SPOT MM

MELTMASTER APPLICATION PYROMETER

FOR LIQUID METAL TEMPERATURE MEASUREMENT IN FOUNDRY AND
TAPPING APPLICATIONS

A PRODUCT OF THE SPOT (SYSTEM 5) FAMILY

🌡 600 to 1800 °C / 1112 to 3272 °F

LAND
AMETEK®

QUALITY CUSTOMER SOLUTIONS

SPOT *MM*

MELTMASTER APPLICATION PYROMETER

BUILDING ON THE VAST EXPERIENCE OF AMETEK LAND IN NON-CONTACT TEMPERATURE MEASUREMENT SYSTEMS FOR THE STEEL INDUSTRY, THE SPOT MM HAS BEEN SPECIFICALLY DEVELOPED TO PROVIDE CONTINUOUS AND ACCURATE MEASUREMENT OF TEMPERATURE OF MOLTEN METAL.

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 smart SPOT MM (MeltMaster) application pyrometer provides a single-sensor solution for liquid metal temperature measurements in foundry and tapping applications.

Optimised signal processing and a dedicated application mode allow the SPOT MM to accurately measure tapping stream temperatures independent of surface and condition changes during the process.

The SPOT MM has millisecond responsivity with integrated time functions to monitor and hold the tapping temperature for a configured time or until the next tapping process starts.

Multiple digital and analog interfaces enable easy integration into new and existing process control systems. An internal visual camera aids alignment and provides a remote process view via the integrated webserver of the SPOT MM. The webserver and Modbus TCP/IP enable full remote access to the pyrometer without the need for any additional software.

The SPOT MM is compatible with the SPOT Actuator for alignment with moving or multiple tapping streams. A further range of accessories, including the industrial enclosure with cooling and air purging options, allow the SPOT MM to work in harsh environmental conditions 24/7.

FIELD OF VIEW
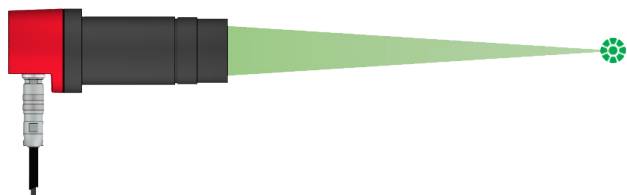
SPOT Size FOV 200:1					
Distance	0.3 m	0.5 m	1.0 m	2.0 m	3.0 m
SPOT Ø	1.5 mm	2.5 mm	5 mm	10 mm	15 mm

ACCESSORIES

SPOT is designed to be interchangeable with existing fixed spot pyrometers. To view the full range of mountings and accessories available, see our SPOT Mountings and Accessories brochure.

For specific recommendations on the choice of mountings, brackets, cables or any other accessories that may suit your specific industry or installation, please contact an AMETEK Land sales manager or representative for further advice before ordering.
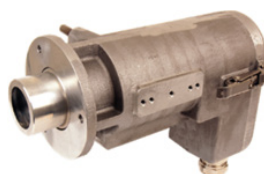
Cooling and purging enclosure

SPOT Actuator, for remote alignment

SPOTPro Software
Process control software

FEATURES & BENEFITS

Autonomous Operation - Continuous measurement without the need for operator adjustments

Fast Tapping Stream Temperature Measurements - Accurate temperature measurement up to 1000 times per second

Plug'n'Play - Operation with options for reference temperature calibration

Automatic Alignment - The SPOT Actuator quickly adjusts to the tapping stream position

Integrated video Camera - Easy adjustment of the measurement point and remote image of the measured stream

Multiple Interfaces - Analog and digital in and outputs, Modbus/TCP Ethernet protocol

Software - Integrated webserver and optional SpotPro software allow data to be accessed and displayed remotely

Jumbo Display - Optional remote display allows measured temperature to be seen at a distance
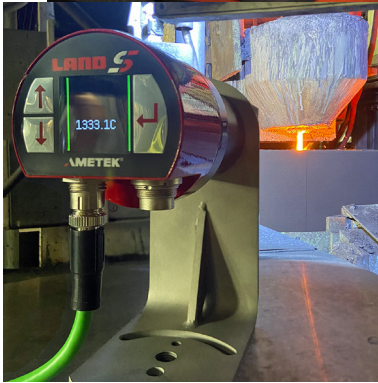
The AMETEK Land Jumbo Display can be used for to monitor the tapping temperature via the 4-20 mA output of the pyrometer.

TYPICAL APPLICATIONS

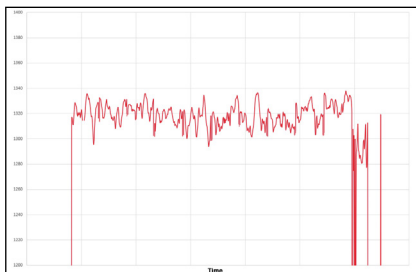Automatic Casting Lines and Mold Casting

Melting Furnaces

Ladle and Mold Tapping

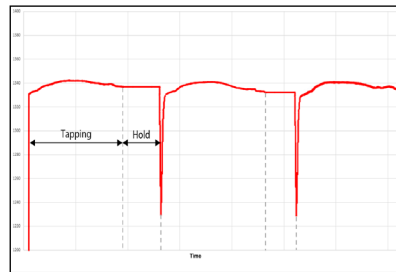Liquid Iron, Steel, Bronze, Brass, Copper, Non-ferrous metals, etc.

FUNCTIONALITY

In foundry tapping applications, pouring stream conditions are typically not very stable. As the liquid metal surface changes during the pouring process, and an initial thin variable oxide layer is established, a special pyrometer is needed to accurately measure the liquid metal temperature and obtain the most accurate and continuous readings.

AMETEK Land offers the SPOT MM smart application pyrometer, an advanced, non-contact infrared pyrometer, specifically designed to provide a single-sensor solution for liquid metal temperature measurements in foundry tapping applications. The optimized signal processing and the integrated application mode allows the SPOT MM to accurately measure tapping stream temperatures without the influence of surface and condition changes during the process. Multiple digital and analog interfaces allow the SPOT MM easily to monitor the actual temperature and being integrated into new and existing process control systems. The integrated visual camera enables the operator to monitor and control the tapping process, while the integrated webserver of the SPOT MM enables a full remote access of the pyrometer without the need of any additional software.

Raw Data Reading

SPOT Application Mode reading

SPOT MM Video Camera

Measurement Range:	600 to 1800 °C / 1112 to 3272 °F
Measurement Accuracy: In application	±0.5 %K
Repeatability: In application	±5 °C
Resolution:	0.1 °C
Noise: In application	5 °C
Detector Type:	Application specific selected range of NIR wavelength bands designed to optimise temperature accuracy measurement of molten metals.
Sealing:	IP65
Response Time:	Adjustable 1 ms to 10 s
Interfaces:	0 to 20 mA DC or 4 to 20 mA DC, Digital or Analogue (0 or 4 to 20 mA) CMD In and CMD Out, Ethernet (TCP-IP, Modbus TCP, DHCP, http, udp, ICMP)
Processing Functions:	Peak/Valley Picking, Averager, Modemaster, CMD In sampling or LED control, CMD Out alarms, emissivity output or actuator control
Power Requirement:	Power over Ethernet or 24 V DC
Display:	Local display with image streaming
Software:	Live configuration and temperature display on any web browser. Optional SPOT Viewer software with datalogging, live and historical data trending plus remote image capture; control of multiple instruments; SPOT Pro Software available for use with multiple SPOT pyrometers
Languages:	Integrated multiple language selections: English, German, French, Italian, Spanish, Portuguese (Brazilian), Japanese, Chinese (simplified Mandarin), Korean, Russian, Polish
Field of View:	200:1 to 90 %
Mounting:	Full range of mountings and accessories available
Ambient Temp Range:	5 to 60 °C / 41 to 140 °F specified, 0 to 70 °C / 32 to 158 °F operating before cooling required
Focus Range:	300 mm / 11.8 in to infinity, locally or remotely adjusted
Sighting:	Integrated video with local display and remote image capture. Patented pulsed Green LED focus pattern confirmation
Inputs:	24 V DC, CMD In, Ethernet, (TCP-IP, Modbus TCP, DHCP, http, udp, ICMP)
Outputs:	0 to 20 mA, 4 to 20 mA, CMD Out, Ethernet (TCP-IP, Modbus TCP, DHCP, http, udp, ICMP)
Settings:	Configure locally using the thermometer interface or remotely (using the Webserver or SPOT Viewer). Emissivity, mode, current output range, alarm logic output and thresholds, network settings, focus and LED, language and user name
Warranty	See our website at www.ametek-land.com for warranty details

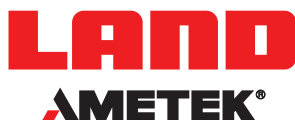**SPOT FAMILY PYROMETERS**

SPOT ACCESSORIES

SPOT ACTUATOR

STEEL METAL FOUNDRY TEMPERATURE MEASUREMENT PROCESS CONTROL

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

WWW.AMETEK-LAND.COM

CONTACT US

www.ametek-land.com

land.enquiry@ametek.com

We are fully committed to Quality Assurance. See all our accreditations at AMETEK-LAND.COM/QUALITY