

## SL MA-310

### Optical Transmittance Analyzer

#### SPECIFICATIONS

- ◆ 3 channel digital interface
- ◆ Up to 30dB dynamic range with IR LED laser
- ◆ Flexible optocoupler digital outputs
- ◆ Trigger level and minimum pulse duration are adjustable via jumpers
- ◆ Specifically designed for compatibility with existing toll equipment (dimensionally and electrically)

The **SL MA-310** three Channel Optical Transmittance Analyzer (OTA) is an electronic interface that operates three fiber optic load sensors. The SL MA-310 serves as the interface between the fiber optic sensor and the processing unit on system level. It should be installed in a weatherproofed road side cabinet.

The interface responds to the optical sensor signal in a dynamic (AC-coupled) manner, i.e. the electrical signal caused when a load is applied to the sensor decreases to zero as the load remains applied. At a threshold, a digital trigger signal per channel is generated. This signal is automatically reset after an adjustable time period. These characteristics allow the SL MA-310 interface to operate without the need for adjustment.

If the interface detects an interruption in the light transmission path of any channels, it flashes a particular light for each interrupted channel. The output signals (trigger signals) are transmitted via optocouplers which behave similar to relays, allowing the use of a variety of output circuitry.

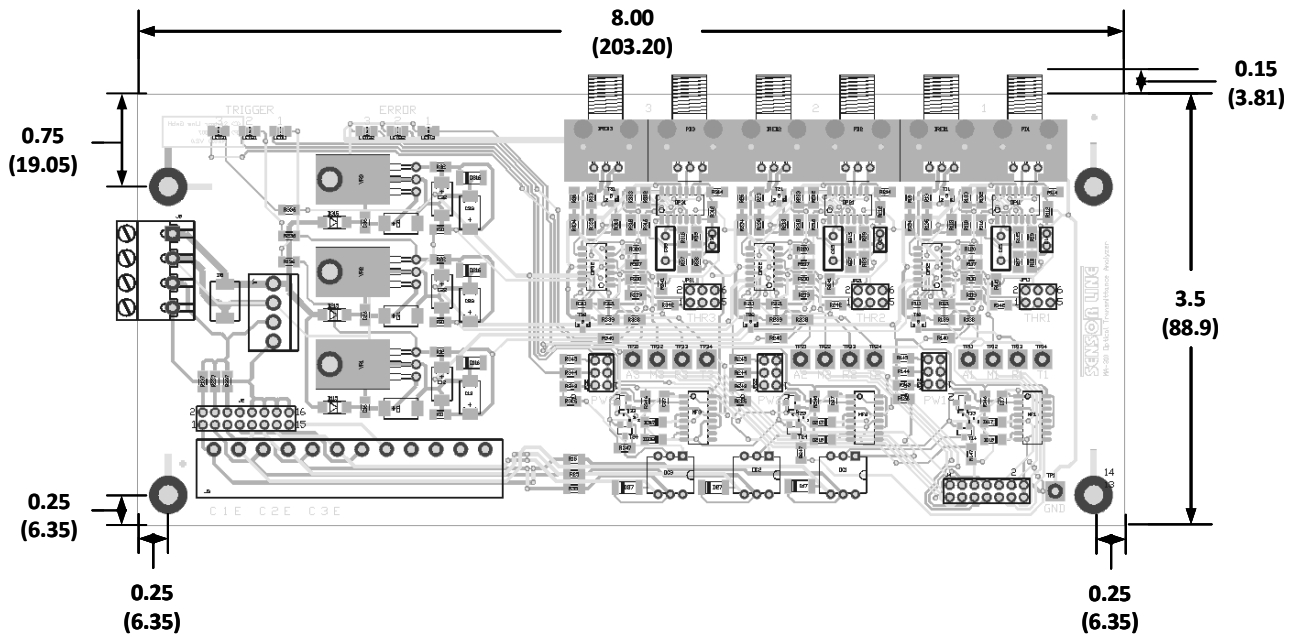
#### FEATURES

- ◆ Dynamic interface for detection of light power changes
- ◆ Optocoupler digital outputs
- ◆ Trigger output (optocoupler)
- ◆ Adjustable trigger threshold and duration (0.3%, 0.5%, 1% and 1.5% rel. light change/ 1, 22, or 47ms minimum trigger duration)
- ◆ Trigger indication LED for each channel
- ◆ Error indication LED for each channel
- ◆ Reverse power protection
- ◆ Short circuit protection optionally
- ◆ Variable output circuits suitable over jumper switches
- ◆ Conforms to RoHS standards

**PERFORMANCE SPECIFICATIONS**

Parameter	Typical Value
Supply Voltage	+12 to +24 VDC
Supply Current (continuous)	< 400 mA
Trigger Threshold	0.3%, 0.5%, 1%, & 1.5% of light transmittance change
Sensor Attenuation	3 - 33 dB (infrared transmitter)
Max. Strain Optocouplers	60 V/25 mA
Velocity Range	1 to 250 km/h
Feeder Length	up to 250 meters
Laser Class	3A
Certification	RoHS

**MECHANICAL DIMENSIONS in inches (mm)**



Model Number	Part Number	Laser
SL MA-310-IR	3-1007153-2	IR

**CONNECTIONS**

**a) Electrical (8 pin pluggable screw clip)**

Pin Number	Signal	Description
0	12 ... 24 VDC	Supply Voltage
1	GND	Ground
2	DC Output	Output Voltage
3	GND Output	Output Ground

**b) Connector Assembly**

Pin Number	Signal	Description
C1	Collector	Collector output of channel 1
E1	Emitter	Emitter output of channel 1
C2	Collector	Collector output of channel 2
E2	Emitter	Emitter output of channel 2
C3	Collector	Collector output of channel 3
E3	Emitter	Emitter output of channel 3

**c) Debug Pins**

The Board has a GND pin and each channel has four pins for troubleshooting. All these outputs are optionally connected to an analog output header. The four pins are:

- Ax -- Analog load signal of channel x
- Mx -- Monitor signal of channel x
- Rx -- Reference voltage of channel x
- Tx -- Trigger voltage of channel x

**d) Optical**

- Output -- LED Transmitter -- SMA Series 905 Connector
- Input -- Photodetector -- SMA Series 905 Connector

**NORTH AMERICA**

Measurement Specialties, Inc.,  
 a TE Connectivity Company  
 Phone +1-800-522-6752  
 Email: [customercare.hmpt@te.com](mailto:customercare.hmpt@te.com)

**ASIA**

Measurement Specialties (China), Ltd.,  
 a TE Connectivity Company  
 Phone: +86-400-820-6015  
 Email: [customercare.chdu@te.com](mailto:customercare.chdu@te.com)

**TE.com/sensorsolutions**

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