



MODEL MD8100-35 HOT METAL DETECTOR



- **Self-Contained Design.**
- **24 VDC connection in one unit.**
- **Lens options: 1° x 25° F.O.V. Rectangular.**
- **Factory Set threshold of 450°C.**
- **Output #1: Relay with SPNO contact and NC contact.**
- **Output #2: PNP and NPN Transistor Output.**
- **Remote Self-check facility.**
- **Robust IP66 aluminum housing with unique combined air purge & cooling facility. Optional water cooling with separate air purge available.**
- **Excellent steam penetration.**

The self-contained Model MD8100-35 Hot Product Detector is available with either air coolant chamber venting as air purge or alternatively with a water coolant chamber and separate air purge.

General Description

The MD8100-35 self-contained Hot Metal Detector sensor benefits of various models into one unit. Thus the MD8100-35 provides one detector that can be standardized on throughout the mill. The MD8100-35 is the economical choice.

The MD8100-35 Hot Metal Detector is a robust sensor activated by the infra-red radiating from hot metal or product. Impervious to water or steam it is built to withstand the harshest environments.

Our lens incorporate filters removing the visible spectrum to minimize sensitivity to extraneous light. Where high accuracy is required or the product deviates about the center line (i.e. Rod Mill) a 1/2° x 25° lens should be utilized. This lens is also highly suited for Strip Mills.

Especially suitable where ambient temperatures are subject to wide deviations. In standard format, a large air cooled chamber vents via a deflector in front of the lens providing combined air purged facility. Alternatively, an optional sealed water coolant radiator & separate air purge facility may be provided.

To accommodate variation in product temperature and background radiation, 450°C, are factory set .

The MD8100-35 can operate from 24VDC power input. Standard output includes a cradle relay with a 8A/250VAC SPNO or NC volt free contact rating plus PNP & NPN transistor output.

The MD8100-35 includes a remote self check. This facility remotely initiates an internal lamp in close proximity to the photodiode. When activated by a remote contact, the detector switches and its performance checked.

MODULOC[®] Technology - The Total Sensor Solution
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MODEL MD8100-35 HOT METAL DETECTOR

Enclosure Specifications

Housing: Aluminum AL6, Oven baked blue paint
Housing Rating: IEC IP66, DIN 89011
Weight w/o Cable: 1.9 Kg
Cable Length: 2 M
Cooling: Standard: -A Air Cooled & Air Purged
Optional: -D Water Cooled & Air Purged

Air & Water Specifications

Air Pressure: 1 cu ft./min at 5 PSI for normal Conditions, non-instrument dry air and 0-15 PSI for severe conditions
Water Pressure: 5 to 10 PSI
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 90°C use water chilled to 5°C .

Part Number Specifications

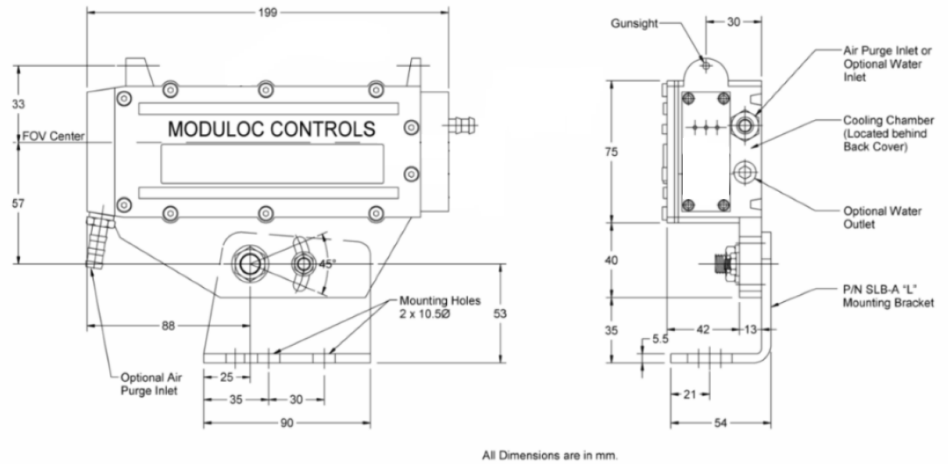
MD8100-35-96-14-RTO-CR2-A

Supply Voltage: -96 24 DC

Lens:
 -CR2 1° x 25° F.O.V. Rectangular Slit
 -C2 2° F.O.V. Spot
 -C4 4° F.O.V. Spot

Cooling:
 -A Air Cooled & Air Purged
 -D Water Cooled & Air Purged

Dimensions



General Specifications

Lens F.O.V.:	Standard: -CR2 1° x 25° Rectangular Slit	Supply Voltage	Standard: 24 VDC ± 15%
Sensing Element	InGas Diode	Power Consumption	5 VA
Power Indication:	RED LED	Operating Temperature	-20°C to +60°C without air cooling -20°C to +70°C with air cooling +2°C to +80°C with (20°C) water cooling
Function Indication	RED LED	Output (#1)	C Form Relay Output (SPNO) 250 VAC, 8A rating
Remote Self-Check	Remote Self-Check - Single wire to -0 VDC internal line	Output Transistor (#2)	NPN and PNP Outputs. N.C. 500 mA, 24 V 2A peak
Min/Max I.R. Threshold settings	Down to 350°C and up to 500°C		
Response Time:	10 msec		

Smallest Detectable Product when utilizing a 1/2° x 25° Lens
 The table to the right identifies the minimum % of vertical field of view required with hot steel at stated temperature for it to be repetitively detected.

Indicative Preset Thresholds		
Steel Temp.	Nominal 350°C Preset Trip	Nominal 450°C Preset Trip
400°C	10%	Not Detectable
450°C	5%	100%
500°C	1%	60%
600°C	1/2%	20%
800°C	Less than 1/2%	Less than 5%

EU & USA Wire Diagram

Pin	EU & USA	Function/Rating
(1)	Pink	Self Check - Single wire - connect to 0VDC line (Black wire)
(2)	Red	+24 VDC
(3)	Black	0 VDC (For 24 VDC Supply)
(4)	Green	Ground * CONNECT*
(5)	White	Relay Common – 8 Amp, 240 VAC rating
(6)	Orange or Grey/Pink according to cable	Relay Output – SPN/Open, 8 Amp, 240 VAC rating
(7)	Grey	Relay Output – SPN/Closed, 8 Amp, 240 VAC rating
(8)	Violet	PNP Transistor Output
(9)	Light Blue or Red/Blue according to cable	NPN Transistor Output

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