

Sensors for steel works



For extreme conditions

Material tracking in steel and rolling mills
tube manufacturing

Piros Infrared Sensors

Infrared sensors (Hot Metal Detectors) are used for the detection of hot objects. To do this, the sensors use the infrared radiation emitted by hot materials which is received by an optical system in the sensor. If this radiation exceeds a threshold set in the device (response temperature), the device switches.

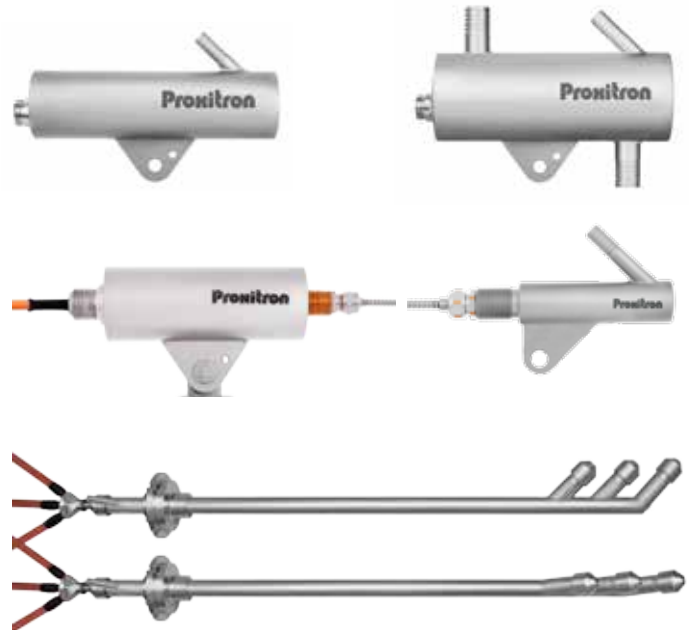
Versions

- different fields of view
- with fiber optic cable and separate optic

Unique characteristics

- extremely quick response time (0,3 ms/1500 Hz)
- adjustable response temperature
- for ambient temperatures up to 600 °C
- different operating voltages and outputs
- various housings and connection variants
- stainless steel housing
- complete range of accessories
- replacement of existing AEG protection tube systems with three separate optic systems, two separate optic systems or one optic system for IR radiation detection

This happens extremely fast and allows the safe monitoring of rapid processes. Response times of up to half a millisecond can be realised. The principle of the infrared sensor allows the detection of hot objects even at a great distance. Infrared sensors are used wherever inductive sensors cannot be mounted due to the high temperature.



Pyrometer

Pyrometers enable a non-contact temperature measurement on objects through detection of infrared radiation. The intensity of the infrared radiation depends on the temperature of an object. The infrared radiation is received by an optical system and further processed by an appropriate sensor element.

The incoming infrared radiation is converted into an electrical signal whose size changes in relation to the radiation intensity. In this way, this electrical signal is directly proportional to the temperature of the object and can be used as a measurement value. An integrated microprocessor processes the measured value and provide a linearised industrial analog output signal.

Versions

- with fiber optic cable
- with cooling jacket
- different housings

Unique characteristics

- for temperatures up to 2500 °C
- measurement through flames possible
- for metal, non-metal, glass
- robust and maintenance free
- resistant to shock and vibration
- various optics available



Sensors for steel works

Piros Light Barriers

Thru-Beam Sensors are the classics when it comes to sensors for object detection. All versions of Light Barriers achieve a very high range, even in a dusty and dirty environment. The functionality of the Thru-Beam Sensor is easily explained: the transmitter sends out a signal which is caught by the receiver. This sensor principle is applied to both, Thru-Beam Sensors, where a lightway is built up directly between transmitter and receiver and Retroreflective Sensors, where the light of the transmitter

travels via a reflector to a receiver.

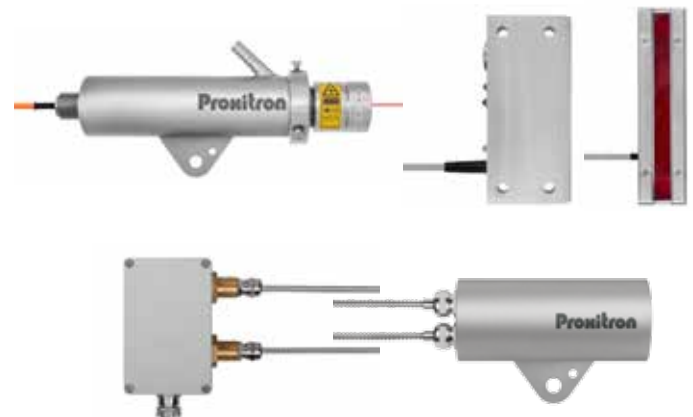
A modified kind of this principle is the Diffuse Sensor. The light from the transmitter is reflected back directly from the surface of the object to the receiver. Proxitron Thru-Beam Sensors are perfectly suited for detection of hot and cold objects. The receiver reacts only to the modulated light signals of the transmitter. The sensors are resistant to the infrared radiation of other heat sources and can be used for object detection in ovens as well.

Versions

- Thru-Beam Sensor
- Retro-Reflective Sensor
- Diffuse Sensor
- Laser Light Barrier
- Light Grid
- With fiber optic cable and separate optic

Unique characteristics

- max. range 2500 m
- for ambient temperatures up to 600 °C
- fast response time (1ms/1000 Hz)
- contamination control
- high functional reliability
- easy LED signalization
- complete range of accessories



Inductive Proximity Switches

These sensors have been designed for ambitious applications in steel mill areas. The high switching distance allow the metal detection where other sensors are overstrained. They have been developed especially for rough areas. High ambient temperatures or a chemical surrounding are no problem for this sensors. The Teach-In function is available for most of the sensors. The predamping by metals in the active area

of the sensor must be considered constructive and needs to be compensated with an adjuster. Proxi-Teach versions read their environment and adjust the operating distance automatically by one touch. The key benefit of the proximity switch is that it is not sensitive to water and pollution.

Versions

- various housing shapes
- with any cable lengths

Unique characteristics

- for ambient temperatures up to 230 °C
- for sensing distances up to 250 mm
- resistant to wet surroundings and fast change of temperature
- suitable for aggressive surroundings (chemical)
- suitable for applications in hot and cold rolling mills



All our sensors for steel works stand for longevity and high quality. We have always produced all sensors in Germany and we look twice where we obtain our parts from. Our robust devices withstand extreme conditions of their environment worldwide. This is the result of good cooperation between plant engineers and operators.

Fields of applications

- Wire processing
- Hot and cold rolling
- Tube manufacturing
- Foundries
- Steel industry
- Forging
- Pressing
- Pipe production
- Sheet metal working
- Shipbuilding
- Steel profile production

Your advantages of our sensors:

- **Sensors for extreme conditions:** Heat and cold, aggressive liquids and emulsions, humidity and steam, mechanical stress, vibration and shock
- **Flexibility in the matter of cables:** We deliver your sensor with the optimum cable for your application. Optimum, of course, in lengths too.
- **Teach-In function:** The Teach-In function makes installation of the sensor really easy. At the touch of a button, the sensor detects its environment and automatically calibrates itself to the optimum parameters.
- **Customizing:** If required, we are happy to customize a sensor to meet your needs.
- **Available throughout the world:** Proxitron partners are available in many countries around the world to provide reliable and competent advice.
- **Accessories:** Appropriate accessories support you in a wide range of tasks.
- **Individual development:** You can't find a suitable sensor? Ask our experienced application engineers. We look forward to present you a suitable solution for your application.

Proxitron sensors – Your benefits, your advantages



Optical sensors



Inductive sensors



Inductive analogue sensors



Flow sensors



Accessories



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