

PUR Sensors

SPECIFICATIONS

- **Reinforced against lateral extensions for increased durability**
- **Long lifetime**
- **Very high detection accuracy for in-road version achieved through the use of temporary hanger bars to ensure a uniform installation height**
- **Optional custom profile and length designs provide trouble-free upgrade to optical fiber**
- **Feeder cables are available in lengths up to 250 meters and with polyethylene reinforcement**
- **Common applications are axle, dual tire and direction detection, speed measuring, and vehicle classification**

FEATURES

- Only sensitive to vertical pressure
- Ready to install PUR Sensor includes sensor element and a fiber optic feeder cable that is spliced directly to it and terminated with fiber optic connectors.
- The direct in-road sensor installation is performed such that the top is flush to the road surface while the bottom is encapsulated in a 2" wide channel using approved road filler material and reusable hanger bars
- Standard warranty of 2 years or 6 million axles, whichever comes first
- Other versions of the PUR Sensor can be installed directly into existing treadle frames by following standard replacement procedures.
- Output via a Sensor Line dynamic or static Optical Transmittance Analyzer.
- Immune to electro-magnetic disturbances, corrosion, and lightning

The Sensor Line PUR Sensor is a polyurethane-based, reinforced, fiber optic traffic sensor which is based on the proven technology found in the legacy SPZ sensor. It has been designed for permanent installation in concrete or asphalt roads.

There are three standard profiles which have been created for installation either directly into the road, or into existing metal treadle frames designed for contact closure (switch type) sensors. The direct in-road sensor has a T shape configuration to help ensure a fast and long-term installation. The PUR Sensor can be installed in concrete or asphalt roads with FlexKrete, PU-200 or similar material which provides optimal bonding between the sensor and the road. The fiber optic core of the PUR sensor is based on the same technology as the SPZ sensor. The wheel of a passing vehicle causes a slight deformation of the sensor which slightly decreases the optical transmittance of the optical fiber. This transmittance change is detected by a Sensor Line optical analyzer interface and is transformed into the signals that are used for processing traffic data.

Other configurations of the sensor are available such as a keystone shape or a larger T-shape. These have been designed as direct drop-in replacements for resistive and contact closure treadles into the existing metal holding plates. Furthermore, a sensor can be equipped with several different lengths for the feeder cables including a high strength reinforced cable (recommended for lengths exceeding 100 m). Other profiles and cable entry/exit locations are possible with precise measurements and a retooling charge.

PERFORMANCE SPECIFICATIONS

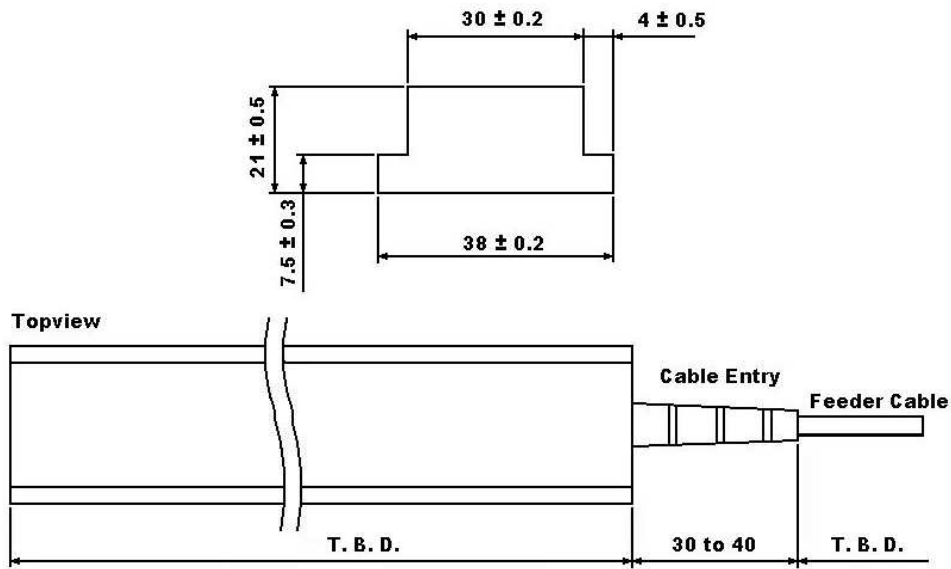
Dimensions		
Parameter	Typical Value	Units
Sensor Element (including splice protections)		
Length	Up to 4	m
Insensitive End Zones	50 (tip) / 100 (feeder joint)	mm
Width	30 (Top) 38 (Bottom)	mm
Height	21	mm
Weight (without feeder)	1	kg/m
Fiber Optic Feeder Cable*		
Outer Dimensions	2.5x5.0	mm
Lengths (Standard) #	15/25/35/50	m
Weight	12	g/m
Maximum Short Term Pull Tension	205 (46)	N (lbs.)
Fiber Connectors FSMA-905		
Standard Type: Crimp and Cleave	SL 4430-C	
Dimension	34	mm
Max. Diameter	8.5	mm
Optional:		
Type: Multiuse	SL-RP2.5-C	
Dimension	41	mm
Max. Diameter	8.5	mm

*PE Enforced Feeder Cable also available

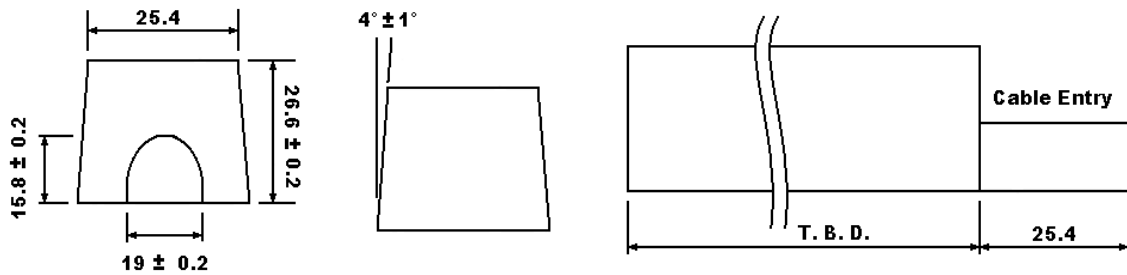
Optical Data		
Sensor Waveguide		
Core Diameter	200	μm
Cladding Diameter	230	μm
Buffer Diameter	500	μm
Numerical Aperture	0.3	
Sensor Attenuation	Typ. 3.5 +1.5/m	dB
Feeder Waveguide		
Core Diameter	200	μm
Cladding Diameter	230	μm
Buffer Diameter	500	μm
Numerical Aperture	0.3	
Feeder Attenuation @ 850 nm	6	dB/km

Performance		
Storage Temperature Range	0 to +40	°C
Operating Temperature Range	-30 to +85	°C
Minimum Bend Radius Feeder Cable	25	mm
Warranty	2 year or 6 million axles	

MECHANICAL DIMENSIONS in mm

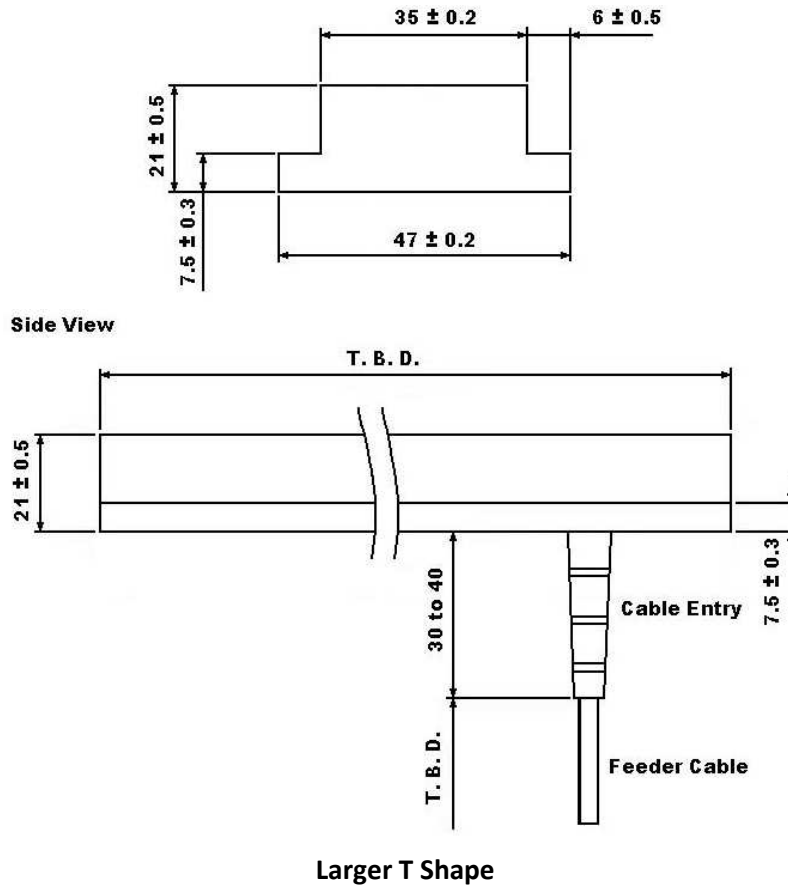


Standard PUR Sensor



Keystone Shape

MECHANICAL DIMENSIONS in mm (CONT)



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