



Foundry Thermocouples

Foundry Temperature
Measuring Solutions

Foundry Thermocouples

Temperature Measurements in ferrous and non-ferrous melts



INTRODUCTION

The knowledge of liquid metal temperature is essential for the production and quality control of steel, cast iron and non-ferrous alloys. The molten metal temperature must be within strict limits to achieve the optimum quality before the heat or melt can be tapped or cast.

The disposable thermocouple is pushed upon the probe holder of a suitable immersion lance until electrical contact is achieved with a built-in contact block. An inner and outer extension cable related to the thermocouple type connects the immersion lance to the measuring instrument.

THERMOCOUPLES

Immersion thermo-electric sensors remain the best way to determine the real temperature of a molten metal. They are available in various types to meet the specific requirements of different application.

Single immersion

POSITHERM®

Standard thermocouple with metal cap inserted on a card-board tube that protects the immersion lance from melting.



Single immersion

NSTC Non-Splash Thermocouple

Our standard Positherm thermocouple with a metal cap, in a card-board tube, with an additional refractory sleeve that protects the immersion lance from melting or excessive radiant temperature exposure.

Multiple immersion

IF

The POSITHERM® style with long quartz for use in shallow, slag free melts a Positherm® design with an extra long quartz U-bend can be used.



Multiple immersion

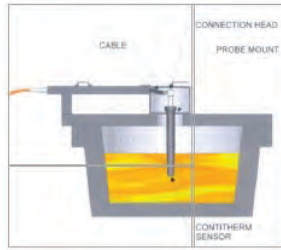
XT

For deeper multiple dips into slag-free melts, XT (Extra-Therm)

Continuous Temp

CONTITHERM®

The unit is hanging in the melt through a single cast sequence or through a multiple of shorter sequences.



Contilance®

With this system the sensor is immersed from the top and is designed to be removed by hand and reused on subsequent casts.

This system uses our wireless technology used in our industrial proven CasTemp wireless systems using the CTW QUBE

Measurement Systems

There are two distinct systems based on handheld or wall mounted instruments. Both systems have the option-al capability to wireless transmit measurement results and log them with the MeltControl Data Management System. The advantage of handheld systems is that they stand alone. Continuous temperature measurements come only with wall devices and special hardware.



Digilance V with immersion lance mounted directly onto the handheld instrument, a light construction

CASTEMP®

The probe is inserted through the sidewall of the Tundish or ladle, measuring temperature throughout the casting sequence.



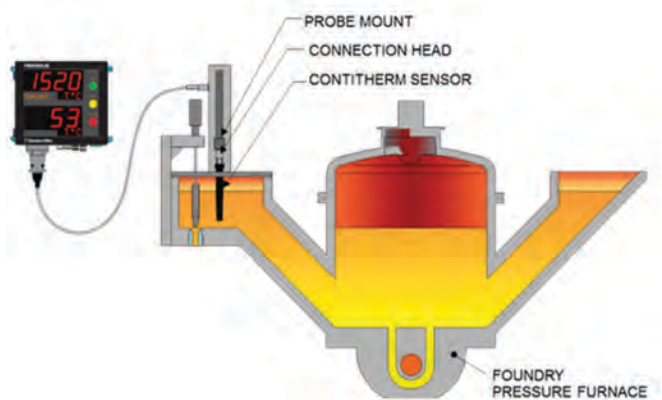
Wall-mounted systems

DIGITEMP® E

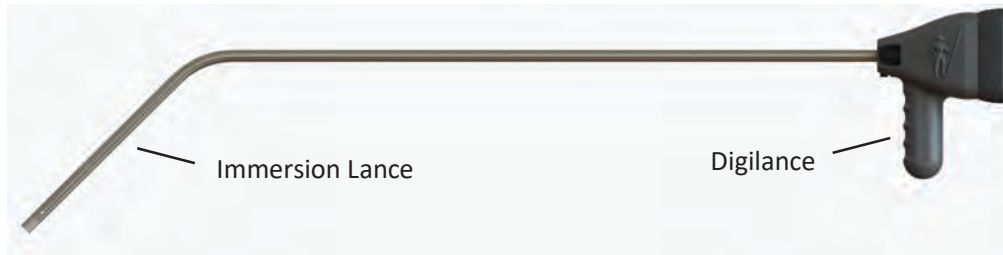


DigiTemp®-E with hand lance connected to the instrument by means of an external compensation cable or wireless without cable (QUBE®), a heavier construction

CONTILAB E



Contilab E for continuous measurements with a hot-zone cable connected to the temperature sensor.



^ Typical assembly

Technical Data

Digilance V

Measurement Application	Single or Multi-dip temperature measurement	
Measurement Range	Type S (Pt 10%Rh / Pt)	400 to 1760°C (752 to 3200°F)
	Type R (Pt 13%Rh / Pt)	400 to 1760°C (752 to 3200°F)
According to IEC 60584	Type B (Pt 30%Rh / Pt 6%Rh)	400 to 1820°C (752 to 3308°F)
	Type K (Ni-Cr / Ni)	400 to 1370°C (752 to 2498°F)
Thermocouple Tables	IPTS 48 / IPTS 68 / ITS 90	
Thermocouple Accuracy	Better than +/- 1°C between 0°C and 50°C ambient temperature	
Result Display	Resolution: configurable 1° or 0.1 ° Units: °C or °F	
Data Storage	Up to 500 measurements	
Operating Ambient Temperature Range	-20°C (-4°F) to 60°C (140°F), max. 90% RH non-condensing	
Size and Weight	140 x 170 x 230 mm (without lance installed) - 1.9kg (4.2lbs)	
Power Supply	Lithium Ion Battery Pack (3.5Ah – 7.2V) Charge Power: 12V DC, 2A max Battery Life: 40 operating hours (nominal)	
Wireless Communication (optional)	Range of 100 meters - line of sight Frequency hopping 2.4 GHz ISM unlicensed band technology Max 10 mW transmit power	
Receiver Box for Wireless Data Transfer (optional)	Dimensions (mm): length = 108, width = 75, height = 32 Weight: 187 g Power: 12V DC, 1.5A, center pin positive	
Memory Software (included)	Live measurements—export data—configure instrument Windows XP or above Compatible with Digilance IV	
MeltControl 2020 Software (optional)	Windows 7 SP1 or above	
Immersion Lance Options	Lances may be ordered separately—check with your local sales representative	



for more information from Heraeus Electro-Nite

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