



AVFM Provides Flow Measurement for Aluminum Casting Process.

Aluminum casting is a type of metalworking process that involves the pouring of liquid metal into a mold or form. Aluminum casting is a variation of this process that uses only aluminum and aluminum alloys as the liquid metal that is poured into the mold. Aluminum castings are used to make complex and detailed parts very efficiently.

During the casting process, water cooling is often used to cool the mold in the initial stages of solidification, and then below the mold, where it is in direct contact with the newly solidified surface of the metal. Temperature control is achieved through the application of water, which influences the aluminum material structure, the microstructure, and the surface of the metal. The quality of the cooling water directly affects the quality of the cast aluminum.

Flow Rate Monitoring of Cooling Water for Optimum Efficiency

At an aluminum manufacturer in Korea, they were looking to measure the amount of cooling water containing contaminants through a flow meter. The quality of cooling water has a huge impact on the aluminum casting process, so it's vital that manufacturers have accurate knowledge of water that contains contaminations.

The flow meter was installed at the edge of a small outlet pipe in a device that removes contaminants from the cooling water. Getting accurate flow rates for this part of the process helped the manufacturer to optimize their manufacturing process to ensure that their plant was running as efficiently as possible.

AVFM 6.1 Area Velocity Flow Meter

After reaching out to Gilwoo Trading Co. Pulsar Measurement's partner in South Korea, the manufacturer installed the AVFM 6.1 Area Velocity Flow Meter. The area velocity flow measurement method is the most common of



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CASE STUDY: AVFM 6.1 COOLING WATER

all partially full pipe flow measurements, and the AVFM 6.1 uses a submersible ultrasonic sensor measuring both the level and velocity of flowing liquid to calculate flow measurement in a partially full channel or pipe. The sensor is mounted either inside a pipe or at the bottom of a channel, and the sensor is built to resist fouling, corrosion, and abrasion thanks to its materials of construction, hydrodynamic shape, and no moving parts.. This was absolutely ideal for this application, where there were suspended solids in the contaminated cooling water.

The AVFM 6.1 can measure forward flow velocity up to 6 m/s (19.7 ft/s) and reverse flow up to 1.5 m/s (5ft/s). The electronics and software sample and average flow rates continuously work to provide stable readings. The submerged velocity/level sensor will measure flow in partially full and surcharged pipes with pressures up to 10psi.

Successful Installation

The installation on this application was simple to complete, and maintenance for the end user is easy and straightforward because of how effortless the sensors are to attach and detach from the bottom of the pipe. The end user was completely satisfied and is actively designing new processes around the AVFM 6.1 Area Velocity Flow Meter.



More Information

AVFM 6.1 Area Velocity Flow Meter: <https://pulsarmeasurement.com/en/avfm-6-1>

Partner Locator: <https://pulsarmeasurement.com/en/partnerlocator>



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