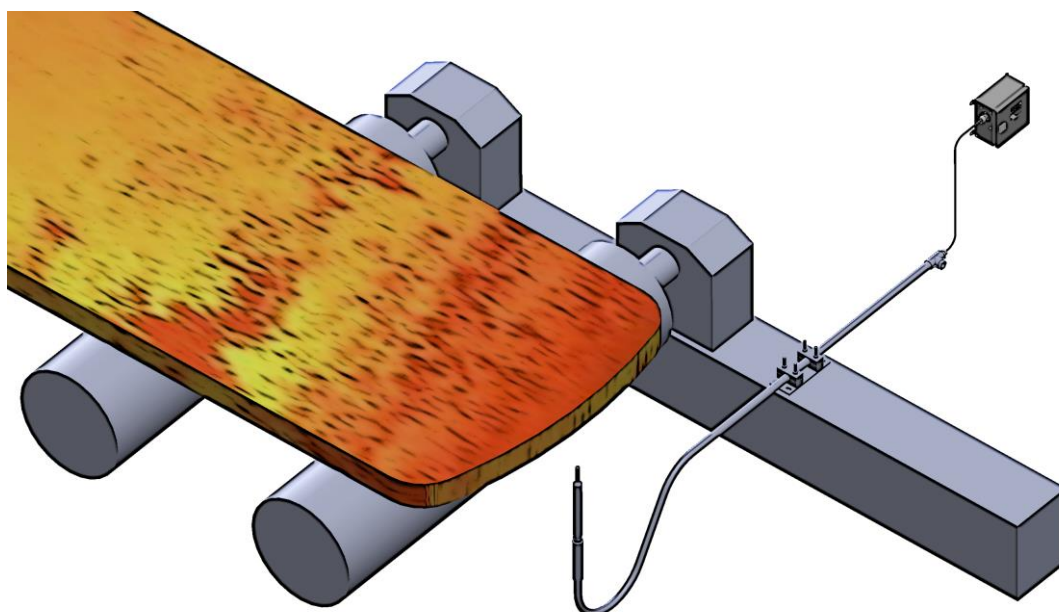


HOT METAL DETECTOR for installation below Roll Table



Iris

Z6500



Fiber Optic Hot Metal Detector

Mounts Below Roll Table

High Detection Accuracy

E 4185

**Presentation**

The **Iris Z6500** (InfraRed Intelligent Sensor) is a precision hot metal detector specifically designed to meet the most challenging requirements in hot rolling mills.

The **Iris Z6500** includes three major elements :

- a fiber optic system which detects infrared light emitted by the hot material,
- a stainless steel mechanical tube which positions and protects the optical system in the line,
- an electronic Sensor Control Unit which reacts to the presence or absence of light in the optical system.

Applications

The **Iris Z6500** Hot Metal Detector is mainly used for the most difficult detection applications with descale water, presence of heavy steam or mechanical obstruction, narrow space, such as :

- Billet, bloom, slab, strip, plate... Head & Tail accurate detection
- Detection before crop shear in hot strip and plate mills,
- Close to rougher & edger rolls for precise timing of automatic thickness & width control,



Below pass line in a hot strip mill



Between apron plate leaves in a hot plate mill

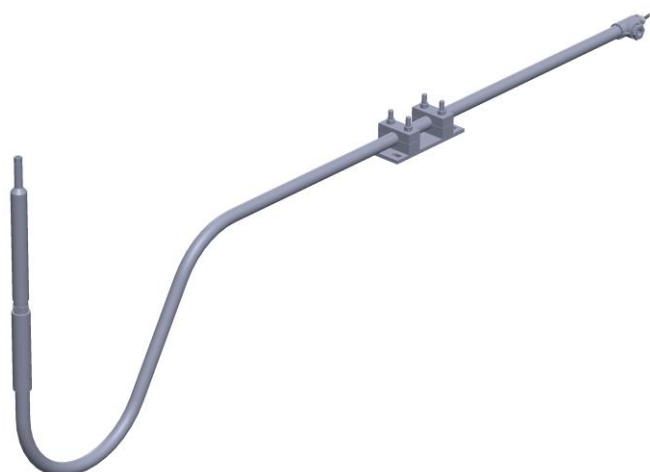
Construction

Iris Z6500 from DELTA comes complete with all the necessary hardware to mount and protect the unit in a rolling mill. All the basic mechanical components are made of stainless steel. The main mechanical component is a one inch (SCH40S) bent stainless steel pipe. It includes a set of extension pipes to adjust the position of the sensor head.

The pipe is held in place by a mounting block, which is typically attached to the roll table support structure. The mounting block is designed to allow both lateral and angular adjustment of the pipe, permitting accurate positioning of the nozzle just below pass line.

A 'T' fitting is attached to the other end of the pipe. Clean dry service air (or nitrogen) should be supplied to the 'T' fitting. Flow through the pipe and around the lens assembly is sufficient to keep the temperature of the lens assembly and the fibre optic bundle within specified limits. The exit velocity of the air prevents scale, water and the like from entering the lens housing and fouling the lens.

The optical front end of the **Iris Z6500** consists of a small diameter lens securely affixed to one end of the pipe, and covered with armoured stainless steel nozzle. The efficient design of these components allows this assembly to fit inside the pipe, enabling the sensor to be positioned in tight spaces beneath the roll line.



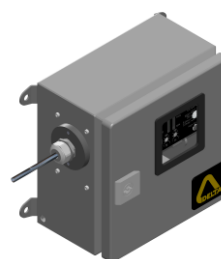


The lens focuses infrared light onto a fiber optic bundle which transmits the light energy to the electronic enclosure. The photo-detector is the latest in a new generation of infrared diodes, incorporating great sensitivity and speed of response. The photo-detector senses the presence or absence of light in the fiber optic bundle in just a few microseconds. The **Iris Z6500** is easily configured to suit the customer's unique applications

Iris Z6500 outputs are switched 'ON' or 'OFF' signalling the presence or absence of light, respectively. The turn-off time has a configurable delay, permitting the sensor to ignore cold spots, or patches of scale, etc...

In a typical installation, the lens housing is set about 200 mm (8") below pass line and aimed so that the optical axis intersects pass line at the centreline of the roll table.

The fibre optic bundle is attached to the lens assembly and passed through the support pipe and the 'T' to the electronic enclosure that may be located away from the optical front end.



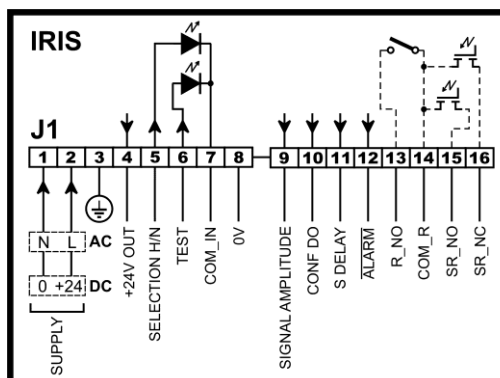
Technical Specifications

Model		Iris Z6530	Iris Z6540	Iris Z6550
Fiber length		9 m (30')	12 m (40')	15 m (50')
Min. Detectable Temperature (1)	Range N	500 °C (930 °F)	520 °C (970 °F)	540 °C (1000 °F)
	Range H	360 °C (680 °F)	380 °C (720 °F)	400 °C (750 °F)
Distance from nozzle to target		100-250 mm (4" to 10") – typically 200 mm (8")		
Spot Size at target distance		6.35 mm (0.25") typically		
Spectral response		1.0 to 1.7 µm		
Response time		< 50 µsec, on or off		
3 x Digital outputs 0/24V		Push-pull outputs, low impedance: 50 mA max. short circuit protection - CONF DO, configurable to: Product presence, De-bounce delay, Ctrl (low detection margin) - S DELAY: Product presence with de-bounce delay at turn off. Selectable from 0 msec to 1 sec - ALARM: Temperature, supply voltage		
Relay Detection output		Single pole Normally open ; Switching capacity: 550 VA, 250V, 5A max		
Static Relay Detection output		2 optocoupled complementary solid state relay ; Switching capacity: +/-100 mA peak, +/-350V peak, 50Ω		
2 x Digital Inputs 0/24V		Test Selection H/N: set the high sensitivity range		
Analog Output		Signal amplitude 0-15V (proportional to photocell signal)		
Electrical Power		115 V (-15%) to 230 V (+10%), 50/60 Hz, 10 VA 24 VDC (10 to 30 VDC), 10 W		
Air purging		About 5 l/sec @ 2 bar max (10 scfm @ 30 psi max) Instrument air (clean, dry, no oil) or purge nitrogen		
Operating temperature		Sensor Control Unit: -10 °C to 60 °C (14 °F to 140 °F)		

(1) Temperatures specified for steel with emissivity over 0.8



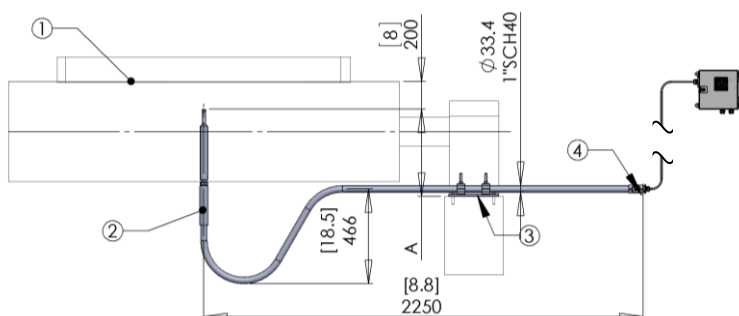
Connection



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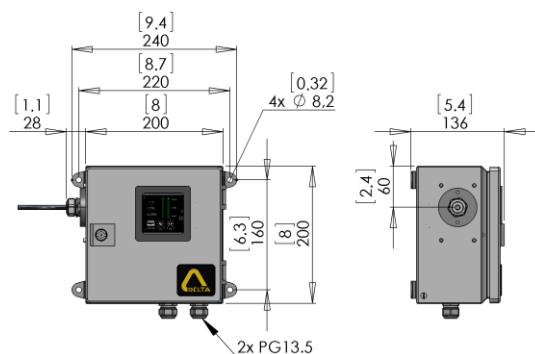
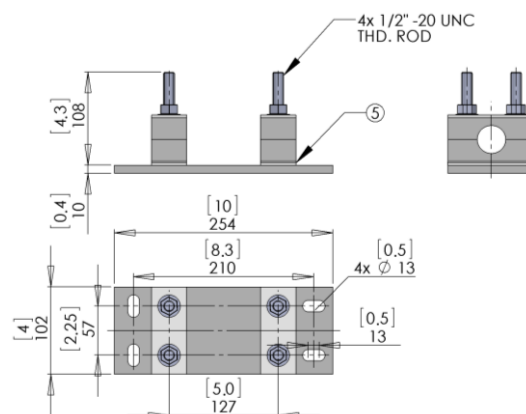


Dimensions



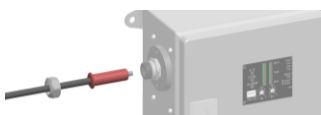
- ① Pass Line
- ② Extension Pipe
- ③ Pipe Mount Base
- ④ "T" Fitting Sub-Assembly
- ⑤ Pivoting Shims

Extension Pipe	A
43 mm [1.7"]	283 mm [11"]
100 mm [4"]	340 mm [13.4"]
200 mm [8"]	440 mm [17.3"]
300 mm [12"]	540 mm [21.3"]
300 mm [12"] + 100 mm [4"]	690 mm [27.2"]
300 mm [12"] + 200 mm [8"]	790 mm [31"]



Accessories

- Adapter kit to connect IRIS111-09 fiber
Ref: 7094575
- Battery powered portable radiant Bar
Ref: BR4000



Reference for order

Z65 • • • •

Fiber Optic Length
30 : 9 m (30')
40 : 12 m (40')
50 : 15 m (50')

Supply voltage
115 - 230 VAC
24 VDC

Example: **Z6530 115-230 VAC** for IRIS Z6500 HMD with 9 m (30') fiber, 115/230 VAC power supply.

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