

# Fork Sensors PS Series



## Fork Sensor U-frame - Visible Red Light

- Rugged metal one-piece housing - always in alignment
- Easy installation
- Visible red light - easy setup
- Glass optics
- High resolution
- Light-on/Dark-on Selectable
- Adjustable sensitivity
- High switching frequency
- M8 connector with 360° LED

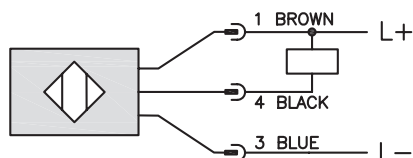


**Fork Sensor U-frame - Visible Red Light PS Series Selection Chart**

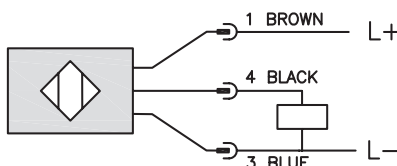
| Part Number                       | Price    | Sensing Range   | Output State                | Logic | Connection   | Wiring    | Dimensions |
|-----------------------------------|----------|-----------------|-----------------------------|-------|--------------|-----------|------------|
| <a href="#"><u>PSUR-0P-1F</u></a> | \$128.00 | 5mm [0.2 in]    | Light-on/Dark-on Selectable | PNP   | M8 connector | Diagram 2 | Figure 1   |
| <a href="#"><u>PSUR-0N-1F</u></a> | \$128.00 | 5mm [0.2 in]    | Light-on/Dark-on Selectable | NPN   | M8 connector | Diagram 1 | Figure 1   |
| <a href="#"><u>PSUR-0P-2F</u></a> | \$128.00 | 10mm [0.39 in]  | Light-on/Dark-on Selectable | PNP   | M8 connector | Diagram 2 | Figure 2   |
| <a href="#"><u>PSUR-0N-2F</u></a> | \$128.00 | 10mm [0.39 in]  | Light-on/Dark-on Selectable | NPN   | M8 connector | Diagram 1 | Figure 2   |
| <a href="#"><u>PSUR-0P-3F</u></a> | \$128.00 | 20mm [0.79 in]  | Light-on/Dark-on Selectable | PNP   | M8 connector | Diagram 2 | Figure 3   |
| <a href="#"><u>PSUR-0N-3F</u></a> | \$128.00 | 20mm [0.79 in]  | Light-on/Dark-on Selectable | NPN   | M8 connector | Diagram 1 | Figure 3   |
| <a href="#"><u>PSUR-0P-4F</u></a> | \$146.00 | 30mm [1.18 in]  | Light-on/Dark-on Selectable | PNP   | M8 connector | Diagram 2 | Figure 4   |
| <a href="#"><u>PSUR-0N-4F</u></a> | \$146.00 | 30mm [1.18 in]  | Light-on/Dark-on Selectable | NPN   | M8 connector | Diagram 1 | Figure 4   |
| <a href="#"><u>PSUR-0P-5F</u></a> | \$155.00 | 50mm [1.97 in]  | Light-on/Dark-on Selectable | PNP   | M8 connector | Diagram 2 | Figure 5   |
| <a href="#"><u>PSUR-0N-5F</u></a> | \$155.00 | 50mm [1.97 in]  | Light-on/Dark-on Selectable | NPN   | M8 connector | Diagram 1 | Figure 5   |
| <a href="#"><u>PSUR-0P-6F</u></a> | \$163.00 | 80mm [3.15 in]  | Light-on/Dark-on Selectable | PNP   | M8 connector | Diagram 2 | Figure 6   |
| <a href="#"><u>PSUR-0N-6F</u></a> | \$163.00 | 80mm [3.15 in]  | Light-on/Dark-on Selectable | NPN   | M8 connector | Diagram 1 | Figure 6   |
| <a href="#"><u>PSUR-0P-7F</u></a> | \$170.00 | 120mm [4.72 in] | Light-on/Dark-on Selectable | PNP   | M8 connector | Diagram 2 | Figure 7   |
| <a href="#"><u>PSUR-0P-8F</u></a> | \$196.00 | 180mm [7.09 in] | Light-on/Dark-on Selectable | PNP   | M8 connector | Diagram 2 | Figure 8   |
| <a href="#"><u>PSUR-0P-9F</u></a> | \$204.00 | 220mm [8.66 in] | Light-on/Dark-on Selectable | PNP   | M8 connector | Diagram 2 | Figure 9   |

## Wiring Diagrams

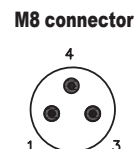
**Diagram 1**



**Diagram 2**



## Connectors



Note: Class 2 power supply required

# Fork Sensors PS Series

| Specifications                             |                                                                                                                                                                                                                                  |                                                                                                                                       |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
|                                            | U-frame - Visible Red Light                                                                                                                                                                                                      | U-frame Frame - Infrared Light                                                                                                        |
| <b>Mounting Type</b>                       | Slot                                                                                                                                                                                                                             |                                                                                                                                       |
| <b>Sensing Distance</b>                    | 5.0 mm [0.20 in] to 220mm [8.66 in]                                                                                                                                                                                              |                                                                                                                                       |
| <b>Smallest Detectable Object</b>          | PSUR 1F-2F-3F-4F 0.3 mm [0.012 in]<br>PSUR 5F-6F 0.4 mm [0.016 in]<br>PSUR 7F 0.5 mm [0.020 in]<br>PSUR 8F-9F 0.6 mm [0.024 in]                                                                                                  | PSUI 1F-2F-3F-4F 0.8 mm [0.032 in]<br>PSUI 5F 1.0 mm [0.040 in]<br>PSUI 6F 1.2 mm [0.047 in]<br>PSUI 7F-8F-9F 1.5 mm [0.059 in]       |
| <b>Emission</b>                            | Visible Red Light                                                                                                                                                                                                                | Infrared Light                                                                                                                        |
| <b>Sensitivity</b>                         | Adjustable Potentiometer (0 to 270°)                                                                                                                                                                                             |                                                                                                                                       |
| <b>Output Type</b>                         | NPN or PNP/ Light-on/Dark-on/ 3-wire                                                                                                                                                                                             |                                                                                                                                       |
| <b>Operating Voltage</b>                   | 10 to 30 VDC                                                                                                                                                                                                                     |                                                                                                                                       |
| <b>No-load Supply Current</b>              | ≤ 35mA                                                                                                                                                                                                                           |                                                                                                                                       |
| <b>Operating (Load) Current</b>            | 200mA                                                                                                                                                                                                                            |                                                                                                                                       |
| <b>Off-state (Leakage) Current</b>         | N/A                                                                                                                                                                                                                              |                                                                                                                                       |
| <b>Voltage Drop</b>                        | ≤ 3.0V (PNP); ≤2.5 (NPN)                                                                                                                                                                                                         |                                                                                                                                       |
| <b>Switching Frequency</b>                 | PSUR 1F-2F 3kHz<br>PSUR 3F-9F 1.5 kHz                                                                                                                                                                                            | PSUI 1F-2F 3kHz<br>PSUI 3F-4F-5F-6F-8F-9F 2kHz<br>PSUI 7F 1kHz                                                                        |
| <b>Differential Travel</b>                 | N/A                                                                                                                                                                                                                              |                                                                                                                                       |
| <b>Repeat Accuracy</b>                     | PSUR 1F-2F-3F-4F 0.02 mm [0.0008 in]<br>PSUR 5F 0.04 mm [0.0016 in]<br>PSUR 6F 0.06 mm [0.0024 in]<br>PSUR 7F-8F-9F 0.08 mm [0.0031 in]                                                                                          | PSUI 1F-2F-3F-4F 0.1 mm [0.0039 in]<br>PSUI 5F 0.12 mm [0.0047 in]<br>PSUI 6F 0.15 mm [0.0059 in]<br>PSUI 7F-8F-9F 0.2 mm [0.0079 in] |
| <b>Ripple</b>                              | N/A                                                                                                                                                                                                                              |                                                                                                                                       |
| <b>Time Delay Before Availability (tv)</b> | N/A                                                                                                                                                                                                                              |                                                                                                                                       |
| <b>Reverse Polarity Protection</b>         | Yes                                                                                                                                                                                                                              |                                                                                                                                       |
| <b>Short-Circuit Protection</b>            | Yes                                                                                                                                                                                                                              |                                                                                                                                       |
| <b>Operating Temperature</b>               | -10 to 60°C [14 to 140°F]                                                                                                                                                                                                        |                                                                                                                                       |
| <b>Protection Degree (DIN 40050)</b>       | IP67                                                                                                                                                                                                                             |                                                                                                                                       |
| <b>Indication/Switch Status</b>            | On Yellow LED                                                                                                                                                                                                                    |                                                                                                                                       |
| <b>Housing Material</b>                    | GD Zn (Gadolinium-Zinc)                                                                                                                                                                                                          |                                                                                                                                       |
| <b>Sensing Face Material</b>               | Glass                                                                                                                                                                                                                            |                                                                                                                                       |
| <b>Shock</b>                               | Meets IEC 68-2-27 (See Photoelectric Sensor at the end of this section for more details)                                                                                                                                         |                                                                                                                                       |
| <b>Vibration</b>                           | Meets IEC 68-2-6 (See Photoelectric Sensor at the end of this section for more details)                                                                                                                                          |                                                                                                                                       |
| <b>Tightening Torque</b>                   | N/A                                                                                                                                                                                                                              |                                                                                                                                       |
| <b>Weight</b>                              | PSUx 1F 20g [0.71 oz]<br>PSUx 2F 23g [0.81 oz]<br>PSUx 3F 28g [0.99 oz]<br>PSUx 4F 36g [1.27 oz]<br>PSUx 5F 54g [1.90 oz]<br>PSUx 6F 77g [2.72 oz]<br>PSUx 7F 118g [4.16 oz]<br>PSUx 8F 190g [6.70 oz]<br>PSUx 9F 220g [7.76 oz] |                                                                                                                                       |
| <b>Connection</b>                          | M8 connector                                                                                                                                                                                                                     |                                                                                                                                       |
| <b>Agency Approvals</b>                    | UL E328811- CE                                                                                                                                                                                                                   |                                                                                                                                       |

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

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## Dimensions

mm [inches]

Figure 1

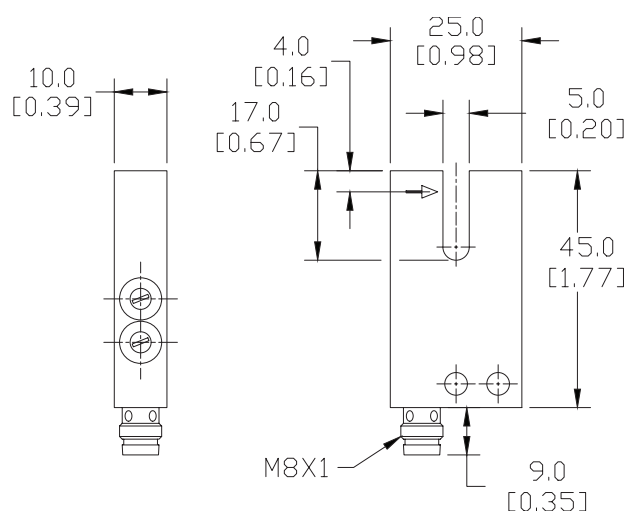


Figure 2

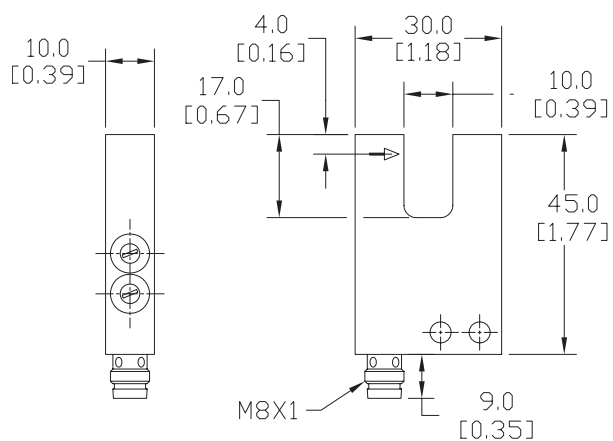


Figure 3

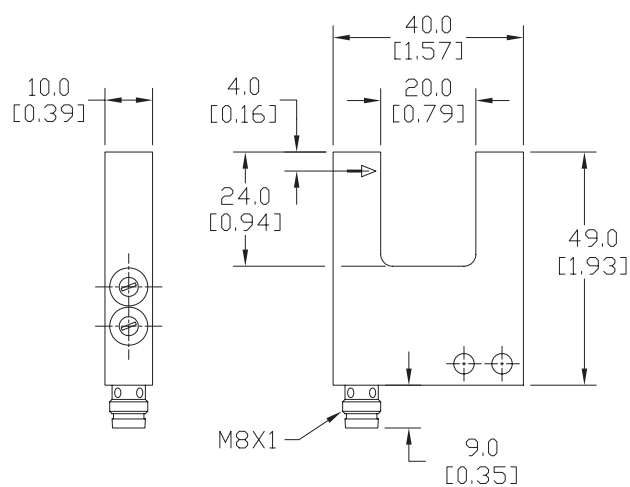
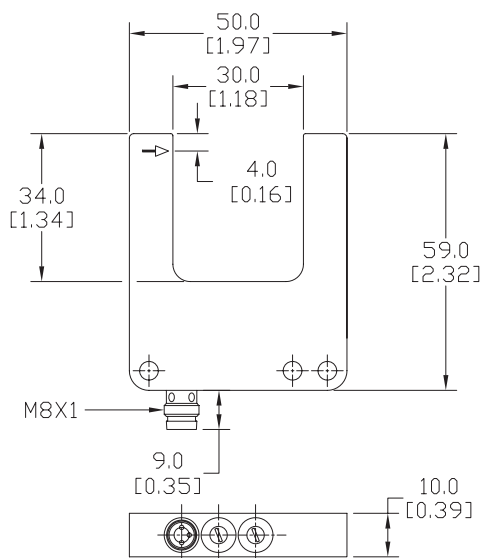


Figure 4

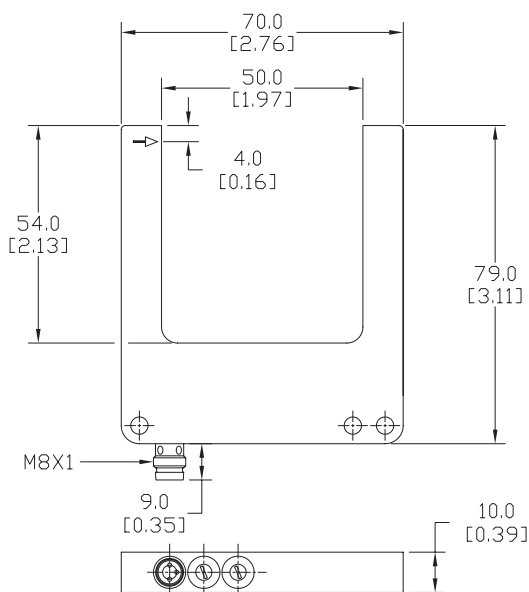
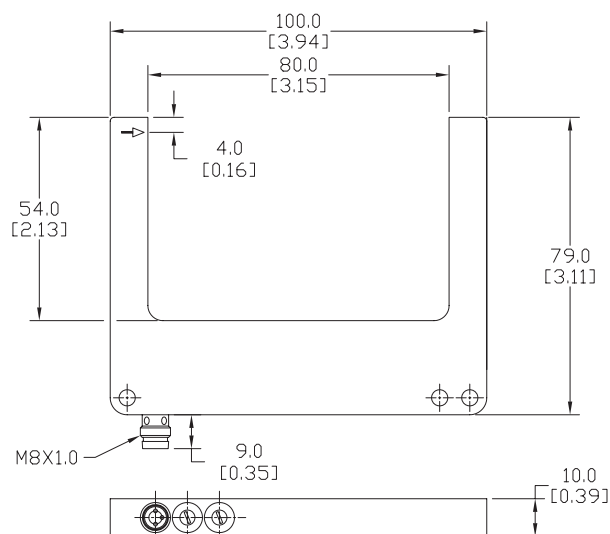
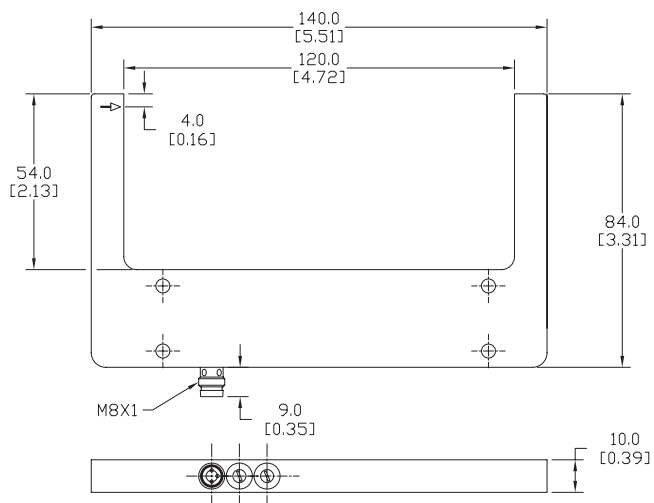


See our website: [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

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## Dimensions

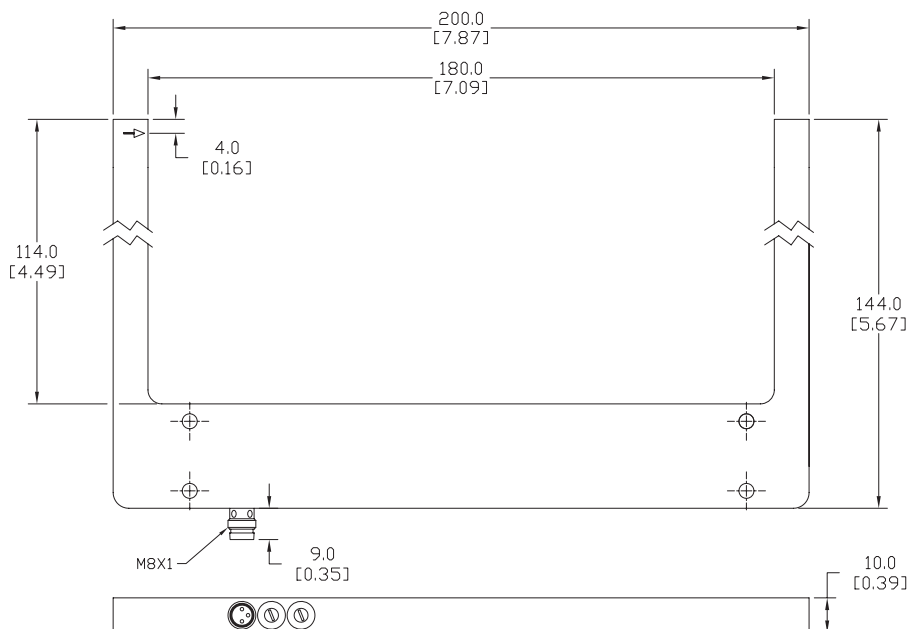
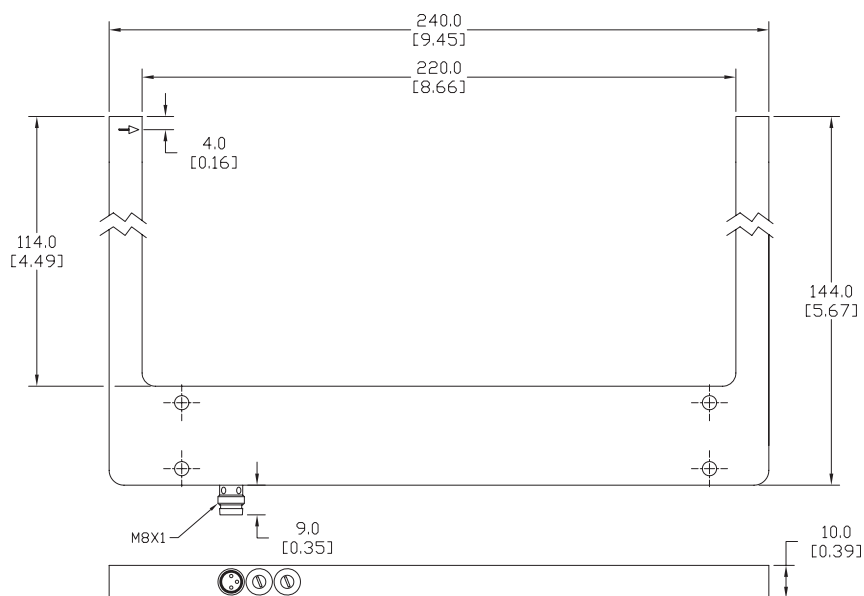
mm [inches]

**Figure 5****Figure 6****Figure 7**See our website: [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

# Fork Sensors PS Series

## Dimensions

mm [inches]

**Figure 8****Figure 9**See our website: [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.