MODULOC SYSTEM ENGINEERING

MSE-LP600

- Determines relative bar position via internal fiber optic block and multiplexed scanned germanium diode array
- LED Array Display of product pass line for correct alignment
- Automatic Gain operating via edge control margin evaluation
- Analog output for product position.
- Digital outputs for product presence
- Robust IP66 aluminum housing with water coolant chamber and separate air purge facility

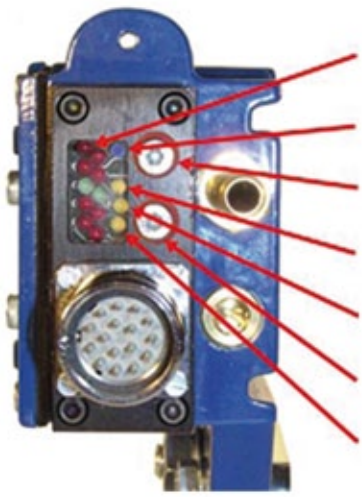
General Description

The Looper operates via internal microprocessor and a multiplexed scanned germanium diode arrays. It provides both analog output and displays the products hot edge position via bar display.

While normal Optical Position Scanners purely detect the product above a pre-set threshold as the Looper operates via a programmable control margin it ensures precise and repetitive positioned output regardless of the product's size or temperature. Hence, it is not adversely affected by lens contamination, hot scale, metalwork or steam in the field of view. As a consequence it provides very stable performance in difficult and variable environments such as found in Mill Stands that can defeat other Scanners.

Being a digital device, the Loopers' response time may be precisely set to accommodate black spots, etc. without detriment to its accuracy. Furthermore, the Looper detects the product edge precisely and repeatability regardless of the product size and changes in temperature. Various analog outputs are available according to requirement.

The Looper operates via internal germanium diode arrays segmented into 40 segments and scanned in 2 ms for an exceptionally fast output . The IR signal input is transmitted via an internal fiber optic block that ensures precise scanning is maintained without loss of signal yet blocking out the unwanted radiating heat from the device. This unique use of fiber optic technology facilitates compact construction with high performance.



Red LED's - Display hot product location in vertical scan & program settings

Green LED - Power & fault

Top push switch - selects program

Top Yellow LED - Delay time level

Mid Yellow LED - Control margin

Bottom push switch - selects

Lower Yellow LED - high/low gain

Typical Applications

Metals Industry: Loop Control, Position of hot bar, rod or wire. Centering of Hot Strip. Edge detection & positioning.

Other Industries: Edge detection and positioning of hot product.

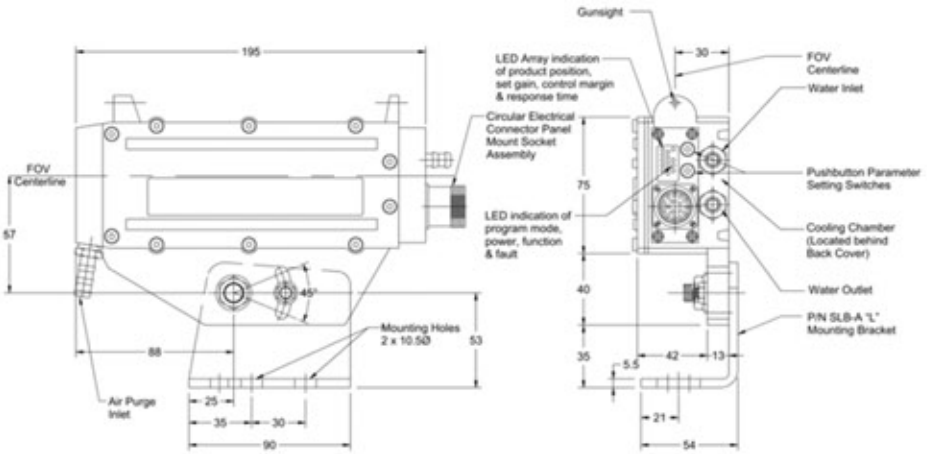
Housing Specifications

Housing: Aluminum AL6, Oven baked blue paint
Housing Rating: IEC IP66, DIN, 89011
Weight w/o Cable: 1.9 Kg
Connector: IP65 Plug/Socket
Cable Length: 1.5 M Standard up 10 M available
Cooling: Air Cooled & Air Purged /
Water Cooled & Air Purged

Air & Water Specification

Air Pressure: 1 cu ft./min at 5 PSI for normal conditions
5 cu ft./min at 15 PSI for severe conditions
Water Pressure: 5 to 10 PSI, 40 PSI Maximum
Water Volume: Regulate between 0.2 - 0.3 liters/min.
Water Temp.: For Ambient Temperature up to 70°C use ambient water below 20°C
For Ambient Temperature up to 80°C use water chilled to 5°C

Dimensions



General Specification

Product Presence Outputs (3 total)	Cradle Relay, SPNO, 250 VAC, 8A NPN & PNP Outputs 400 mA, 45 V, 2A peak Opto-isolated Output 300 V, 150 mA	Supply Voltage	24VDC ±10%
		Power Consumption	2 Watts
Analog Output	0 -10 VDC Standard (Optional: +/- 10VDC, +/- 15VDC or 4-20mA)	Operating Temperature	-10°C to +45°C without cooling +2°C to 65°C with (20°C) water cooling
Linear resolution	±0.2% of full scale	Humidity	Max 90% RH (non condensing)
Response time	10 milliseconds	Storage Temperature	-20°C - +50°C
Product Temperature Limit	Minimum 600°C (1112°F) Maximum 1200°C (2192°F)	Self Check	Continuous automatic self check & remote self check facility
Sensing Elements	Germanium (IR filter removes visible spectrum)	Array Scan Time	2 mS

Control Marging Illustration

Typical hot background signal

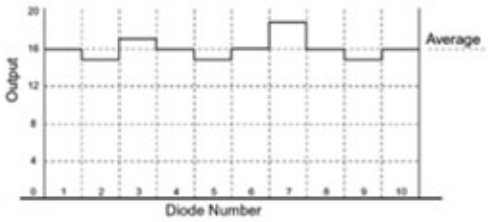
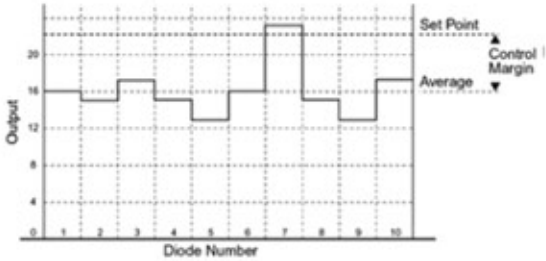


Chart illustrating signal from typical hot background

Typical signal with passing hot bar



This chart illustrates the control margin. Where the background IR is uniform then the control margin can be set to a lower figure. Any hot product passing needs to give a signal that exceeds the set point.

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