



# FF-ST4 Series

## Type 4 Safety Light Curtains

### DESCRIPTION

The FF-ST4 Series is designed for hazardous point-of-operation or access detection in industrial machine safeguarding applications. Its enhanced output stage design provides longer cable length through M12 plugs. The Honeywell patented push-pull type OSSD outputs allow for low impedance at any time, while regular open collector type OSSD outputs have high impedance when OFF. As a result, the M12 limited wire section is no longer a constraint.

ASIC technology provides fast response times compared to the micro-processor technology commonly used for safety light curtains. The FF-ST4 light curtain response times are worst-case response times including the sensor and the output stage, the embedded functions processing such as blanking or muting, and possible OSSD output failure modes. Fast response times contribute to shortened safety distances and reduced overall machine size.

Some models offer flexible configuration of different mode of operations through the M12, 8 pole plug. The Honeywell patented inputs with automatic polarity recognition reduce the amount of wiring and increase the number of configurations while keeping the advantages of the pre-wired, off-the shelf M12 cord sets.

The sturdy metal housing (including zamak end caps), and a small window that reduces exposure to the environment, allow the FF-ST4 to operate in most harsh duty applications.

Accessories include mounting kits, connectors, power supply, and relay modules.

### FEATURES

- Type 4 per IEC61496-1/2, SIL2 per IEC61508
- Resolutions: 14 mm, 30 mm, 80 mm
- Protection heights: 200 mm to 1400 mm (14 mm and 18 mm resolution) or 200 mm to 1800 mm (30 mm and 80 mm resolution)
- Scanning ranges: 0 m to 3.5 m (14 mm resolution) or 0.25 mm to 10 m (other resolutions)
- Patented, unique solid state safety OSSD outputs allow longer cable lengths
- Patented, automatic polarity recognition inputs provide easy, last minute configuration
- M12, 5 and 8 pole plugs
- ASIC technology provides fast response times
- Metal housing and reduced window size provide sturdy design
- Optimized overall size with reduced inactive zones
- Different function packages available
- Optional AS-i Safe field module

### POTENTIAL APPLICATIONS

- Automotive plant floor industry
- Food and beverage industry
- Handling industry
- Machine tool industry
- Packaging industry
- Paper industry
- Special machines

# FF-ST4 Series

## SPECIFICATIONS

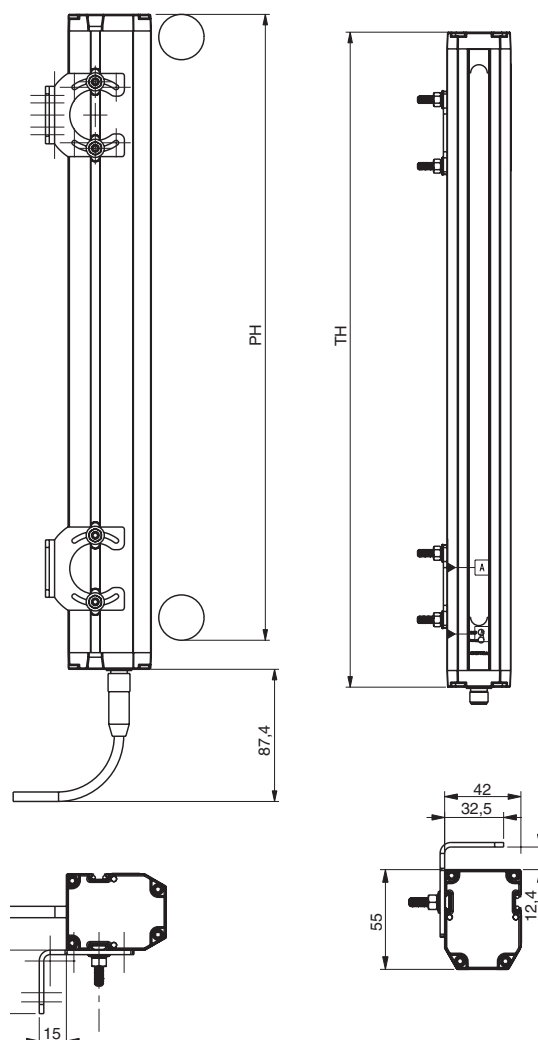
| Characteristic                          | Parameter                                                                                                                                                |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Resolution (min. object detection size) | 14 mm, 18 mm, 30 mm, 80 mm                                                                                                                               |
| Nominal scanning range                  | 0 m to 3.5 m (for 14 mm resolution); 0.25 m to 10 m (for 18 mm, 30 mm, 80 mm resolutions)                                                                |
| Angle of divergence                     | max. $\pm 5^\circ$ above 3 m (as per IEC/EN 61496-2)                                                                                                     |
| Emitting light source                   | infrared, pulsed, 880 nm                                                                                                                                 |
| Supply voltage                          | 24 Vdc ( $\pm 20\%$ ) for the emitter and the receiver                                                                                                   |
| Power consumption                       | 5 W max. for the emitter, 5 W max. for the receiver                                                                                                      |
| Output type                             | 2 safety solid state outputs, push-pull/PNP type with Normally Open characteristics                                                                      |
| Response time                           | see mounting dimensions drawing                                                                                                                          |
| Switching capability                    | 350 mA max. at 24 Vdc                                                                                                                                    |
| Restart time after power up             | >1 s (automatic mode)                                                                                                                                    |
| Restart time after beam release         | 80 ms (without EDM), 150 ms (with EDM)                                                                                                                   |
| Leakage current                         | 0.25 mA                                                                                                                                                  |
| Load impedance                          | 70 Ohm min., 5 kOhm max.                                                                                                                                 |
| Voltage drop                            | <2.3 Vdc                                                                                                                                                 |
| Load turn-on voltage                    | 5 V min. on resistive loads, 7 V min. on inductive loads                                                                                                 |
| Test pulse width/recurrence             | 2 pulses (width 200 us and 75 us), separated by 300 us, frequency from 3.3 ms to 8 ms (depending on height)                                              |
| Protections                             | short-circuits and cross-faults, overloads (0.4 A max./0 Vdc; 0.9 A max./24 Vdc), reversed polarity, micro-cut-off 10 ms (100% voltage breakdown, 10 Hz) |
| Max. cable length                       | 100 m [328.08 ft] (capacitance: 10 nF)                                                                                                                   |
| External contact type                   | relay contact, or static (solid state) PNP or static (solid state) NPN (automatic recognition - no push-pull output allowed)                             |
| Filtering time                          | 20 ms by default, 150 ms on the EDM input                                                                                                                |
| Voltage switching thresholds (high/low) | 14.5 Vdc min., 4.5 Vdc (complies with IEC 61131-2, for type 2 sensors)                                                                                   |
| Input current (high/low)                | 20 mA; 10 mA at 24 Vdc                                                                                                                                   |
| Max. voltage                            | 29 Vdc                                                                                                                                                   |
| Housing material                        | aluminum alloy                                                                                                                                           |
| End cap material                        | zamak                                                                                                                                                    |
| Window material                         | PMMA (Polymethylmethacrylate)                                                                                                                            |

## FUNCTION PACKAGES

| Model             | External Device Monitoring (EDM) | Automatic Restart (AUTO) | Restart Interlock (RES) | Muting (or Bypass) | One or Two Beam Floating Blanking | AS-i Safe |
|-------------------|----------------------------------|--------------------------|-------------------------|--------------------|-----------------------------------|-----------|
| FF-ST4 Basic      | -                                | X                        | -                       | -                  | -                                 | X         |
| FF-ST4 Standard   | X                                | X                        | X                       | -                  | -                                 | -         |
| FF-ST4 Advanced M | X                                | X                        | X                       | X                  | -                                 | -         |
| FF-ST4 Advanced B | X                                | X                        | X                       | -                  | X                                 | -         |

## Type 4 Safety Light Curtains

## MOUNTING DIMENSIONS (For reference only: mm)



| FF-ST4X_XM2               | 02   | 03   | 04   | 05  | 06  | 07   | 08   | 09  | 10   | 12   | 14   | 16   | 18   |
|---------------------------|------|------|------|-----|-----|------|------|-----|------|------|------|------|------|
| Protection Height PH (mm) |      |      |      |     |     |      |      |     |      |      |      |      |      |
| 14 mm resolution          | 206  | 302  | 398  | 494 | 590 | 686  | 782  | 878 | 974  | 1166 | 1358 | NA   | NA   |
| 18 mm resolution          | 210  | 306  | 402  | 498 | 594 | 690  | 786  | 882 | 978  | 1170 | 1362 | NA   | NA   |
| 30 mm, 80 mm resolution   | 222  | 318  | 414  | 510 | 606 | 702  | 798  | 894 | 990  | 1182 | 1374 | 1566 | 1758 |
| Total Height TH (mm)      | 242  | 338  | 434  | 530 | 626 | 722  | 818  | 914 | 1010 | 1202 | 1394 | 1586 | 1778 |
| Response Time (ms)*       |      |      |      |     |     |      |      |     |      |      |      |      |      |
| 14 mm, 18 mm resolution   | 11   | 12   | 12.5 | 13  | 14  | 14.5 | 15.5 | 16  | 16.5 | 18   | 19.5 | NA   | NA   |
| 30 mm resolution          | 11   | 12   | 12.5 | 13  | 14  | 14.5 | 15.5 | 16  | 16.5 | 18   | 19.5 | 21   | 22   |
| 80 mm resolution          | 13.5 | 14.5 | 15.5 | 16  | 17  | 18   | 19   | 20  | 21   | 23   | 24.5 | 26.5 | 28.5 |

NA: not available

(\*) without blanking

# FF-ST4 Series

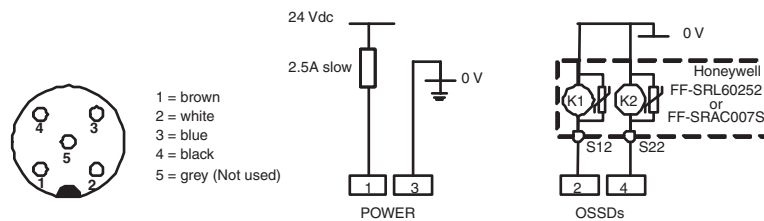
## ORDERING INFORMATION

Function package                      Automatic restart without external device monitoring  
 Connection types                      M12/5 pole on emitter and receiver

## FF-ST4 Basic

These on/off sensors are designed for the Honeywell FF-SRL60252 relay module or for the Honeywell FF-SRAC007S AS-i Safe field module.

## RECEIVER WIRING DIAGRAM



## FINGER DETECTION

| Resolution 14 mm, Scanning Range 0 m to 3.5 m |                 | Resolution 18 mm, Scanning Range 0.25 m to 10 m |                 |
|-----------------------------------------------|-----------------|-------------------------------------------------|-----------------|
| Protective Height (mm)                        | Catalog Listing | Protective Height (mm)                          | Catalog Listing |
| 200                                           | FF-ST4A02AM2    | 200                                             | FF-ST4B02AM2    |
| 300                                           | FF-ST4A03AM2    | 300                                             | FF-ST4B03AM2    |
| 400                                           | FF-ST4A04AM2    | 400                                             | FF-ST4B04AM2    |
| 500                                           | FF-ST4A05AM2    | 500                                             | FF-ST4B05AM2    |
| 600                                           | FF-ST4A06AM2    | 600                                             | FF-ST4B06AM2    |
| 700                                           | FF-ST4A07AM2    | 700                                             | FF-ST4B07AM2    |
| 800                                           | FF-ST4A08AM2    | 800                                             | FF-ST4B08AM2    |
| 1000                                          | FF-ST4A10AM2    | 1000                                            | FF-ST4B10AM2    |
| 1200                                          | FF-ST4A12AM2    | 1200                                            | FF-ST4B12AM2    |
| 1400                                          | FF-ST4A14AM2    | 1400                                            | FF-ST4B14AM2    |

## HAND, LIMB OR BODY DETECTION

| Resolution 30 mm, Scanning Range 0.25 m to 10 m |                 | Resolution 80 mm, Scanning Range 0.25 m to 10 m |                 |
|-------------------------------------------------|-----------------|-------------------------------------------------|-----------------|
| Protective Height (mm)                          | Catalog Listing | Protective Height (mm)                          | Catalog Listing |
| 200                                             | FF-ST4C02AM2    | 200                                             | FF-ST4C02JM2    |
| 300                                             | FF-ST4C03AM2    | 300                                             | FF-ST4C03JM2    |
| 400                                             | FF-ST4C04AM2    | 400                                             | FF-ST4C04JM2    |
| 500                                             | FF-ST4C05AM2    | 500                                             | FF-ST4C05JM2    |
| 600                                             | FF-ST4C06AM2    | 600                                             | FF-ST4C06JM2    |
| 700                                             | FF-ST4C07AM2    | 700                                             | FF-ST4C07JM2    |
| 800                                             | FF-ST4C08AM2    | 800                                             | FF-ST4C08JM2    |
| 900                                             | FF-ST4C09AM2    | 900                                             | FF-ST4C09JM2    |
| 1000                                            | FF-ST4C10AM2    | 1000                                            | FF-ST4C10JM2    |
| 1200                                            | FF-ST4C12AM2    | 1200                                            | FF-ST4C12JM2    |
| 1400                                            | FF-ST4C14AM2    | 1400                                            | FF-ST4C14JM2    |
| 1600                                            | FF-ST4C16AM2    | 1600                                            | FF-ST4C16JM2    |
| 1800                                            | FF-ST4C18AM2    | 1800                                            | FF-ST4C18JM2    |

# Type 4 Safety Light Curtains

## ORDERING INFORMATION

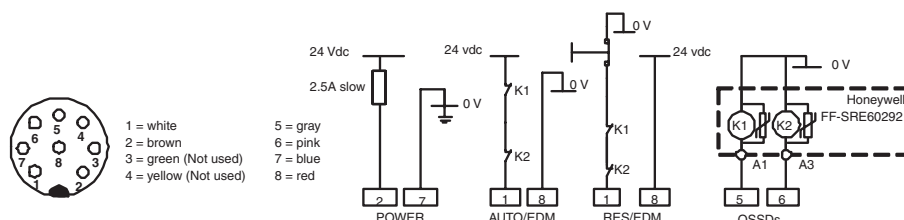
## FF-ST4 Standard

Function package      Selectable automatic or manual restart interlock with external device monitoring

Connection types      M12, 5 pole on emitter and M12, 8 pole on receiver

These on/off sensors are designed to be directly interfaced to the machine final switching devices (e.g. contactors), eliminating the need for a dedicated interface module.

## RECEIVER WIRING DIAGRAM



## FINGER DETECTION

| Resolution 14 mm, Scanning Range 0 m to 3.5 m |                 | Resolution 18 mm, Scanning Range 0.25 m to 10 m |                 |
|-----------------------------------------------|-----------------|-------------------------------------------------|-----------------|
| Protective Height (mm)                        | Catalog Listing | Protective Height (mm)                          | Catalog Listing |
| 200                                           | FF-ST4A02DM2    | 200                                             | FF-ST4B02DM2    |
| 300                                           | FF-ST4A03DM2    | 300                                             | FF-ST4B03DM2    |
| 400                                           | FF-ST4A04DM2    | 400                                             | FF-ST4B04DM2    |
| 500                                           | FF-ST4A05DM2    | 500                                             | FF-ST4B05DM2    |
| 600                                           | FF-ST4A06DM2    | 600                                             | FF-ST4B06DM2    |
| 700                                           | FF-ST4A07DM2    | 700                                             | FF-ST4B07DM2    |
| 800                                           | FF-ST4A08DM2    | 800                                             | FF-ST4B08DM2    |
| 1000                                          | FF-ST4A10DM2    | 1000                                            | FF-ST4B10DM2    |
| 1200                                          | FF-ST4A12DM2    | 1200                                            | FF-ST4B12DM2    |
| 1400                                          | FF-ST4A14DM2    | 1400                                            | FF-ST4B14DM2    |

## HAND, LIMB OR BODY DETECTION

| Resolution 30 mm, Scanning Range 0.25 m to 10 m |                 | Resolution 80 mm, Scanning Range 0.25 m to 10 m |                 |
|-------------------------------------------------|-----------------|-------------------------------------------------|-----------------|
| Protective Height (mm)                          | Catalog Listing | Protective Height (mm)                          | Catalog Listing |
| 200                                             | FF-ST4C02DM2    | 200                                             | FF-ST4C02MM2    |
| 300                                             | FF-ST4C03DM2    | 300                                             | FF-ST4C03MM2    |
| 400                                             | FF-ST4C04DM2    | 400                                             | FF-ST4C04MM2    |
| 500                                             | FF-ST4C05DM2    | 500                                             | FF-ST4C05MM2    |
| 600                                             | FF-ST4C06DM2    | 600                                             | FF-ST4C06MM2    |
| 700                                             | FF-ST4C07DM2    | 700                                             | FF-ST4C07MM2    |
| 800                                             | FF-ST4C08DM2    | 800                                             | FF-ST4C08MM2    |
| 900                                             | FF-ST4C09DM2    | 900                                             | FF-ST4C09MM2    |
| 1000                                            | FF-ST4C10DM2    | 1000                                            | FF-ST4C10MM2    |
| 1200                                            | FF-ST4C12DM2    | 1200                                            | FF-ST4C12MM2    |
| 1400                                            | FF-ST4C14DM2    | 1400                                            | FF-ST4C14MM2    |
| 1600                                            | FF-ST4C16DM2    | 1600                                            | FF-ST4C16MM2    |
| 1800                                            | FF-ST4C18DM2    | 1800                                            | FF-ST4C18MM2    |

# FF-ST4 Series

## ORDERING INFORMATION

|                  |                                                                                             |
|------------------|---------------------------------------------------------------------------------------------|
| Function package | Selectable automatic or manual restart interlock with external device monitoring and muting |
| Connection types | M12, 5 pole on emitter and M12, 8 pole on receiver                                          |

## FF-ST4 Advanced M

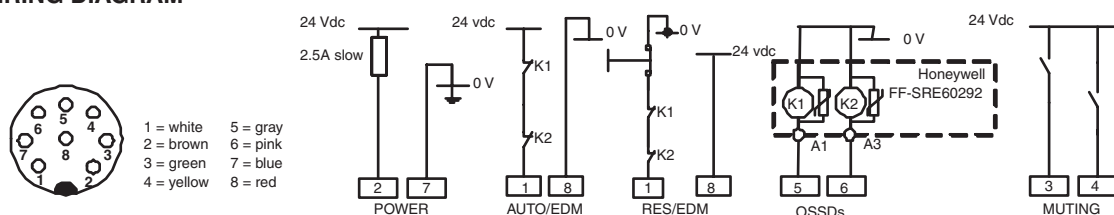
Muting (or bypass) allows objects to pass through the protection field without stopping the machine. Muting is permitted when personnel are not exposed to the hazard (e.g. manual loading/unloading) or when the hazard cannot be accessed without a stop (e.g. conveyor).

### NOTICE

#### MUTING SENSOR OUTPUT TYPE

The muting sensors can be any device with either relay outputs or solid state output. Devices with solid state push-pull outputs cannot be used.

## RECEIVER WIRING DIAGRAM



## FINGER DETECTION

| Resolution 14 mm, Scanning Range 0 m to 3.5 m |                 | Resolution 18 mm, Scanning Range 0.25 m to 10 m |                 |
|-----------------------------------------------|-----------------|-------------------------------------------------|-----------------|
| Protective Height (mm)                        | Catalog Listing | Protective Height (mm)                          | Catalog Listing |
| 200                                           | FF-ST4A02VM2    | 200                                             | FF-ST4B02VM2    |
| 300                                           | FF-ST4A03VM2    | 300                                             | FF-ST4B03VM2    |
| 400                                           | FF-ST4A04VM2    | 400                                             | FF-ST4B04VM2    |
| 500                                           | FF-ST4A05VM2    | 500                                             | FF-ST4B05VM2    |
| 600                                           | FF-ST4A06VM2    | 600                                             | FF-ST4B06VM2    |
| 700                                           | FF-ST4A07VM2    | 700                                             | FF-ST4B07VM2    |
| 800                                           | FF-ST4A08VM2    | 800                                             | FF-ST4B08VM2    |
| 1000                                          | FF-ST4A10VM2    | 1000                                            | FF-ST4B10VM2    |
| 1200                                          | FF-ST4A12VM2    | 1200                                            | FF-ST4B12VM2    |
| 1400                                          | FF-ST4A14VM2    | 1400                                            | FF-ST4B14VM2    |

## HAND, LIMB OR BODY DETECTION

| Resolution 30 mm, Scanning Range 0.25 m to 10 m |                 | Resolution 80 mm, Scanning Range 0.25 m to 10 m |                 |
|-------------------------------------------------|-----------------|-------------------------------------------------|-----------------|
| Protective Height (mm)                          | Catalog Listing | Protective Height (mm)                          | Catalog Listing |
| 200                                             | FF-ST4C02VM2    | 200                                             | FF-ST4C02D1M2   |
| 300                                             | FF-ST4C03VM2    | 300                                             | FF-ST4C03D1M2   |
| 400                                             | FF-ST4C04VM2    | 400                                             | FF-ST4C04D1M2   |
| 500                                             | FF-ST4C05VM2    | 500                                             | FF-ST4C05D1M2   |
| 600                                             | FF-ST4C06VM2    | 600                                             | FF-ST4C06D1M2   |
| 700                                             | FF-ST4C07VM2    | 700                                             | FF-ST4C07D1M2   |
| 800                                             | FF-ST4C08VM2    | 800                                             | FF-ST4C08D1M2   |
| 900                                             | FF-ST4C09VM2    | 900                                             | FF-ST4C09D1M2   |
| 1000                                            | FF-ST4C10VM2    | 1000                                            | FF-ST4C10D1M2   |
| 1200                                            | FF-ST4C12VM2    | 1200                                            | FF-ST4C12D1M2   |
| 1400                                            | FF-ST4C14VM2    | 1400                                            | FF-ST4C14D1M2   |
| 1600                                            | FF-ST4C16VM2    | 1600                                            | FF-ST4C16D1M2   |
| 1800                                            | FF-ST4C18VM2    | 1800                                            | FF-ST4C18D1M2   |

# Type 4 Safety Light Curtains

## ORDERING INFORMATION

## FF-ST4 Advanced B

|                  |                                                                                                                                   |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Function package | Selectable automatic or manual restart interlock with external device monitoring and selectable one or two-beam floating blanking |
| Connection types | M12, 5 pole on emitter and M12, 8 pole on receiver                                                                                |

The built-in floating blanking feature provides a means for the random inhibition of one or two light curtain beams. It is useful in applications where material or air-ejected parts randomly travel through or within the sensing field. Light beams may be disabled in an area where a fixture penetrates the light field, and stationary objects may not be allowed to protrude into the light curtain's sensing field. Any beam within the light curtain detection field may be blanked.

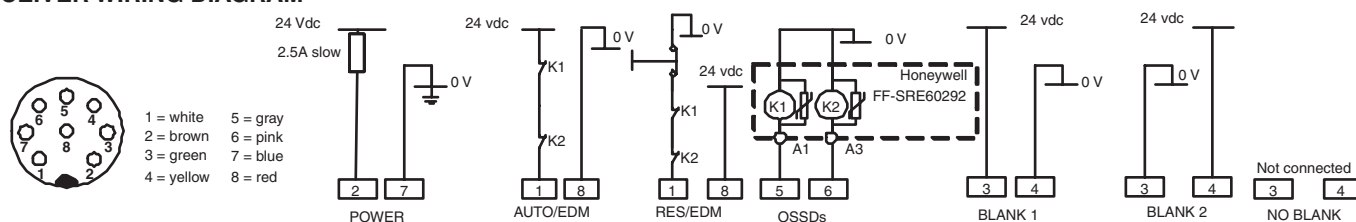
## ! WARNING

### INCORRECT SAFETY DISTANCE WHEN USING FLOATING BLANKING

- Floating blanking increases the light curtain resolution and the response time. Therefore, the safety distance between the light curtain and the hazardous area shall be increased.
- Refer to the installation manual for detailed information on resolution and calculating the safety distance.

**Failure to comply with these instructions could result in death or serious injury.**

## RECEIVER WIRING DIAGRAM



## FINGER DETECTION

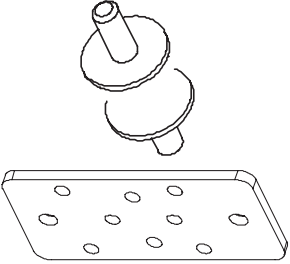
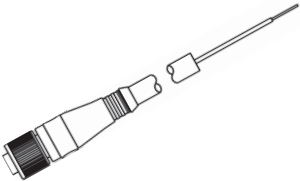
| Resolution 14 mm, Scanning Range 0 m to 3.5 m |                 | Resolution 18 mm, Scanning Range 0.25 m to 10 m |                 |
|-----------------------------------------------|-----------------|-------------------------------------------------|-----------------|
| Protective Height (mm)                        | Catalog Listing | Protective Height (mm)                          | Catalog Listing |
| 200                                           | FF-ST4A02RM2    | 200                                             | FF-ST4B02RM2    |
| 300                                           | FF-ST4A03RM2    | 300                                             | FF-ST4B03RM2    |
| 400                                           | FF-ST4A04RM2    | 400                                             | FF-ST4B04RM2    |
| 500                                           | FF-ST4A05RM2    | 500                                             | FF-ST4B05RM2    |
| 600                                           | FF-ST4A06RM2    | 600                                             | FF-ST4B06RM2    |
| 700                                           | FF-ST4A07RM2    | 700                                             | FF-ST4B07RM2    |
| 800                                           | FF-ST4A08RM2    | 800                                             | FF-ST4B08RM2    |
| 1000                                          | FF-ST4A10RM2    | 1000                                            | FF-ST4B10RM2    |
| 1200                                          | FF-ST4A12RM2    | 1200                                            | FF-ST4B12RM2    |
| 1400                                          | FF-ST4A14RM2    | 1400                                            | FF-ST4B14RM2    |

## HAND, LIMB OR BODY DETECTION

| Resolution 30 mm, Scanning Range 0.25 m to 10 m |                 | Resolution 30 mm, Scanning Range 0.25 m to 10 m |                 |
|-------------------------------------------------|-----------------|-------------------------------------------------|-----------------|
| Protective Height (mm)                          | Catalog Listing | Protective Height (mm)                          | Catalog Listing |
| 200                                             | FF-ST4C02RM2    | 900                                             | FF-ST4C09RM2    |
| 300                                             | FF-ST4C03RM2    | 1000                                            | FF-ST4C10RM2    |
| 400                                             | FF-ST4C04RM2    | 1200                                            | FF-ST4C12RM2    |
| 500                                             | FF-ST4C05RM2    | 1400                                            | FF-ST4C14RM2    |
| 600                                             | FF-ST4C06RM2    | 1600                                            | FF-ST4C16RM2    |
| 700                                             | FF-ST4C07RM2    | 1800                                            | FF-ST4C18RM2    |
| 800                                             | FF-ST4C08RM2    |                                                 |                 |

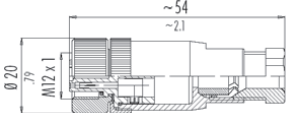
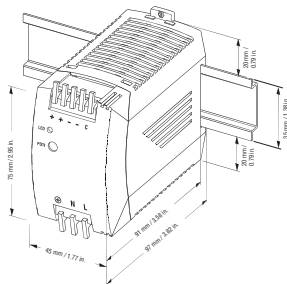
# FF-ST4 Series

## ACCESSORIES

| Catalog Listing                                                                                                                                                                                                            | Picture                                                                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FF-SGZ001001                                                                                                                                                                                                               |    | Basic mounting kit includes two M5 dovetail shape bolts, two M5 nuts and two rip-lock washers. (These are already included in the FF-ST package.) Order two kits for a complete set to use with emitter and receiver.                                                                                                                                                                                                                                                                                                                       |
| FF-SYZ634178                                                                                                                                                                                                               |    | Right angle bracket kit includes two right angle brackets with four sets of M5 bolts, nuts and washers. Order two kits for a complete set to use with emitter and receiver.                                                                                                                                                                                                                                                                                                                                                                 |
| FF-SXZ634189                                                                                                                                                                                                               |    | Adjustable bracket kit includes two right angle brackets with four sets of M5 bolts, nuts and washers. Allows adjustments in azimuth directions of $\pm 4^\circ$ with front access of the adjusting screws. Order two kits for a complete set to use with emitter and receiver).                                                                                                                                                                                                                                                            |
| FF-SYZAD                                                                                                                                                                                                                   |    | <p>Kit includes two straight brackets and four anti-vibration dampers (mounting hardware included).</p> <p>In case of high vibration applications, order:</p> <ul style="list-style-type: none"> <li>• Two FF-SYZAD kits for light curtain systems with protection heights below 1000 mm.</li> <li>• Three FF-SYZAD kitS for light curtain systems with protection heights greater or equal to 1000 mm, but less than 1800 mm.</li> <li>• Four FF-SYZAD kits for light curtain systems with protection heights equal to 1800 mm.</li> </ul> |
| FF-SYZPF<br>FF-SYZPFM11                                                                                                                                                                                                    |  | <p>Floor standing posts.</p> <ul style="list-style-type: none"> <li>• 1300 mm high beam post. (Order two pieces for a complete light curtain set and two FF-SYZ634178 bracket kits.)</li> <li>• 1170 mm high plain mirror post (25% scanning range reduction). Recommended for light curtains with a protection height of up to 1000 mm.</li> </ul>                                                                                                                                                                                         |
| FF-SYZMIR102<br>FF-SYZMIR104<br>FF-SYZMIR106<br>FF-SYZMIR108<br>FF-SYZMIR110<br>FF-SYZMIR112<br>FF-SYZMIR114<br>FF-SYZMIR116<br>FF-SYZMIR118                                                                               |  | <p>Wall mount plain mirrors (25% scanning range reduction). Top and bottom brackets included (<math>\pm 45^\circ</math> angle adjustment). Suitable for:</p> <ul style="list-style-type: none"> <li>• FF-ST__ 02 _ M2</li> <li>• FF-ST__ 03 _ M2 and FF-ST__ 04 _ M2</li> <li>• FF-ST__ 05 _ M2 and FF-ST__ 06 _ M2</li> <li>• FF-ST__ 07 _ M2 and FF-ST__ 08 _ M2</li> <li>• FF-ST__ 09 _ M2 and FF-ST__ 10 _ M2</li> <li>• FF-ST__ 12 _ M2</li> <li>• FF-ST__ 14 _ M2</li> <li>• FF-ST__ 16 _ M2</li> <li>• FF-ST__ 18 _ M2</li> </ul>    |
| FF-SXZCAM125U02-S<br>FF-SXZCAM125U05-S<br>FF-SXZCAM125U05-90S<br>FF-SXZCAM125U10-S<br>FF-SXZCAM125U10-90S<br><br>FF-SXZCAM128U02-S<br>FF-SXZCAM128U05-S<br>FF-SXZCAM128U05-90S<br>FF-SXZCAM128U10-S<br>FF-SXZCAM128U10-90S |  | <p>M12 single-ended cordsets, female, 5 pin.</p> <ul style="list-style-type: none"> <li>• 2 m, straight</li> <li>• 5 m, straight</li> <li>• 5 m, right angle</li> <li>• 10 m, straight</li> <li>• 10 m, right angle</li> </ul> <p>M12 single-ended cordsets, female, 8 pin.</p> <ul style="list-style-type: none"> <li>• 2 m, straight</li> <li>• 5 m, straight</li> <li>• 5 m, right angle</li> <li>• 10 m, straight</li> <li>• 10 m, right angle</li> </ul>                                                                               |

## Type 4 Safety Light Curtains

## ACCESSORIES (continued)

| Catalog Listing                                                                                                | Picture                                                                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FF-SXZCOM125<br>FF-SXZCOM128                                                                                   |    | M12 screw connector, female, straight, 5 pin<br>M12 screw connector, female, straight, 8 pin                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| FF-SXZPWR050                                                                                                   |    | ac to dc power supply (ordered separately as an option).<br><ul style="list-style-type: none"> <li>• UL508 listed, UL1950, cUL/CSA-C22.2 No. 950-M90, EN/IEC 60950, EN 50178 (Class 2 rated for low power installations)</li> <li>• Input voltage: 85 Vac to 264 Vac (43 Hz to 67 Hz)</li> <li>• Output voltage: 24 Vdc to 28 Vdc adjustable</li> <li>• Rated continuous load (at 60 °C [140 °F] max.): 2.1 A at 24 Vdc/ 1.8 A at 28 Vdc</li> <li>• Power: 50 W</li> <li>• Dimensions: 75 mm x 45 mm x 97 mm</li> <li>• DIN rail mounting</li> <li>• Weight: 240 g</li> </ul>                                                                                                                                                                                                                                                      |
| FF-SRL60252                                                                                                    |   | Dual channel module for the FF-ST4 Basic models.<br><ul style="list-style-type: none"> <li>• 22,5 mm width, 3 NO/1 NC internally redundant safety relay outputs</li> </ul><br>(See separate product data sheet for detailed information.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| FF-SRAC007S<br>(input module)<br><br>FF-SRAC5003<br>(DIN rail and panel quick mount base for AS-i flat cables) |  | AS-i Safe input module for the FF-ST4 basic models.<br><ul style="list-style-type: none"> <li>• Category 4 per EN954-1 and SIL3 per IEC61508</li> <li>• Connection of the FF-ST4 emitter and receiver via a pair of M12 sockets</li> <li>• An external power supply is required to power the light curtain through the black flat cable. Order the DIN rail and panel quick mount base for AS-i flat cables: FF-SRAC5003</li> <li>• Maximum cable length between light curtain and module is 10 m</li> <li>• 31 modules per master module</li> <li>• IP 67 protection rating</li> <li>• Dimensions: 110 mm x 45 mm x 70 mm (with the base)</li> <li>• Material: PA 6 (module), PBT (base)</li> <li>• CE approved, UL/CSA (application approval pending)</li> <li>• AS-i details: versions 2.11 and 3.0, profile S-0.B.E</li> </ul> |
| FF-SRE60292<br>FF-SRE30812                                                                                     |  | Expansion relay modules for the FF-ST4 Standard A and Standard M models.<br><ul style="list-style-type: none"> <li>• 22,5 mm width, 4 NO/2 NC safety relay outputs</li> <li>• 90 mm width, 7 NO/1 NC safety relay outputs</li> </ul><br>(See separate product data sheet for detailed information.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| FF-SRL59022                                                                                                    |  | Presence sensing device initiation module (PSDI) for the automatic machine cycle start to be used with light curtains with a resolution less than or equal to 30 m.<br><br>(See separate product data sheet for detailed information.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



## **WARNING**

### **MISUSE OF DOCUMENTATION**

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

### **Warranty/Remedy**

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details.

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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.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

### **Sales and Service**

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

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