



CHANDAN SENSOR CONTROLS

CHANDAN SENSOR CONTROLS are the Manufacturers & Suppliers of Hot Metal Detectors, Pyrometers & Automatic Cut to Length Control Panel for Hot Steel Rolling Mills.

HOT METAL DETECTOR

The Hot Metal Detector (HMD) which, for decades has been operating successfully worldwide in the steel industry. Hot Metal Detectors (HMDs) are used in many different applications throughout the metals rolling process, for target detection, tracking and length determination. They are also an essential component of cut-to-length systems.

- For Hot areas of the Steel Industry
- Various Application Possibilities
- Temperature response from 350°C to 1500°C
- Rugged Industrial Version

Application

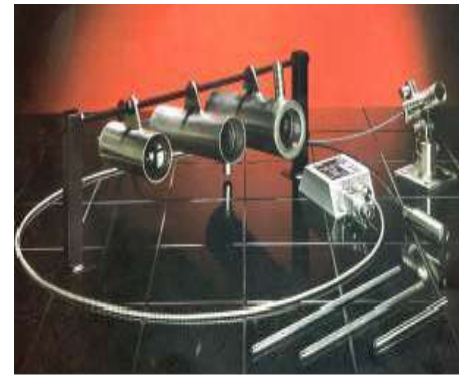
The hot metal detector is an infrared switch especially designed for fault free operation in the harsh environments of heavy industry. For more than 10 years HMD has been successfully installed to monitor hot products in

- **Rolling Mills**

To Control cut to length shearing, monitor hot rods, controlling roller tables, coil regulating, switching in crosscut hauler, monitor de-scaler, cooling beds, winder control, monitor edge washing, continuous casting or tracking of high speed wire.

- **General Industry**

Wherever Infrared radiation requires a reliable Signal.



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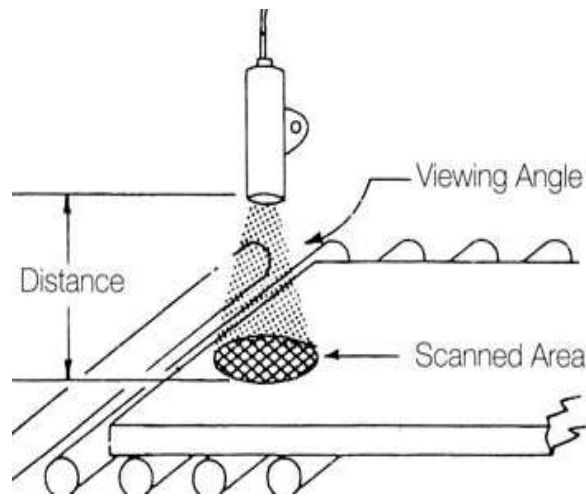
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Principle of Operation

The infrared radiation, received through the lens system, is transmitted to IR Detector. When the Radiation exceeds a trigger point, the electrical switching output is activated.

Design Feature

HMD are rugged infrared switches completely epoxy resin encapsulated in stainless steel housings.HMD's are designed to be impervious to the effects of steam,water,dust,shock,vibration and oily conditions associated with heavy industrial environments. They are temperature compensated for extreme ambient temperature conditions.



The sketch indicates a typical application in a slab mill. The viewing angle determines the scanned area.

THE CHANDAN HOT METAL DETECTOR WAS DEVELOPED TO PROVIDE USERS WITH A HIGHER ACCURACY, FASTER RESPONSE AND MORE RUGGED HMD THAT COULD OUTPERFORM ANY OTHER HMDs FROM AS FAR AWAY AS 5000 MM FROM A SLAB, PLATE OR STRIP. WITH NO MOVING PARTS, IT IS ALSO THE EASIEST BOTH TO APPLY AND TO MAINTAIN.

FOCUSSING PARAMETERS

OBJECT	TEMPERATURE	DISTANCE	OBJECT	TEMPERATURE	DISTANCE
Bloom	350°C	3 MTR	Wire Rod	350°C	1 MTR
Bloom	1500°C	10MTR	Plate	350°C	2 MTR
Slab	350°C	2 MTR	Rail	350°C	2 MTR
Billet	350°C	2 MTR			

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SENSORS ARE THE MOST ESSENTIAL TOOL FOR ANY STEEL PRODUCING INDUSTRIES, AS THEY GUIDE THE COMPUTER CONTROLS FOR VARIOUS APPLICATIONS, SO AS TO ELIMINATE FALSE SIGNAL FROM CLOGGING ...FOUL UP METALLURGICAL

GENERAL SPECIFICATIONS

SUPPLY VOLTAGE	24 VDC / max 2 amps
POWER INDICATION	GREEN LED
FUNCTION INDICATION	RED LED
OUTPUT Miniature Relay	Relay Potential Output (SPNO) 24 VDC Operate Time - Approx. 3 ms / max 10 ms Release Time - Approx. 2 ms / max 5 ms Note: Potential Free Contact Available on Order.
VIEWING ANGLE	7°
OPERATING TEMPERATURE	20°C to +60°C without air cooling
	-20°C to +70°C with air cooling (OPTIONAL)
	+2°C to +80°C with (20°C) water cooling (OPTIONAL)

TERMINAL CONNECTIONS

PIN NO	WIRE COLOUR	FUNCTION
1	RED	24VDC Supply
2	BLACK	Ground
3	GREEN	Relay Output 24 VDC

Specifications are subject to change without notice.

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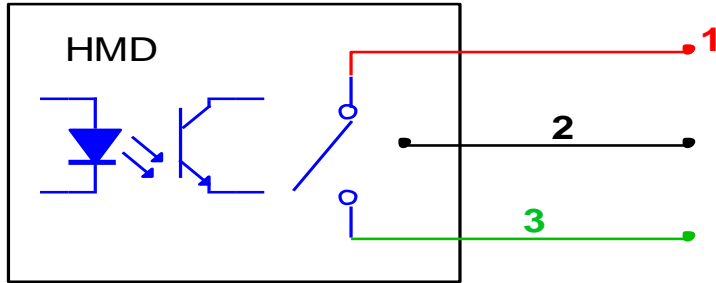
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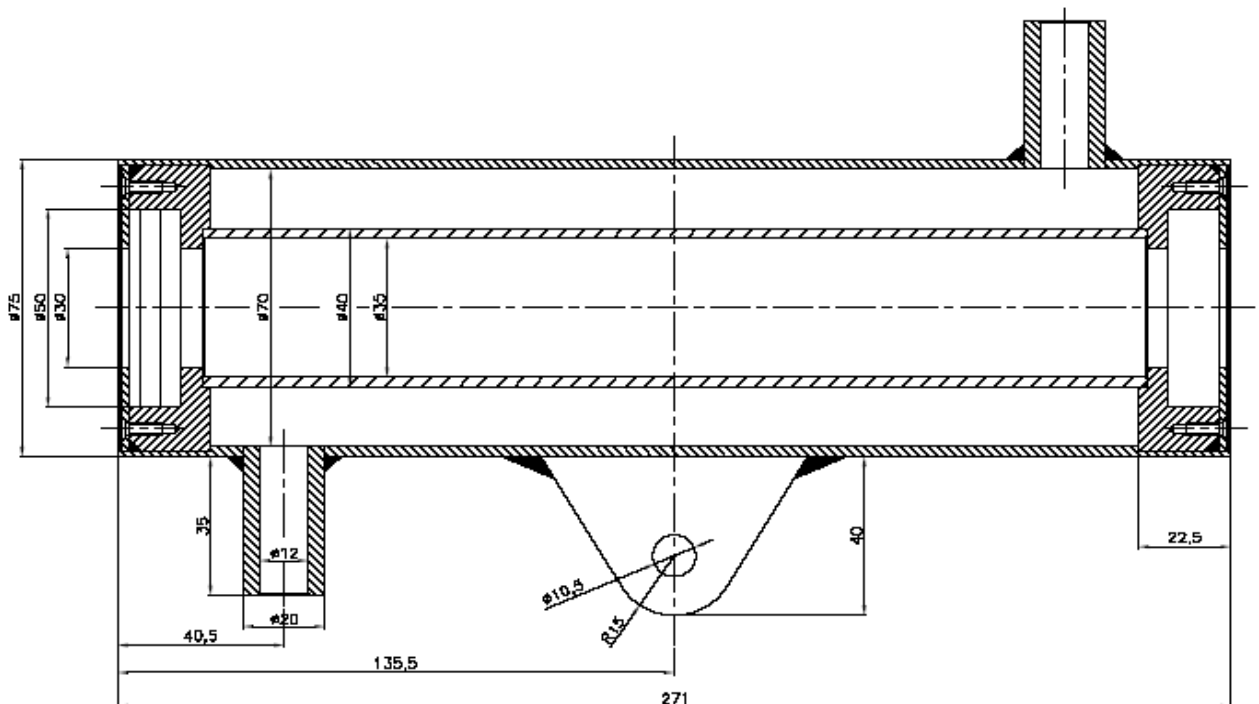
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Relay Potential Output Diagram.



WHY USE HMD?

Infrared Sensors recognize the natural radiation of warm objects over a great distance. They are applied when other proximity switches cannot operate properly because of high radiation or ambient temperatures.

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PYROMETERS

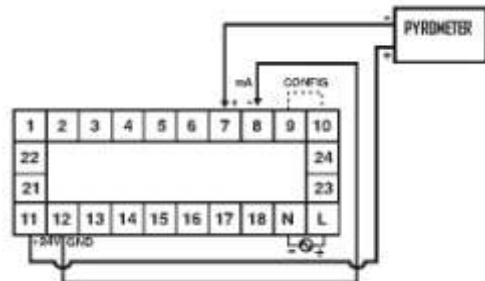
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Developed specifically for high-temperature applications in the steel and primary metal industries proven reliability in severe production environments. Improve Your Process with Better Measurement today's increasing quality standards and higher energy costs demand more precise temperature control in the steel making process.



Our non-contact infrared temperature solutions provide the steel industry with cutting-edge technology, ease-of-use and dependability when monitoring critical parameters for productivity and product quality. These Solutions are used throughout the steel manufacturing process, where accurate temperature monitoring is required for control.

- High accuracy due to digital signal processing
- 2-wire form
- Easy electrical and mechanical installation
- Small spot sizes
- Short response time
- Stainless steel housing
- Ambient temperature up to 70°C without cooling



WIRING CONNECTION

Wiring connection may change as development is continuous process. Please refer exact product manual before installation.

Why use Infrared Pyrometer to measure temperature in application? Infrared pyrometers allow users to measure temperature in applications where conventional sensors cannot be employed. Specifically, in cases dealing with moving objects (i.e., rollers, moving machinery, or a conveyer belt), or where non-contact measurements are required because of contamination or hazardous reasons (such as high voltage), where distances are too great, or where the temperatures to be measured are too high for thermocouples or other contact sensors.

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TECHNICAL DATA

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Spectral range:	8 ... 14 μm
Accuracy:	1% of measured value in $^{\circ}\text{C} + 1^{\circ}\text{C}$
Temperature range	200 $^{\circ}\text{C}$... 1300 $^{\circ}\text{C}$
Resolution:	0.1 $^{\circ}\text{C}$
Response time t90:	120 ms
Emissivity:	By Adjustable Knob (Optional)
Output:	4 ... 20 mA, linear; max. load 700 Ohm at 24 V
Power supply:	24 VDC ,30 mA
Power consumption:	Max. 0.6 W
Fixed connecting cable:	2 m length
Distance ratio:	40 : 1
Aperture:	15 mm
Protection class:	IP65
Ambient temperature:	0 ... 70 $^{\circ}\text{C}$
Storage temperature:	-20 ... +70 $^{\circ}\text{C}$
Weight: Approx.	3.0 Kg
Target Distance	1 Meter

Specifications are subject to change without notice as development is continuous process.

OPTICAL DATA

PROCESS INDICATOR Variable Knob value	SPOT SIZE
200	8mm
150	10mm
100	12mm
75	16mm
50	20mm
25	25mm

These can be set with the variable adjustable knob in the pyrometer offline before production. Example: for 8mm Rod production vary the knob till it shows exactly 200 $^{\circ}\text{C}$ in the process indicator@ distance 1 Meter without any material in its front view or presence of Hot metal.

The advantage of this pyrometer is that it can be fixed in place without any movement for different diameter target detection

giving out exact temperature of the metal with the help of Knob Settings as Above.

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DIGITAL AUTO CUT TO LENGTH SYSTEM, AUTO BYPASS, W CHANNEL SHIFT, COUNTER AND HMD FLUCTUATION CONTROL.

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We have pleasure to introduce ourselves as manufacturers and suppliers of ROTARY SHEAR AUTO CUT TO LENGTH control systems, while eliminating traditional manual cutting, it is an ultimate cost and scrap saver system. The HMD with the panel can be used for end piece By Pass on TMT mills, provided required distance for the HMD & Mill Setup.

THE H.M.D is capable of sensing/responding to any hot metal above 350°C and up to 1500°C, for a distance between 1 meter and above depending on light intensity illumination of the hot object.

I. The Sensor (H.M.D) has its wide and versatile application in all steel Industries for:

- A) Automatic sensing of hot metal, for subsequent versatile applications in T.M.T plants.
- B) For operating Rotary Shear Etc.

This system, actuates the rotary shear in steel plant .it provides a healthy substitute of manual cutting exist in a plant, by operating the rotary shear.

II. AUTO CUTTING SYSTEM is guaranteed to achieve:

EQUAL CUT LENGTH of ± 4 INCH APPROX. The system (timer) can be set up to the second decimal, means 0.01 or 1,00TH of the speed of hot metal which can achieve lowest scrap ever produced .Provided the mill motors, rollers & rotary shear pusher/Puller are in perfect condition. This is applicable for any Mill Speed and any desired length.

III. W CHANNEL SHIFT

"W" channel changing to opposite side, on every new entry of material on "W" channel this ensures smooth functioning of cutting and clearing "W" Channel. For faster Production.

IV. DIGITAL COUNTER (OPTIONAL)

Counting of hot metal production i.e. Billets, No. of Cuts Pieces & random.

V. AUTO BYPASS of LAST LAP For T.M.T. Plant Auto by-pass of last lap (random) through the T.M.T. Box. While T.M.T. Auto by-pass saves Break-Down Time of the Plant.

Ultimately Our Auto Cut System is a guaranteed COST AND SCRAPSAVER upto 5% for any Mill.

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DIGITAL AUTO CUT SYSTEM WITH COUNTER



HOT METAL DETECTOR

Advantage of Chandan Auto Cut to length System over PLC or Microcontroller based System.

- 1) Instant individual changes can be made for the particular length without any downtime (break down), hence changes can be made over running mill without any interruption. Without interrupting other length settings.
- 2) Individual Length can be set for each cutting depending on number of timers lengths there after Loop Back cutting according to last cutting length for additional or extra length cut which is exceptional for last Cutting.(Additional Timers can be configured on Demand as per requirement).
- 3) Saves Time over programming concept. Hence saving power and other resources giving Maximum Production. Inbuilt HMD Fluctuation control, for smooth operation of mill.
- 4) USER friendly Display with Preset switches for each length (Timer) No Programming Skill Required.
- 5) Counting of Billets, Cut Pieces & Random.
- 6) Finally AUTO-BYPASS of Last piece through TMT Quenching BOX without any Breakdown.
- 7) Single Hot Metal Detector for all-in one control.
- 8) Our Control Panel is highly recommended for Rotary Shear Cutting.
- 9) Hot Metal Detector can be used for Both High Speed Rolling Mills (Flying Shear).
- 10) W Channel Shift recommended for faster production in rolling mills. Automatically changes the channel where it left the last piece. Inbuilt Logic no Proxy required.

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Clientele & Reference

M/s. INDUS SMELTERS LIMITED, RAIPUR (July 2010)

HMD & Auto Cut to Length System (W channel Shift) with Counter.

Mr.LALIT KUMAR SINGHANIA (Director) – 9425208189

M/s. KESAR ALLOYS & METALS PVT LTD, INDORE (February 2010)

HMD & Auto Cut to Length System (W channel Shift) with Counter.

Mr.Ashok Jain (Director) – 9425082852

M/s. HARIOM INGOTS & POWER PVT LTD, RAIPUR (March 2010)

HMD & Auto Cut to Length System (W channel Shift) with Counter.

Mr.Sandeep Agrawal (Director) – 9893690221

M/s. KAMACHI STEELS LTD, GUMMIDIPOONDI, CHENNAI (SEPTEMBER 2010)

HMD & Auto Cut to Length System (W channel Shift) with Counter.

Mr. Vijay Kothari (Director) – 9841288331

M/s. G B R METALS PVT LTD, PONNERI, CHENNAI

HMD.

Mr.Venkatesh Rathi (Director) – 9884072709

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Clientele

M/s. D.D.S.STEEL PVT LTD, TAMIL NADU (AUTO CUT TO LENGTH & HMD)
M/s. MAITHAN STEEL & POWER LTD, WEST BENGAL (HMD)
M/s. TULSYAN NEC LTD, AMBATTUR, CHENNAI (AUTO CUT TO LENGTH & HMD)
M/s. SAMLO KOYENCO STEEL, PORT LOUIS, MAURITIUS (AUTO CUT TO LENGTH & HMD)
M/s. SUJANA METAL PRODUCTS LTD, TAMIL NADU (HMD)
M/s. S.K.SARAWAGI & CO. (P) LTD. RAIPUR (C.G) (HMD)
M/s. BHUWALKA STEEL INDUSTRIES LTD, BANGALORE (HMD)
M/s. NAVA KARNATAKA STEELS PVT LTD, BELLARY (HMD)
M/S. RA TMT INDIA PVT LTD, BANGALORE (AUTO CUT TO LENGTH & HMD)
M/s. POWER FORMERS ENGINEERS (P) LTD, PUNE (HMD)
M/s. CHOUDHRY ROLLS CORPORATION, PUNJAB (HMD)
M/s. BR POWERCONTROL & AUTOMATION SERVICES, FARIDABAD (HMD)
M/s. THORSON INDUSTRIES, AHMEDABAD (HMD)
M/s. RISHABH INDUCTO TECH, DELHI (HMD)
M/s. TECHNOPLUS ENGINEERING SERVICES, GHAZIABAD (HMD)
M/s. TECHNO ELECTRICAL TRADING ENGINEERS, PUNE (HMD)
M/s. THORSON INDUSTRIES, AHMEDABAD (HMD)
M/s. AML STEEL LTD, PUDUCHERRY (AUTO CUT TO LENGTH & HMD)
M/s. JISHU AUTOMATION & INSTRUMENTS, CHENNAI (HMD)
M/s. SUNDER ISPAT LTD, HYDERABAD (AUTO CUT TO LENGTH & HMD)
M/s. IPI STEEL LTD, CUTTACK (AUTO CUT TO LENGTH & HMD)
M/s. PUSHBIT STEELS PVT LTD, PONDICHERRY (AUTO CUT TO LENGTH & HMD)
M/s. MAHRISHI ALLOYS PVT LTD, BANGALORE (HMD)
M/s. MITTAL CHAMBERS, VISAKHAPATANAM (HMD)
M/s. JAIHIND WIRE ROD MILLS LTD, SALEM (HMD)
M/s. VIJAYA STEEL LTD, BANGALORE (HMD)
M/s. BHAGWANDAS METALS LTD, CHENNAI (HMD)
M/s. KANISHK STEEL INDUSTRIES LTD, GUMMIDIPOONDI (HMD)
M/s. SRI.RAMA MACHINERY CORPORATION LTD, MADRAS (HMD)

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M/s. UTILITY ALLOYS PVT LTD, COIMBATORE (HMD)

M/s. MITTAL ISPAT (P) LTD, PONDICHERRY (HMD)

M/s. SAM STEEL, BANGALORE (HMD)

M/s. BHORUKA STEEL LTD, BANGALORE (HMD)

M/s. SUBBA RAO EXPORT, BANGALORE (HMD)

M/s. CHAMUNDI ROLLING MILL (P) LTD, BANGALORE (HMD)

M/s. OP STEELS PVT.LTD, GUMMIDIPOONDI (HMD)

M/s. TRIVENI ALLOYS LIMITED, GUMMIDIPOONDI (HMD)

M/s. PONDY METALS & ROLLING MILLS (P) LTD, PONDICHERRY (HMD)

Formerly Known as SAGAR HOT METAL DETECTOR & PHOTOMASTER AUTO CONTROL PANEL SERVICE

OUR INTERNET WEB BLOGS with Customer ONSITE PHOTOGRAPHS and VIDEOS

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YOUTUBE VIDEO LINKS

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http://www.youtube.com/watch?v=-94C0gRAtEA&feature=player_embedded

Please click or paste the above URL link in Internet Explorer or Any Web Application to watch the Video

COMING SOON

TMT TAIL BREAKER CONTROL

AND

BURST (PHATAMAL) METAL DETECTOR

THANK YOU

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