TA 110

THERMAL ANALYSIS FOR MONITORING
THE MECHANICAL CHARACTERISTICS
REFERRING TO GRAIN REFINEMENT
AND MODIFICATION

- USER-FRIENDLY
- PROCESS RELIABLE
- RECORDABLE

AL-SCHMELZE-MESSTECHNIK
MELT MEASURING TECHNOLOGY

MADE IN GERMANY

Thermal Analysis

Application

The Thermal Analysis **TA 110** is a stationary tabletop unit for monitoring the quality of aluminium melts. The cooling pattern of different Al- alloys provides information on the formation of their structure with regard to **grain refinement (GF)** and **modification (M)**. The grain refinement describes the size of the grains while the modification refers to the even distribution of silicon in the structure of the metal. Both these factors, GF and M provide an important indication of the mechanical characteristics and properties which the finished casting may be expected to have. The thermal analysis makes it possible to achieve a consistently high melt quality while effectively reducing the reject rate.

The Thermal Analysis TA 110 can be used for standard Al-alloys with up to 13% Silicon content* as well as for the following special alloys: **AlMg3, AlCu4Ti, AlZn5Mg**

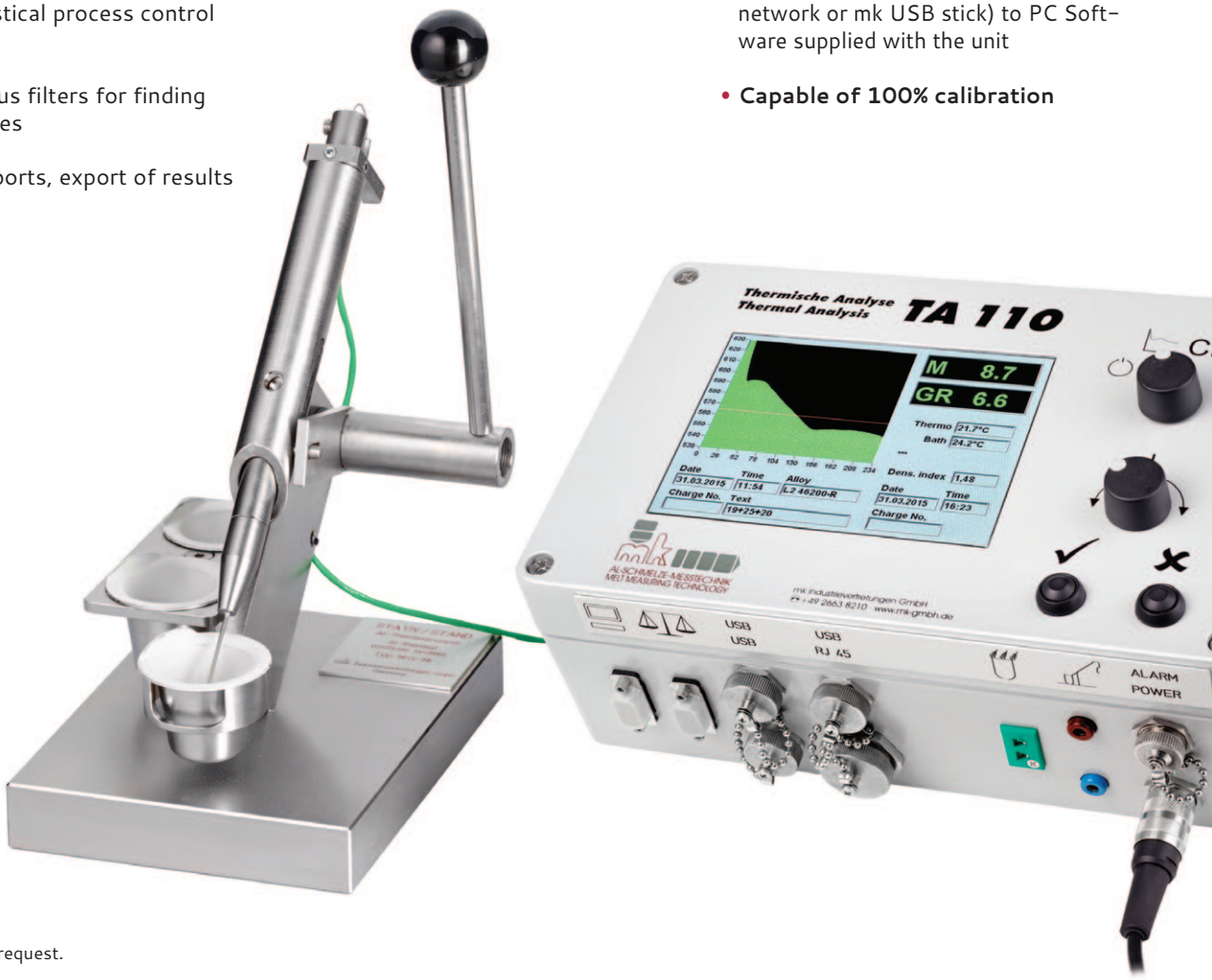
For more information have a look at our website **www.mk-gmbh.de**

PC Software

- Saving of measurements
- Analysis of individual cooling curves:
  - zooming to specific curve sections
  - display of cooling speed in form of first derivative
  - graphic superimposition of two curves for comparison purposes
- Use of statistical process control (SPC)
- Use of various filters for finding specific curves
- Printable reports, export of results to MS Excel

Special features

- Long life-span through dust-proof housing without fan
- User-friendly
- **Process reliability** through fully electronic control and thermocouple-fracture monitoring
- **High measuring accuracy** and **low cost per test** due to re-usability of components (crucible and thermocouple)
- TA 110 parameters can be saved on the mk USB stick
- Transfer of test data (serial, internal network or mk USB stick) to PC Software supplied with the unit
- **Capable of 100% calibration**



* Other alloys on request.

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TA 110

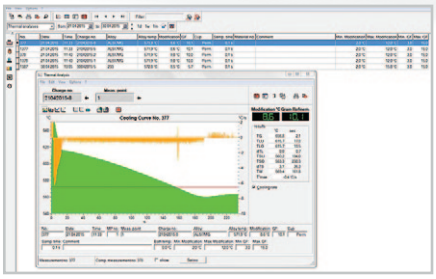
Product Extensions

Scientific Software

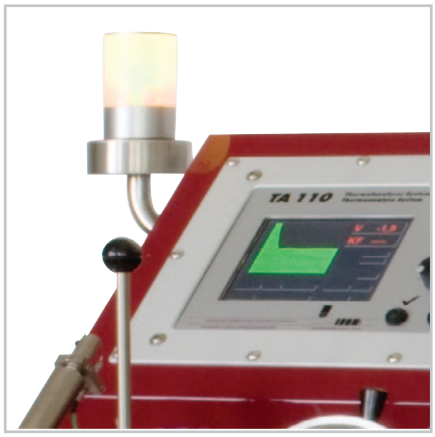
- Detailed graphic representation of cooling curves possible by extending the maximum temperature-scanning time of 0,1 sec.
- High-resolution recording of 4096 measuring points
- Setting of stop temperature, i.e. where measuring is ended when a certain temperature is reached or when a certain time has expired
- Modification of factors of certain alloy elements possible

Signal lamp

- Coloured depiction of departure from specified tolerances for grain refinement and modification of the aluminium melt
- Quick response time by operating personnel
- Increased process reliability
- Signal colours red and green



Scientific Software



Signal lamp

Technical data:

Monitoring unit

Design:
Al die-cast housing, wall-mounting possible

Dimensions: L 280 x B 180 x H 100 mm

OS: Windows CE

Display: 6,4" TFT, resolution 640*480

Interfaces:
2x COM serial D-SUB,
2x USB 2.0,
1x thermal input (stand banana socket),
1x thermal input (bath mini plug)

Weight: approx. 5 kg

Power connection:
Power cable with transformer, 100-230 VAC, 50-60 Hz

Stand

Design:
Sturdy stand of nickel-plated steel with movable sleeve to guide thermocouple,
1 crucible in measuring holder,
2 crucibles in test holder

Dimensions: L 250 x B 160 x H 350 mm

Weight: approx. 9 kg

Services

- Rental units for trial purposes
- Commissioning and training of staff
- Maintenance and calibration service
- Spare and wear parts
- IT-Support

Product line

ALSP highline consists of ALSP plus and TA 110 for determining the density index and mechanical characteristics referring to grain refinement (GF) and modification (M)

Mobile Test Unit **ALSP plus** for determining the density index

Combi Package plus consists of 3VT plus and MK 3000 for determining the density index

About us

We are a medium-sized privately owned company established in 1984. We are located in the Westerwald region of Germany, about 100 km from Frankfurt and design and build a range of high quality aluminium melt test equipment for the foundry industry. Our products are the result of expertise and experience acquired over many years of close association with the aluminium industry. Besides manufacturing our equipment, we also provide customer services such as commissioning, maintenance, calibration of our test equipment supported by our comprehensive spare parts inventory.

Our customers all over the world are served by us personally as well as by a team of representatives operating worldwide.

Certified according to
DIN EN ISO 9001
DIN EN ISO 14001

Managing Director Nicolas Knoche:

„Our vision is to become worldwide leader in the design and manufacture of aluminium melt testing technology and in service to our customers."

Are you interested in a technical consultancy and a demonstration at your location?
We look forward to hearing from you.*

Contact data

mk Industrievertretungen GmbH
Melt Measuring Technology

Rödernhahn 1b
56459 Stahlhofen a.W., Germany

+49 2663 82 10
+49 2663 34 31

information@mk-gmbh.de
www.mk-gmbh.de

*Please check on our website if a local representative is available in your country. Otherwise please contact us directly for further support.