

PRODUCT BULLETIN

INTELLIGENT TEMPERATURE MEASUREMENT FOR ALUMINIUM EXTRUSION PROCESSES

Accurate temperature measurement is critical in quality aluminium extrusion production. The introduction of new high tech aluminium alloys designed for high end applications such as aerospace, automotive or safety products have increasing mechanical specifications and decreasing product weights, the extrusion and quench process temperatures are crucial to meet the extremely high requirements and specifications of the final products. The SPOT AL EQS (Aluminium Extrusion, Quench and Strip) application pyrometer combined with the new SPOT Actuator enable unprecedented and highly accurate process temperature measurements and intelligent product and process tracking to continuously monitor temperature and improve process and product quality. Extruders who produce lower quality profiles can increase production rates because press speeds can be increased.

SPOT AL EQS Application Pyrometer – Accurate Plug ‘n’ Play Measurement

The SPOT AL EQS is the result of continuous product development, utilising the latest technologies, and lengthy site trials and is founded on AMETEK Land manufacturing expertise in aluminium application pyrometers since the early 1990s. In the late 1990s a second generation of AMETEK Land application pyrometers with improved processing were introduced, now followed by the current application specific SPOT AL EQS Pyrometer.

By selecting the desired mode of operation– E, Q or S - Extrusion, Quench or Strip – locally configured



on the pyrometer or remotely using the integrated webserver via TCP/IP with a standard web browser, the pyrometer measures an accurate product temperature for approximately 90% of all aluminium alloys, without the need for additional adjustments.

For special alloys, it is easy to enter a reference temperature bias, based on a thermocouple reading, into the pyrometer remotely, using a web browser or directly from a PLC. The pyrometer will now accurately measure that alloy type rapidly and repeatedly.

SPOT Actuator – Automatic Intelligent Product and Process Tracking

The new SPOT Actuator is the result of further product development to provide an intelligent function to automatically track and improve process temperatures. Remote control via Modbus TCP/IP by a PLC or manually via the integrated

webserver accessible by a standard web browser, without the need for additional software, are easy to access and use. The combination of SPOT AL EQS and the Actuator communicate directly with each other without the need for operator intervention.

Multiple intelligent scanning modes are available. Select hot spot mode to dynamically track the hottest of multiple profiles as they exit the press or quench exit. For bigger or complex profile geometries it automatically finds the area emitting the most energy to ensure the correct metallurgical properties– extrusion mode.

Finally using the billet scan mode, the SPOT AL EQS and Actuator combination scans the length of a billet as it arrives at the press and produces a full head to tail temperature profile. This allows press speed to be optimised for each billet.



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MARCOM0458 Product Bulletin - SPOT AL EQS/Actuator Aluminium Extrusion Rev. 1



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