

# Fork Sensors PS Series

## Fork Sensor U-frame - Laser



- Rugged metal one-piece housing - always in alignment
- Easy installation
- Class 1 laser to detect small objects
- Glass optics
- High resolution
- Light-on/Dark-on Selectable
- Adjustable sensitivity
- High switching frequency
- M8 connector with 360° LED
- Some units designed specifically for transparent objects



**Fork Sensor U-frame - Laser Class 1 PS Series Selection Chart**

| Part Number                       | Price    | Sensing Range   | Output State                | Logic | Connection   | Wiring    | Dimensions |
|-----------------------------------|----------|-----------------|-----------------------------|-------|--------------|-----------|------------|
| <a href="#"><u>PSUL-0P-4F</u></a> | \$204.00 | 30mm [1.18 in]  | Light-on/Dark-on Selectable | PNP   | M8 connector | Diagram 2 | Figure 1   |
| <a href="#"><u>PSUL-0N-4F</u></a> | \$204.00 | 30mm [1.18 in]  | Light-on/Dark-on Selectable | NPN   | M8 connector | Diagram 1 | Figure 1   |
| <a href="#"><u>PSUL-0P-5F</u></a> | \$204.00 | 50mm [1.97 in]  | Light-on/Dark-on Selectable | PNP   | M8 connector | Diagram 2 | Figure 2   |
| <a href="#"><u>PSUL-0N-5F</u></a> | \$204.00 | 50mm [1.97 in]  | Light-on/Dark-on Selectable | NPN   | M8 connector | Diagram 1 | Figure 2   |
| <a href="#"><u>PSUL-0P-6F</u></a> | \$236.00 | 80mm [3.15 in]  | Light-on/Dark-on Selectable | PNP   | M8 connector | Diagram 2 | Figure 3   |
| <a href="#"><u>PSUL-0N-6F</u></a> | \$236.00 | 80mm [3.15 in]  | Light-on/Dark-on Selectable | NPN   | M8 connector | Diagram 1 | Figure 3   |
| <a href="#"><u>PSUL-0P-7F</u></a> | \$236.00 | 120mm [4.72 in] | Light-on/Dark-on Selectable | PNP   | M8 connector | Diagram 2 | Figure 4   |
| <a href="#"><u>PSUL-0N-7F</u></a> | \$236.00 | 120mm [4.72 in] | Light-on/Dark-on Selectable | NPN   | M8 connector | Diagram 1 | Figure 4   |

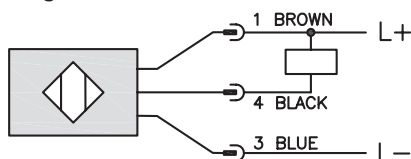
## Fork Sensor - Laser for Transparent Objects

**Fork Sensor U-frame - Laser Class 1 for Transparent Objects PS Series Selection Chart**

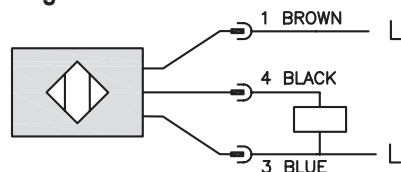
| Part Number                       | Price    | Sensing Range  | Output State                | Logic | Connection   | Wiring    | Dimensions |
|-----------------------------------|----------|----------------|-----------------------------|-------|--------------|-----------|------------|
| <a href="#"><u>PSTL-0P-6F</u></a> | \$242.00 | 80mm [3.15 in] | Light-on/Dark-on Selectable | PNP   | M8 connector | Diagram 2 | Figure 3   |

## Wiring Diagrams

**Diagram 1**

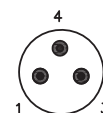


**Diagram 2**



**Connectors**

**M8 connector**



Note: Class 2 power supply required

# Fork Sensors PS Series

| Specifications                      |                                                                                                                      |                                                       |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
|                                     | Laser                                                                                                                | Laser for Transparent Objects                         |
| Mounting Type                       | Slot                                                                                                                 | Slot                                                  |
| Sensing Distance                    | 30mm [1.18 in] to 120mm [4.72 in]                                                                                    | 80mm [3.15 in]                                        |
| Smallest Detectable Object          | PSUL 4F 0.05 mm [0.002 in]<br>PSUL 5F 0.08 mm [0.003 in]<br>PSUL 6F 0.10 mm [0.004 in]<br>PSUL 7F 0.15 mm [0.006 in] | 2 mm [0.8 in] thickness and at an angle of 30 degrees |
| Emission                            | Class 1 Laser [650nm]*                                                                                               |                                                       |
| Sensitivity                         | Adjustable Potentiometer [0 to 270°]<br>NPN or PNP/ Light-on/Dark-on/ 3-wire<br>10 to 30 VDC                         |                                                       |
| Output Type                         |                                                                                                                      |                                                       |
| Operating Voltage                   |                                                                                                                      |                                                       |
| No-load Supply Current              | ≤ 20mA                                                                                                               |                                                       |
| Operating (Load) Current            | 200mA                                                                                                                |                                                       |
| Off-state (Leakage) Current         | N/A                                                                                                                  |                                                       |
| Voltage Drop                        | ≤ 3.0V (PNP); ≤2.5 (NPN)                                                                                             |                                                       |
| Switching Frequency                 | 5kHz                                                                                                                 |                                                       |
| Differential Travel                 | N/A                                                                                                                  |                                                       |
| Repeat Accuracy                     | PSUL 4F–5F–6F 10μm [0.0004 in]<br>PSUL 7F 15μm [0.0005 in]                                                           | 10μm [0.0004 in]                                      |
| Ripple                              | N/A                                                                                                                  |                                                       |
| Time Delay Before Availability (tv) | N/A                                                                                                                  |                                                       |
| Reverse Polarity Protection         | Yes                                                                                                                  |                                                       |
| Short-Circuit Protection            | Yes                                                                                                                  |                                                       |
| Operating Temperature               | -10 to 60°C [14 to 140°F]                                                                                            |                                                       |
| Protection Degree (DIN 40050)       | IP67                                                                                                                 |                                                       |
| Indication/Switch Status            | On Yellow LED                                                                                                        |                                                       |
| Housing Material                    | GD Zn (Gadolinium-Zinc)                                                                                              |                                                       |
| Sensing Face Material               | Glass                                                                                                                |                                                       |
| Shock                               | Meets IEC 68-2-27 (See Photoelectric Sensor at the end of this section for more details)                             |                                                       |
| Vibration                           | Meets IEC 68-2-6 (See Photoelectric Sensor at the end of this section for more details)                              |                                                       |
| Tightening Torque                   | N/A                                                                                                                  |                                                       |
| Weight                              | PSUR 4F 66g [2.33 oz]<br>PSUR 5F 110g [3.88 oz]<br>PSUR 6F 135g [4.76 oz]<br>PSUR 7F 210g [7.41 oz]                  | 135g [4.76 oz]                                        |
| Connection                          | M8 connector                                                                                                         |                                                       |
| Agency Approvals                    | 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.

## 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 seconds, by overcoming their natural aversion response to the very bright light.

# Fork Sensors PS Series

## Dimensions

mm [inches]

Figure 1

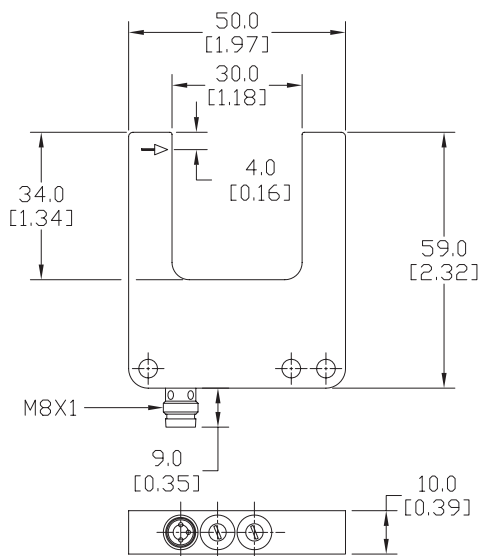


Figure 2

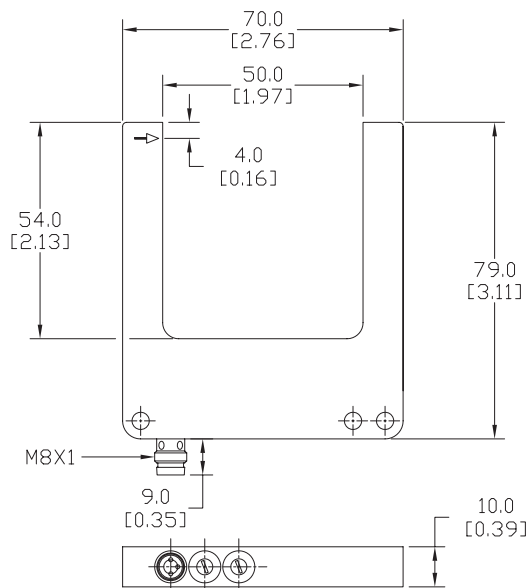


Figure 3

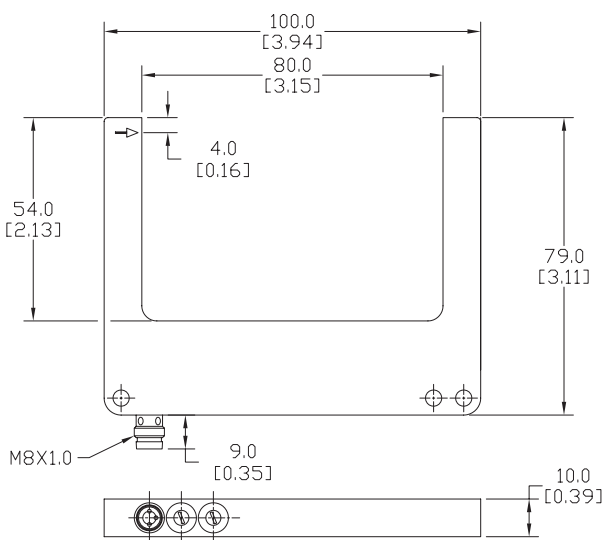
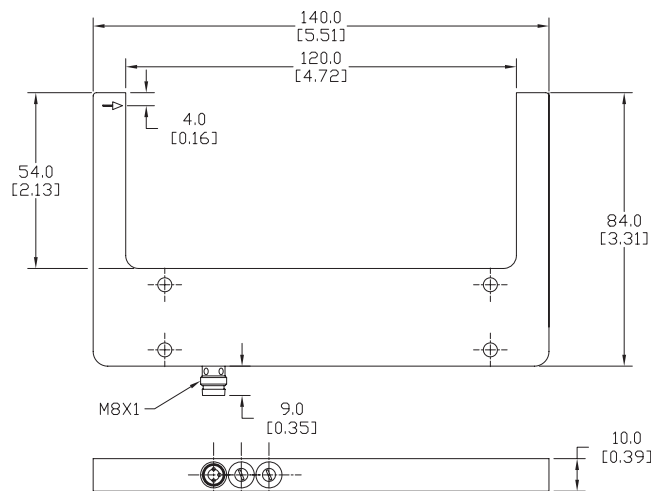


Figure 4

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