

# SENSOR LINE SL SPZ

The SL SPZ fiber-optic sensor is suitable for installation in concrete or asphalt roads and guarantees optimal vehicle detection, precision in data processing, and long-term reliability.

## Product Description

The SL SPZ sensor detects cars, trucks as well as motorbikes and bicycles (depending on the embedding material) in road traffic for axle counting, speed measurement, headway measurement, vehicle classification and cyclist counting. The SL SPZ sensor is a basic fiber optic traffic sensor designed for permanent installation in concrete or asphalt roads. The SL SPZ sensor is installed with our PU-based filler material which provides a perfect bonding to roads.

The pressure of a wheel deforms the SL SPZ sensor. This deformation decreases the optical transmittance inside the sensor. This transmittance change is detected by our opto-electronic interfaces like the dynamic or static optical transmittance analyzer and is transformed into signals for traffic data processing.

## Advantages

- 99,99+% vehicle detection rate
- Visibility independent
- Noise free signal
- EMV immune

## References

- Germany, speed enforcement
- Turkey, traffic control
- Colombia, traffic control
- South Africa, traffic control



SL SPZ sensor



SL SPZ sensor installation

## Characteristics

- SL SPZ sensor detects vehicles such as cars and trucks as well as motorbikes.
- Typical applications are axle counting, dual tire and direction detection, speed enforcement and vehicle classification.
- A ready to install SL SPZ sensor comprises the sensor element itself, a fiber optic feeder cable spliced directly to it and terminated with fiber optic connectors.
- The sensor is installed flush and even to the road surface in small saw cut slots using Sensor Line SL Cast-90 embedding material and wedge kit. Inductive loops can be installed in the same slot.
- To operate the SL SPZ sensor, it is connected to a Sensor Line opto-electronic interface.

## Benefits

- Accurate Detection of Vehicles - all vehicles are detected independent of poor visibility like smoke, rain, fog or snow.
- Outstanding service life - no material fatigue and no mechanical parts.
- Durable and permanent installation - adapts smoothly to asphalt or concrete path surfaces.
- No maintenance or calibration needed during or after installation.
- Customized sensor length possible - up to 8 m (26 ft) and cable length up to 250 m (820 ft).

## SL SPZ Technical Data

### Dimensions

#### Sensor element

Length	up to 8 m (14.76 ft)
Insensitive zones	tip 50 mm (1.97 in) feeder joint 100 mm (3.94 in)
Width	12 mm (0.47 in)
Height	14 mm (0.55 in)
Weight (without feeder cable)	0.18 kg/m (5.83 oz/yd)

#### Fiber optic feeder cable

Outer dimension	2.5 x 5 mm (0.10 in x 0.20 in)
Length	up to 250 m (820 ft)
Weight	12 g/m (0.39 oz/yd)
Maximum short term pull tension	20 N
Minimum bending radius	25 mm (0.98 in)

#### PE enforced feeder cable

Outer dimension	4 x 6.6 mm (0.16 in x 0.26 in)
Length	up to 250 m (820 ft)
Weight	25 g/m (0.81 oz/yd)
Maximum short term pull tension	60 N
Minimum bending radius	25 mm (0.98 in)

Fiber connectors  
(plastic / metal)

Length	34 mm (1.34 in)
Max. diameter	8.5 mm (0.33 in)

## Performance

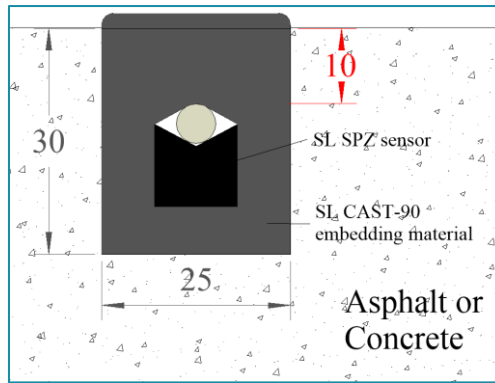
Average Life (MTTF)	3+ years or 5+ million axles
Maximum speed	up to 250 km/h (155 mph)
Operating / storage temperature	-30 °C to 85 °C (-22 °F to 185 °F)
Humidity	No limitation
Warranty	6 months

## Accompanying Products

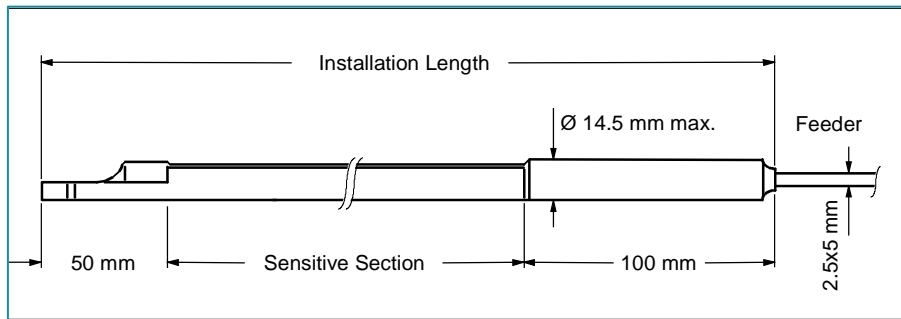
Sensor element

- SL MA-110: Analog Electronic Interface with 1 channel
- SL MA-210: Analog Electronic Interface with 2 channels
- SL MA-310: Analog Electronic Interface with 3 channels
- SL MD-220: Digital Electronic Interface with 2 channels
- SL CAST-90: Grout for SL SPZ installation
- SL Rubber Clips: Rubber Clips for SL SPZ installation (included)

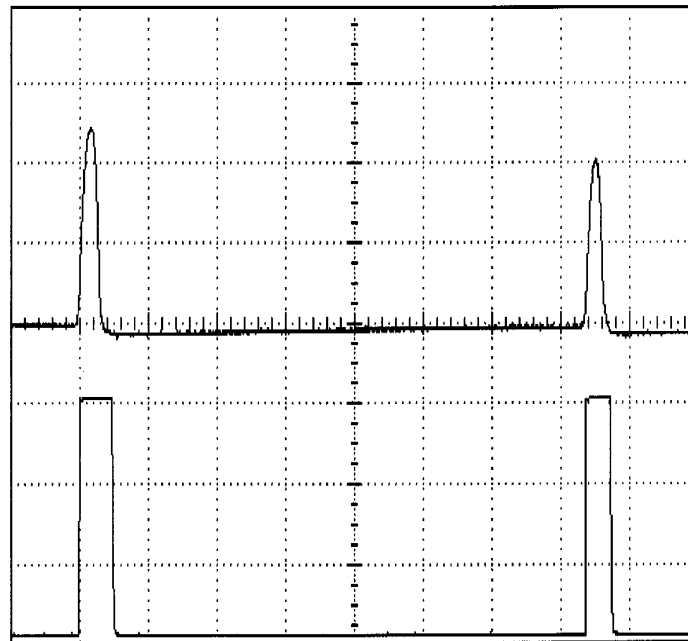
# SL SPZ Drawings



Slot with SL SPZ sensor



SL SPZ sensor dimensions



1 Typical signal output of SL MA/MD interfaces and SL sensors.  
Upper trace: analog output 500mV/div, lower trace: digital output 5V/div