www.kem-kueppers.com
info@kem-kueppers.com

Küppers Elektromechanik GmbH

KEM Metal Die Casting Industry

Application Spotlight

Multi-channel temperature control up to 662 °F (350 °C)

MULTI-CHANNEL TEMPERATURE CONTROL UP TO 662 °F (350 °C) IN THE METAL DIE CASTING INDUSTRY

Technical data

Medium:	Thermal oil
Temperature:	536 °F up to 662 °F (280 °C up to 350 °C)
Pressure:	Up to 5 bar (72.5 psi)
Measuring range:	180 up to 1,800 l/h

Application

Multi-channel temperature control is used in the industry for both plastic injection moulding and metal die casting. For example, the temperature of the die casting mould is controlled for making magnesium heat sinks. These magnesium heat sinks are used among other things in multimedia systems installed by renowned German automobile manufacturers. Highly efficient multi-channel temperature control prevents mould corrosion and wear, and also ensures a high quality of the finished product.

KEM Product

Four KEM Turbine Flow Meters (HM P Series with Pelton Runner) are used to monitor the temperature control circuit. Linking them with KEM Inductive Pulse Amplifiers (IF Series) permits the contactless recording of the KEM Flow Meter's rotation and supports integration with the customer's control unit.

Challenge

Multi-channel temperature control guarantees exact control of each temperature control zone in the die casting mould, so that products of high quality can be produced consistently with the shortest cycle times. Here the focus is on the individual use of each separate channel. The cooling impulses are recalculated for each cycle depending on the return temperature of the thermal oil. A corresponding layout of the distributor components is required since the thermal oil reaches high temperatures up to 662 °F (350 °C).

Solution

Thanks to their premium construction (components and materials), a medium temperature of 662 °F (350 °C) is no problem for the KEM Turbine Flow Meters. This makes them ideal for temperature control using thermal oil. What's more, the low weight of the impeller supports fast response times and short cycle times. Positioning the Flow Meters in every channel makes it possible to regulate the temperature of each individual circuit, simultaneously verifying the insights previously gained from complex simulation procedures in engineering.

Benefits

- *Thermal oil temperature control up to 662 °F (water temperature control only up to 302 °F)*
- *Temperature control units also for magnesium die casting (avoidance of highly explosive magnesium-water reactions)*
- *Cost-effective flow rate measurement of temperature control circuits*
- *Verification of data from previous complex simulation procedures*

Turbine Flow Meter (HM P Series)

KEM Küppers Elektromechanik GmbH | Liebigstraße 5 | D-85757 Karlsfeld | Tel +49 8131 59391 - 0 | Fax +49 8131 92604