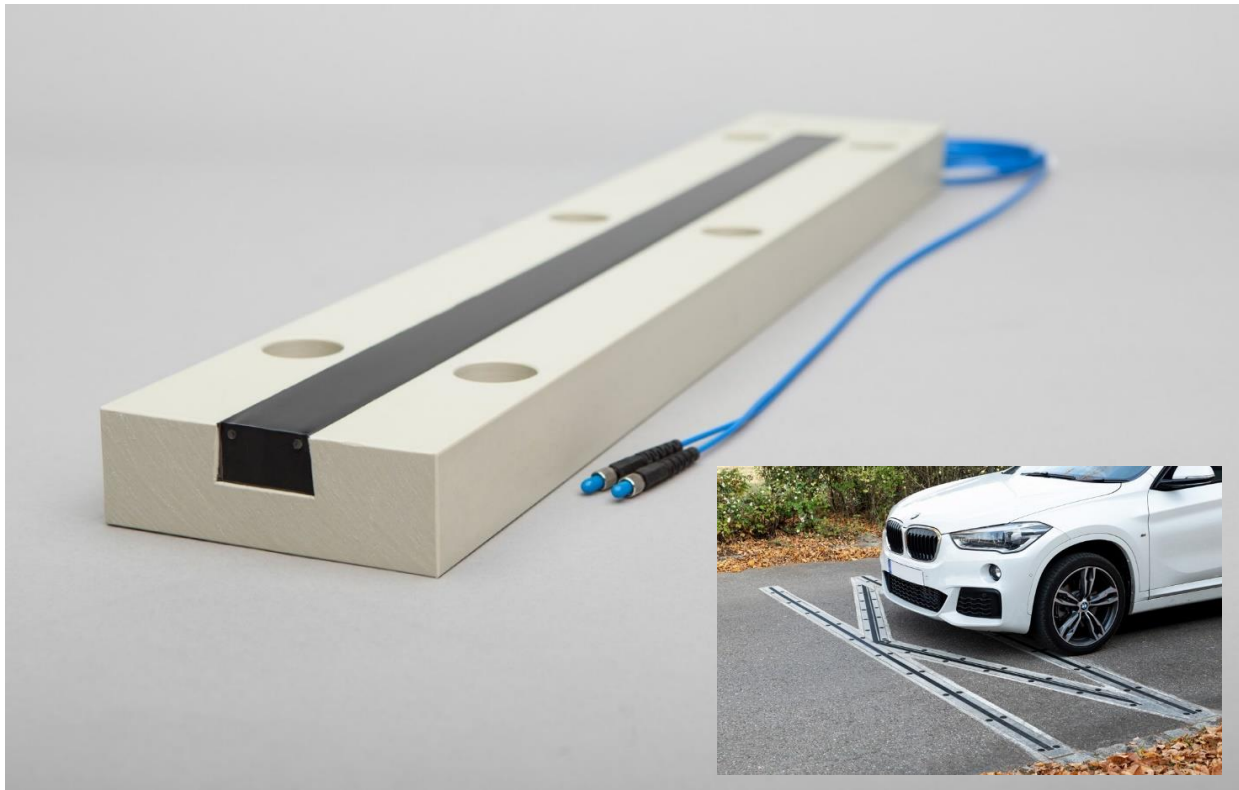


Sensor Line SL EZ FRAME

Fiber-Optic Axle Detection Sensor for Road Traffic



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Product Description

The SL EZ sensor detects vehicles in road traffic for applications like axle counting, speed measurement, headway measurement and vehicle classification. The SL EZ sensor is designed for permanent installation on a concrete foundation in roads. It is a polyurethane-based reinforced fiber optic traffic sensor which is preinstalled in a frame of high-density polymer. The frame is fixed to a concrete base with bolts or threaded rods. The sensor strip can be replaced quickly and easily without additional roadworks, which is particularly necessary for free flow tolling.

The pressure of a wheel deforms the SL EZ 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
- EMV immune
- Noise free signal
- Highly reliable and maintenance free

References

- New York Thruway
- Istanbul Bosphorus bridge
- Bangkok toll station organisation
- Bogota traffic control
- Pakistan toll stations

Sensor Line EZ FRAME

Fiber-Optic Axle Detection Sensor for Road Traffic

Characteristics

- From one up to four SL fiber optic sensors are preinstalled in a frame of high-density polymer.
- The sensor does not include any metal parts. It is immune against electromagnetic disturbances, corrosion and lightning.
- A ready to install SL EZ sensor consists of a frame, the sensor element itself and a fiber optic feeder cable with a variable length.
- The SL EZ sensor is connected to a SL opto-electronic analyser with fiber optic plugs.
- SL EZ sensor detects vehicles such as cars and trucks.
- Typical applications are axle counting, dual tire and direction detection, speed measuring and vehicle classification.

Benefits

- Easy and fast installation at lowest risk.
- 100 % detection rate - all vehicles are detected independent of poor visibility like smoke, rain, fog or snow.
- Fiber optic cable is EMV immune – no impact by electric vehicles, any other magnetic fields or lightning.
- Fiber optic cable is noise free – clear analog or digital trigger output.
- Adapts smooth to asphalt or concrete path surface
- No maintenance or calibration needed at or after installation
- Customized sensor length possible - up to 4.5 m and cable length up to 250 m reinforcement against lateral strain for a longer lifetime.
- Unique strip lifetime ensures low maintenance costs.
- Easy and quick replacement if needed

Sensor Line EZ FRAME

Fiber-Optic Axle Detection Sensor for Road Traffic

Specifications

Sensor Element	Length	up to 4,5 m	
	Width / Weight	1 Slot Frame	133 mm / 6 kg/m
		2 Slot Frame	187 mm / 8.2 kg/m
		3 Slot Frame	240 mm / 9.5 kg/m
		4 Slot Frame	295 mm / 12.5 kg/m
	Sensor distance	Centre-to-centre	54 mm
	Standard slot gap		19 mm
	Insensitive zones		tip 60 mm / feeder joint 200 mm
	Height		45 mm
Shore hardness		86	
Fiber optic feeder cable	Outer dimension	2.5 x 5 mm	
	Length	up to 250 m	
	Weight	12 g/m	
	Maximum short term pull tension	20 N	
	Minimum bending radius	25 mm	
	PE enforced feeder cable	Outer dimension	4 x 6.6 mm
Length		up to 250 m	
Weight		12 g/m	
Maximum short term pull tension		60 N	
Minimum bending radius		25 mm	
Fiber Connectors (plastic / metal)		Length	34 mm
	Max. diameter	8.5 mm	
Performance	Average Life (MTTF)	5+ years or 10+ million axles	
	Maximum speed	up to 250 km/h	
	Operating / storage temperature	-30°C to 85°C	
	Humidity	No limitation	
	Warranty	24 months	

Sensor Line EZ FRAME

Fiber-Optic Axle Detection Sensor for Road Traffic

Accompanying Products

- SLEZR XXX-Z-ZZ (PE) – Replacement sensor strip
- SL MA-X10 (X: 1, 2 or 3) - Electronic interface with 1-3 channels
- SL MD-220 - Electronic Interface
- SL PUR SLOT FILLER: Grout for filling
- SL BOLT SET – Mounting material

Ordering Information

- SL nEZ XXX-Y-ZZ (PE)**
- n: Number of sensors in a frame (1...4)
 - XXX: Frame length (cm)
 - Y: Connector type (1: Plastic FSMA, 2: Metal FSMA reusable)
 - ZZ: Cable length (m)
 - PE: Blue sensor cable with reinforced PE sheath

Typical Signal Output

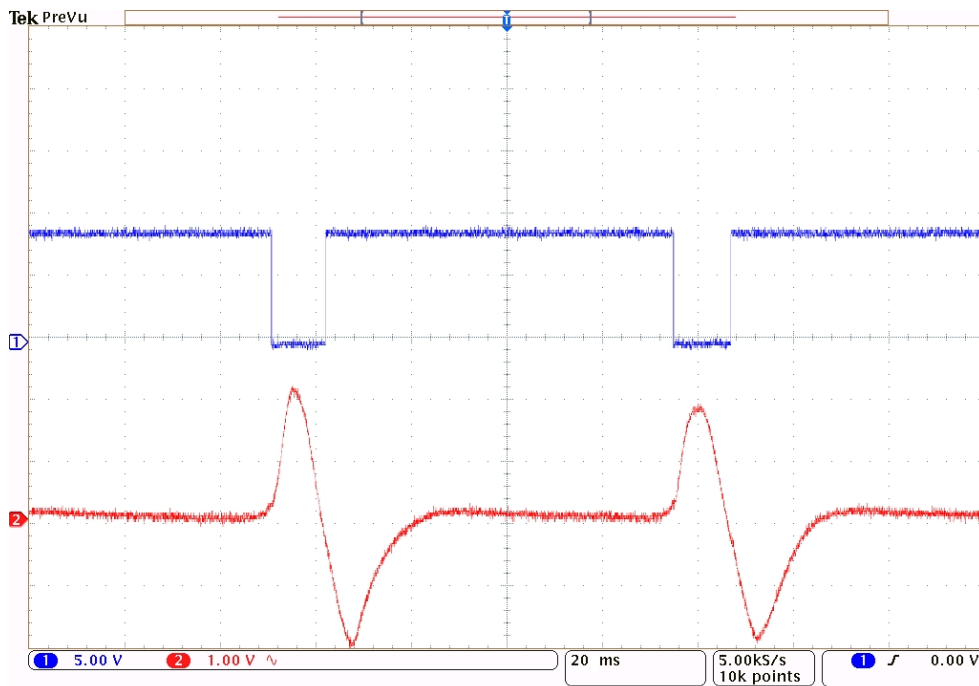
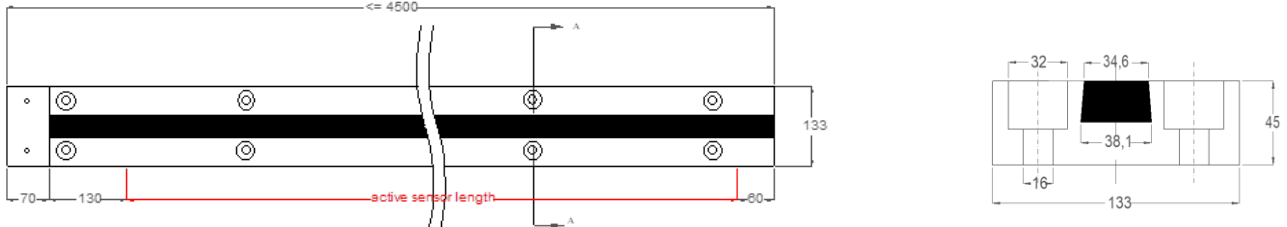


Fig. 1: SL EZ Sensor operated by analyser SL MA-110
Trigger signal output (blue, 5V/div) and analog voltage output (red, 1V/div).

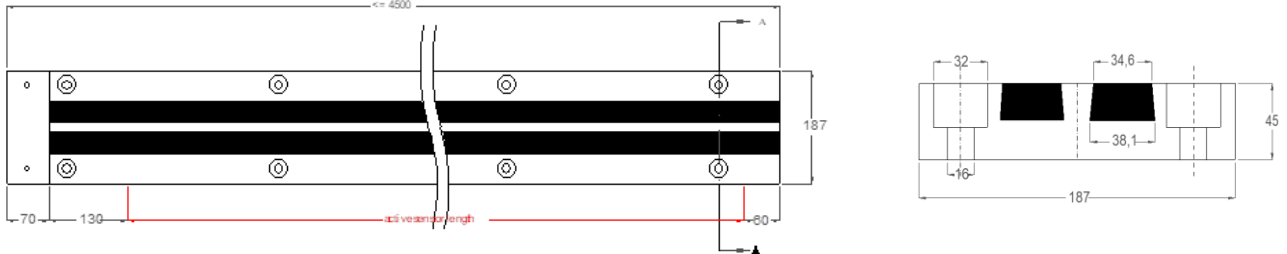
Sensor Line EZ FRAME

Fiber-Optic Axle Detection Sensor for Road Traffic

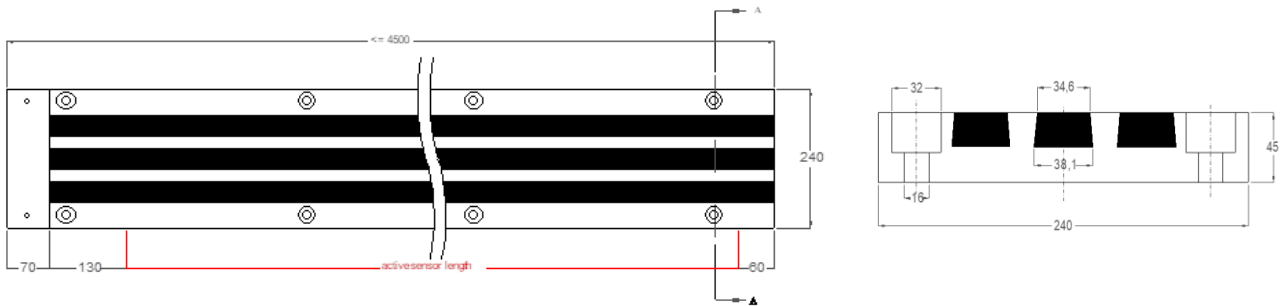
SL 1EZ: One-Strip Sensor



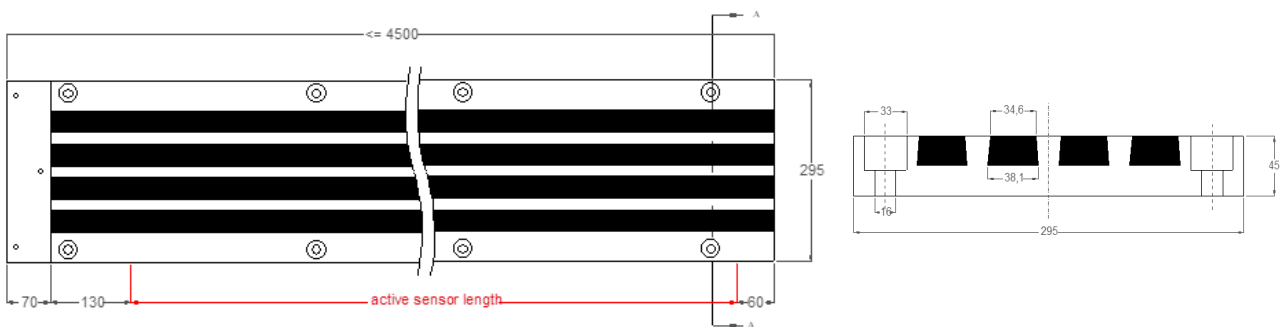
SL 2EZ: Two-Strip Sensor



SL 3EZ: Three-Strip Sensor

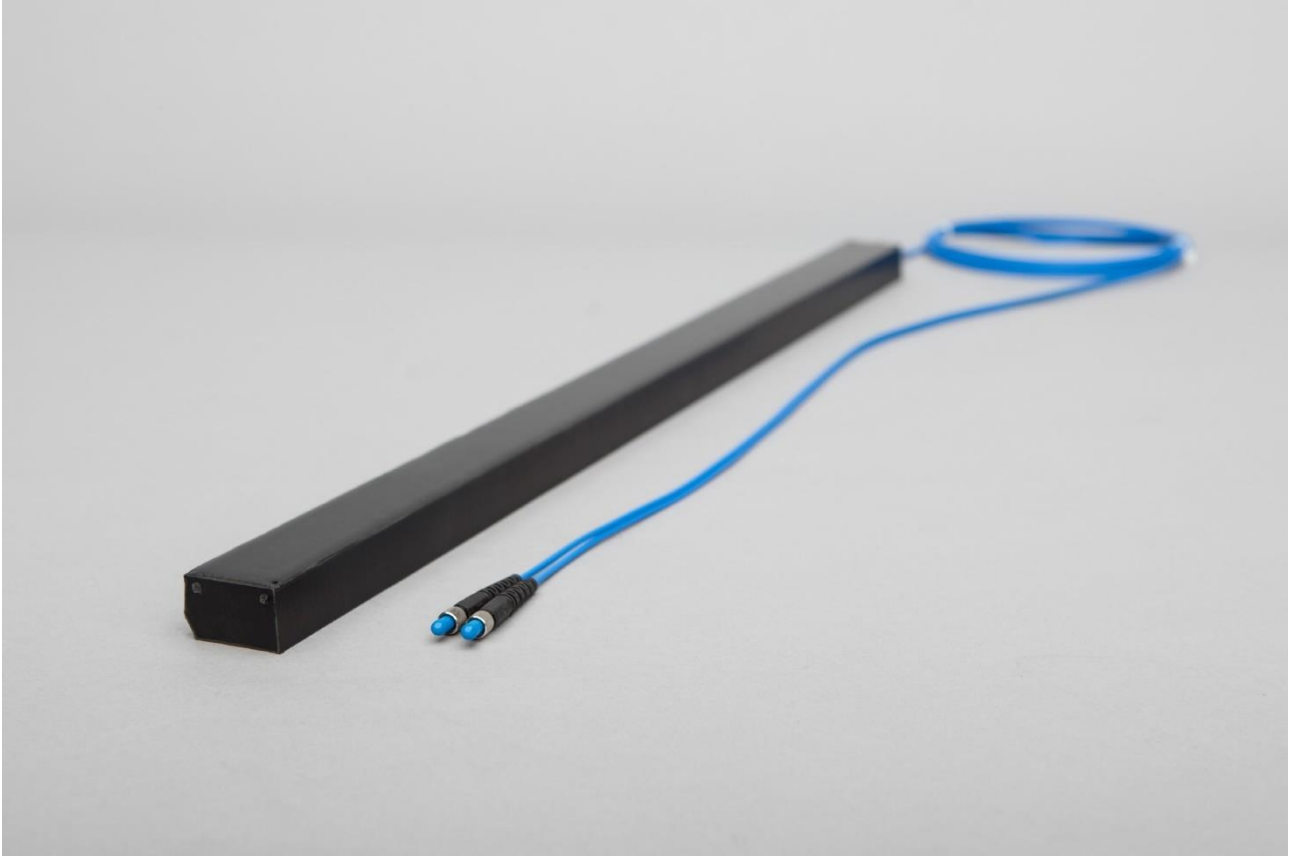


SL 4EZ: Four-Strip Sensor



SL EZR STRIP

Easy Replace Fiber Optic Strip for SL EZ Frame



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Product Description

The SL EZR Strip is a polyurethane-based reinforced fiber optic traffic sensor replacement strip designed for permanent installation in SL EZ frames. Its special chamfered shape ensures a fast and simple replacement into an existing frame. The SL EZR Strip has a double-sided adhesive tape on the underside to guarantee a tight fit even in diagonal configurations for dual tire detection and heavy traffic.

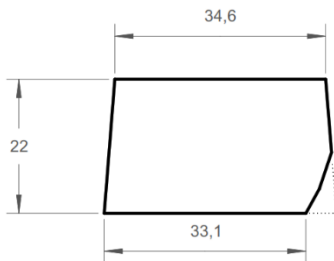


Fig. 2: Cross section SL EZR