

CasTemp®

Continuous temperature
measurement in liquid steel

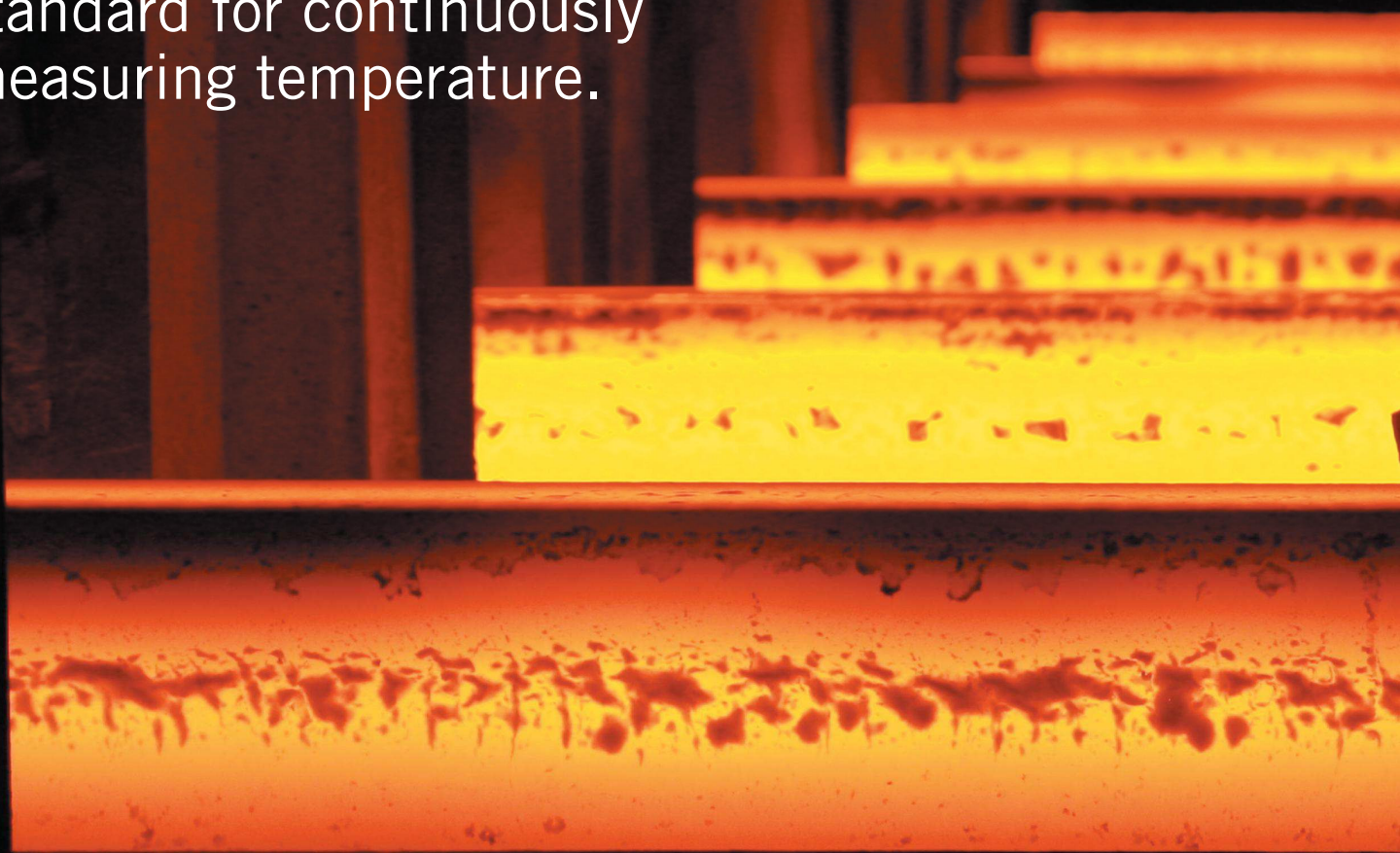
The CasTemp® system is used to safely, reliably, and continuously measure the temperature of liquid steel in the tundish in a continuous casting plant.

The system has been designed to withstand the environment within a steel plant and is the global standard for continuously measuring temperature.

The CasTemp® system gives an accurate temperature measurement throughout the casting sequence and is positioned close to the steel outlet. CasTemp® is a 'fit and forget' system that does not need any handling.

The CasTemp® probe is inserted through the sidewall of the tundish using a system designed to remove the risk of steel leaking. The probe can be used in all types of tundish.

The CasTemp® probe contains a type-B thermocouple housed in a robust refractory sheath, which can withstand thermal shock and gives a fast temperature response.

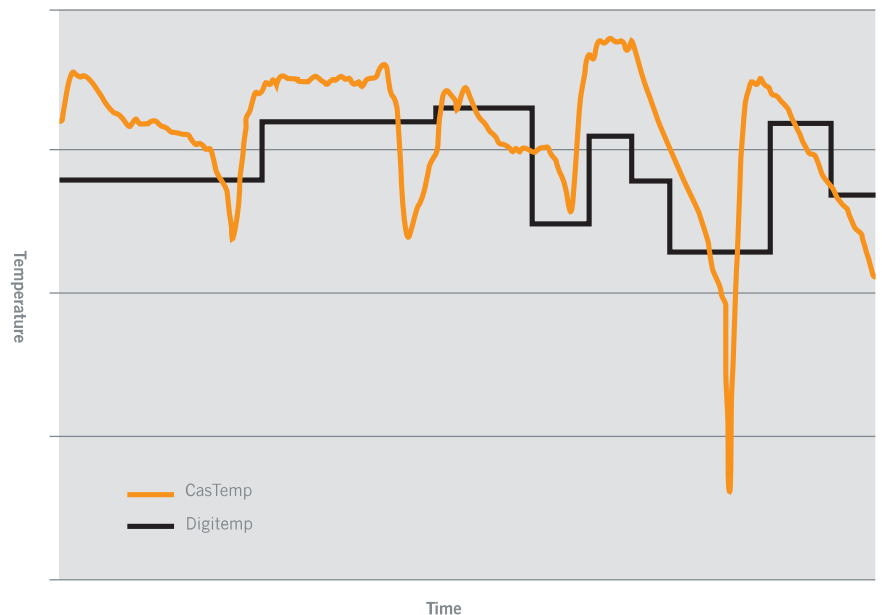


Benefits

- Improved safety by removing the possibility of the operator being exposed to liquid steel
- Continuous temperature readings throughout the whole casting sequence including preheat
- A fast response because the probe is fully submerged in liquid steel
- Improved output by optimising the speed of casting
- Reduced temperature-related breakouts and freezeoffs
- Avoids contact with corrosive slag
- Accurate measurements during ladle changes



The graph shows the difference between spot measurements and continuous measurements given by the CasTemp® probe.



The system

The following shows the essential parts of the CasTemp[®] measurement system.

Well block ▶

Securely holds the probe in the lining of the tundish



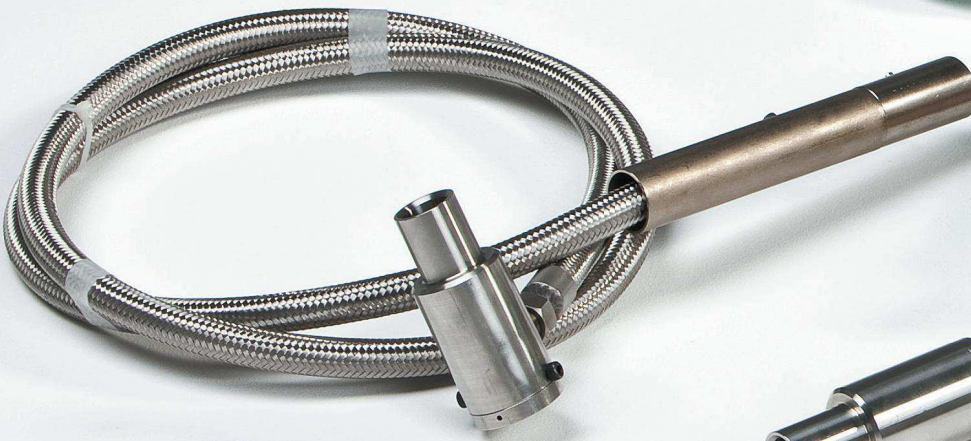
◀ Embedding tool

Correctly lines the well block up in the tundish



Hot-zone cable ▲

Connects the probe to the instrument



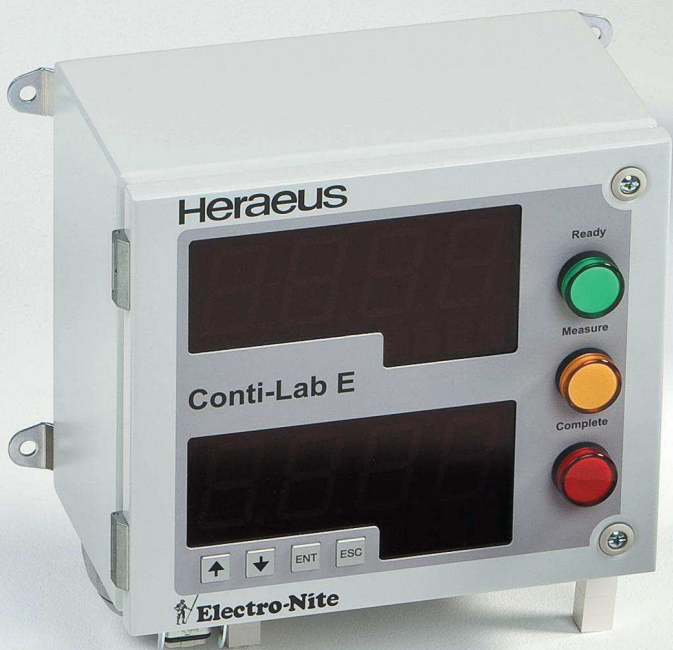
▲ Continuity checker

Verifies that the probe is working



✓ Conti-Lab E instrument

Processes and displays the measurements



▲ Mortar

Secures the probe in the block

◀ Retaining system

Locks the tundish equipment in place



▲ CasTemp® probe

Measurement sensor

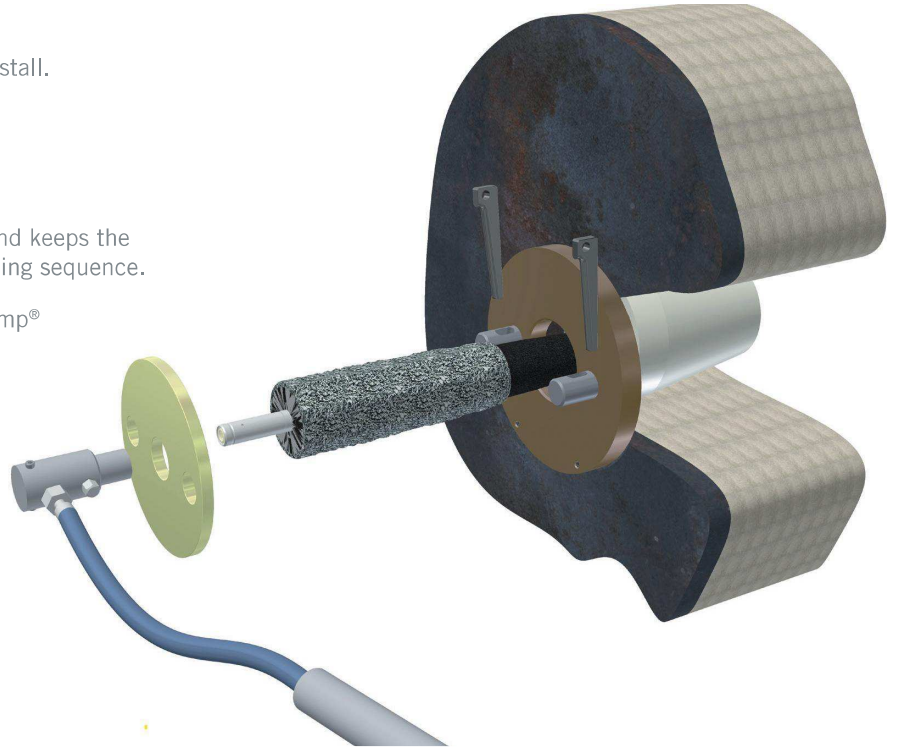
Preparing the system

The CasTemp® system is quick and easy to install. The main steps are:

- welding the retaining plate; and
- fitting the well block.

The CasTemp® retaining system is reusable and keeps the CasTemp® safely in place throughout the casting sequence.

For more detailed information, see the CasTemp® Instruction and Operating Manual.



Using the probe

The main steps of using the CasTemp® probe are:

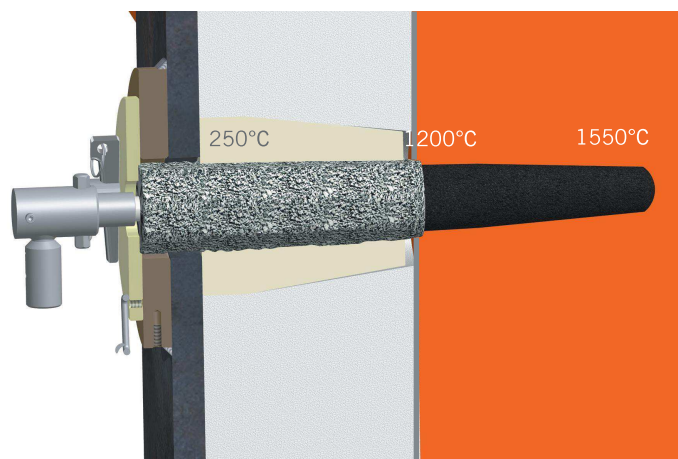
- inserting the probe;
- securing the retaining plate; and
- connecting the hot-zone cable.

Measuring

CasTemp® continuously measures the casting temperature throughout a casting sequence enabling closed-loop caster control. The system is not affected by the level of liquid steel or slag, or the machine being used.

The Conti-Lab E is a robust instrument that can be placed close to the measurement point. The large display makes sure that it can be read at a distance of up to 30 metres.

Conti-Lab E links to the plant computer and has a number of communications options, which are programmable.



Connection system

There are three different types of connection systems, designed to connect the CasTemp® probe to the Conti-Lab E instrument.

- Hot-zone cable using platinum wire in a braided steel hose designed for the harshest conditions
- Hot-zone compensation cable in a fireproof rubber hose designed for most applications
- Cold-zone compensation cable designed to offer fast and economical repair





Heraeus Electro-Nite International N.V.
Centrum Zuid 1105
3530 Houthalen, Belgium
Tel: +32 11 / 60 02 11
Fax: +32 11 / 60 04 00
Email: info.electro-nite.be@heraeus.com
www.heraeus-electro-nite.com