

# PS Series Fork Sensors

## Fork Sensor- Visible Red Light



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



**PS Series Fork Sensor Selection Chart - Red Light**

Part Number	Price	Sensing Range	Output State	Logic	Connection	Wiring	Dimensions
<b>PSUR-0P-1F</b>	\$86.00	5mm (0.2 in)	Light On/Dark On Selectable	PNP	M8 connector	Diagram 2	Figure 1
<b>PSUR-0N-1F</b>	\$86.00	5mm (0.2 in)	Light On/Dark On Selectable	NPN	M8 connector	Diagram 1	Figure 1
<b>PSUR-0P-2F</b>	\$86.00	10mm (0.39 in)	Light On/Dark On Selectable	PNP	M8 connector	Diagram 2	Figure 2
<b>PSUR-0N-2F</b>	\$86.00	10mm (0.39 in)	Light On/Dark On Selectable	NPN	M8 connector	Diagram 1	Figure 2
<b>PSUR-0P-3F</b>	\$86.00	20mm (0.79 in)	Light On/Dark On Selectable	PNP	M8 connector	Diagram 2	Figure 3
<b>PSUR-0N-3F</b>	\$86.00	20mm (0.79 in)	Light On/Dark On Selectable	NPN	M8 connector	Diagram 1	Figure 3
<b>PSUR-0P-4F</b>	\$98.00	30mm (1.18 in)	Light On/Dark On Selectable	PNP	M8 connector	Diagram 2	Figure 4
<b>PSUR-0N-4F</b>	\$98.00	30mm (1.18 in)	Light On/Dark On Selectable	NPN	M8 connector	Diagram 1	Figure 4
<b>PSUR-0P-5F</b>	\$104.00	50mm (1.97 in)	Light On/Dark On Selectable	PNP	M8 connector	Diagram 2	Figure 5
<b>PSUR-0N-5F</b>	\$104.00	50mm (1.97 in)	Light On/Dark On Selectable	NPN	M8 connector	Diagram 1	Figure 5
<b>PSUR-0P-6F</b>	\$109.00	80mm (3.15 in)	Light On/Dark On Selectable	PNP	M8 connector	Diagram 2	Figure 6
<b>PSUR-0N-6F</b>	\$109.00	80mm (3.15 in)	Light On/Dark On Selectable	NPN	M8 connector	Diagram 1	Figure 6
<b>PSUR-0P-7F</b>	\$114.00	120mm (4.72 in)	Light On/Dark On Selectable	PNP	M8 connector	Diagram 2	Figure 7
<b>PSUR-0N-7F</b>	\$114.00	120mm (4.72 in)	Light On/Dark On Selectable	NPN	M8 connector	Diagram 1	Figure 7
<b>PSUR-0P-8F</b>	\$132.00	180mm (7.09 in)	Light On/Dark On Selectable	PNP	M8 connector	Diagram 2	Figure 8
<b>PSUR-0N-8F</b>	\$132.00	180mm (7.09 in)	Light On/Dark On Selectable	NPN	M8 connector	Diagram 1	Figure 8
<b>PSUR-0P-9F</b>	\$137.00	220mm (8.66 in)	Light On/Dark On Selectable	PNP	M8 connector	Diagram 2	Figure 9
<b>PSUR-0N-9F</b>	\$137.00	220mm (8.66 in)	Light On/Dark On Selectable	NPN	M8 connector	Diagram 1	Figure 9

# PS Series Fork Sensors

## Fork Sensor - Laser

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



PS Series Fork Sensor Selection Chart - Laser Class 1							
Part Number	Price	Sensing Range	Output State	Logic	Connection	Wiring	Dimensions
<b>PSUL-0P-4F</b>	\$137.00	30mm (1.18 in)	Light On/Dark On Selectable	PNP	M8 connector	Diagram 2	Figure 4
<b>PSUL-0N-4F</b>	\$137.00	30mm (1.18 in)	Light On/Dark On Selectable	NPN	M8 connector	Diagram 1	Figure 4
<b>PSUL-0P-5F</b>	\$137.00	50mm (1.97 in)	Light On/Dark On Selectable	PNP	M8 connector	Diagram 2	Figure 5
<b>PSUL-0N-5F</b>	\$137.00	50mm (1.97 in)	Light On/Dark On Selectable	NPN	M8 connector	Diagram 1	Figure 5
<b>PSUL-0P-6F</b>	\$158.00	80mm (3.15 in)	Light On/Dark On Selectable	PNP	M8 connector	Diagram 2	Figure 6
<b>PSUL-0N-6F</b>	\$158.00	80mm (3.15 in)	Light On/Dark On Selectable	NPN	M8 connector	Diagram 1	Figure 6
<b>PSUL-0P-7F</b>	\$158.00	120mm (4.72 in)	Light On/Dark On Selectable	PNP	M8 connector	Diagram 2	Figure 7
<b>PSUL-0N-7F</b>	\$158.00	120mm (4.72 in)	Light On/Dark On Selectable	NPN	M8 connector	Diagram 1	Figure 7

## Fork Sensor - Laser for Transparent Objects

PS Series Fork Sensor Selection Chart - Laser Class 1 for Transparent Objects							
Part Number	Price	Sensing Range	Output State	Logic	Connection	Wiring	Dimensions
<b>PSTL-0P-6F</b>	\$163.00	80mm (3.15 in)	Light On/Dark On Selectable	PNP	M8 connector	Diagram 2	Figure 6
<b>PSTL-0N-6F</b>	\$163.00	80mm (3.15 in)	Light On/Dark On Selectable	NPN	M8 connector	Diagram 1	Figure 6

## Wiring diagrams

Diagram 1

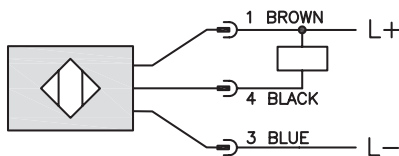
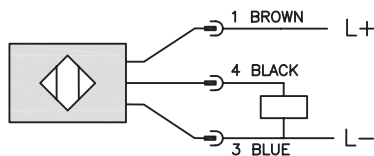


Diagram 2



Connectors



**NOTE: CLASS 2 POWER SUPPLY REQUIRED**

# PS Series Fork Sensors

Specifications			
	Visible Red Light	Laser	Laser for Transparent Objects
<b>Mounting Type</b>	Slot	Slot	Slot
<b>Sensing Distance</b>	5.0 mm (0.20 in ) to 220mm (8.66 in)	30mm (1.18 in) to 120mm (4.72 in)	80mm (3.15 in)
<b>Smallest Detectable Object</b>	PSUR 1F–2F–3F–4F 0.3 mm (0.12 in) PSUR 5F–6F 0.4 mm (0.16 in) PSUR 7F 0.5 mm (0.02 in) PSUR 8F–9F 0.6 mm (0.24 in)	PSUL 4F 0.05 mm (0.002 in) PSUL 5F 0.08 mm (0.003 in) PSUL 6F 0.10 mm (0.004 in) PSUL 7F 0.15 mm (0.006 in)	2 mm (0.8 in) thickness and at an angle of 30 degrees
<b>Emission</b>	Visible Red Light	Class 1 Laser (650nm)*	Class 1 Laser (650nm)*
<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>	≤ 35 mA	≤ 20 mA	
<b>Operating (Load) Current</b>	200 mA		
<b>Off-state (Leakage) Current</b>	≤ 10 µA		
<b>Voltage Drop</b>	≤ 3.0V (PNP); ≤2 (NPN)		
<b>Switching Frequency</b>	PSUR 1F–2F 3 kHz PSUR 3F–9F 1.5 kHz	5 kHz	
<b>Differential Travel</b>	PSUR 1F2F–3F–4F ≤ 0.1 mm (0.004 in) PSUR 5F ≤ 0.15 mm (0.006 in) PSUR 6F–9F ≤ 0.20 mm (0.008 in)	PSUL 4F ≤20 µm (0.00078 in) PSUL 5F ≤25 µm (0.00098 in) PSUL 6F ≤30 µm (0.0011 in) PSUL 7F ≤ 50 µm (0.0019 in)	PSUL 6F ≤30 µm (0.0011 in)
<b>Repeat Accuracy</b>	PSUR 1F–2F–3F–4F 0.02 mm (0.0008 in) PSUR 5F 0.04 mm (0.0016 in) PSUR 6F 0.06 mm (0.002 in) PSUR 7F–8F–9F 0.08 mm (0.003 in)	PSUL 4F–5F–6F 10 µm (0.0004 in) PSUL 7F 15 µm (0.0005 in)	10 µm (0.0004 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°C to +60°C (-14°F to +140°F)		-10°C to +45°C (-14°F to +113°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 Terminology at the end of this section for more details)		
<b>Vibration</b>	Meets IEC 68-2-6 (See Photoelectric Sensor Terminology at the end of this section for more details)		
<b>Tightening Torque</b>	N/A		
<b>Weight</b>	PSUR 1F 20g (0.71 oz) PSUR 2F 23g (0.81 oz) PSUR 3F 28g (0.99 oz) PSUR 4F 36g (1.27 oz) PSUR 5F 54g (1.90 oz) PSUR 6F 77g (2.72 oz) PSUR 7F 118g (4.16 oz) PSUR 8F 190g (6.70 oz) PSUR 9F 220g (7.76 oz)	PSUR 4F 66g (2.33 oz) PSUR 5F 110g (3.88 oz) PSUR 6F 135g (4.76 oz) PSUR 7F 210g (7.41 oz)	135g (4.76 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.

## 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

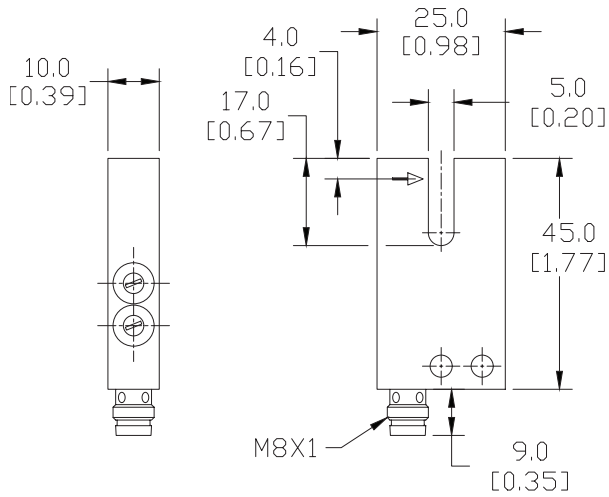
These are visible lasers. This class is safe for accidental viewing under all operating conditions. However, it may not be safe for a person who deliberately stares into the laser beam for longer than 0.25 seconds, by overcoming their natural aversion response to the very bright light.

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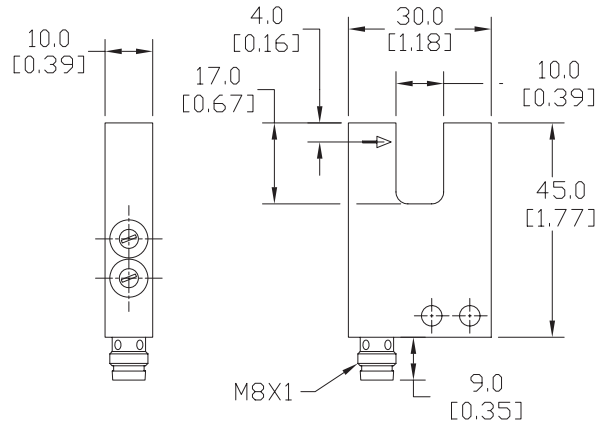
## Dimensions

mm  
[inch]

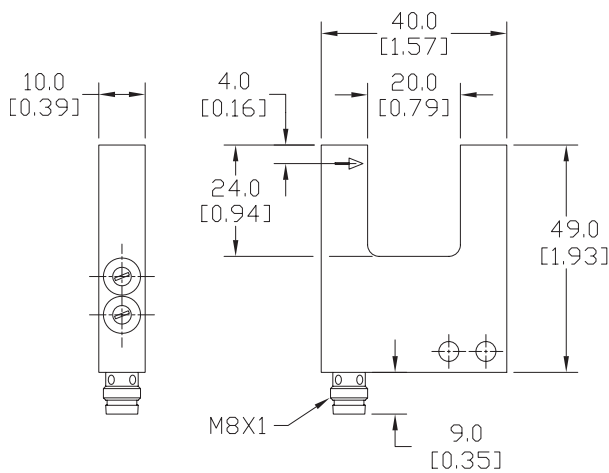
**Figure 1**



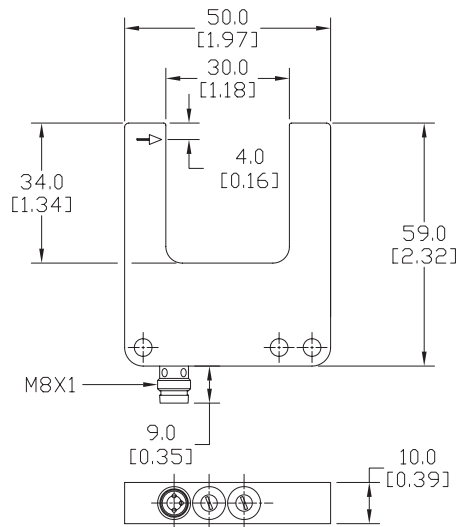
**Figure 2**



**Figure 3**



**Figure 4**



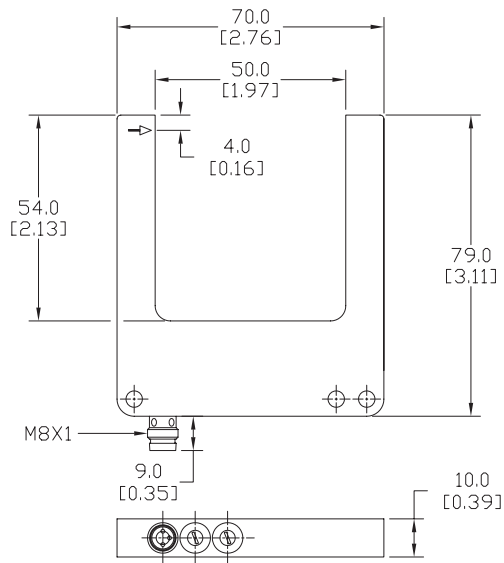
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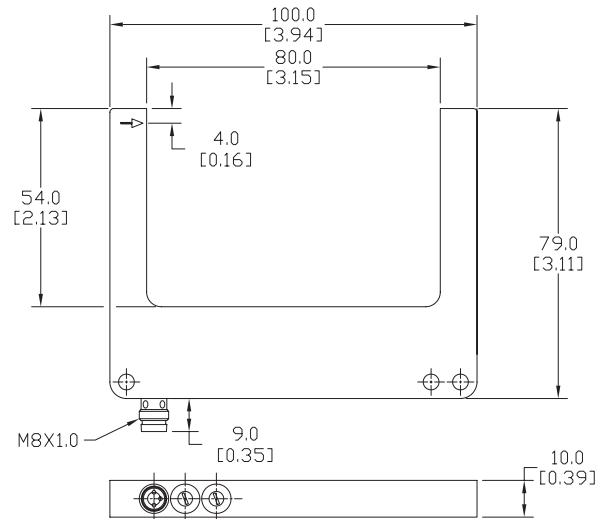
## Dimensions

mm  
[inch]

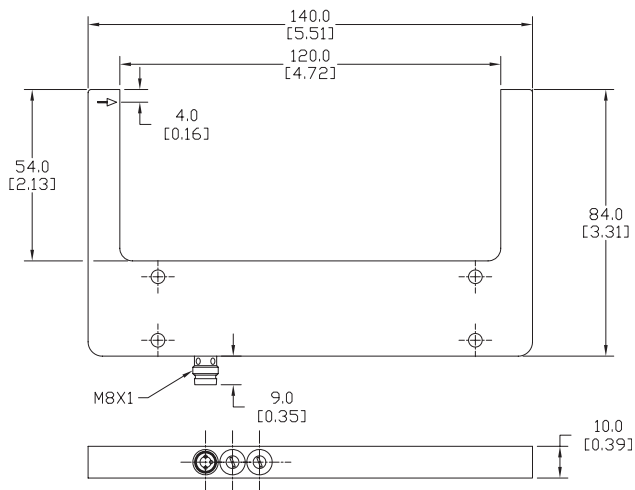
**Figure 5**



**Figure 6**



**Figure 7**



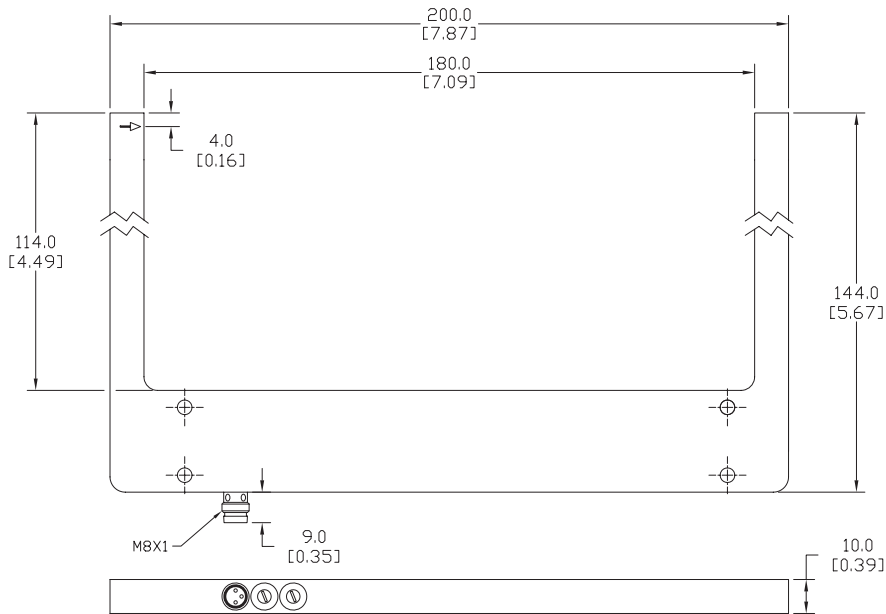
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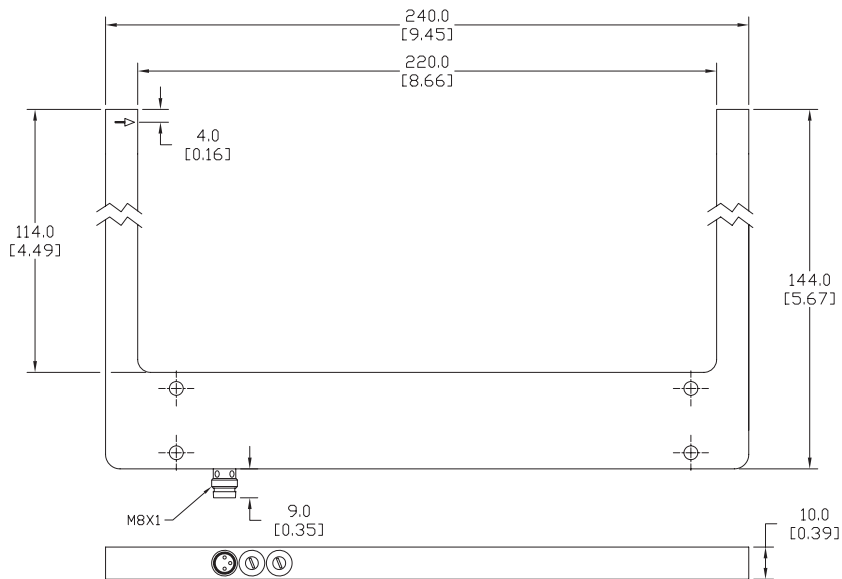
## Dimensions

mm  
[inch]

**Figure 8**



**Figure 9**



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