

Application Spotlight

Multi-channel temperature control
up to 350 °C [662 °F]

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

Technical Data

Medium:	Thermal oil
Temperature:	280 °C up to 350 °C [536 °F up to 662 °F]
Pressure:	up to 5 bar [72,5 psi]
Measuring range:	180 up to 1.800 l/h

Application

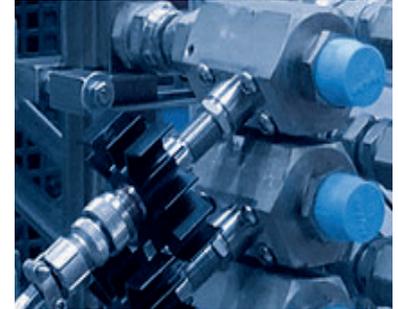
Multi-channel temperature control is used in the industry for example for metal die casting. The temperature of the die casting mould is controlled for making magnesium heat sinks that are used among other things in multi-media systems. Highly efficient multi-channel temperature control prevents mould corrosion and wear. She 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 350 °C [662 °F].

Solution

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 flow meter's rotation and supports integration with the customer's control unit. Thanks to their premium construction (components and materials), the high medium temperature is no problem for the KEM Turbine Flow Meters. 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.

Advantages

- Thermal oil temperature control up to 350 °C [662 °F] (water temperature control only up to 150 °C [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 simulation procedures



Certificates:

- Pressure Equipment Directive 97/23/EC, 2014/68/EU
- HPO - Certification
- Explosion protection according to 2014/34/EU
- CSA/UL - Certification
- Accreditation according to ISO 17025



KEM Helical Flow Meter
(HM P Series)