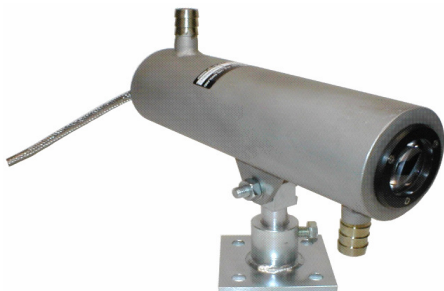
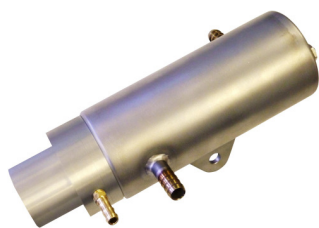




WATER COOLED MD8200 HOT METAL



As standard incorporates completely surrounding water cooled Jacket



Air Purged Detector

- **“ALL-IN-ONE” Connection.**
- **Robust Stainless Steel Construction**
- **Completely surrounding Water Cooled Jacket**
- **110 VAC or 24 VDC connection in one unit.**

- **Lens options: 2°, 4° or 1/2° x 25° F.O.V. Rectangular.**
- **DIP switch selectable thresholds down to 270°C.**
- **Output #1: Relay with SPNO contact.**
- **Output #2: Selectable PNP or NPN Transistor.**
- **Adjustable response time from 2 to 200 msec.**
- **Optional In-line Cable Connector**
- **Remote Self-check facility.**
- **Air purge option available.**
- **Excellent steam penetration.**

General Description

The MD8200 “All-in-One” Hot Metal Detector provides the user with the option to connect to 80-230 VAC supply or 24 VDC as well as providing relay and selectable NPN/PNP transistor outputs thus allowing one Sensor to be standardized on throughout the mill. The MD8200 is the economical choice. Now there is no need to stock a detector for each different trip level.

Furthermore, the MD8200 Hot Metal Detector is an exceptionally robust sensor activated by the infra-red radiating from hot metal or product. Constructed in a heavy duty stainless housing it is built to withstand the harshest environments and is impervious to water and steam. It is the ideal HMD for installing on the line where very high ambient or radiant temperatures are present as incorporates completely surrounding water cooled chamber with option of air purge being available.

All lenses incorporate filters removing the visible spectrum to minimize sensitivity to extraneous light. For general tracking, spot lenses are commonly used. 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 to Strip Mills.

To accommodate variation in product temperature and background radiation, six specific I.R. thresholds, from 300°C to 550°C, are selectable by DIP switch in 50°C steps. Further adjustment to the trip level down to 270°C and up to 750°C can be accomplished via a threshold sensitivity adjuster.

The MD8200 can be operate from either 110VAC-50/60 Hz or 24VDC power input. Standard output includes a cradle relay with a 8A/250VAC SPNO volt free contact plus a switch selectable PNP & NPN transistor output. Alternatively, an optional reed relay with SPNO contact can be provided in place of the cradle relay. Available with In-line Cable Connector option

The MD8200 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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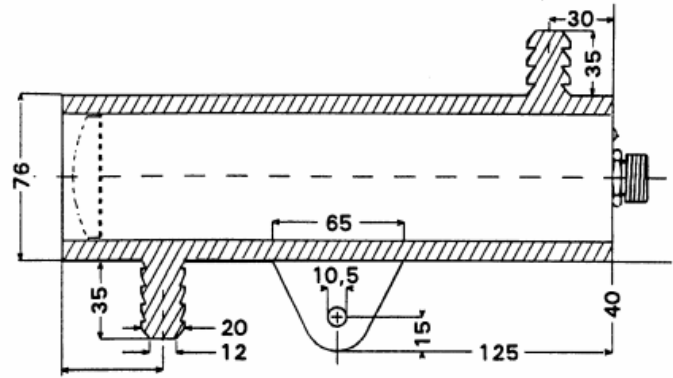
MODULOC® Control Systems, Inc.

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Enclosure Specifications

Stainless 316 Steel
 Housing Rating: IEC IP66, DIN 89011
 Weight with Cable: 2.8 Kg
 Weight with in-line Connector & Cable: 3.0 kg
 Cable Length: 1.5 M

Dimensions



Air Purge Specifications (Optional)

Air Pressure: 1 cu ft./min at 5 PSI for normal conditions
 5 cu ft./min at 15 PSI for severe conditions

Coolant Water Specifications

Water Pressure: 5 to 20 PSI
Water Volume: Regulate between 0.5 - 1.5 liters/min.
Water Temp.: Where ambient temperature up to 80°C use ambient water below 20°C.
 Where ambient Temperature up to 90°C use water chilled to 5°C .

Part Number Specifications

MD8200-81-CR2—XX
Supply Voltage: -81 110 VAC ± 15% 50/60 Hz and 24 VDC ± 15%
 -82 220 VAC ± 15% 50/60 Hz
Lens: -CR2 ½ x 25° F.O.V. Rectangular Slit
 -C2 2° F.O.V. Spot
 -C4 4° F.O.V. Spot
Cooling: -W Water Cooled
 -D Water Cooled & Air Purged

Smallest Detectable Product when utilizing a ½ x 25° Lens

The table below 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%
500°C	1/2%	20%
800°C	Less than 1/2%	Less than 5%

General Specifications

Lens Field of View	Standard: - CR2 1 x 20° Rectangular Slit Optional: - C2 2° or -C4 4° Spot
Sensing Element	Germanium Diode
Power Indication:	Red LED
Function Indication	RED LED
Remote Self-Check	Single wire to +24 VDC internal line
I.R. Threshold settings	Selector switch selectable in 50°C steps between 300°C to 550°C
Min/Max I.R. Threshold settings	Down to 270°C and up to 750°C using internal sensitivity adjustment
Response Time:	2 msec. min to 200 msec max., dip switch selectable.
Supply Voltage	Standard: 110 VAC ± 15% 50/60 Hz and 24 VDC ± 15% Optional: 220 VAC ± 15% 50/60 Hz
Power Consumption	5 VA
Operating Temperature	-20°C to +60°C without air cooling -20°C to +80°C with air cooling +2°C to +100°C with (20°C) water cooling
Output (#1)	Relay Output (SPNO) 250 VAC, 8A with 20 mSec response time. Optional: Reed relay
Output (#2)	Switch selectable NPN or PNP Outputs, N.O., 500 mA, 45 V, 2A peak

Electrical Connections		
Pin No.	Wire Color	Function
1	Pink	Self-check to +24 VDC Supply
2	Red	+ 24VDC Supply
3	Black	110VAC Supply Hot (L1)
4	White	110VAC Supply Neutral (L2)
5	Violet	PNP/NPN Selectable Output
6	Blue	0VDC (For 24VDC Supply)
7	Green	Ground
8	Brown	N.O. Relay Output
9	Orange	N.O. Relay Output
10	Light Blue	Set IR Trip Point

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Your Local Sales Representative:

We reserve the right to alter specifications without prior notice. Specifications without tolerances are typical values.



Bul. MD8200-010-01