

SL MA-210

Optical Transmittance Analyzer

SPECIFICATIONS

- ◆ 2 channel digital interface
- ◆ Up to 30dB dynamic range with IR LED lasers
- ◆ Flexible optocoupler digital outputs
- ◆ Trigger level and minimum pulse duration are adjustable via jumpers
- ◆ Sensor failure indication
- ◆ Designed for compatibility with existing toll equipment

FEATURES

- ◆ Dynamic interface for detection of light power changes
- ◆ Optocoupler digital outputs
- ◆ Adjustable trigger threshold and duration (0.3%, 0.5%, 1% and 1.5% relative light change and 1, 22, or 47 ms minimum trigger duration)
- ◆ Trigger indication LED for each channel
- ◆ Error indication LED for each channel
- ◆ Short circuit protection
- ◆ Reverse power protection
- ◆ Conforms to RoHS standards

The SL MA-210 two-channel Optical Transmittance Analyzer (OTA) is an electronic interface that operates two fiber optic load sensors. The SL MA-210 serves as the interface between the fiber optic sensor and the processing unit on system level. It should be installed indoors or in a weatherproofed road side cabinet.

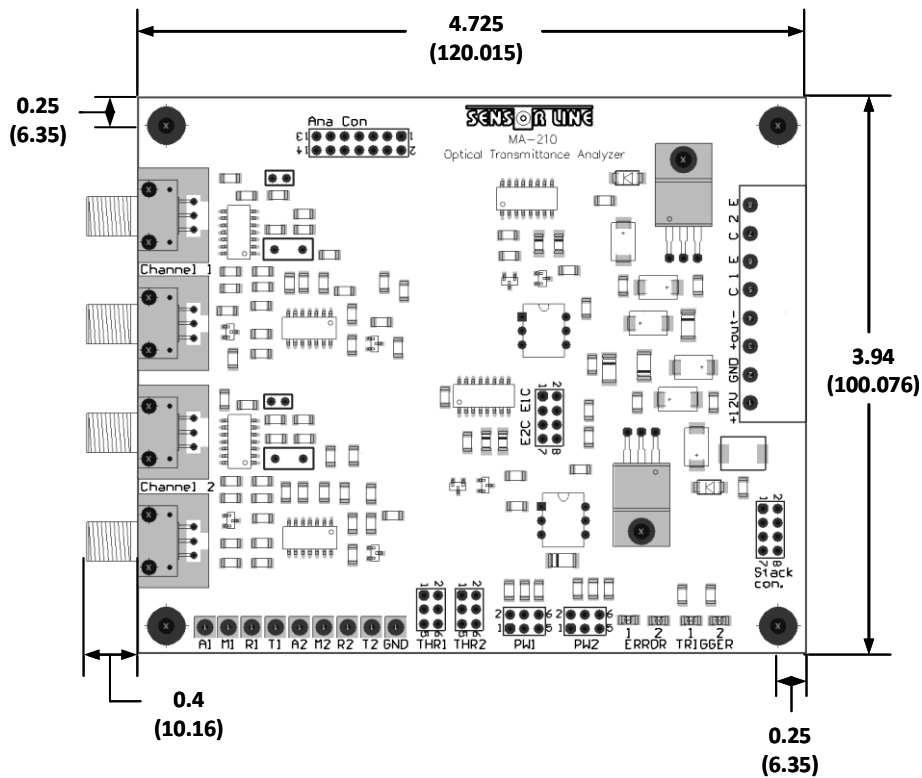
The interface responds to the optical sensor signal in a dynamic (AC-coupled) manner, i.e. the electrical signal caused when a load is applied to the sensor decreases to zero as the load remains applied. At a tunable threshold, a digital trigger signal per channel is generated. This signal is automatically reset after an adjustable time period. These characteristics allow the SL MA-210 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.

PERFORMANCE SPECIFICATIONS

Parameter	Typical Value
Supply Voltage	+12 to +24 VDC
Supply Current (continuous)	< 300 mA
Trigger Threshold	0.3%, 0.5%, 1%, & 1.5% of light transmittance change
Sensor Attenuation for MA 310 IR	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-210-IR	2-1007153-2	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
4	Collector	Collector output of channel 1
5	Emitter	Emitter output of channel 1
6	Collector	Collector output of channel 2
7	Emitter	Emitter output of channel 2

b) 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 (Ana Con). 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

The analog output header pins are:

Pin Number	Voltage	
1	GND	
2	GND	
3	Vana1	Analog load signal of channel 1
4	Vmon1	Monitor signal of channel 1
5	Vtrg1	Trigger voltage of channel 1
6	Vref1	Reference voltage of channel 1
7	Vana2	Analog load signal of channel 2
8	Vmon2	Monitor signal of channel 2
9	Vtrg2	Trigger voltage of channel 2
10	Vref2	Reference voltage of channel 2
11-14	Not connected	

c) Stack Connector

This Connector (Stack Con.) is used to stack two or more MA-210 together. In such a stack you only need to connect one board to the power supply.

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

ASIA

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

TE.com/sensorsolutions

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