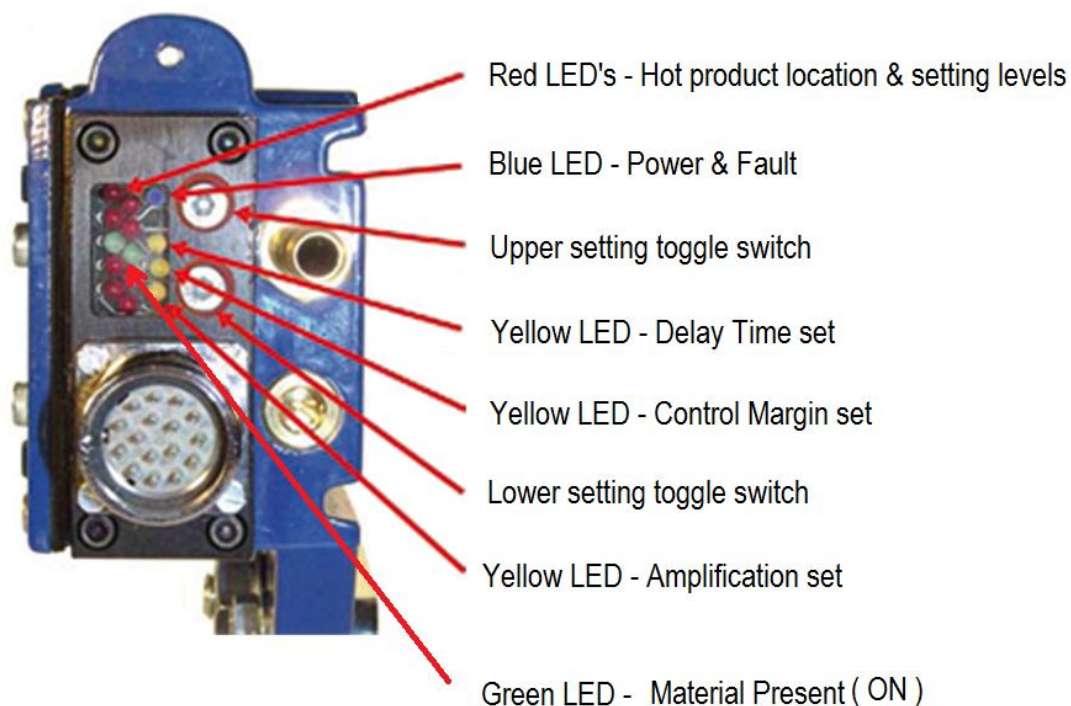# MODULOC SYSTEM ENGINEERING®

MSE

MSE-HMD85

- Fully digital "All-in-One" Design
- LED Bar Display of % IR input signal
- Programmable temperature threshold from 270°C
- Operates with 24VDC Supply
- Programmable response times from 1ms to 250ms
- Control Relay Outputs
- NPN and PNP Transistor Outputs
- Remote Self-Check Facility
- Unique combined air purge and coolant facility（Air or Water）
- Robust die-cast IP66 (with connected cable with plug) operating Watertight Aluminum Housing

General Description

The MSE-HMD85 Hot Metal Detector 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 MSE-HMD85 Hot Metal 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.

Red LED's - Hot product location & setting levels

Blue LED - Power & Fault

Upper setting toggle switch

Yellow LED - Delay Time set

Yellow LED - Control Margin set

Lower setting toggle switch

Yellow LED - Amplification set

Green LED - Material Present (ON)

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.
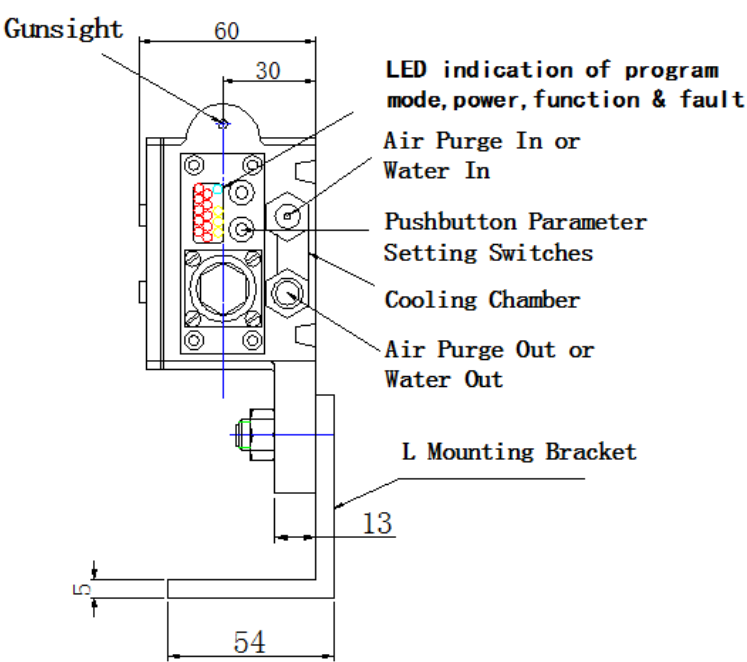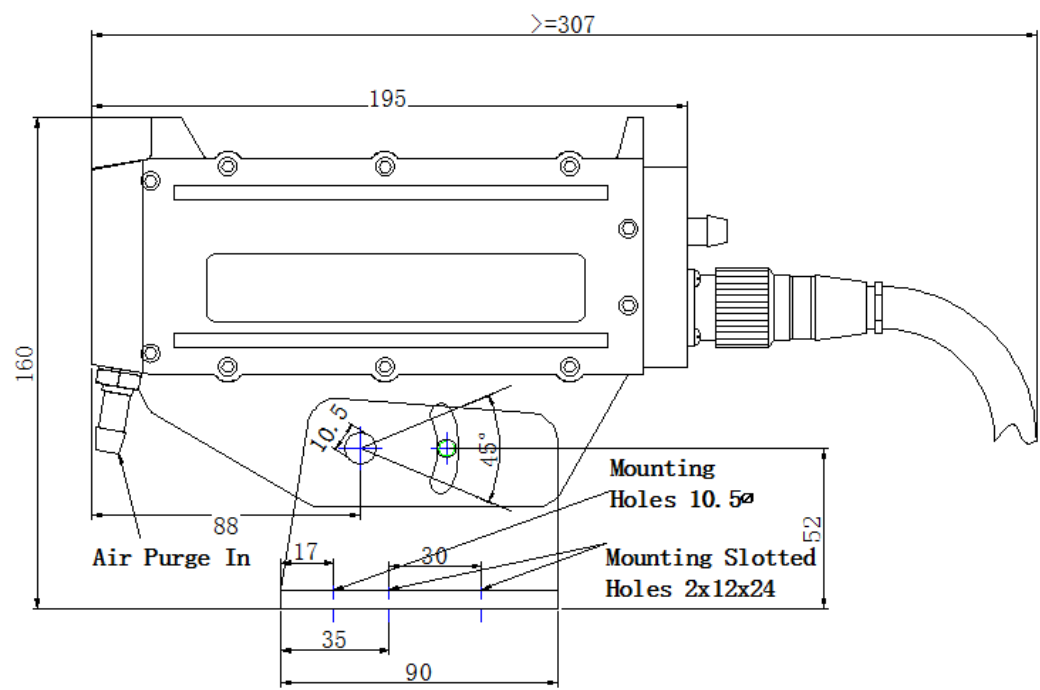
Housing Specifications

Housing Rating:	EC IP66, DIN, 89011	**Housing:**	Aluminum AL6,
Weight w/o Cable:	1.9 Kg	**Cooling:**	Water Cooled （can use for air cooling too）or/& Air Purged
Cable Length:	2 m Standard Length , optional up to 10m available	**Connector:**	IP66 with connected Plug/Socket

Dimensions

General Specification

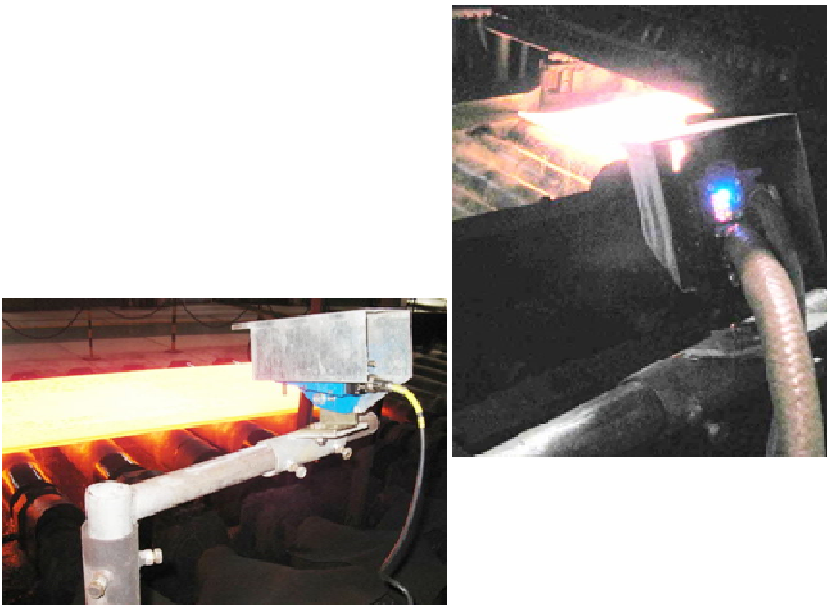| Lens F.O.V. (Filed of View)	0.5° x 25° Rectangular Slit	Supply Voltage	**Standard:** 24 VDC ± 10%
Sensing Element	InGaAs Sensor	Power Consumption	5 W
Power Indication	Blue LED	Operating Temperature	1. -20°C to +50°C without Air Cooling 2. +50°C to +65°C with Air Cooling 3. +65°C to +80°C with 20°C Water Cooling 4. up to 80°C with special cooling protection housing & Heat Shield
Function Indication	Top & Bottom Yellow LED's		
Remote Self-Check	Middle Yellow LED's	Output (#1)	Cradle Relay Output, SPNO, 240VAC, 7A with 20 ms Response Time.
Min/Max I.R. Threshold Settings	Adjustable from 270°C via Programming Switch	Output (#2)	NPN Outputs, 500 mA
Response Time	1 ms to 250 ms, via Programming Switch	Output (#3)	PNP Outputs, 500 mA

Additional Information

To accommodate variation in bar temperature and background IR, various precise threshold are programmable via covered switches from 270°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 hot material.

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 with 24 VDC power input. Standard outputs include a cradle relay, and both NPN/PNP transistor outputs.

Moduloc System Engineering Ltd.