MODULOC SYSTEM ENGINEERING®

MSE-HMD100

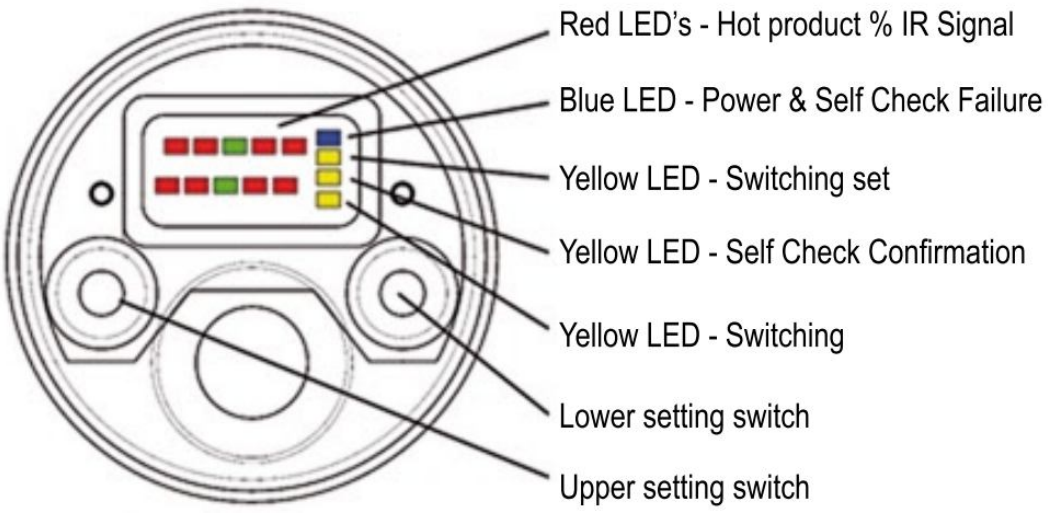
- Fully digital "All-in-One" Design
- LED Bar Display of % IR input signal
- Programmable270°C to1000°C Trip Level
- Operates with24VDC Supply
- Programmable response times from 1ms to 250ms
- Control Relay Output
- NPN and PNP Transistor Outputs
- Remote Self-Check Facility
- Unique combined air purge and coolant facility
- Optional Water Coolant Radiator & separate Air Purge

General Description

The MSE-HMD100 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. It provides the user an universal detector that can be used throughout the mil. The MSE-HMD100 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-HMD100Hot 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 visiblespectrum to minimize sensitivity to extraneous light. The precise 1°x 12° 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.

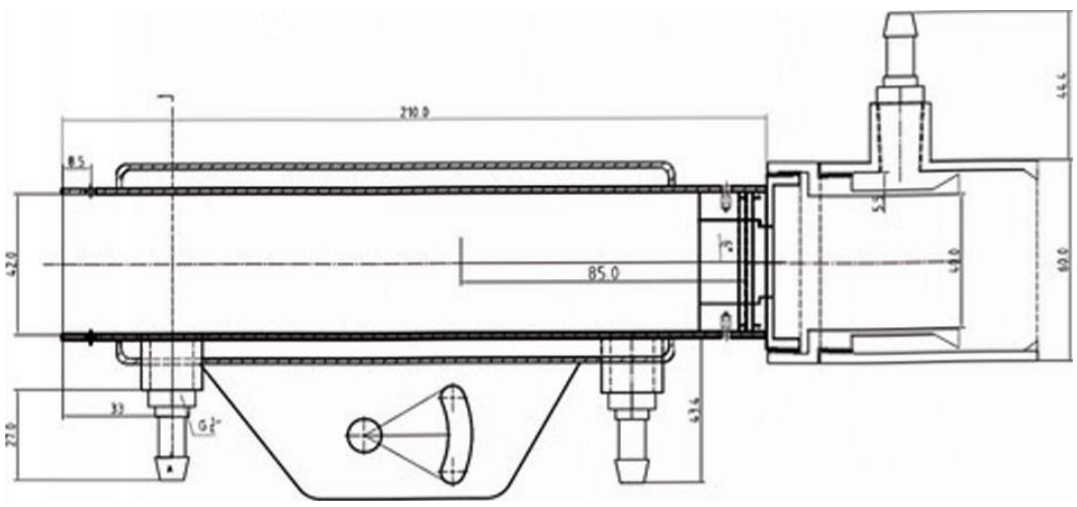
Housing Specifications

Housing: Stainless Steal, double-walled
Housing Rating: IEC IP65
Weight : 2.2Kg
Cable Length: 2MStandard up 10M available
Cooling: Air / Water Cooling and Air purge

Air & Water Specifications

Air Pressure: 1cu ft/min at 5 PSI for normal conditions
5cu 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

Lens F.O.V.:	1°x 12° Rectangular Slit	Supply Voltage	24 VDC ±10%
Sensing Element	InGaAs Photodiode	Power Consumption	5VA
Power Indication	Blue LED	Operating Temperature	-20°C to +50°C (-4°F to 122140°F) air cooling -20°C to +60°C (-4°F to 140°F) air cooling +2'C to +70°C (36°F to 158°F) water cooling
Function Indication	Top & Bottom Yellow LED's		
Remote Self-Check	Middle Yellow LED's	Output (#1)	Cradle Relay Output,SPNO.240 VAC.8A 20 ms response time
Min/Max I.R. Threshold settings	Down to 270°C (518°F) and up to 1000°C (1832°F) via programming switch	Output (#2 & #3)	PNP and NPN Transistor Outputs.N.O.,500mA, 45 VDC.2A peak (requires 24VDC supply)
Response Time	1 to 250 ms , via programming switch	%1.R. Signal	Red/Green/Red Bar Display

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-HMD100 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-HMD100 operates with 24 VDC power input. Standard out -puts include a cradle relay and both NPN/PNP transistor outputs.

Connection Wiring	
Color	Description of Connection
Green	PNP
Black	0V
Blue	NPN
Gray	Screen/Housing
Red	+24VDC
Violet	Self Check, if connected to +24VDC
White	Relay Output
Yellow	Relay Output

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