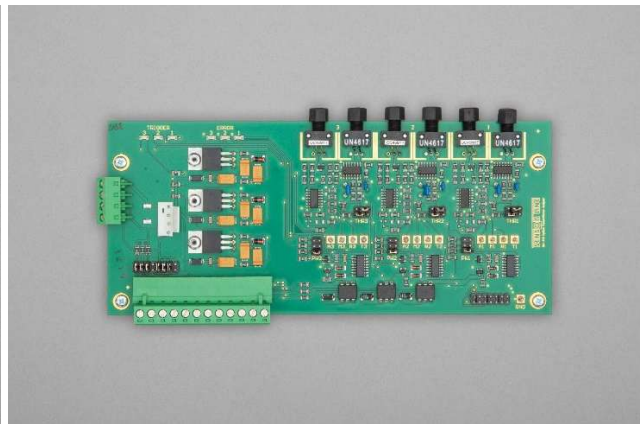
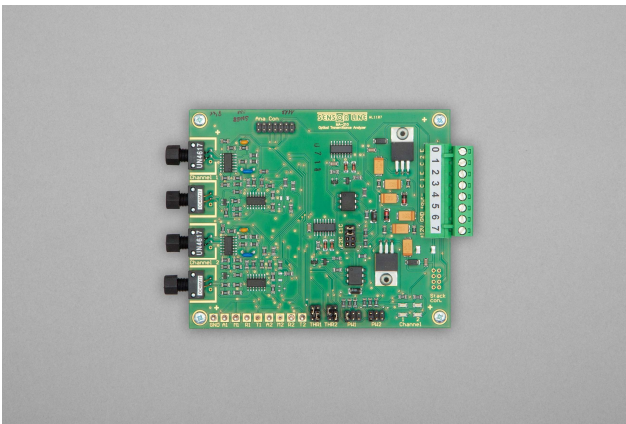




## Sensor Line SL MA-X10

### Electronic Interface with 1-3 Channels



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### Product Description

The SL MA-X10 interface operates one or more Sensor Line fiber optic road traffic sensors responding to changes of their optical transmittance and provides respective electrical output signals that can be retrieved by other devices for traffic data processing. The unit comprises a high-power infrared LED transmitter, a PIN diode photodetector, and the optical transmission analysis electronic. All our fiber optic road traffic sensors (like PUR, EZ, SPZ, SMS) can directly be connected to the SL MA-X10. There are three versions named MA-110, MA-210 and MA-310 available with one, two and three channels, respectively.

| Interface Type | No. of sensors | Application                         |
|----------------|----------------|-------------------------------------|
| SL MA-110      | 1              | Standard Road Edition, Bike Edition |
| SL MA-210      | 2              |                                     |
| SL MA-310      | 3              |                                     |

## Characteristics

- Dynamic analog voltage output (0-10V) for automatic long term signal adaptation
- Static analog monitor output (0-10V), e.g. for normalizing of the analog signal
- Optocoupler digital outputs enable free definition of any logical polarity and level
- Adjustable trigger threshold (MA-210, MA-310)
- Adjustable minimum trigger pulse duration (MA-210, MA-310)
- Pre-wired output circuits configurable through jumper settings (MA-210, MA-310)
- Sensor failure indication
- Reverse power protection
- Outputs short circuit protection
- RoHS compliant

## Typical Signal Output

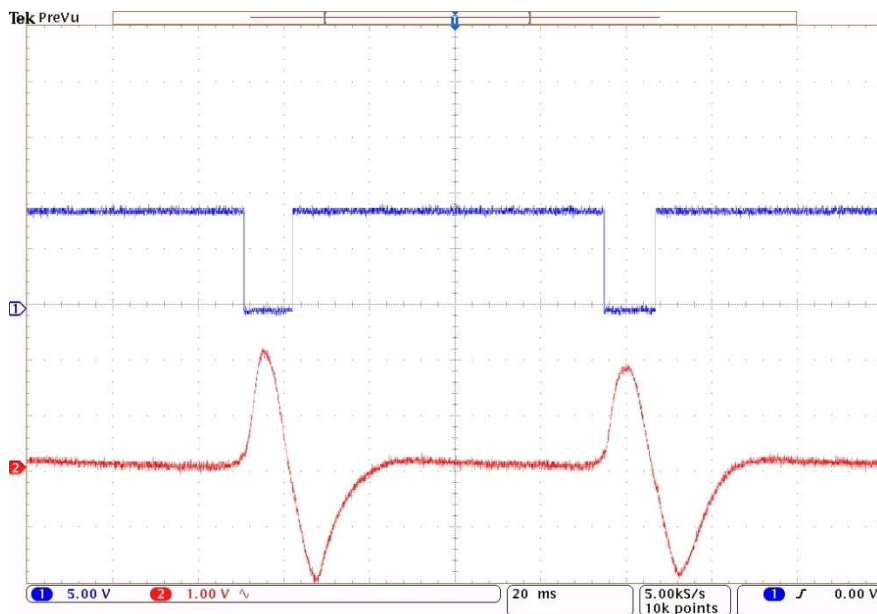


Fig. 1: SL PUR sensor operated by SL MA-110.

Digital trigger output (blue), analog voltage output in (red)

## Specifications

| Order Name                         | SL MA-110        | SL MA-210                     | SL MA-310     |
|------------------------------------|------------------|-------------------------------|---------------|
| Housing material                   | ABS black        | x                             | x             |
| Dimensions in mm                   | 67 x 58 x 25     | 130 x 100 x 17                | 208 x 93 x 17 |
| Protection class                   | IP 30            | IP 00                         |               |
| Main Connection                    | Screw clip       | Pluggable screw clip          |               |
| Board Supply Voltage:              | +12 to +24 VDC   |                               |               |
| Board Supply Current (continuous): | < 100mA          | < 210mA                       | < 330mA       |
| Output Supply Voltage:             | + 5 to +24 VDC   |                               |               |
| Supply for Optocouplers:           | 60V / 25mA max.  |                               |               |
| Trigger Thresholds:                | 0.30% (0.16%)    | 0.04% / 0.16% / 0.32% / 1.00% |               |
| Minimum Trigger Pulse Duration:    |                  | 1 ms / 22 ms / 47 ms          |               |
| Operating / Storing Temperatures   | -40°C to 85°C    |                               |               |
| Relative Humidity:                 | < 80% at 25°C    |                               |               |
| Sensor Attenuation                 | 3 – 25 dB        |                               |               |
| Speed Range:                       | 5 to 250 km/h    |                               |               |
| Feeder Length:                     | up to 250 meters |                               |               |
| Certification:                     | RoHS             |                               |               |
| LED Risk Group:                    | RG 0 (safe)      |                               |               |

## Sketches

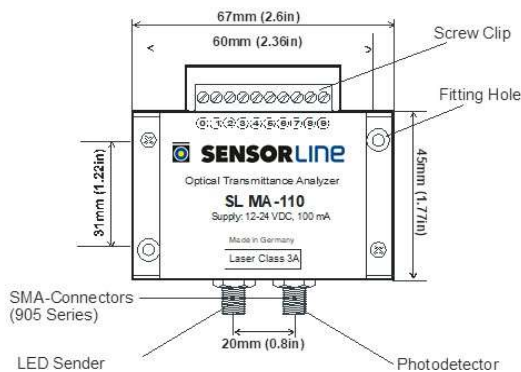


Fig. 2: SL MA-110 Dimension

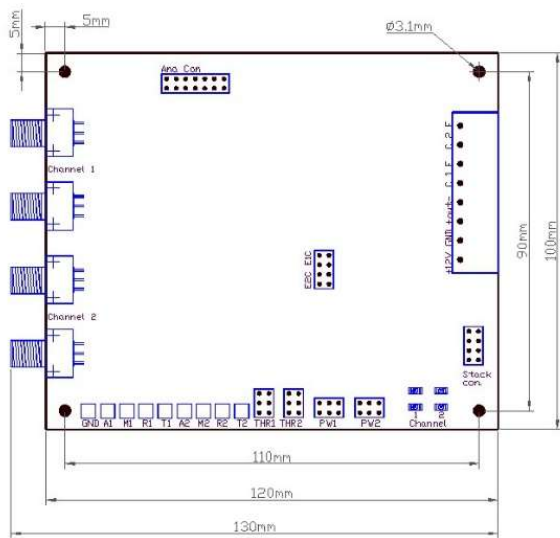


Fig. 3: SL MA-210 Dimension

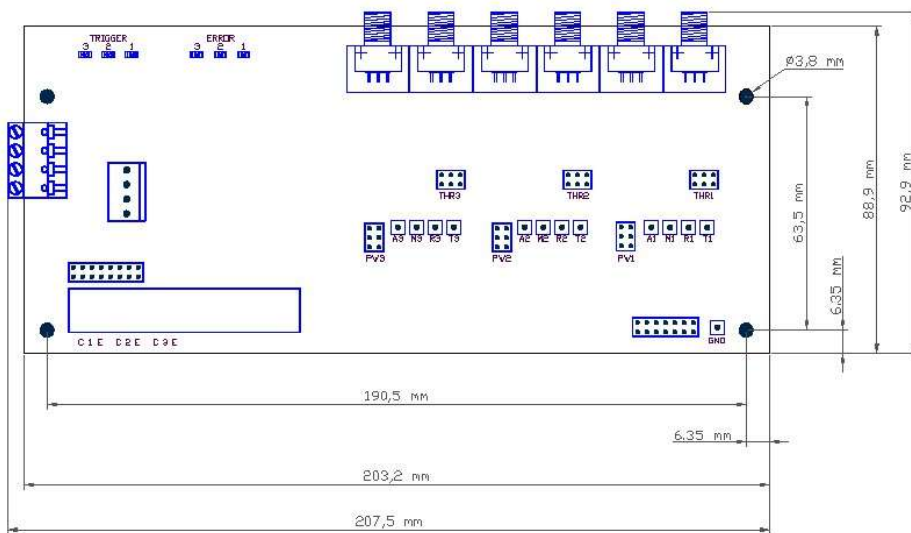


Fig. 4: SL MA-310 Dimension