

Rota-Sonde

DC2000



Sensitivity 400 °C

Remote control of the sensitivity

Design for harsh environment



Benefits of Rota-Sonde DC2000

- Easy alignment of the sensor.
- Assured detection regardless of the transverse position of the product.
- Precise detection thanks to the narrow lateral field.
- Reliable detection because of the small analysing beam.
- Photosensitive cell that best suits application in rolling mills, despite scale and steam.
- Very low maintenance, virtually nil in some cases.

Rota-Sonde DC2000 – Presentation

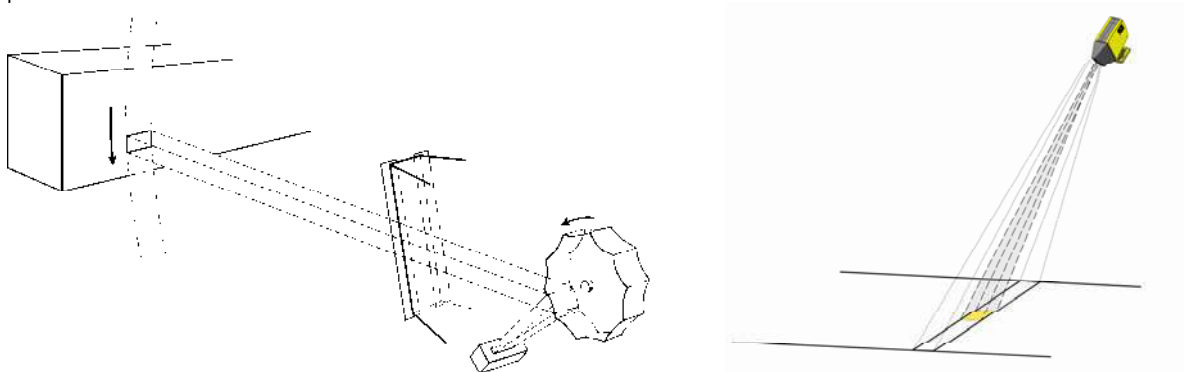
The **Rota-Sonde DC2000** is a scanning sensor, which is sensitive to the infrared radiation emitted by hot products. It is a self-contained detector including:

- An optoelectronic case with a protecting hood of the viewing port and a connector.
- A cooling plate with an adjustable mounting stand.

Because of its design and particularly its cast aluminium case, the **Rota-Sonde DC2000** is specially adapted for the harsh environment of the Steel Industry (vibrations, heat, vapour and dust).

Operating principle

The detection field is scanned by a rotating polygonal mirror which reflects the infrared radiation from the product to the photocell.



Because of the exclusive optical scanning principle, the **Rota-Sonde DC2000** offers the following advantages :

- Easy alignment and reliable detection, regardless of the transverse position of the product, thanks to the large vertical field angle.
- Accurate detection because of the narrow lateral field.
- Reliable detection due to the small analysing beam.

All these features give accurate and reliable detection, whatever the dimensions and the temperature of the product, or its distance and its position in the scanned field.

Photosensitive cell

The **Rota-Sonde DC2000** is fitted with a special photosensitive cell, the best compound for detection of metal, even at a temperature as low as 400 °C (750 °F).

Mechanics

The **Rota-Sonde DC2000** is enclosed in a sealed cast aluminium case.

A hood for protecting the window glass is fitted with an air-jet facility to blow a vertical air curtain in front of this glass. The protective hood can be hinged down to clean the window. The case is mounted on a cooling plate including a stainless steel pipe and fixed to a mounting stand, adjustable in two axes. The water and air purging connections are on the support plate. In this way it is possible to remove the sensor without first disconnecting the water and air supplies and without need of optical re-alignment.





Electronics

- Sensitive photocell with an optimal spectral sensitivity to detect product at low temperatures and in the presence of steam.
- Case mounting connector and mating connector fitted with high temperature cable.
- Plug-in circuit.
- Control panel behind a hinged cover and including:
 - A direct sighting through the detector itself for easy alignment.
 - One sensitivity potentiometer.
 - A TEST button to control a built-in lamp which simulates the presence of product in the field.
 - Product presence LED indicator.



Optics

Model	DC2010	DC2030	DC2050
Scanning angle	10°	30°	50°
Response time	1 ms	2 ms	4 ms
Horizontal angle	Adjustable max : 3°		
Spectral sensitivity	1 to 3 μm with maximum sensitivity at 2.2 μm		
Temperature range	> 400 °C (750 °F)		

The scanning angle is determined according to the field of detection required for the application.

- Optimum distance between the sensor and various products (depending on the temperature) :

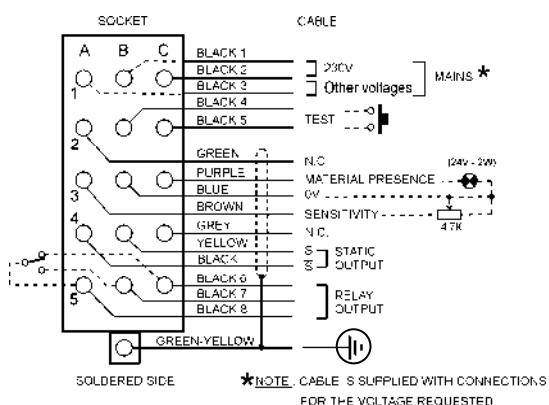
Wire 5 to 10 mm	0.05 to 2 m	Strip	0.60 to 2 m
Bars 10 to 40 mm	0.10 to 4 m	Wide strip	1.00 to 6 m
Billet and small beam	0.50 to 6 m	Heavy plate	1.00 to 8 m
Bloom	Over 2 m	Slab	Over 2 m

Electrical and other characteristics

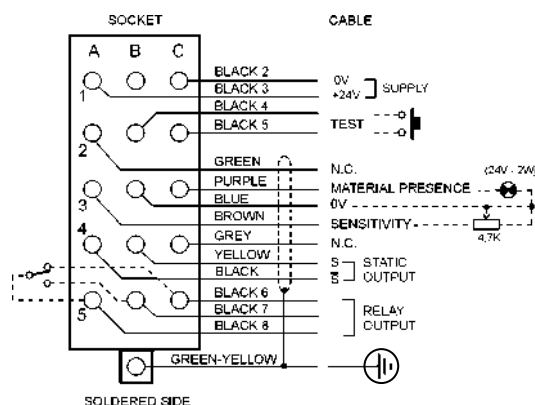


Operating voltage	220 V (-10%) to 240 V (+10%) - 50 / 60 Hz or 110 V (-10%) to 120 V (+10%) - 50 / 60 Hz or 24 V ($\pm 10\%$) - 50 / 60 Hz	24 V DC ($\pm 10\%$)
Power Consumption	30 VA	< 600 mA
Static output	Push-pull outputs, Low impedance : 0 / 24 V - 100 mA	
Relay output	Single pole changeover Switching capacity: 550 VA - 250 V - 5 A max Closing time: 7.5 ms ; Opening time : 3 ms	
Connection - Cable	Connector fitted with silicone cable with protective steel braid Standard length of 2 m (other length: 3, 5 or 8 m)	
Protecting rating	IP 66 (cast aluminium case)	
Operating ambient temperature	-20 °C to 60 °C (0 °F to 140 °F) without water-cooling. Over 60 °C (140 °F), the sensor must be cooled with industrial quality water at about 25 °C (77 °F), 1-2 bar and 1-2 l/min	
Weight	7 kg	

Connection



AC supply

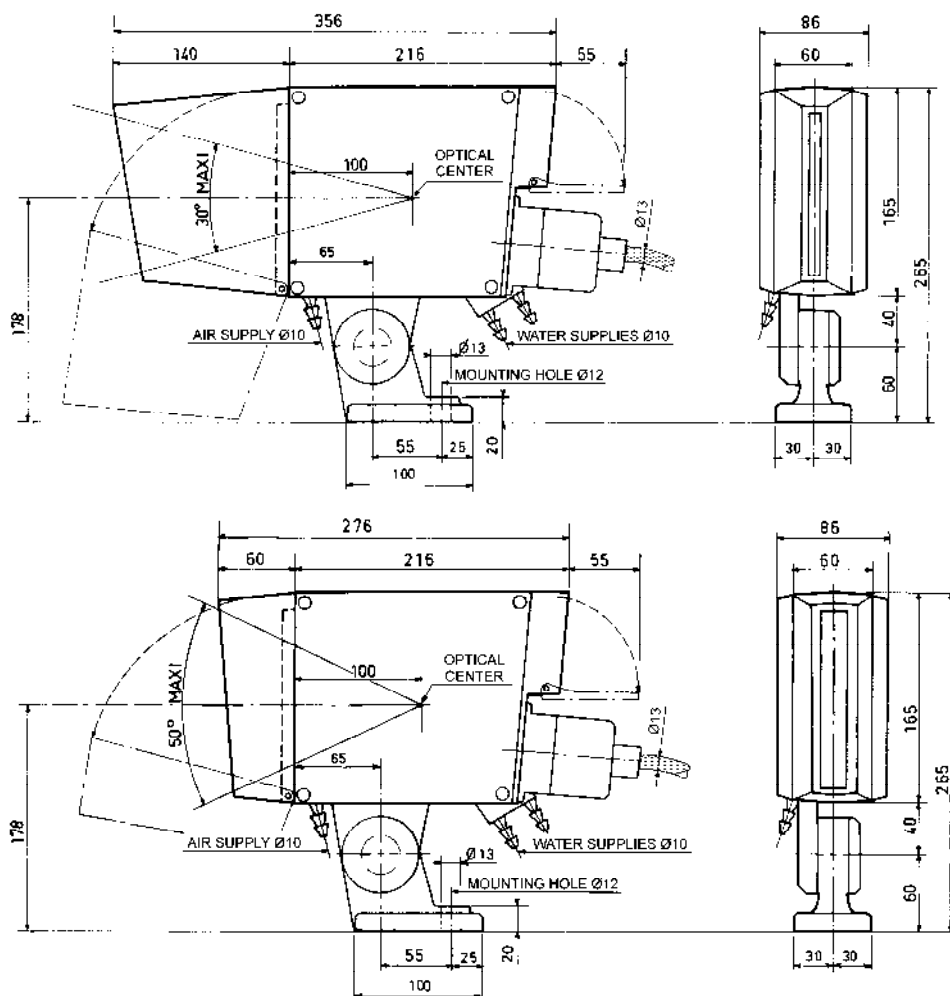


DC supply

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Dimensions



Reference for order

Rota-Sonde DC2 0 • 0

Scanning angle

- 1: 10° angle
- 3: 30° angle
- 5: 50° angle

Supply voltage

- 115 VAC
- 230 VAC
- 24 VAC
- 24 VDC

E.g. : DC2010 230 VAC

Accessories

- Shutters to reduce the scanning angle.
- Radiant bar BR3000 for simulation of hot product.

DELTA

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