

SPOT GS

STEEL APPLICATION PYROMETER
FOR GALVANNEALED AND GALVANIZED STRIP

A PRODUCT OF THE SYSTEM 5 FAMILY



① 125 to 1000 °C / 257 to 1832 °F



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SPOT GS

STEEL APPLICATION PYROMETER

BUILDING ON THE VAST EXPERTISE AMETEK LAND HAS IN MEASURING ACCURATE TEMPERATURE OF GALVANNEALING STEEL STRIP, THE SPOT GS HAS BEEN SPECIFICALLY DEVELOPED TO PROVIDE CONTINUOUS AND ACCURATE MEASUREMENT OF TEMPERATURE ON COATED STEEL STRIP DURING THE GALVANNEAL REACTION.

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.

SPOT GS enables automated furnace management to provide close control of the reaction and position of the reaction zone, delivering tighter control of product quality. By maintaining control of the reaction zone, SPOT GS accommodates rapid changes of line speed and furnace power with changes of substrate or coating weight. This allows furnace optimisation; reducing heating costs, maximising throughput and avoiding excessive over-reaction and powdering or flaking of the coating during subsequent forming operations.

SPOT GS ensures the production of consistent, high quality, premium-coated steel, demanded by the automotive industry. Without the close control provided by SPOT GS, manufacturers produce lower grade coated steels which cannot be sold to customers requiring premium-grade products.

This latest SPOT GS application pyrometer can be integrated with furnace controls, PLCs and control software, and the temperature can be used to accurately control the customer's galvanneal furnace to run at optimum

throughput rates. Live temperature feedback allows furnaces to run reliably and repeatably and produce the highest quality products with minimal scrap. The SPOT GS has additional inputs and outputs including emissivity out and LED switching which are available as analogue/digital control I/O as well as over Ethernet.

Combining Ethernet, Modbus TCP, Video, Analog and Alarm Outputs within one device, SPOT makes all these conveniently available to the operator. Pyrometer readings and configuration settings are available on the rear display and remotely via a web browser or through SPOTViewer software. SPOT GS features both local and remote motorized focus adjustment.

Dedicated software extends the usability. SPOTViewer software allows you to configure, display and log data from any SPOT pyrometer. To ensure security with multiple users, various levels of access are available. Data log frequency, file size, save and archive locations are all configurable. SPOTViewer is free to download.



SPECIFICATION & DESIGN

1: UNIQUE PRE-SET ALGORITHMS

The GS algorithm is dedicated to fully galvannealed or galvanized surfaces. GS+ algorithm extends functionality to include liquid surfaces seen on exit from the zinc pot.

2: THROUGH-THE-LENS INTEGRATED CAMERA

Easy target alignment and verification in low and high brightness environments.

3: PATENTED* PULSED HIGH BRIGHTNESS LED SIGHTING

Indicates both target size and location using an easily visible pattern; no laser safety requirements.

4: POWER OPTIONS

Power over Ethernet or 24V DC.

5: INTEGRATED PROCESSING

No need for any separate processors, the SPOT GS offers powerful processing capability built in

6: HIGH QUALITY OPTICS

Sapphire protection window ensures precise targeting and repeatable measurements even in the harshest environments.

7: INTEGRATED WEB SERVER

Allows for remote adjustment and readings via any web browser.

8: REAR DISPLAY & CONTROLS

Target viewing, temperature reading and set-up through simple menu driven choices; no need for separate software.

TYPICAL APPLICATIONS

Annealing Furnace

Soaking Zone

Galvannealing Furnace

MOUNTINGS & ACCESSORIES

AMETEK LAND OFFERS A RANGE OF MOUNTINGS AND ACCESSORIES FOR SPOT PYROMETERS

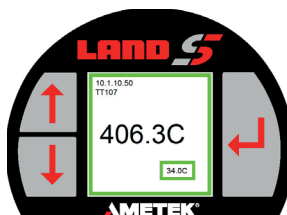
SPOT is designed to be interchangeable with existing fixed spot pyrometers. To view the full range of mountings and accessories available, see our SPOT Mountings and Accessories brochure.

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.



SPOT MENU

Remote user interface



Actual SPOT image view



Flexibility of design enables the SPOT GS to adapt to multiple steel application scenarios.

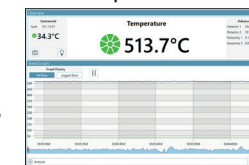
Updating from an older AMETEK Land sensor to SPOT form factor is flexible and easy. Utilize existing mountings and accessories for simple integration and installation.

SPOTVIEWER SOFTWARE

SPOTViewer is a PC-based utility that enables you to connect, configure, and view data from a SPOT pyrometer and scan graphs with an Actuator. Specifically developed to work seamlessly with the industry leading single point pyrometers. SPOTViewer's simple installation means the operator can quickly connect, configure and view data from any AMETEK Land SPOT pyrometer.

Easy view and analysis of long term data displayed in both graphical and tabular views. Clearly highlights trends and patterns allowing you a greater understanding of the temperatures involved in your process. Simple configuration of pyrometer and actuator settings from a remote location gives you total control over temperature measurement on their process without the need to be at the instrument location.

SPOTViewer enables a user to remotely control a SPOT Actuator and its settings, plus display scan graphs.



FEATURES & BENEFITS

Specialized Galvanneal and Galvanized algorithms - provide accurate digital temperature readings from GS or GS+ algorithms enabling live process control.

Single Sensor Solution - Ideal for use with customer PLCs or DCS systems; no separate processor. Easy to implement in small or large organizations.

Single person installation at instrument location - local display and settings; no need for a second person in the control room.

Industry standard 4-20 mA linear temperature output in addition to other outputs.

Modbus TCP - widely used and popular industrial protocol over Ethernet.

Durable Sapphire Protection Window - resists scratches, solvents and easily cleaned with a soft cloth.

Software - SPOTViewer provides remote display and data logging for a SPOT pyrometer.

* Patent Pending

SPOT GS

STEEL APPLICATION PYROMETER
FOR GALVANNEALED AND GALVANIZED STRIP

SPECIFICATIONS

Measurement Range:	200 -1000 °C / 392-1832 °F on highly reflective liquid / galvanised surfaces 125 to 1000 °C / 257 to 1832 °F on higher emissivity galvanized surfaces ($\epsilon > 0.5$)
Measurement Accuracy*:	± 5 °C < 200 °C, ± 2 °C or 0.25 % K at 300 °C and above
Repeatability*:	± 3 °C < 200 °C, ± 2 °C or 0.25 % K at 300 °C and above
Resolution:	0.1 °C
Noise*:	5 °C < 200 °C, 1.5 °C at 250 °C, <0.5 °C at 300 °C and above
Detector Type:	Application specific selected range of narrow wavelength bands designed to optimise temperature accuracy for the measurement of Galvanized and Galvanized Strip
Sealing:	IP65
Response Time:	Adjustable 15 ms to 10 s
Interfaces:	0-20 mA DC or 4-20 mA DC, Digital or Analogue (0 or 4-20 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 SPOTViewer software with datalogging, live and historical data trending plus remote image capture
Languages:	Integrated multiple language selections: English, German, French, Italian, Spanish, Portuguese (Brazilian), Japanese, Chinese (simplified Mandarin), Korean, Russian, Polish
Field of View:	60 :1 to 90%
Mounting:	Full range of mountings and accessories available
Ambient Temp Range:	5 - 60 °C / 41 - 140 °F specified, 0-70 °C / 32 - 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:	0-20 mA, 4-20 mA, CMD Out, Ethernet (TCP-IP, Modbus TCP, DHCP, http, udp, ICMP)
Settings:	Configure locally using the pyrometer interface or remotely (using the Webserver or SPOTViewer). 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.

* In Application ** Patent pending.

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PERFORMANCE SERVICES

AMETEK Land's AMECare Performance Services ensure peak performance and maximum return on investment over the life of your equipment.

We will deliver this by:

- Proactively maintaining your equipment to maximize availability.
- Optimizing solutions to meet your unique applications.
- Enhancing user skills by providing access to product and application experts.

AMETEK Land's global service network provides unparalleled after-sales services to ensure you get the best performance and value from your AMETEK Land products. Our dedicated service centre teams and on-site engineers are trained to deliver the highest standard of commissioning, maintenance and after-sales support.

SEE OUR OTHER LITERATURE ON SPOT MOUNTINGS & ACCESSORIES AND SPOTVIEWER SOFTWARE:



SPOT FAMILY
PYROMETERS



SPOTVIEWER
SOFTWARE

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

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For a full list of international offices, please visit our website www.ametek-land.com



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