



- Determines relative bar position via 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 IP65 aluminum housing with water coolant chamber and separate air purge facility

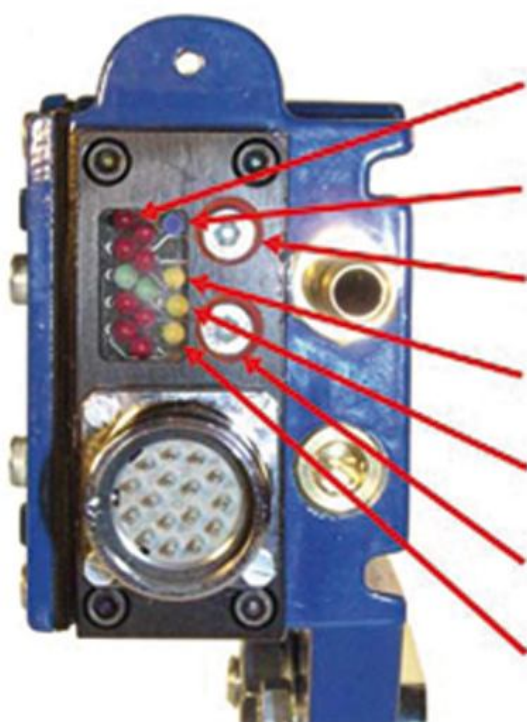
General Description

The Looper operates via internal microprocessor and a multiplexed scanned 20 Pixel InGaAs Diode Array segmented into 40 segments and scanned in 2 ms for exceptionally fast output. It provides both analogue output as well as displaying the products hot edge position via bar display.

Whilst 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 over the range of 350°C -1200°C. Various analog outputs are available according to requirement.

The Looper is available for 24 VDC supply connection . Supplementary product detection is provided by both 8 Amp/24-240 VAC relay and NPN/PNP outputs (where 24 VDC supply) are provided.



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.

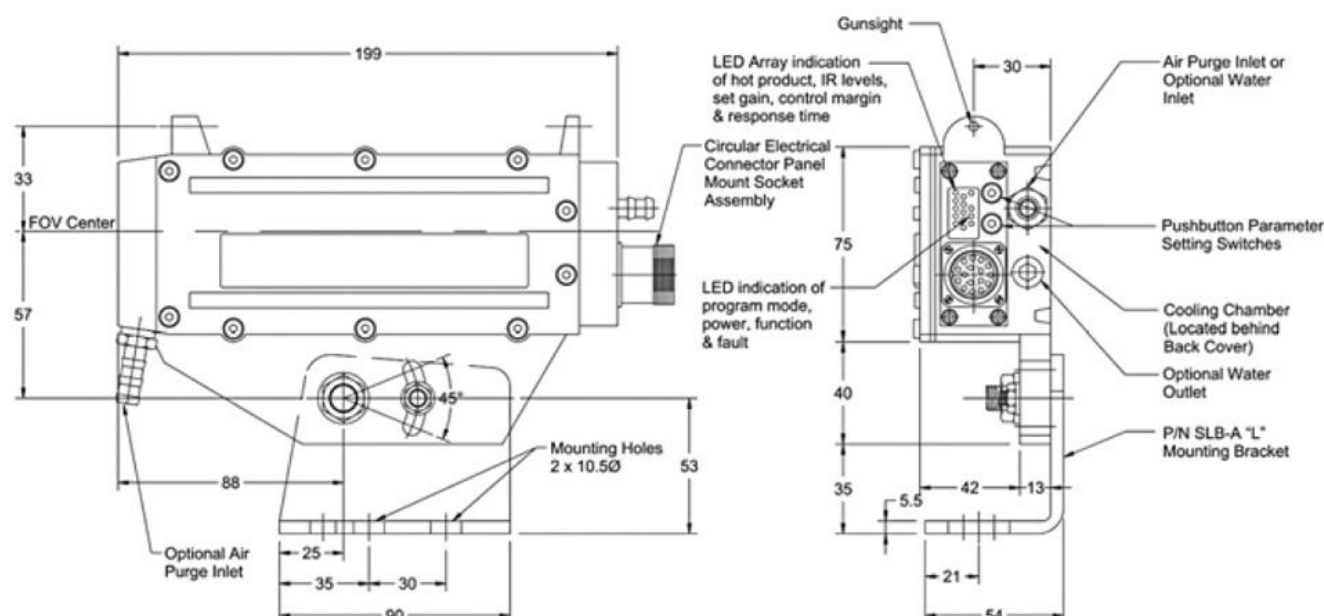
Other Industries: Edge detection and positioning of hot product.



Housing Specifications & Cooling

Housing:	Aluminum AL6, Oven baked blue paint	Air Pressure:	1 cu ft./min at 5 PSI for normal conditions
Housing Rating:	IEC IP66, DIN, 89011		5 cu ft./min at 15 PSI for severe conditions
Weight w/o Cable:	1.9 kg (4.2lb)	Water Pressure:	5 to 10 PSI, 40 PSI Maximum
Connector:	IP65 Plug/Socket	Water Volume:	Regulate between 0.2 - 0.3 liters/min.
Cable Length:	2 m Standard up 15 m available	Water Temp.:	For Ambient Temperature up to 80°C use ambient water below 20°C
Cooling:	Air Cooled & Air Purged /Water Cooled & Air Purged		For Ambient Temperature above 80°C use cooling 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: 4-20mA)	Operating Temperature	-10°C to +45°C without cooling up to 80°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 - +70°C
Product Temperature Limit	Minimum 350°C (1112°F) Maximum 1200°C (2192°F)	Self Check	remote self check facility
Sensing Elements	20 Diode InGaAs Array	Array Scan Time	2 ms

Control Marging Illustration

Typical hot background signal

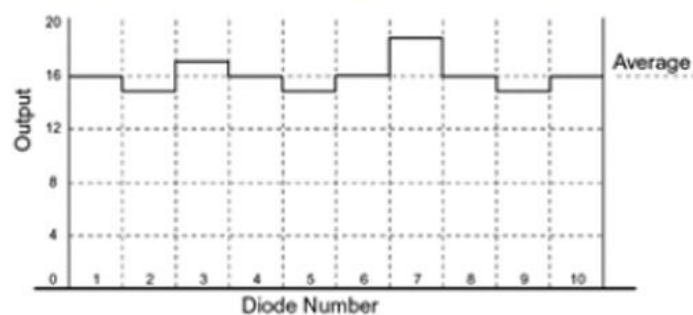
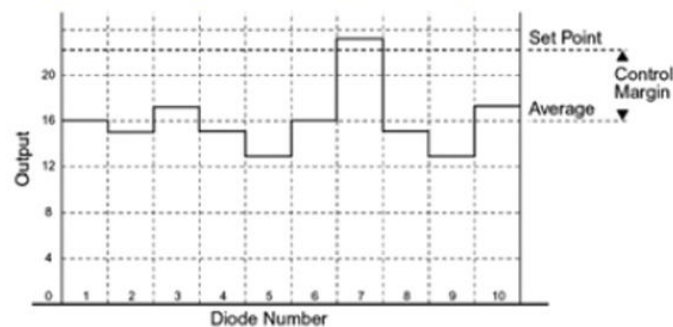


Chart illustrating signal from typical hot background

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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