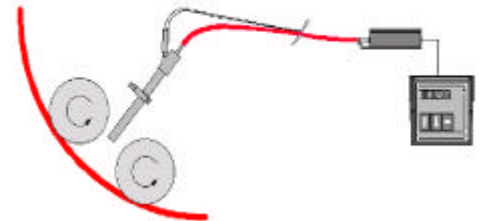
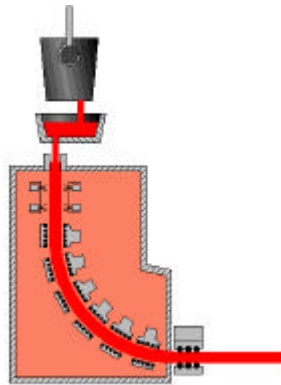


Continuous Caster Spray Chamber Temperature Measurement



Spray chamber thermometer viewing between rolls

Temperature Measurement of the steel strand at various points within the continuous caster spray chamber is desirable to enable cooling rates in the chamber to be optimised, directly influencing both product quality and process efficiency. Accurate monitoring of temperatures is invaluable in determining yield, pull rate and the final metallurgical properties of the metal. Comparative temperatures in the spray chamber can also indicate crust thickness and the solidity of the core.

The Problem

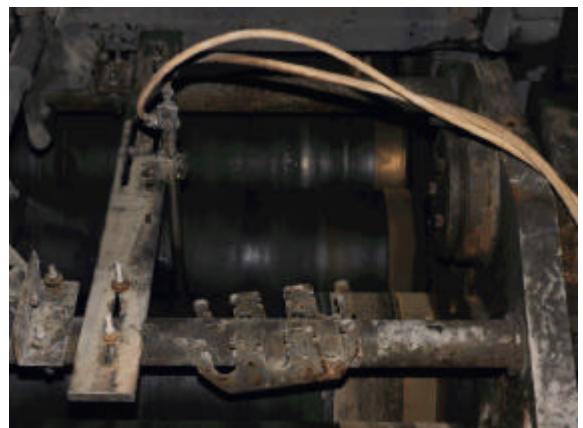
The environment inside the spray chamber is extremely hostile. In addition to the high temperatures that a thermometer will be exposed to, there are also other problems such as high pressure water sprays and steam. The surface to be measured may be partially obscured due to water droplets and steam in the field of view.

The Solution

The use of a Fibroptic thermometer system allows the sensitive electronics to be sited remotely. A waterproof outer tube protects the Fibroptic light guide against water ingress. A high-pressure purge system keeps the lens clean and provides a relatively clean sight path to the measurement position. The thermometer is positioned in the spray chamber to view the strand between rolls. An additional processor provides the necessary signal processing functions to filter out the errors introduced by water, steam etc.



ZT6279 Spray Chamber Thermometer



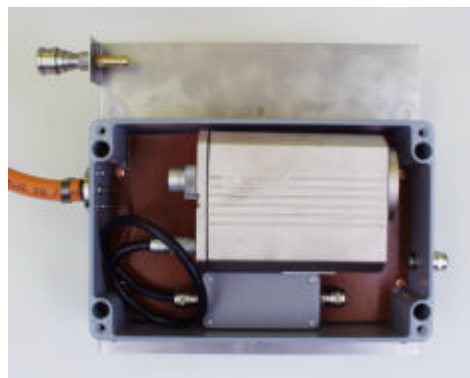
Typical installation

Recommended Instrumentation

A short wavelength thermometer is required so that errors are minimised. The thermometer must be accurate, free from drift and suitably protected against the harsh conditions encountered during operation.



Specialised Lens assembly



Remote Electronics housing

Application dedicated systems

Land Instruments International are the leaders in the field of specialist temperature solutions for the steel industry with over 55 years of experience. Suitable systems can be offered that are both affordable and available on short delivery times. ZT6279 is a special system designed specifically for this application. This design has been installed in many casters around the world and provides reliable maintenance free measurements for process optimisation.

Key features are:

- Easy installation with non-critical positioning
- Simple, quick, no-tools probe removal
- No electronics whatsoever inside the chamber
- Minimal services – one non-critical air supply for purging. No water cooling

ZT6279 Specification

Temperature range	600 to 1600 °C
Length of light guide	10m
Ordering code	M1 6/16C L10 ZT6279
Target size	7mm dia at 400mm

Installation

Correct installation of the thermometers is critical to ensure correct operation and long-term reliability. Land Instruments International is happy to advise the installers of the necessary requirements. Basic system requirements include a stable power supply and clean air to the air purge mountings to maintain a clean lens.

Land

Infrared Temperature Measurement

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