

MeltControl System - Measurement Data Management in Foundries



MeltControl 2000-win - Measurement Data Management System with inte

The MeltControl System makes the important process parameters available to the foundry simultaneously to the casting process.

Additionally to temperature and analysis data the instrument software is able to deal with foundry production data and measurement data by means of further program modules.

The MeltControl System consists of local measuring devices QuiK-Lab-E WinProcess, Digitemp-E WinProcess and a PC with installed MeltControl 2000-Win software.

- » Evaluation instrument optionally with serial or Ethernet interface
- » Independent working evaluation instrument for single or multi measuring station operation

QuiK-Lab-E WinProcess

The thermal analysis instrument QuiK-Lab-E WinProcess is a local independent working instrument which



QuiK-Lab-E WinProcess

covers a wide operation spectrum with its extensive evaluation software.

For the analysis measurements preferably QuiK-Cup® crucibles from the Heraeus Electro-Nite delivery program are used.

- » Calculation program for grey and white solidification of cast iron, TL, TS, CEL, Sc, %C, %Si, ΔT , ΔTM
- » Additional program for unalloyed lamellar casting, Z/H, HB, RM, K, MEG
- » Instrument version for liquidus temperature measurement in steel casting melts
- » Automatic change over to single measuring station operation

Digitemp-E WinProcess

The Digitemp-E WinProcess is also a local independent working instrument. It uses Heraeus Positherm® measuring



Digitemp-E WinProcess



probes for bath temperature measurement.

MeltControl Software

The MeltControl software allows automatic measuring operations, stores and processes all received measured values. The program is characterised in particular by its user-friendly operating system. Beside the diagram of the analyses cooling curves all results of measuring and calculation are clearly visualized.

- » Independent detection of grey and white solidification of cast iron

MeltControl Installation

With the choice of the Ethernet networking the MeltControl System can be included into already existing network installations.

» Network installation

» Easy extension of existing measuring systems

Beside the stationary evaluation devices which are connected to the MeltControl System, the Digilance Wireless System - with wireless data transmission - can be integrated into the network installation (see fig. 1).

» Digilance Wireless Temperature measurement with radio data communication

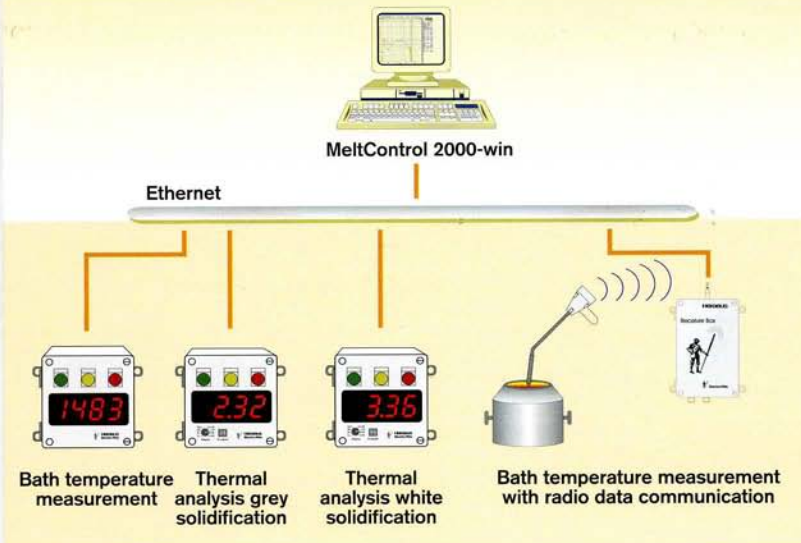


Fig. 1: MeltControl System for bath temperature and thermal analysis

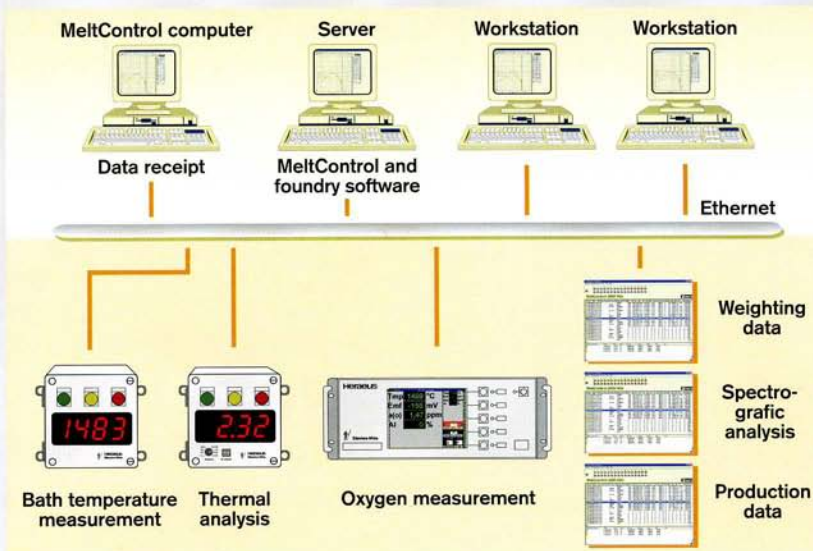
» Optimal data exchange by use of integrated software modules

In an extended MeltControl installation (see fig. 2) the evaluation devices for bath temperature measurement, thermal analysis and oxygen measurement run in a network installation. Additionally further production and measuring data are read in into the MeltControl System.

The modular structure of the MeltControl software allows individual and customized software solutions. Both the hardware and the software can be extended in accordance with the customers increasing needs.

» Access to all foundry data

Fig. 2: Example of an extended MeltControl System in a network



Technical Data

MeltControl 2000-win Computer

Measuring input	up to 32 measuring channels	via RS232C and Ethernet interface (USB optionally)
Storage capacity	depends on hard disk	

MeltControl 2000-win Software

Evaluation program thermal analysis	grey and white solidification of cast iron	calculation C%, CEL, Sc, Si%, undercooling ΔT , ΔTM
Calculation program for unalloyed lamellar casting	tensile strength (RM) brinell hardness (HB) tensile strength hardness factor (Z/H)	graphite factor (K) quantity of the eutectic graphite (MEG)
Additional calculation programs	liquidus temperature measurement, oxygen measurement	in steel casting melts
Optional foundry programs	data collection spectrographic analysis, weighing data	casting reports, material administration, standard charge calculation, QA-modules, certification administration

QuiK-Lab WinProcess

Operation	in network with MeltControl 2000-win computer	independent evaluation instrument with automatic change over to single measuring station operation
Evaluation program thermal analysis	grey and white solidification of cast iron	calculation C%, CEL, Sc, Si%, undercooling ΔT , ΔTM
Calculation program	for unalloyed lamellar casting	calculation RM, HB, Z/H, K, MEG
Temperature measuring range	linearized according to IEC 584	type K (NiCr-Ni) 400 °C - 1370 °C
Multifunctional display	LED display, 4 digits, height 50 mm (max. two additional displays)	display of TL, TS, CEL, Sc, C%, Si%, ΔT , ΔTM
Instrument variant	evaluation program for liquidus temperature measurement	in steel casting melts

Digitemp-E WinProcess

Operation	in network with MeltControl 2000-win computer	independent evaluation instrument
Measuring ranges	linearized according to IEC 584 type S (Pt10%Rh/Pt) 400/600 -1800 °C type R (Pt13%Rh/Pt) 400/600 -1800 °C	type B (Pt30%Rh/Pt6%) 600/800 -1900 °C type K (NiCr-Ni) 200/400 -1400 °C
Temperature display	LED display, 4 digits, height 50 mm	

QuiK-Lab WinProcess und Digitemp-E WinProcess (common technical data)

Accuracy of measurement	ambient temperature from +18 °C to +28 °C ambient temperature from 0 °C to +50 °C	+/- 1 °C +/- 2 °C
Accuracy of calculation	0,3 °C	
Measurement sequence display	"ready", "measurement", "complete"	via coloured signal lights
Data interface	TTY, 20 mA, 2400 Baud, active, Ethernet optionally	measuring results and measuring place no. (heat number optionally)
Signal outputs	"ready", "measurement", "complete"	via potential free relay contacts 250V, 1A, max. 60 W
Additional option	input of heat number	4 - 8 digits
Housing	metal housing for wall-mounting, IP 55	h = 200 mm, w = 200 mm, d = 120 mm weight approx. 5 kg (standard instrument)
Operating data	power supply power consumption ambient temperature	230 V (115 V) +/- 10%, 50/60 Hz 10 VA 0 to +50 °C

Diligance Wireless System

Temperature measurement	with radio controlled data transmission
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Multi-Lab Celox®, Celox® Foundry, Multi-Lab III

Evaluation instruments	for temperature and oxygen measurement
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