

# FA Series Laser Photoelectric Sensors

## M18 (18mm) metal or plastic - DC



- Diffuse, diffuse with background suppression, polarized reflective, and through-beam models
- Plastic or metal (diffuse with background suppression) housing
- Axial or right-angle optical head models
- Axial cable or M12 quick-disconnect models
- NPN or PNP, complementary N.O./N.C. outputs
- IP67 rated



### FA Series Photoelectric Sensors Selection Chart

| Part Number                                       |             | Price                                            | Maximum Sensing Range                            | Output State               | Logic   | Connection              | Wiring                  | Dimensions | Characteristic Curves |         |
|---------------------------------------------------|-------------|--------------------------------------------------|--------------------------------------------------|----------------------------|---------|-------------------------|-------------------------|------------|-----------------------|---------|
| Diffuse with Background Suppression Class 1 Laser |             |                                                  |                                                  |                            |         |                         |                         |            |                       |         |
| <a href="#"><u>FALS-BN-1E</u></a>                 | Axial       | \$111.00                                         | 100mm [3.94 in]                                  | Complementary<br>N.O./N.C. | NPN     | M12 [12mm] connector    | Diagram 1               | Figure 2   | Chart 4               |         |
| <a href="#"><u>FALS-BP-1E</u></a>                 |             | \$111.00                                         |                                                  |                            | PNP     |                         | Diagram 2               | Figure 2   | Chart 4               |         |
| <a href="#"><u>FALS-BN-3E</u></a>                 | Right angle | \$120.00                                         | 80mm [3.15 in]                                   |                            | NPN     |                         | Diagram 1               | Figure 4   | Chart 5               |         |
| <a href="#"><u>FALS-BP-3E</u></a>                 |             | \$120.00                                         |                                                  |                            | PNP     |                         | Diagram 2               | Figure 4   | Chart 5               |         |
| Diffuse with Background Suppression Class 2 Laser |             |                                                  |                                                  |                            |         |                         |                         |            |                       |         |
| <a href="#"><u>FALW-BN-1E</u></a>                 | Axial       | \$111.00                                         | 150mm [5.91 in]                                  | Complementary<br>N.O./N.C. | NPN     | M12 [12mm] connector    | Diagram 1               | Figure 2   | Chart 6               |         |
| <a href="#"><u>FALW-BP-1E</u></a>                 |             | \$111.00                                         |                                                  |                            | PNP     |                         | Diagram 2               | Figure 2   | Chart 6               |         |
| <a href="#"><u>FALW-BN-3E</u></a>                 | Right angle | \$120.00                                         | 130mm [5.12 in]                                  |                            | NPN     |                         | Diagram 1               | Figure 4   | Chart 7               |         |
| <a href="#"><u>FALW-BP-3E</u></a>                 |             | \$120.00                                         |                                                  |                            | PNP     |                         | Diagram 2               | Figure 4   | Chart 7               |         |
| Diffuse                                           |             |                                                  |                                                  |                            |         |                         |                         |            |                       |         |
| <a href="#"><u>FAL4-BN-0A</u></a>                 | Axial       | \$133.00                                         | 300mm [11.81 in]                                 | Complementary<br>N.O./N.C. | NPN     | 2m [6.5 ft] axial cable | Diagram 1               | Figure 1   | Chart 1               |         |
| <a href="#"><u>FAL4-BP-0A</u></a>                 |             | \$133.00                                         |                                                  |                            | PNP     | 2m [6.5 ft] axial cable | Diagram 2               | Figure 1   | Chart 1               |         |
| <a href="#"><u>FAL4-BN-0E</u></a>                 |             | \$133.00                                         |                                                  |                            | NPN     | M12 [12mm] connector    | Diagram 1               | Figure 3   | Chart 1               |         |
| <a href="#"><u>FAL4-BP-0E</u></a>                 |             | \$133.00                                         |                                                  |                            | PNP     | M12 [12mm] connector    | Diagram 2               | Figure 3   | Chart 1               |         |
| Polarized reflective* Class 1 Laser               |             |                                                  |                                                  |                            |         |                         |                         |            |                       |         |
| <a href="#"><u>FALN-BN-0A</u></a>                 | Axial       | \$133.00                                         | 20m [65.61 ft] with <a href="#"><u>RL110</u></a> | Complementary<br>N.O./N.C. | NPN     | 2m [6.5 ft] axial cable | Diagram 1               | Figure 1   | Chart 2               |         |
| <a href="#"><u>FALN-BP-0A</u></a>                 |             | \$133.00                                         |                                                  |                            | PNP     | 2m [6.5 ft] axial cable | Diagram 2               | Figure 1   | Chart 2               |         |
| <a href="#"><u>FALN-BN-0E</u></a>                 |             | 30m [98.43 ft] with <a href="#"><u>RL201</u></a> | \$133.00                                         |                            | NPN     | M12 [12mm] connector    | Diagram 1               | Figure 3   | Chart 2               |         |
| <a href="#"><u>FALN-BP-0E</u></a>                 |             |                                                  | \$133.00                                         |                            | PNP     | M12 [12mm] connector    | Diagram 2               | Figure 3   | Chart 2               |         |
| Through-beam** Class 1 Laser                      |             |                                                  |                                                  |                            |         |                         |                         |            |                       |         |
| <a href="#"><u>FALD-BN-0A</u></a>                 | Receiver    | \$46.50                                          | 50m [164.04 ft]                                  | Complementary<br>N.O./N.C. | NPN     | 2m [6.5 ft] axial cable | Diagram 1               | Figure 1   | Chart 3               |         |
| <a href="#"><u>FALD-BP-0A</u></a>                 | Receiver    |                                                  |                                                  |                            | PNP     | 2m [6.5 ft] axial cable | Diagram 2               | Figure 1   | Chart 3               |         |
| <a href="#"><u>FALD-BN-0E</u></a>                 | Receiver    |                                                  |                                                  |                            | NPN     | M12 [12mm] connector    | Diagram 1               | Figure 3   | Chart 3               |         |
| <a href="#"><u>FALD-BP-0E</u></a>                 | Receiver    |                                                  |                                                  |                            | PNP     | M12 [12mm] connector    | Diagram 2               | Figure 3   | Chart 3               |         |
| <a href="#"><u>FALH-X0-0A</u></a>                 | Emitter     |                                                  |                                                  |                            | \$93.00 | Receiver dependent      | 2m [6.5 ft] axial cable | Diagram 3  | Figure 1              | Chart 3 |
| <a href="#"><u>FALH-X0-0E</u></a>                 | Emitter     |                                                  |                                                  |                            | \$93.00 |                         | M12 [12mm] connector    | Diagram 3  | Figure 3              | Chart 3 |

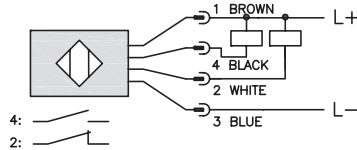
\*Purchase reflectors separately.

\*\*Purchase one receiver and one emitter for a complete set.

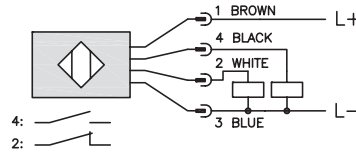
# FA Series Laser Photoelectric Sensors

## Wiring Diagrams

**Diagram 1**  
**NPN Output**

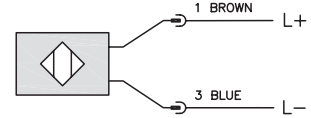


**Diagram 2**  
**PNP Output**



**Diagram 3**

**Emitter with check**



Cable Assembly Wiring Colors:

Pin 1 - Brown

Pin 2 - White

Pin 3 - Blue

Pin 4 - Black

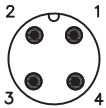
Note: Wiring colors are based on Automation Direct 4-pole cable assemblies.

| Switching Element Function |                                    |                |
|----------------------------|------------------------------------|----------------|
|                            | Through-Beam and Reflective Models | Diffuse Models |
| <b>Light-on</b>            | N.C.                               | N.O.           |
| <b>Dark-on</b>             | N.O.                               | N.C.           |

2-meter Axial Cable version: check is black  
M12 Connector: check is Pin 2 (white).

Check input: This condition simulates the presence of a target within the detection range and forces the receiver output to switch. If switching does not occur, it indicates a fault in the system.

**M12 connector**

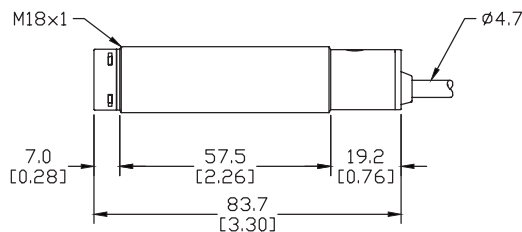


Note: N.O. = Signal ON when receiver is NOT sensing emitter.  
N.C. = Signal ON when receiver is sensing emitter.

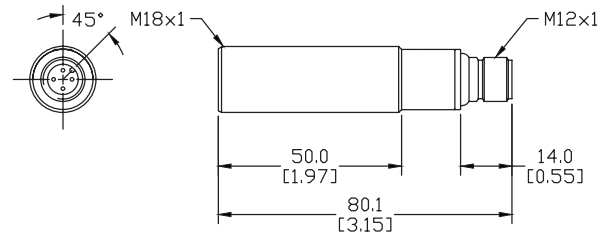
## Dimensions

mm [inches]

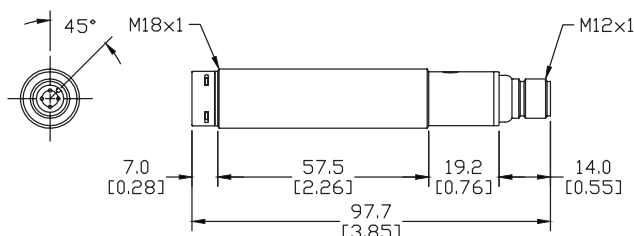
**Figure 1**



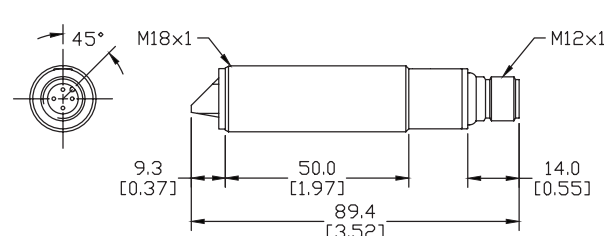
**Figure 2**



**Figure 3**



**Figure 4**



# FA Series Laser Photoelectric Sensors

| FA Series Photoelectric Sensors Specifications |                                                                                     |                                  |                                                                   |                                                                  |
|------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------|
| Specifications                                 | Diffuse with Background Suppression                                                 | Diffuse Models                   | Reflective Models                                                 | Through-Beam Models                                              |
| Type                                           | Diffuse with background suppression                                                 | Diffuse reflection               | Polarized reflection <sup>3</sup>                                 | Through-beam <sup>4</sup>                                        |
| Sensing Distance                               | 100mm <sup>5</sup><br>80mm <sup>5</sup><br>150mm <sup>5</sup><br>130mm <sup>5</sup> | 300mm <sup>1</sup>               | 20m with RL110 reflector <sup>2</sup><br>30m with RL201 reflector | 50m                                                              |
| Light Spot Diameter                            | 1mm @ 100mm                                                                         |                                  | 15mm @ 800mm                                                      | 22x5 mm @ 20m                                                    |
| Emission                                       | Visible red Class 1 or Class 2 Laser (650nm); see note below                        |                                  |                                                                   |                                                                  |
| Sensitivity                                    | Adjustable                                                                          |                                  |                                                                   |                                                                  |
| Output Type                                    | NPN or PNP - Complementary N.O./N.C.                                                |                                  |                                                                   |                                                                  |
| Operating Voltage                              | 10-30 VDC                                                                           |                                  |                                                                   |                                                                  |
| No-load Supply Current                         | ≤ 40mA                                                                              | ≤ 30mA                           | ≤ 20mA                                                            | ≤ 25mA                                                           |
| Operating (Load) Current                       | ≤100mA                                                                              |                                  |                                                                   |                                                                  |
| Off-state (Leakage) Current                    | ≤10µA                                                                               |                                  |                                                                   |                                                                  |
| Voltage Drop                                   | 2V max at 100mA                                                                     |                                  |                                                                   |                                                                  |
| Switching Frequency                            | 1.5 kHz                                                                             | 800Hz                            |                                                                   | 1kHz                                                             |
| Ripple                                         | ≤ 10%                                                                               |                                  |                                                                   |                                                                  |
| Time Delay Before Availability (tv)            | 250ms                                                                               | 200ms                            |                                                                   |                                                                  |
| Short-Circuit Protection                       | Yes, switch auto-resets after load is removed                                       |                                  |                                                                   |                                                                  |
| Operating Temperature                          | -10 to 50°C [14 to 122°F]                                                           | -15 to 55°C [5 to 131°F]         |                                                                   |                                                                  |
| Protection Degree (DIN 40050)                  | IEC IP67                                                                            |                                  |                                                                   |                                                                  |
| LED Indicators/Switch Status                   | Yellow (output energized)<br>Green (power ON)                                       |                                  |                                                                   | Receiver: Yellow (output energized)<br>Emitter: Green (power ON) |
| Housing Material                               | Nickel-plated brass (metallic)                                                      | Polybutylene Terephthalate (PBT) |                                                                   |                                                                  |
| Lens Material                                  | Polycarbonate (PC)                                                                  |                                  |                                                                   |                                                                  |
| Shock/Vibration                                | <a href="#">See terminology Section</a>                                             |                                  |                                                                   |                                                                  |
| Tightening Torque                              | 25 N•m [18.44 lb-ft]                                                                | 1 N•m [0.737 lb-ft]              |                                                                   |                                                                  |
| Weight                                         | 65g [2.29 oz]                                                                       | 100g [3.54 oz]                   |                                                                   |                                                                  |
| Connectors                                     | 2m [6.5 ft] axial cable; M12 [12mm] connector. Two lock nuts included.              |                                  |                                                                   |                                                                  |
| Agency Approvals                               | cULus E187310, CE                                                                   |                                  |                                                                   |                                                                  |

<sup>1</sup> With 100x100mm white matte paper<sup>2</sup> With standard Ø84mm RL110 reflector<sup>3</sup> Purchase reflector separately.<sup>4</sup> An emitter (FALH) and receiver (FALD) pair must be ordered for a complete sensor set.<sup>5</sup> Dependent on Axial and Right Angle and Laser class.

To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

## IMPORTANT NOTE

The Laser Classification Systems for the standards IEC (EN) 60825-1 defines the following safety classes:

### Class 1

This class is eye-safe under all operating conditions.

### Class 2

These are visible lasers. This class is safe for accidental viewing under all operating conditions. However, it may not be safe for a person who deliberately stares into the laser beam for longer than 0.25 s, by overcoming their natural aversion response to the very bright light.

# FA Series Laser Photoelectric Sensors

## Characteristic curves

Chart 1 (Diffuse)

FAL4-B\*-0\* Excess gain

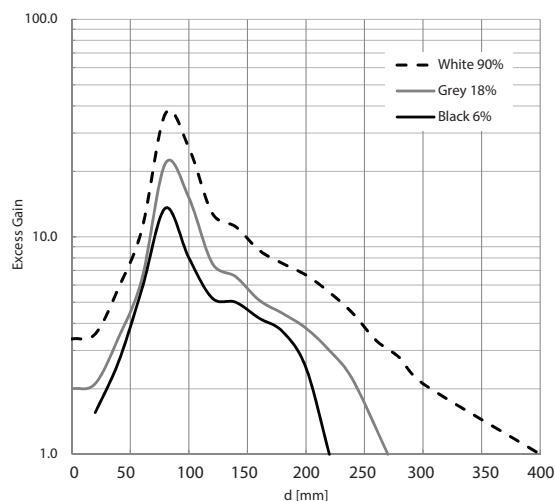
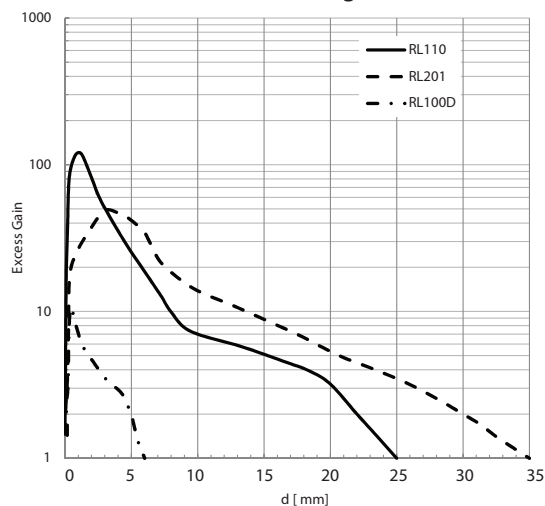
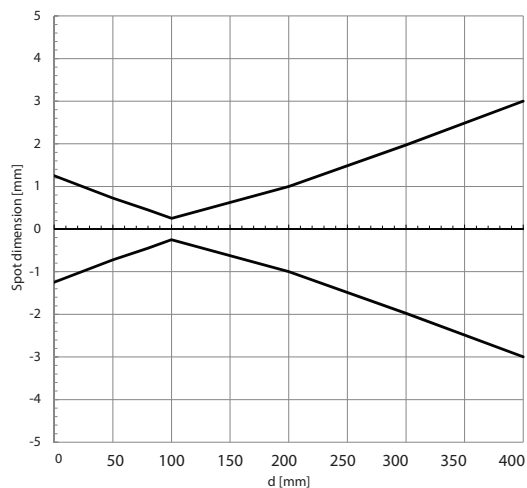


Chart 2 (Polarized Reflective)

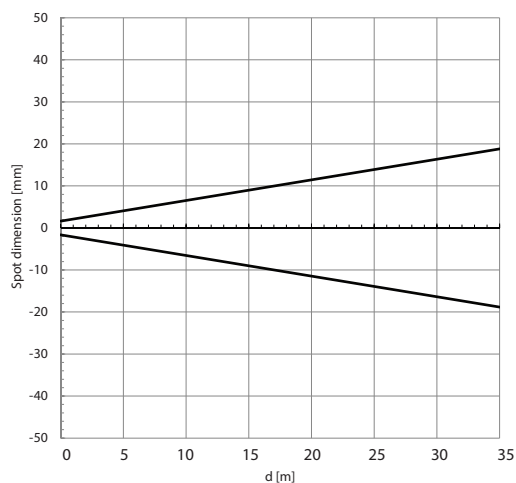
FALN-\*\*-\*\* Excess gain



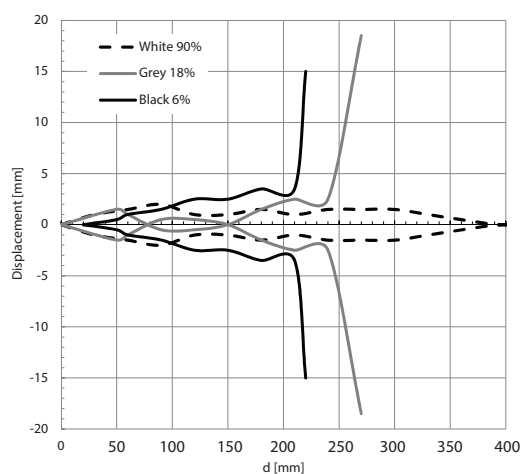
FAL4-B\*-0\* Spot dimension



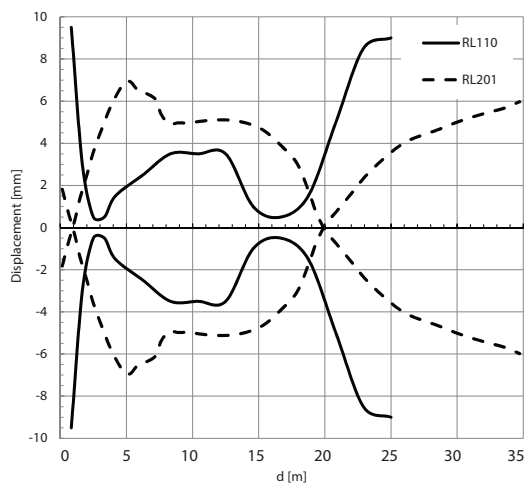
FALN-\*\*-\*\* Spot dimension



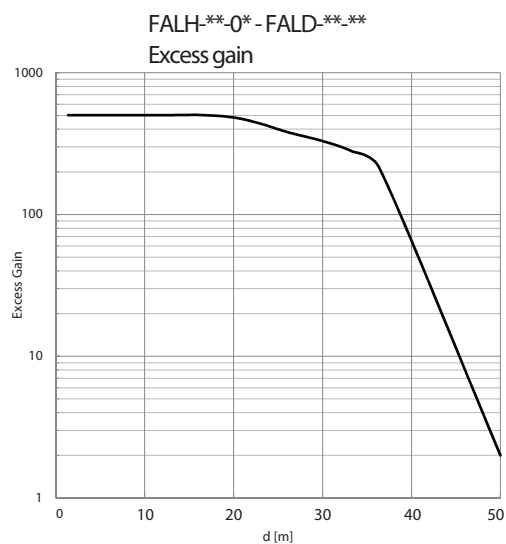
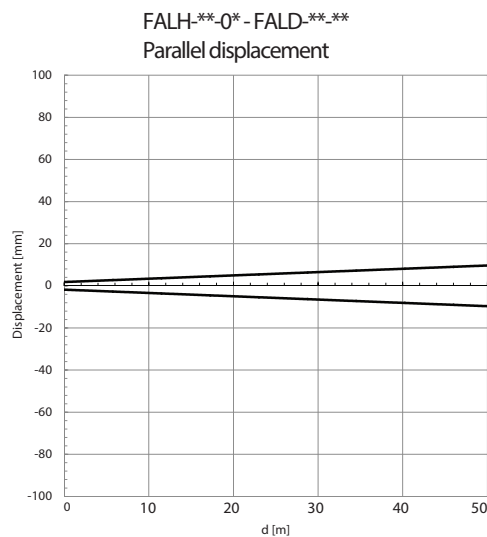
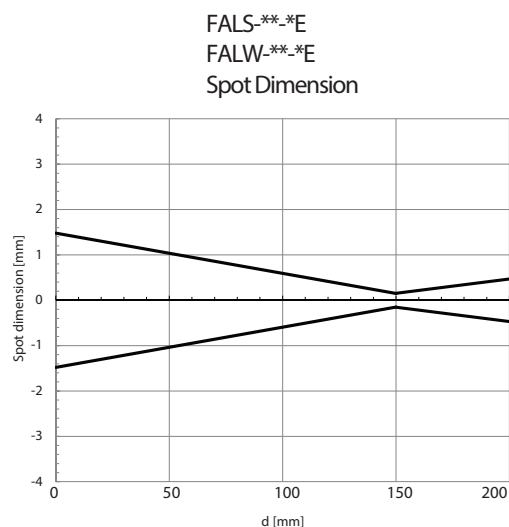
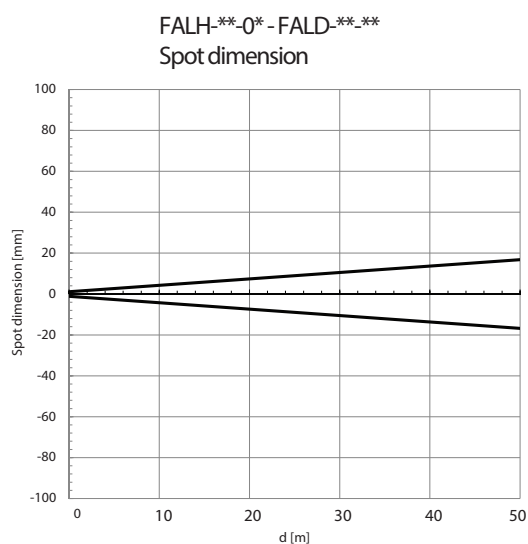
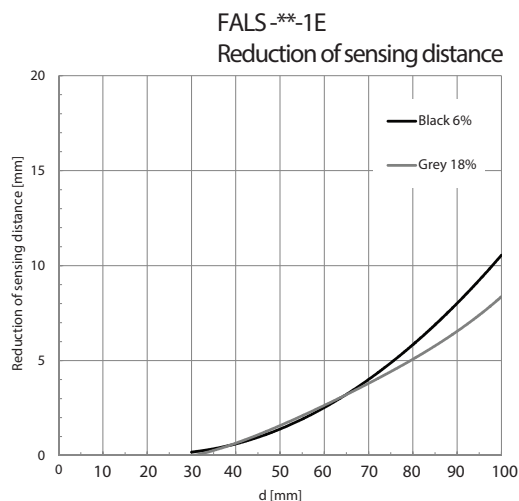
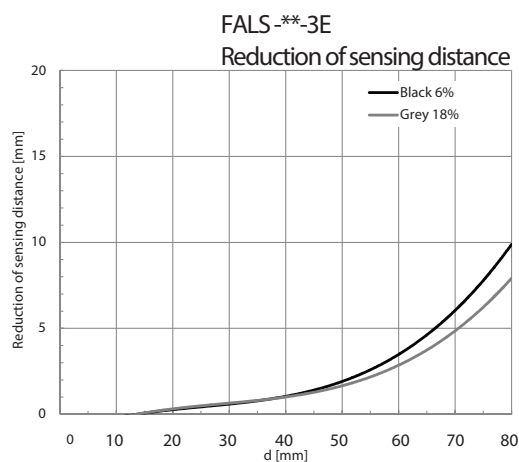
FAL4-B\*-0\* Parallel displacement



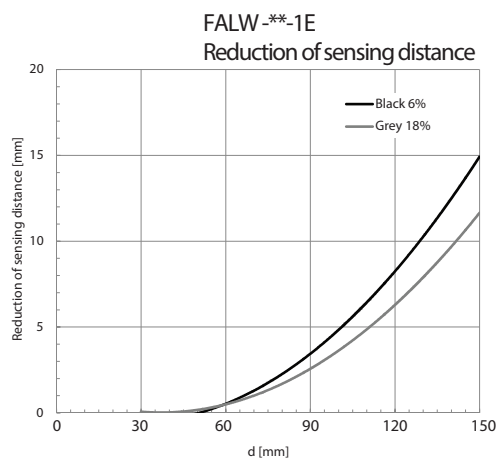
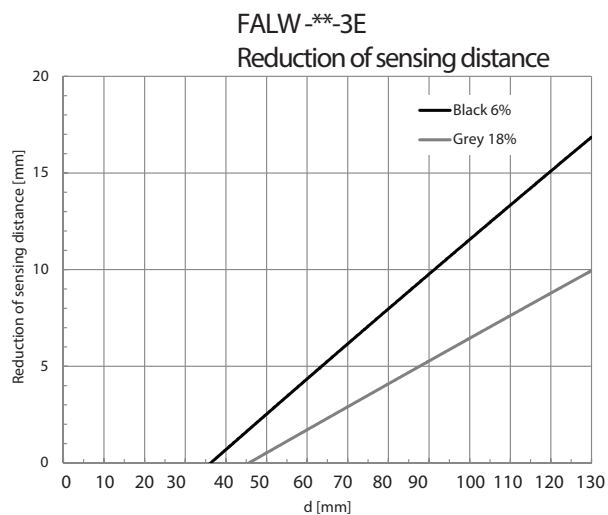
FALN-\*\*-\*\* Parallel displacement



# FA Series Laser Photoelectric Sensors

**Chart 3 (Through-Beam)**

**Chart 4 (Diffuse with Background Suppression Class 1)**

**Chart 5 (Diffuse with Background Suppression Class 1)**


# FA Series Laser Photoelectric Sensors

**Chart 6 (Diffuse with Background Suppression Class 2)****Chart 7 (Diffuse with Background Suppression Class 2)**

## Axial Mounting Bracket



**ST18A**

## Dimensions

Technical drawing of a mechanical part, likely a valve or actuator component, showing a cross-section and a side view. The cross-section features a central vertical shaft with a diameter of 30.0 mm, a top flange with a diameter of 18.3 mm, and a base with a diameter of 42.4 mm. The side view shows a total height of 70.6 mm and a base thickness of 1.5 mm. Various dimensions and tolerances are provided in millimeters and brackets.

Key dimensions and tolerances:

- Top flange diameter:  $\varnothing 18.3$  [ $\varnothing 0.72$ ]
- Central shaft diameter: 30.0 [1.18]
- Base diameter: 42.4 [1.67]
- Top flange thickness: 53.8 [2.12]
- Central shaft length: 15.9 [0.62]
- Base thickness: 14.0 [0.55]
- Side view total height: 70.6 [2.78]
- Side view base thickness: 1.5 [0.06]
- Side view top flange thickness: 15.9 [0.62]
- Side view central shaft length: 15.9 [0.62]
- Side view base thickness: 14.0 [0.55]
- Side view top flange diameter:  $\varnothing 18.3$  [ $\varnothing 0.72$ ]
- Side view central shaft diameter: 30.0 [1.18]
- Side view base diameter: 42.4 [1.67]
- Side view top flange thickness: 53.8 [2.12]
- Side view central shaft length: 15.9 [0.62]
- Side view base thickness: 14.0 [0.55]
- Side view top flange diameter:  $\varnothing 18.3$  [ $\varnothing 0.72$ ]
- Side view central shaft diameter: 30.0 [1.18]
- Side view base diameter: 42.4 [1.67]
- Side view top flange thickness: 53.8 [2.12]
- Side view central shaft length: 15.9 [0.62]
- Side view base thickness: 14.0 [0.55]

**ST18C**

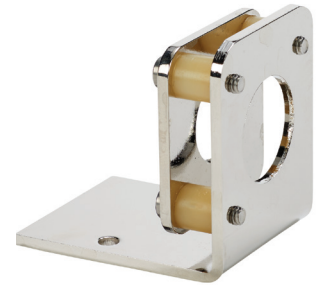
## Dimensions

# Accessories for 18mm Sensors

## Right-angle Fine Tune Mounting Bracket

Mounting bracket, right-angle, fine tune vertical and horizontal adjustment, nickel-plated steel. For use with 18mm sensors. Allows for fine tuning vertical and horizontal placement.

| Accessories for 18mm Sensors   |         |                                                                                                                                      |                            |             |
|--------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------|
| Part Number                    | Price   | Description                                                                                                                          | Drawing Link               | Weight [lb] |
| <a href="#"><u>OPT2036</u></a> | \$38.50 | Wenglor mounting bracket, right-angle, fine tune vertical and horizontal adjustment, nickel plated steel. For use with 18mm sensors. | <a href="#"><u>PDF</u></a> | 0.02        |

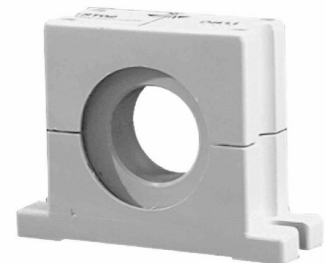


[OPT2036](#)

## Swivel Mounting Bracket

Mounting bracket, ball swivel, plastic. For use with 18mm sensors. Has a ball-joint and set screws to adjust sensor orientation. Allows angular orientation up to 15 degrees (from center) in all directions for photoelectric sensors (Will not work with C18 series).

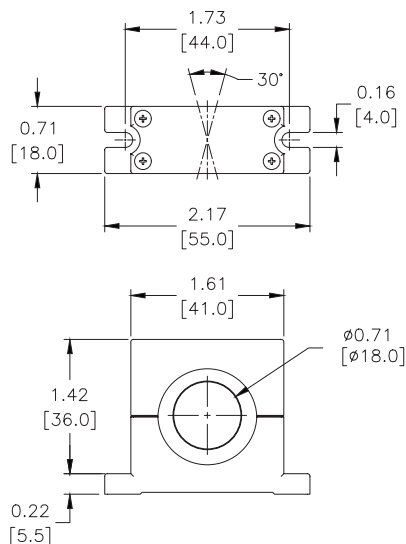
| Accessories for 18mm Sensors |        |                                                                                    |             |
|------------------------------|--------|------------------------------------------------------------------------------------|-------------|
| Part Number                  | Price  | Description                                                                        | Weight [lb] |
| <a href="#"><u>ST02</u></a>  | \$9.50 | Micro Detectors mounting bracket, ball swivel, plastic. For use with 18mm sensors. | 0.06        |



[ST02](#)

## Dimensions

mm [inches]



# Accessories for 18mm Sensors

## Right-angle Mounting Brackets

Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors. Available with or without fixed insertion stop.

| Accessories for 18mm Sensors |         |                                                                                                             |                     |               |
|------------------------------|---------|-------------------------------------------------------------------------------------------------------------|---------------------|---------------|
| Part Number                  | Price   | Description                                                                                                 | Drawing Link        | Weight lb [g] |
| <a href="#">OPT2104</a>      | \$10.50 | Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors. | <a href="#">PDF</a> | 0.06 [27.2]   |
| <a href="#">OPT2105</a>      | \$10.50 | Wenglor mounting bracket, right-angle, plastic. For use with 18mm sensors.                                  | <a href="#">PDF</a> | 0.06 [27.2]   |



[OPT2104](#), [OPT2105](#)

## Right-angle Swivel Mounting Systems

Mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 12mm rod mount. For use with 18mm sensors. Available in all 304 stainless steel or with an aluminum head and a stainless steel mounting plate.

| Accessories for 18mm Sensors |         |                                                                                                                                                              |                     |                     |                     |               |
|------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|---------------------|---------------|
| Part Number                  | Price   | Description                                                                                                                                                  | Mounting Head       | Mounting Plate      | Drawing Link        | Weight lb [g] |
| <a href="#">OPT2116</a>      | \$11.50 | Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 18mm sensors.            | Aluminum            | 304 Stainless steel | <a href="#">PDF</a> | 0.15 [68.0]   |
| <a href="#">OPT2117</a>      | \$21.00 | Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 18mm sensors. | 304 Stainless steel | 304 Stainless steel | <a href="#">PDF</a> | 0.28 [127.0]  |



[OPT2116](#), [OPT2117](#)

Note: 304 Stainless steel mounting rods sold separately: [OPT2109](#) (200mm [7.87 in] length), [OPT2110](#) (300mm [11.81 in] length), and [OPT2111](#) (500mm [19.69 in] length).

# Mounting Rods and Brackets

## Mounting Rods

304 Stainless steel rods for mounting swivel brackets [OPT2112](#) - [OPT2127](#). Available in three lengths: 200mm, 300mm, and 500mm. 12mm diameter.

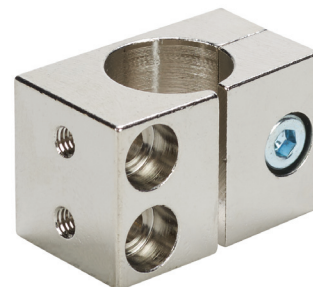
| Mounting Rods for OPT2112-2127 Swivel Mounting Brackets |         |                                                                         |                     |                  |
|---------------------------------------------------------|---------|-------------------------------------------------------------------------|---------------------|------------------|
| Part Number                                             | Price   | Description                                                             | Drawing Link        | Weight lb (g)    |
| <a href="#">OPT2109</a>                                 | \$13.00 | Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel. | <a href="#">PDF</a> | 0.41<br>[185.97] |
| <a href="#">OPT2110</a>                                 | \$16.00 | Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel. | <a href="#">PDF</a> | 0.60<br>[272.16] |
| <a href="#">OPT2111</a>                                 | \$21.00 | Wenglor mounting rod, 12mm diameter, 500mm length, 304 stainless steel. | <a href="#">PDF</a> | 0.98<br>[444.52] |



## Right-angle Mounting Bracket

Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods [OPT2109](#), [OPT2110](#) & [OPT2111](#).

| Right-angle Mounting Brackets for 12mm Sensors |         |                                                                                                                         |                     |                |
|------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------|---------------------|----------------|
| Part Number                                    | Price   | Description                                                                                                             | Drawing Link        | Weight lb [g]  |
| <a href="#">OPT2108</a>                        | \$16.00 | Wenglor mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111. | <a href="#">PDF</a> | 0.07<br>[31.8] |



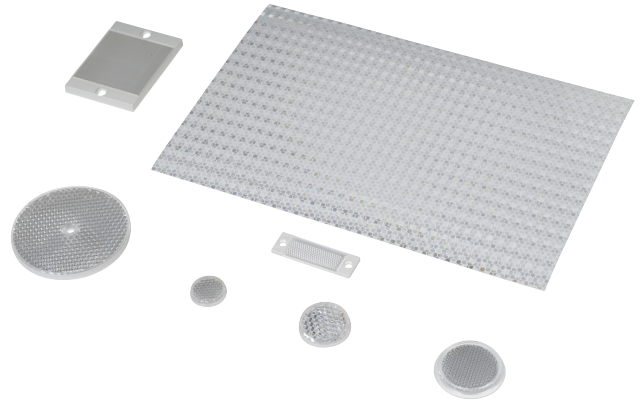
# Reflectors

## RL Series Reflectors for Polarized Reflective Photoelectric Sensors (All Models)

- Suitable for use with polarized light photoelectric sensors
- Shapes and sizes for most applications
- Miniature types for close mounting in multiple sensor installations
- Single hole, dual hole and self-adhesive mounting types available
- Single and 10-packs available

### Installation Notes

- Keep the reflector surface clean to ensure peak detection performance. This is especially true when the maximum sensing range is being used. Clean using a damp cloth.
- When selecting a reflector, it is important to consider the ambient conditions it will be exposed to. Dusty or high humidity conditions may reduce the sensing range as much as 90%.
- Reflectors should be positioned at a 90° angle to the optical axis with a tolerance of  $\pm 15^\circ$ .



| Reflector Specifications |         |                     |          |                    |                      |                                                              |                                                                                                                         |
|--------------------------|---------|---------------------|----------|--------------------|----------------------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Part number              | Price   | Drawing Link        | Quantity | Dimensions mm [in] | Degree of Protection | Mounting                                                     | Materials                                                                                                               |
| <a href="#">RL102</a>    | \$38.00 | <a href="#">PDF</a> | 10       | 25                 | IEC IP67             | Customer-supplied adhesive or other mounting method required | Reflective face: PMMA<br>Polymethylmethacrylate (acrylic)<br><br>Base material: ABS<br>(Acrylonitrile-butadiene-styren) |
| <a href="#">RL102-1</a>  | \$4.25  |                     | 1        | [0.98]             |                      |                                                              |                                                                                                                         |
| <a href="#">RL103</a>    | \$42.50 | <a href="#">PDF</a> | 10       | 34.5               |                      |                                                              |                                                                                                                         |
| <a href="#">RL103-1</a>  | \$4.75  |                     | 1        | [1.36]             |                      |                                                              |                                                                                                                         |
| <a href="#">RL104</a>    | \$42.50 | <a href="#">PDF</a> | 10       | 46                 |                      |                                                              |                                                                                                                         |
| <a href="#">RL104-1</a>  | \$4.75  |                     | 1        | [1.81]             |                      |                                                              |                                                                                                                         |
| <a href="#">RL105G</a>   | \$38.00 | <a href="#">PDF</a> | 10       | 95 x 38            |                      | Two 4.3 mm holes                                             |                                                                                                                         |
| <a href="#">RL105G-1</a> | \$4.25  |                     | 1        | [3.74 x 1.50]      |                      |                                                              |                                                                                                                         |
| <a href="#">RL106G</a>   | \$42.50 | <a href="#">PDF</a> | 10       | 182 x 42           |                      | Two 6mm holes                                                |                                                                                                                         |
| <a href="#">RL106G-1</a> | \$4.75  |                     | 1        | [7.17 x 1.65]      |                      |                                                              |                                                                                                                         |
| <a href="#">RL110</a>    | \$19.00 | <a href="#">PDF</a> | 10       | 84                 |                      | One 5mm hole                                                 |                                                                                                                         |
| <a href="#">RL110-1</a>  | \$2.00  |                     | 1        | [3.31]             |                      |                                                              |                                                                                                                         |
| <a href="#">RL116</a>    | \$19.00 | <a href="#">PDF</a> | 10       | 41 x 60            |                      | Two 3mm holes                                                |                                                                                                                         |
| <a href="#">RL116-1</a>  | \$2.00  |                     | 1        | [3.54 x 2.36]      |                      |                                                              |                                                                                                                         |
| <a href="#">RL100DA4</a> | \$38.50 | NA                  | 1        | 200 x 300          |                      | Self-adhesive                                                | Paper (Acrylic tape with micro prism)                                                                                   |
| <a href="#">RL100DC4</a> | \$12.00 | NA                  | 1        | 50 x 300           |                      |                                                              |                                                                                                                         |
| <a href="#">RL100DQ1</a> | \$8.75  | NA                  | 1        | 100 x 100          |                      |                                                              |                                                                                                                         |
| <a href="#">RL111G</a>   | \$60.00 | <a href="#">PDF</a> | 10       | 22.5 x 47          |                      | Two 3mm slots                                                | Reflective face: PMMA<br>Polymethylmethacrylate (acrylic)<br><br>Base material: ABS<br>(Acrylonitrile-butadiene-styren) |
| <a href="#">RL111G-1</a> | \$7.25  |                     | 1        | [0.89 x 1.85]      |                      |                                                              |                                                                                                                         |
| <a href="#">RL112G</a>   | \$44.00 | <a href="#">PDF</a> | 10       | 19 x 73            |                      |                                                              |                                                                                                                         |
| <a href="#">RL112G-1</a> | \$4.75  |                     | 1        | [0.75 x 2.87]      |                      |                                                              |                                                                                                                         |
| <a href="#">RL113G</a>   | \$53.00 | <a href="#">PDF</a> | 10       | 51.4 x 60.3        |                      | Two 4mm slots                                                |                                                                                                                         |
| <a href="#">RL113G-1</a> | \$6.00  |                     | 1        | [2.02 x 2.37]      |                      |                                                              |                                                                                                                         |

Not recommended for applications involving moist air environments or water immersion.

# Reflectors

## RL Series Reflectors for Polarized Reflective Laser Photoelectric Sensors (FALN series)

- Suitable for use with polarized light laser photoelectric sensors
- Sizes for most applications
- Miniature types for close mounting in multiple sensor installations
- Single and 5-packs available

| Specifications                    |                              |                                |                              |                                |                                  |                                |
|-----------------------------------|------------------------------|--------------------------------|------------------------------|--------------------------------|----------------------------------|--------------------------------|
| Part Number                       | <a href="#"><i>RL201</i></a> | <a href="#"><i>RL201-1</i></a> | <a href="#"><i>RL203</i></a> | <a href="#"><i>RL203-1</i></a> | <a href="#"><i>RL204</i></a>     | <a href="#"><i>RL204-1</i></a> |
| Price                             | \$38.00                      | \$8.25                         | \$35.50                      | \$7.75                         | \$30.00                          | \$6.75                         |
| Quantity                          | 5                            | 1                              | 5                            | 1                              | 5                                | 1                              |
| Drawing Link                      | <a href="#">PDF</a>          |                                | <a href="#">PDF</a>          |                                | <a href="#">PDF</a>              |                                |
| Dimensions                        | 60 x 82 mm<br>2.36 x 3.23 in |                                | 19 x 6mm<br>0.75 x 2.36 in   |                                | 20mm x 32mm<br>0.80 in x 1.26 in |                                |
| Degree of Protection <sup>1</sup> | IEC IP67                     |                                |                              |                                |                                  |                                |
| Mounting                          | Two 0.4 mm holes             |                                | Two 0.4 mm holes             |                                | Two 0.3 mm holes                 |                                |
| Materials                         | Acrylic/polycarbonate        |                                |                              |                                |                                  |                                |

<sup>1</sup> Not recommended for applications involving moist air environments or water immersion.