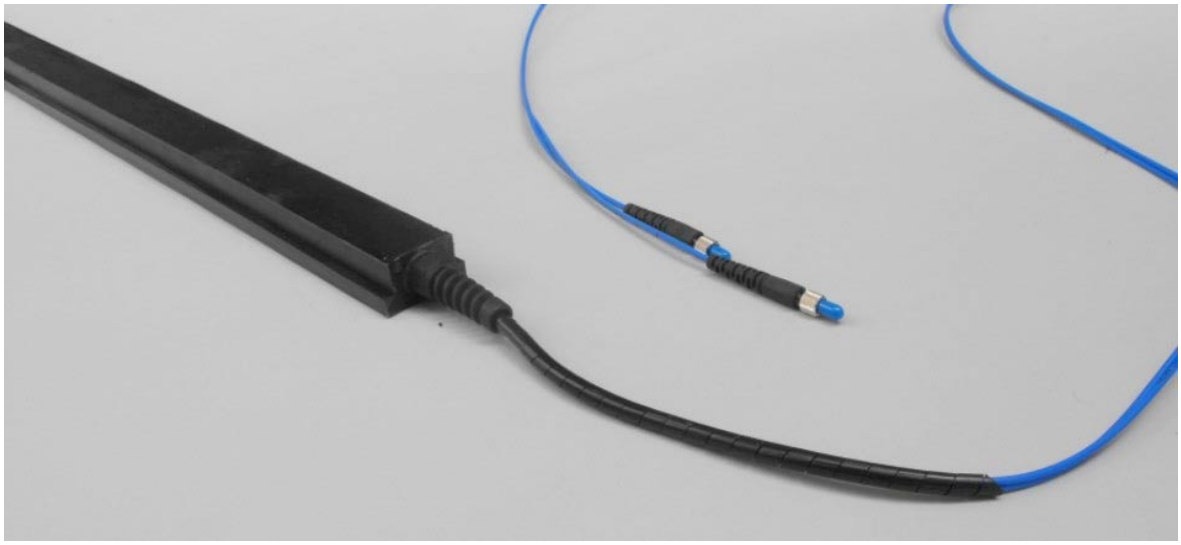
PUR Sensor™
Fiber Optic Traffic Sensor



Product Description

SENSOR LINE PUR SENSOR™ is a polyurethane-based reinforced fiber optic load traffic sensor designed for permanent installation in concrete or asphalt roads. Due to its special T-shape a fast and long-term installation is guaranteed. Unlike the SPZ sensor, the PUR Sensor™ is installed in concrete roads with a special cement-based filler material which provides a perfect bonding to the concrete road. In asphalt roads, the PUR Sensor™ is installed with a special PU-based filler material which provides a perfect bonding to asphalt roads. A wheel (axle) deforms the PUR Sensor™. This deformation decreases the optical transmittance inside the sensor. This transmittance change is detected by an opto-electronic interface and is transformed into signals for traffic data processing.

Characteristics

- PUR Sensor™ Fiber Optic Sensor is sensitive to vertical pressure only.
- As the sensor does not include any metal parts it is immune against electro-magnetic disturbances, corrosion, and lightning.
- A ready to install PUR Sensor™ comprises the sensor element itself, and a fiber optic feeder cable spliced directly to it and terminated with fiber optic connectors.
- The sensor installation is done flush and even to the road surface in small saw cut slots using approved cement-based filler material and special hanger bar tools.
- To operate the PUR Sensor™ it is connected to an opto-electronic interface, e.g. SENSOR LINE dynamic or static Optical Transmittance Analyzer.
- Common applications are axle, dual tire and direction detection, speed measuring, vehicle classification and WIM preselection.

Benefits

- Easy and fast installation at lowest risk
- Standard warranty: 2 years or 5 million axles whatever occurs first
- Adapts to any road surface
- Reinforcement against lateral strain for longer lifetime
- Unique strip lifetime ensures lowest maintenance costs
- Highest detection accuracy is ensured through well-defined installation with hanger bars
- Increased signal uniformity along the sensitive area

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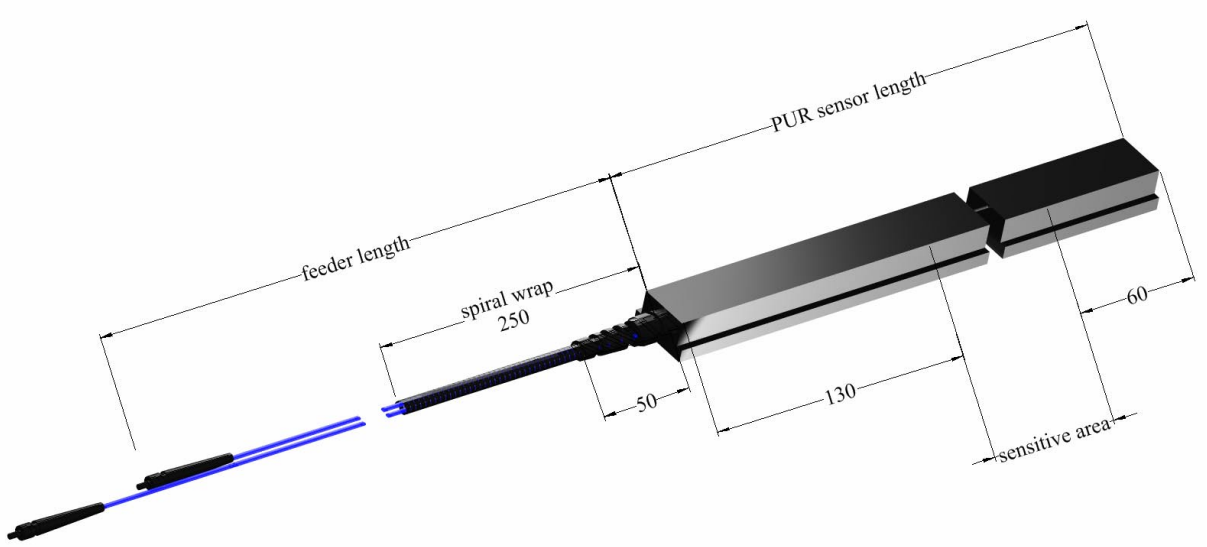
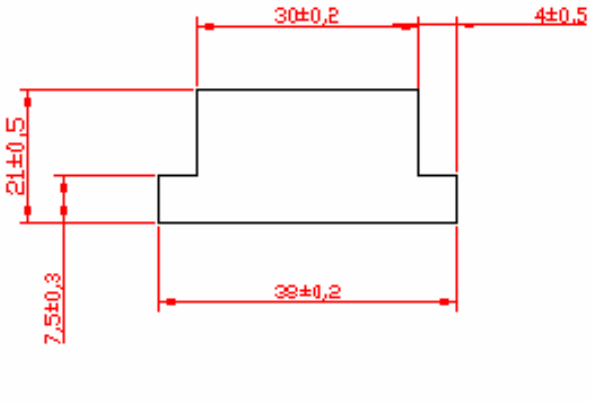
PUR Sensor™

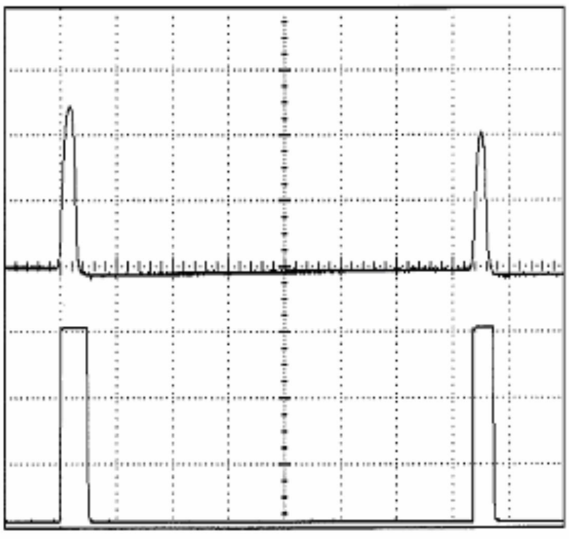
Pictures and Drawings



Cross section of PUR Sensor™



PUR Sensor™ typical output signal with dynamic interfaces (MA-110 / 210 / 310)



Typical Signal output MA-110 and PUR Sensor (car at 65km/h), Upper trace analog output 500 mv/div, lower trace digital output 5V/div

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Technical Data

Dimensions			
Sensor Element (including splice protections)			
Length		Up to 4	m
Insensitive End Zones		60 (tip) / 130 (feeder joint)	mm
Width		30 (Top) 38 (Bottom)	mm
Height		21	mm
Weight (without feeder)		1000	g/m
Shore Hardness		65	A
		80	A
	(standard)	90	A
Zipcord Fiber Optic Feeder Cable			
Outer Dimensions		2.5x5.0	mm
Lengths (Standard) #		25/35/50	m
Weight		12	g/m
Maximum Short Term	Pull Tension	205(46)	N(lbs.)
PE Enforced Feeder Cable also available			
Fiber Connectors FSMA-905			
Standard Type	Crimp & 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

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...+40	°C
Operating Temperature Range		-30...+85	°C
Minimum Bend Radius Feeder Cable		25	mm
Warranty		2 year or 5 million axles	
Minimum Number of Load cycles		unlimited	
Sensitivity	Typical light change caused by a midsize passenger car 5-10 %		

See Manual for detailed installation instructions.

Rev. 3.2 TF 09/2012

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