

# SPOT ACTUATOR

ENHANCED TARGETED ALIGNMENT  
FOR SPOT ALUMINIUM PYROMETER  
APPLICATIONS



**A PRODUCT OF THE SYSTEM 5 FAMILY**

① FOR ALUMINIUM EXTRUDERS



**LAND**  
**AMETEK**<sup>®</sup>  
PROCESS & ANALYTICAL INSTRUMENTS



QUALITY CUSTOMER SOLUTIONS

# SPOT ACTUATOR

FOR SPOT ALUMINIUM APPLICATIONS PYROMETER

**AMETEK LAND HAS BEEN MANUFACTURING PRECISION MEASURING EQUIPMENT SINCE 1947.**

**WE ARE SPECIALISTS IN NON-CONTACT TEMPERATURE MEASUREMENT AND COMBUSTION MONITORING WITH APPLICATIONS ACROSS DIVERSE INDUSTRIES SUCH AS STEEL AND GLASS MAKING, POWER GENERATION AND CEMENT MANUFACTURE.**

As part of AMETEK Process & Analytical Instruments Division since 2006, our customers benefit from the worldwide AMETEK sales and service team.

**The SPOT Actuator provides remotely controlled target alignment of a SPOT pyrometer for industrial processing applications,** specifically for aluminium applications using the SPOT AL EQS (Aluminium Extrusion, Quench and Strip) pyrometer.

**The SPOT Actuator is a motorised unit which is designed for use at the billet reheat furnace exit, die entrance and exit and quench exit** on aluminium extrusion presses and is capable of operating in automatic or operator controlled modes to suit the needs of an individual aluminium plant.

**Compact, quick and easily configurable,** the SPOT Actuator is designed for mounting the SPOT AL EQS pyrometer onto the billet reheat furnace exit and/or extrusion press entrance face, where the actuator scans the SPOT AL EQS pyrometer along the length of the billet generating a temperature profile.

**At the next stage of processing, it can be mounted on the press exit or suitable part of the press superstructure** in close proximity, looking downwards onto the profile, to target the extruded profile as it appears from the die. This temperature

measurement is typically fed back to the press control system to enable dynamic press speed control. The SPOT Actuator allows for rapid and precise alignment, following die changes, so it can be repositioned on multi-cavity strands or where it maximises the signal strength on narrow sections.

**It may also be used for alignment at the exit of a quench box or nearby structure** to allow for alignment with wandering sections exiting the quench. The small and well-defined measurement spot of the pyrometer, combined with its fast 15 ms response speed, facilitates such dynamic tracking.

**The innovative features of the SPOT Actuator include a hotspot 'autoscan'** which when triggered causes the device to scan the entire range of movement and then align the SPOT AL EQS with the hottest part of the extrusion. This can be activated either locally by the operator or from an external command; an 'autoscan' can be triggered automatically from the PLC upon a die change. This functionality significantly reduces the challenge of ensuring the alignment of the pyrometer allowing the operator to focus on more critical tasks.

## ACCESSORIES ▼

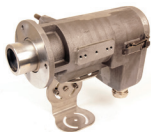
**LIGHT PURGE** - Designed to keep the pyrometer lens clean, when installed in less hostile environments such as measurements made on low temperature, cleaner applications.

PART NUMBER: 808015



**WATER COOLED MOUNTING** - Jacket housing allows the pyrometer to withstand high ambient temperatures. Incorporates the integrated Protection Jacket and Purge plus the hinged back cap.

PART NUMBER: 808100



**COOLING PLATE** - If ambient temperatures exceed 50 °C / 122 °F, prevent overheating with the water-cooled Cooling Plate. Positioned between the mounting location and the Actuator it acts as a conductive heat barrier to provide optimal cooling capabilities.

PART NUMBER: 813374



## INDUSTRIAL PROCESSING APPLICATION ▼

*SPOT AL EQS and Actuator scanning a profile along the billet as it arrives at the press*



# SPECIFICATION & DESIGN



**1: SMOOTH & ACCURATE MOVEMENT**

900 positional increments over 90 degrees

**2: AUTOSCAN FUNCTION**

Scan across a user-configurable range and automatically go to hotspot

**3: SIMPLE INSTALLATION**

On furnace and press superstructures

**4: DIRECT COMMUNICATIONS**

Between Pyrometer, Actuator and Press Control Systems

**5: ELECTRICAL TECHNOLOGY**

Low voltage, simple, safe and precise

**6: MANUAL OPERATION**

Move left and right and initiate 'autoscan' from optional remote

**7: ONLINE ACCESS**

View temperature graph, operate virtual remote, set scan range, triggering and network options

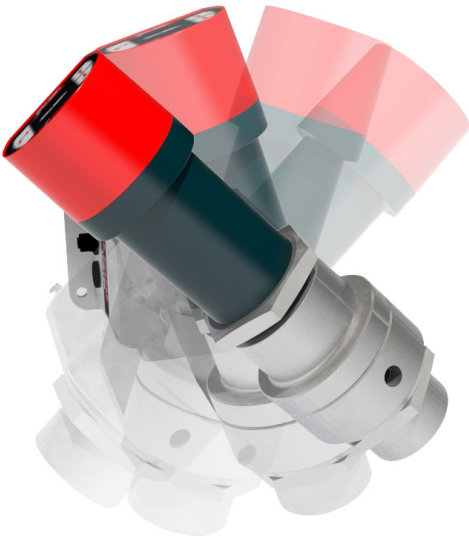
*Note: Photo on left shows SPOT Actuator with SPOT AL EQS within Light Purge.*

## TYPICAL APPLICATIONS

- Reheat Furnace Exit
- Press Entrance
- Press Exit
- Quench Exit

Above: Screenshot from the embedded webserver

### 90 DEGREE MOVEMENT



## FEATURES & BENEFITS

**Direct Communications-** remote controlled or automatic target alignment by Actuator of SPOT pyrometer

**Accurate Alignment-** taking 900 measurement points over 90 degrees, aligns on optimum measurement position on profile

**Multiple Locations -** reheat furnace exit, press entrance, press exit and quench exit

**Die Exit -** temperature measurement fed back to press control system

**Rapid Alignment -** accurate repositioning following die changes

**Compact, Quick and Easily Configurable -** control locally or remotely over Ethernet or via 24V digital I/O

# SPOT ACTUATOR

FOR SPOT ALUMINIUM APPLICATION PYROMETERS  
FOR ALUMINIUM EXTRUDERS

## SPECIFICATIONS

<b>Positional Points:</b>	900 points over 90 degrees
<b>Speed:</b>	Adjustable between approximately 25° and 100° swivel per second
<b>Sealing:</b>	IP65
<b>Power:</b>	Power over Ethernet 802.3 at (PoE+) or 18-36 V
<b>Mounting:</b>	4 holes Dia. 8.5. 109 x 70 pitch
<b>Ambient Temperature Range:</b>	5 - 60 °C / 5 - 100 °C with optional Actuator Cooling Plate (811824)
<b>Inputs:</b>	Modbus TCP or 24 V Digital I/O
<b>Outputs:</b>	Modbus TCP for full scan details; 24 V Digital and 4-20 mA signals for simple control
<b>Rotation Clearance:</b>	400 mm Diameter
<b>Settings:</b>	Scan range, hotspot location or billet scan, remote or automatic triggering and speed, site orientation, network and display configuration
<b>Remote:</b>	Optional, available with 2 m, 5 m or 10 m cable
<b>Configurations:</b>	<p><b>Analogue Only (1 wire):</b> PLC triggers scan with 24 V digital signal and reads 4-20 mA temperature from SPOT</p> <p><b>Analogue and Optional Remote:</b> As above, also local control</p> <p><b>Ethernet or Webserver (1 wire):</b> Connect to the Actuator for access to both SPOT and Actuator on separate IP addresses, ability to configure all settings, trigger a scan and read scan data using Modbus TCP or Webserver</p> <p><b>Ethernet and Optional Remote:</b> As above, also local control</p> <p><b>Analogue, Ethernet and Optional Remote:</b> Trigger a scan by any method Also, can be set to scan if SPOT temperature falls below a customer selected value</p>
<b>Weight:</b>	3 kg (without instrument and housings)
<b>Dimensions:</b>	Actuator: 11.5 x 13.0 x 15.5 cm (4.5 x 5.1 x 6.1 in) (without instrument and housings) Remote: 14.0 x 6.5 x 3.0 cm (5.5 x 2.6 x 1.2 in) (without cables)
<b>Warranty:</b>	18 months
<b>Accessories:</b>	Range of accessories available including Water Cooled Mounting, Light Purge and cooling plate.

### ACCESSORY SPECIFICATIONS

<b>Cooling Plate:</b>	<p>Dimensions: 16.9 x 11.9 x 2.9 cm / 6.7 x 4.7 x 1.1 in</p> <p>Water Connecting Tubes: 9.5 mm / 0.37 in</p> <p>Weight: 1.2 kg</p> <p>Material: Aluminium / Steel</p> <p>Water Quality: Clean cooling water</p> <p>Water pH Level: Must be within 5-8 pH</p> <p>Max. Water Pressure: 3 bar / 43.5 psi</p> <p>Max. Water Inlet Temperature: &lt; 40 °C if ambient air &lt; 80 C (&lt; 104 °F / &lt; 176 °F) / 20 °C if ambient up to 100 °C (&lt; 68 °F / &lt; 212 °F)</p> <p>Recommended Flow Rate: 1 l/min</p>
-----------------------	---

SEE OUR OTHER LITERATURE ON SPOT PYROMETERS:



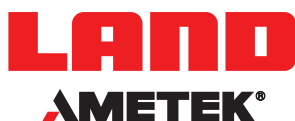
SPOT FAMILY  
PYROMETERS



SPOT AL EQS  
PYROMETER

DISCOVER HOW OUR BROAD RANGE OF NON-CONTACT  
TEMPERATURE MEASUREMENT AND COMBUSTION &  
EMISSIONS PRODUCTS OFFER A SOLUTION FOR YOUR PROCESS

[WWW.AMETEK-LAND.COM](http://WWW.AMETEK-LAND.COM)



### CONTACT US



[www.ametek-land.com](http://www.ametek-land.com)



[land.enquiry@ametek.com](mailto:land.enquiry@ametek.com)

