts, and washers to mount one emitter or one receiver unit. To be mounted together with the FF-SYZ634178 brackets delivered with the FF-SYA package.
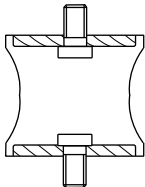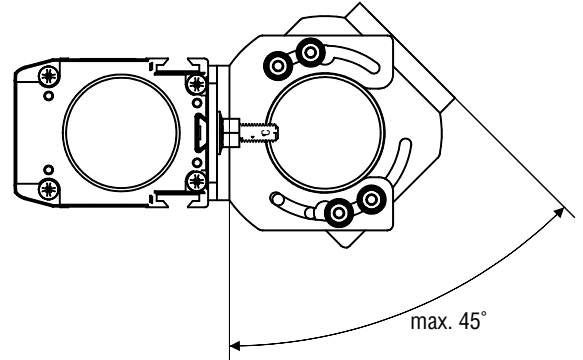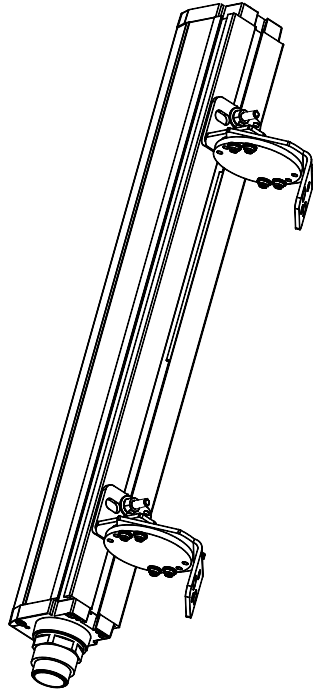
Possible mounting position is:

• at the rear dovetail slot
    (allowing adjustments in vertical directions along the slot an in azimuth directions of max. ± 45°)

Order 2 kits for a complete set of emitter and receiver.

Refer to the section FF-SYZ634178 for the detailed dimensions of the brackets.

(to be ordered separately as an option)

max. 45˚

New

FF-SYZAD

Kit of 4 antivibration dampers. To be mounted together with the existing mounting brackets. Order 2 kits for a complete set of emitter and receiver.
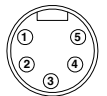
NOTICE

PROTECTION AGAINST HIGH VIBRATIONS

In case of high vibrations, 3 pairs of brackets must be used for light curtain systems with protection heights, greater or equal to 1000 mm / 39.4 in. You may also use our antivibration damper kit FF-SYZAD.

(The additional bracket kit and the antivibration damper kit must be ordered separately).

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Plugs kits

FF-SYA

FF-SYZ172113 (for FF-SYA❏❏❏❏C2 light curtains)
Kit of 2 EN 60423 plastic 7-pin right-angle plugs with crimping contacts (Hirschmann, N6RFF type). Order 1 kit for a complete set emitter and receiver.
Already included in the FF-SYA package.

FF-SYZ172159 (for FF-SYA❏❏❏❏C2 light curtains)
Kit of 2 EN 60423 plastic 7-pin straight plugs with crimping contacts (Hirschmann, N6REF type). Order 1 kit for a complete set emitter and receiver.
To be ordered separately as an option.

New

FF-SBZ1721136 (for FF-SYA❏❏❏❏C2 light curtains)
Kit of 1 EN 60423 plastic 7-pin right-angle connector with screw contact terminals (Hirschmann, N6RFFS11 type). Order 2 kits for a complete set of emitter and receiver.
To be ordered separately as an option.

Colour code leadwires
1-White
2-Red
3-Green
4-Orange
5-Black

Face view

FF-41308 (for FF-SYA❏❏❏❏Q2E emitters)
One 5-pole female straight Brad Harrison Mini-Change® plug 3,66 m /12 ft cable length. Order one plug for the emitter.
To be ordered separately when using the FF-SYA❏❏❏❏Q2 light curtains.

FF-41322 (for FF-SYA❏❏❏❏Q2E emitters)
One 5-pole female straight Brad Harrison Mini-Change® plug, 6,10 m / 20 ft cable length. Order one plug for the emitter.
To be ordered separately when using the FF-SYA❏❏❏❏Q2 light curtains.

Colour code leadwires
1-White/Black
2-Black
3-White
4-Red
5-Orange
6-Blue
7-Green

Face view

FF-42803 (for FF-SYA❏❏❏❏Q2R receivers)
One 7-pole female straight Brad Harrison Mini-Change® plug, 3,66 m /12 ft cable length. Order one plug for the receiver.
To be ordered separately when using the FF-SYA❏❏❏❏Q2 light curtains.

FF-42821 (for FF-SYA❏❏❏❏Q2R receivers)
One 7-pole female straight Brad Harrison Mini-Change® plug, 6,10 m / 20 ft cable length. Order one plug for the receiver.
To be ordered separately when using the FF-SYA❏❏❏❏Q2 light curtains.

FF-SYZROD14
Test rod for ø14 mm / 0.6 in resolution safety light curtains
(already included in the FF-SYA package).

FF-SBZROD30
Test rod for ø30 mm / 1.2 in resolution safety light curtains
(already included in the FF-SYA package).

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Safety control modules

FF-SRS59392

Dual channel relay module for safety light curtains with static safety outputs
(to be ordered separately as an option).
- Compatible with safety light curtains with static outputs only
- 24 Vdc
- Category 4 per EN 954-1
- Selectable start mode and FSD monitoring
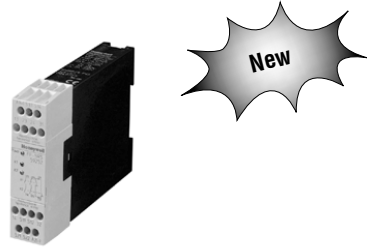- 2 NO/ 1 NC safety relay outputs
- 45 mm / 1.77 in width

FF-SRL59252

New

Dual channel relay module for safety light curtains with static safety outputs
(to be ordered separately as an option)
- Compatible wit safety light curtains with static outputs only
- 24 Vdc
- Category 4 per EN 9541
- Selectable start mode and FSD monitoring
- 2 NO, 1 NC internally redundant safety relay outputs
- 22.5 mm / 0.89 in width

FF-SRM100P2

Muting module
(to be ordered separately as an option)
- Compatible with safety light curtains (also with static safety outputs) and other safety
  devices
- Conveyor mode and press mode
- Unidirectional or bidirectional muting
- Connection of 2 or 4 auxiliary muting sensors and 1 safety device
- 24 Vdc
- Category 4 per EN 954-1
- Manual start mode, FSD monitoring and programmable test function
- Programmable max. muting time
- Crossfault monitoring of inputs
- Integrated override facility
- Self monitored muting lamp output
- 2 PNP static safety outputs
- Static outputs for restart status, output status and alarm status
- 152 mm / 5.98 in width

FF-SXZPWR050

New
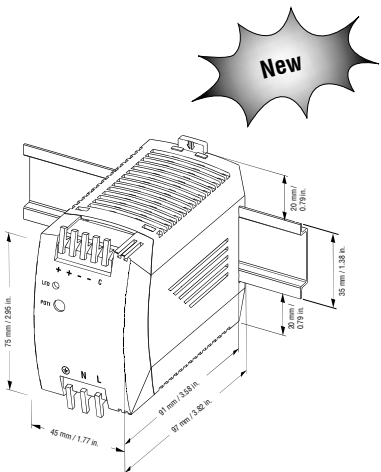
Ac to dc power supply
(to be ordered separately as an option)
- Approvals: UL508 listed, UL1950, cUL/CSA-C22.2 No.950-M90, EN/IEC 60950,
EN 50178 (Class 2 Rated for low power installations)
- Input voltage: 85-264 Vac (43-67 Hz)
- Output voltage: 24-28 Vdc adjustable
- Rated continuous load (at 60 °C/140 °F max.): 2,1 A @ 24 Vdc / 1,8A @ 28 Vdc
- Power: 50 W
- Dimensions 75 mm x 45 mm x 97 mm / 2.95 in x 1.77 in x 3.82 in
- DIN rail mounting
- Weight: 240 g / 0.52 lbs

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FF-SYA

New
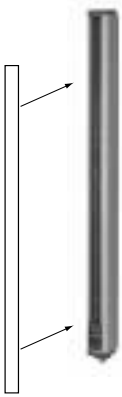
**FF-SYZFT❏❏❏**

Kit including two self-adhesive tapes to be glued on the front windows of the FF-SYA light curtain. **(Order 1 kit per light curtain).**


CAUTION

Make sure the transparent protection tape is placed on the emitter and the filtered protection is placed on the receiver. Protections cannot be removed once in place.
Failure to comply with these instructions may result in product damage.

Features:	
Storage and operating temperatures	-20 °C to 55 °C / -4 °F to 131 °F, high resistance to the ejection of melting particles
Material	Organic glass
Prohibited liquids	Sulfuric acid, hydrofluoric acid, ammonia solution
Scanning range attenuation	36%
Optical immunity improvement factor	2,5
Ordering guide:	FF-SYA234 versions
FF-SYZFT064	FF-SYA02500❏2
FF-SYZFT096	FF-SYA03400❏2, FF-SYA04300❏2
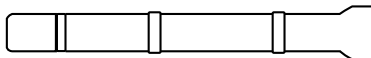
FF-SPZLASER

The laser pen FF-SPZLASER is a self-contained and compact
laser device designed to ease infrared beam alignments. Its class II conforms to the EN 60825
European standard and the US 21 CFR 1040 American standard.
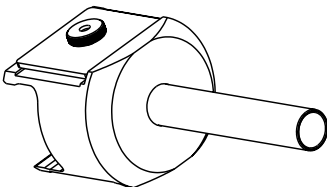
FF-SYZ604795

Mechanical adapter for the FF-SPZLASER laser pen to be used with the FF-SYA Series light curtain.

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FF-SYZPF
Fixed post for FF-SYA light curtain
Floorstanding post for the installation of the following FF-SYA light curtains:
Light curtain models: FF-SYA❏❏032, FF-SYA❏❏048, FF-SYA❏❏080, FF-SYA❏❏096
Multibeam models: FF-SYA02500, FF-SYA03400, FF-SYA04300
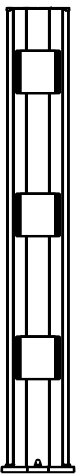**(To be ordered separately as an option).**

Front covers are available for additional protection of the FF-SYA234 beam access detection systems:
FF-SYZ630184-2: Front cover for 2 beams
FF-SYZ630184-3: Front cover for 3 beams
FF-SYZ630184-4: Front cover for 4 beams
(To be ordered separately as an option).

FF-SYZPF❏❏
Fixed post with 2, 3 or 4 individual mirrors (10 % or 25 % reduction of scanning range)
(to be ordered separately as an option)

	Floorstanding post with 2 individual mirrors
FF-SYZPF02	with 10 % of loss
FF-SYZPF12	with 25 % of loss
	Suitable for FF-SYA02500 multibeam system

	Floorstanding post with 3 individual mirrors
FF-SYZPF03	with 10 % of loss
FF-SYZPF13	with 25 % of loss
	Suitable for FF-SYA03400 multibeam system

	Floorstanding post with 4 individual mirrors
FF-SYZPF04	with 10 % of loss
FF-SYZPF14	with 25 % of loss
	Suitable for FF-SYA04300 multibeam system

Note: The FF-SYZPF❏❏ fixed posts with individual mirrors are already delivered with the FF-SYZ630184-❏ front covers.

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Warranty and remedy

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. The foregoing is Buyer's sole remedy and is **in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

While we provide application assistance, personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

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Honeywell serves its customers through a worldwide network of sales offices and distributors. For application assistance,current specifications, pricing or name of the nearest Authorised Distributor, contact a nearby sales office or:

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