Heraeus

Digitemp-E

Temperature Measurement in Liquid Metals

Electro-Nite

Digitemp-E

Temperature Measurement in Liquid Metals

- Measurement instrument Digitemp-E
- Measurement instrument Digitemp-E 19" with Chargennummer

The constantly increasing requirements on measurement technology demand the integration of new technologies with regard to electronics hardware, interfaces and in particular the software for accurate temperature measurement in molten metal applications.

The Digitemp-E meets all these requirements fully. Its impressive design capability is characterised by innovative evolution, resulting in superior reliability, operating convenience and flexibility.

The following features provide the foundation for the superior design concept of the Digitemp-E:

- **Large non reflective numerical display with unit indication, display height 45 mm**
- **LED measuring sequence signalling**
- **High measuring accuracy by high resolution A/D converter**
- **Universal application with wide range power supply**
- **Characteristics for thermocouples Type S, R, B, K, D**
- **Error measurement detection and interpretation**
- **Automatic test measurement recognition**
- **Two fixed data telegrams plus five additional data telegrams freely programmable via Ethernet**

In addition to the traditional single dip measurement in liquid steel, Digitemp-E can also be adapted for use in a range of related applications.

With simple re-programming of the measurement parameters by the customer, the Digitemp-E can be adapted to the following measurement tasks:

- **Dip measurement in liquid steel, irons and non-ferrous melts with Positherm® single use sensors**

Immersion temperature measurement in cast iron

- **Dip measurement with Multi-Stik® multi immersion probes**

The Digitemp-E instrument is simple and easy to use with fully-automatic operation during measurement.

User-specific parameter settings and data message selection can be carried out by LCD user interface contained within the Digitemp-E.

- **Password-protected instrument parameter settings by LCD terminal**

Parameter settings for:

- **Evaluation tolerances**
- **Thermocouple calibration types**
- **Measuring times**
- **Data interfaces**
- **Starting conditions**
- **Calibration offset**
- **Bath level**

In addition to the manual instrument operation, parameter setup is also possible via Internet browser.

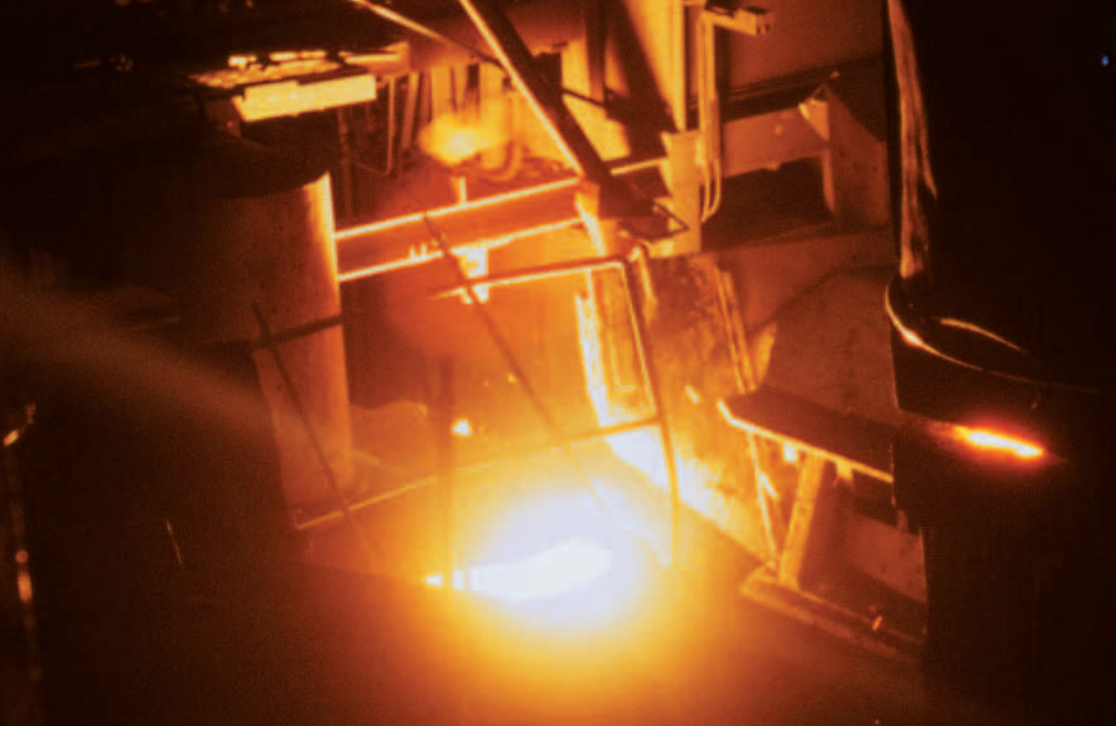
- **Instrument parameter set-up via Internet browser**

The Digitemp-E is fitted with customer oriented instrument interfaces. Two data interfaces and control outputs are strategic components of the basic devices.

Standard Interfaces and Outputs

- **Measuring data output via serial 20 mA interface (TTY)**
- **Ethernet with real-time clock**
- **Control outputs for signal alarm devices and PLC**

The Ethernet interface and optional Profibus and Modbus interface allow the device operation in the network. When equipped with the additional bath level software



module, the Digitemp-E can be used for the determination of the bath level in molten metal.

Bath level measurements can be obtained in automatic dipping applications when used with Positherm® temperature sensors.

The “bath level” determination works together with an automatic, robot-like lance, but does not require special immersion lance hardware.

Extension modules

- **Second serial interface TTY 20 mA**
  or
  Profibus DP/ Modbus RTU
  or
  Radio data transmission
  or
  mA output 0/4 ... 20 mA

- **Bath level evaluation with programmable settings for controlling the automatic immersion lance**

- **Ten-digit chargeno. input alphanummerical via keyboard possible**

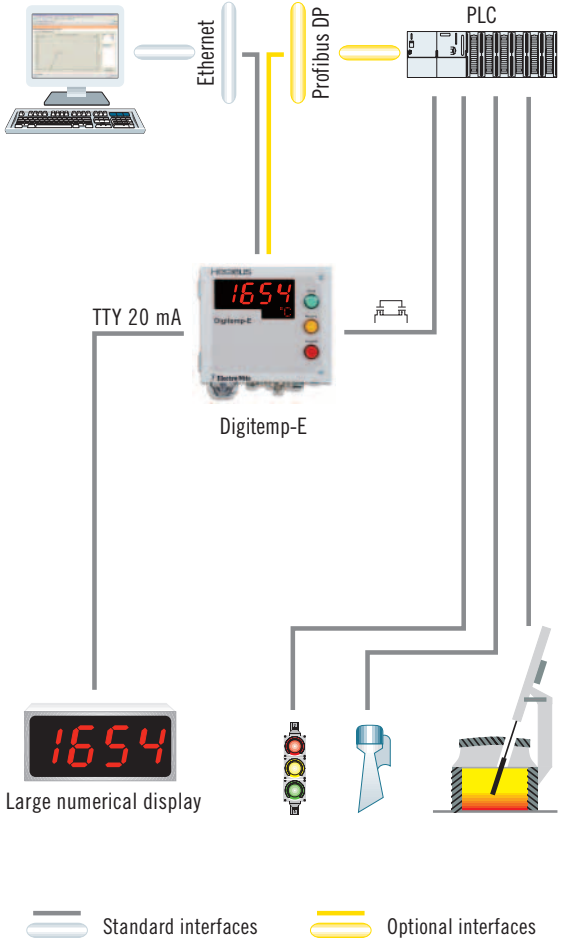
Remote Viewer Software

Digitemp-E instruments are connected with the PC via Ethernet interface. The installation of the viewer software enables the temperature measurements of the Digitemp-E to be viewed online.

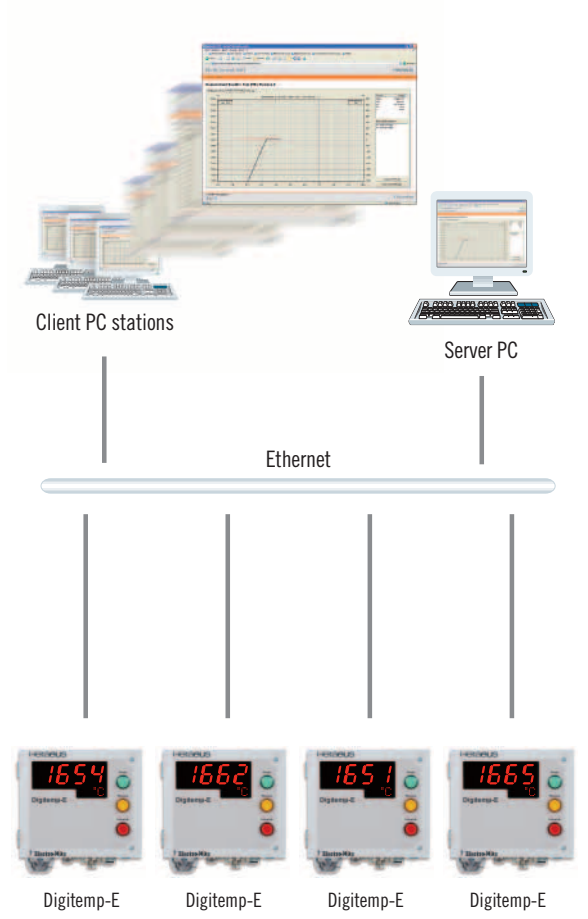
Measuring sequence, results of measurement and measurement curves can be displayed on a PC.

Digitemp-E instrument variant with radio data transmission

Digitemp-E with standard and optional interfaces: Solutions for peripheral equipments in the plant



Remote Viewer Software: External online display of temperture measurements



Technical Data

Digitemp-E

Measuring applications	immersion temperature measurement	measurement applications selectable over LCD terminal	
Measuring input	1 analogue input channel	galvanic isolated	
Sample rate	10 samples/ s		
Thermocouple input	type S, 200 °C up to 1760 °C type R, 200 °C up to 1760 °C type B, 200 °C up to 1820 °C type K, 200 °C up to 1370 °C	arithmetically linearized according to IEC 584, IPTS 68 or IPTS 48	type D, 200 °C up to 2300 °C, according to ASTME 988
Measuring accuracy	± 1 °C at 0 up to 50 °C ambient temperature	in measuring range > 400 °C	cold junction control at measuring input
Calculation accuracy	0.1 °C		
Plateau recognition	plateau length 0.1 s up to 5 s, adjustable in 0.1 s steps	window height 0.2 °C up to 10 °C	adjustable in 0.1 °C steps
Measuring circuit control	automatic thermocouple burnout	automatic sensor detection	
Offset adjustment	± 5 °C in 0.1 °C steps		
Start temperature	200 °C up to 1200 °C in 50 °C steps		
Maximum measuring time	immersion temperature measurement adjustable 6 s up to 60 s		
Measuring curve evaluation	plateau evaluation with failure detection		
Display	LED 4-digits	display height 45 mm	with unit indication
Display resolution	1 °C / 1 °F		
Measuring sequence display	"ready", "measurement", "complete"	LED green, yellow, red	
Control outputs	3 Photo MOS relays	24 V up to 240 V AC/ DC, max. load 0.5 A	additional output via Profibus DP (optional)
Data interfaces	TTY 20 mA serial	protocol CTS/ 3964/ 3964R	or no protocol
	Ethernet incl. real time clock	TCP/IP protocol	
Additional interfaces/ options	second serial interface TTY 20 mA	or Profibus DP/ or Modbus RTU	or radio data transmission (additional receiver unit necessary)
	mA output	0,4 mA ... 20 mA	2 channel
	bath level detection	output via contact "measurement"	additional output via the optional Profibus interface
Chargeno.	10 digit	alphanumerical	input via 10 keys
Data telegrams	2 selectable data telegrams, additional 5 free programmable data telegrams	programmable via Web browser	one of them selectable for each communication output
Housing, dimensions and weight	metal housing for wall-mounting, weight: approx. 7.5 kg	protection IP 55, coating RAL 7035	dimensions: h = 230 mm, w = 260 mm, d = 150 mm
	metal housing for rack mounting, weight: approx. 6 kg	protection IP 40	dimensions: h = 133 mm, w = 485 mm, d = 330 mm
Operating data	power supply 90 - 260 V AC, 47 - 63 c.p.s.	power consumption max. 34 VA	ambient temperature 0 up to + 50 °C

Further technical details on request. We reserve the right to modify illustrations and technical data without notice.

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HERAEUS
ELECTRO-NITE GmbH & Co. KG
Unter dem Hofe 10
58099 Hagen (D)
Tel. +49(0)6181.352700
Fax +49(0)6181.352800
info.electro-nite.de@
heraeus.com
www.heraeus-electro-nite.com

HERAEUS
ELECTRO-NITE INTERNATIONAL N.V.
Centrum Zuid 1105
3530 Houthalen (B)
Tel. +32(0)11.600211
Fax +32(0)11.600400
info.electro-nite.be@
heraeus.com
www.heraeus-electro-nite.com

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