



- Fully digital “All-in-One” Design
- LED Bar Display of % IR input signal
- Programmable 250°C to 1000°C Trip Level
- Operates from 80-240VAC or 24VDC Supply
- Programmable response times from 1ms to 250ms
- Control Relay and Fast Reed Relay Outputs
- NPN and PNP Transistor Outputs
- Remote Self-Check Facility
- Unique combined air purge and coolant facility
- Optional Water Coolant Radiator & separate Air Purge
- Robust die-cast IP66 Watertight Aluminum Housing

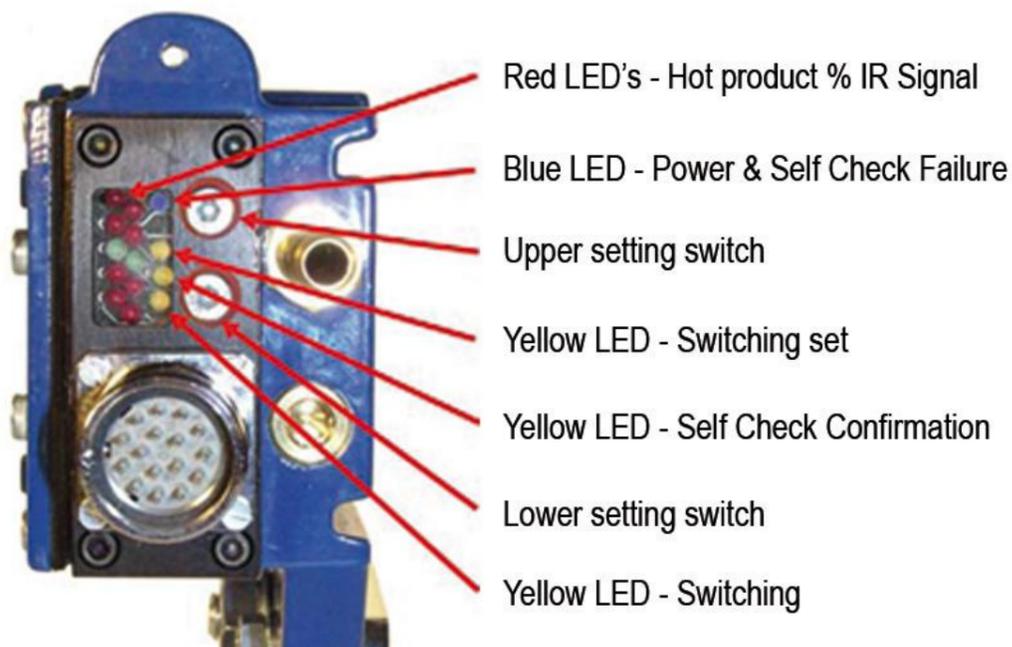
General Description

The MSE-HMD85 is a fully digital “All-in-One” Hot Metal Detector uniquely incorporating a bar display showing the % IR input signal relative to the pre-set threshold as well as programmable thresholds and response times via simple programming switch action. This and the universal connection format means it provides the user with one universal Detector that can be used throughout the mill. The MSE-HMD85 is the economical choice. Now there is no need to stock various Detectors for each location. Costly multiple inventory can be replaced by one Detector.

The MSE-HMD85 Hot Metal Detector is a robust sensor activated by the infra-red radiating from the hot product. Impervious to water or steam it is built to withstand the harshest of environments. The product is detected via a highly stable InGaAs Photodiode to ensure detection regardless of heavy water and steam and incorporates filtering that removes the visible spectrum to minimize sensitivity to extraneous light. The precise 0.5° x 25° lens ensures accurate detection of strip and accommodates bar bounce.

This Detector is especially suitable where ambient temperatures are subject to large changes. In standard format, a large air cooled chamber vents via deflector in front of the lens to allow the use of non-instrument air and provides air purging. Alternatively, an optional sealed loop water coolant radiator accommodates tap pressure and a separate air purge inlet may be provided.

Rear Bar Display



The rear bar display allows the user to clearly establish the amount of received IR both from the background metalwork and the bar being detected and thereby establishing the correct trip level required. This display also allows the user to align the Detector from a low energy source such as a flashlight, which normally would be insufficient to switch the Detector. Adjustment of both the threshold and the response time is also clearly defined by this bar.



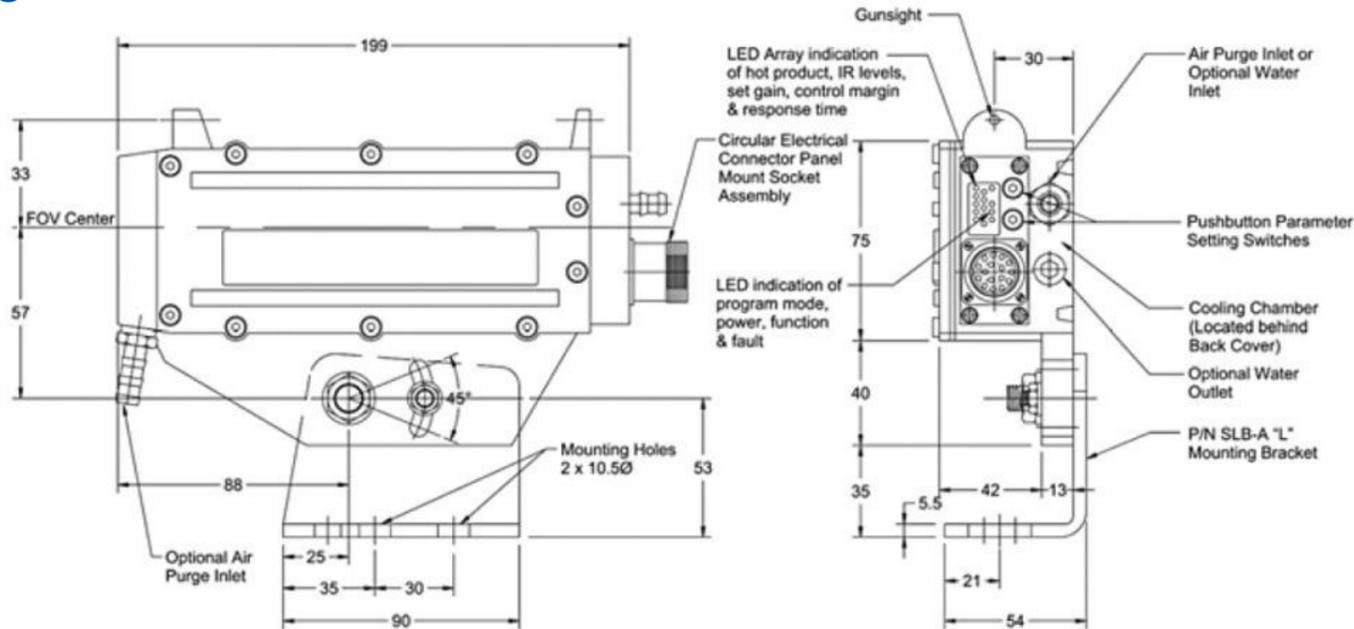
Housing Specifications

Housing: Aluminum AL6, Oven baked blue paint
Housing Rating: IEC IP66, DIN, 89011
Weight w/o Cable: 1.9 Kg (4.2lb)
Connector: IP65 Plug/Socket
Cable Length: 1.5 M Standard up 15 M available
Cooling: Air Cooled & Air Purged /
 Water Cooled & Air Purged

Air & Water Specifications

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 80°C use ambient water below 20°C
 For Ambient Temperature up to 80°C use water chilled to 5°C

Dimensions



General Specification

Lens F.O.V. (Filed of View)	Standard: 0.5° x 25° Rectangular Slit Optional: 2° Spot or 4° Spot	Supply Voltage	Standard: 80 - 240 VAC, 50/60 and 24 VDC ± 10%
Sensing Element	InGaAs Photodiode	Power Consumption	5 VA
Power Indication:	Blue LED	Operating Temperature	1. -20°C to +50°C (-4°F to 122°F) without air cooling 2. -20°C to +60°C (-4°F to 140°F) with air cooling 3. +2°C to +70°C (36°F to 158°F) with 20°C water cooling
Function Indication	Top & Bottom Yellow LED's		
Remote Self-Check	Middle Yellow LED's	Output (#1)	Cradle Relay Output, SPNO, 240VAC, 8A with 20 msec response time.
Min/Max I.R. Threshold settings	Down to 250°C (518°F) and up to 1000°C (1832°F) via programming switch	Output (#2)	Reed Relay Output, SPNO, 240VAC, 0.5A with 2 msec response time.
Response Time:	1 msec. min to 250 msec max., via programming switch	Output (#3 & #4)	NPN and PNP Outputs, N.O., 500 mA, 45VDC, 2A peak

Additional Information

To accommodate variation in bar temperature and background IR, various precise threshold are programmable via covered switches from 270°C to 1,000°C to ensure reliable switching with reference to both the displayed background and product IR signal.

Furthermore, response time is programmable from 1 ms to 250ms to accommodate black spots on the bar.

The MSE-HMD85 incorporates a remote self-check facility remotely energized by closed contacts that lights up an internal IR LED to switch the Detector and verify its' outputs operate correctly.

The MSE-HMD85 will operate from either 80-240 VAC or 24 VDC power input. Standard outputs include a cradle relay, a fast reed relay and both NPN/PNP transistor outputs.



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