

Model 1600 SpectraTemp

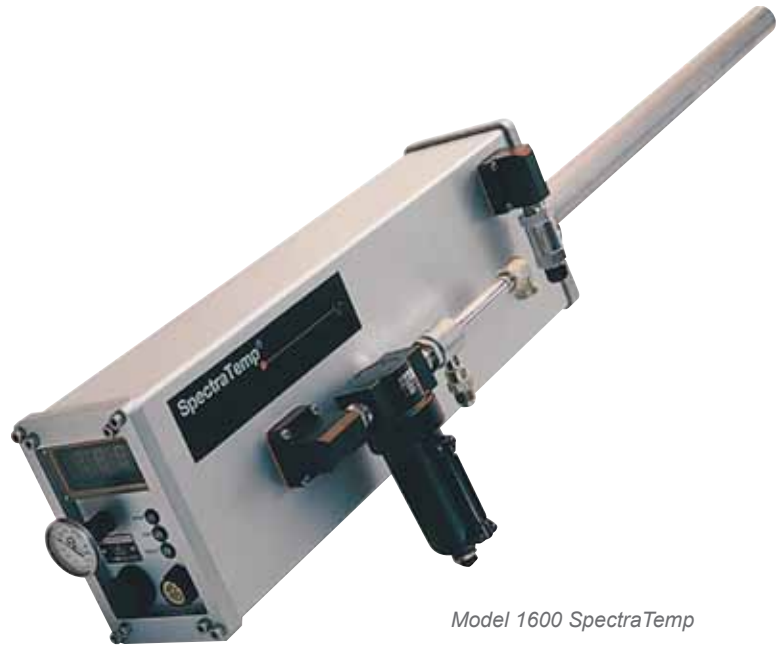
The Need

AMETEK Western Research's SpectraTemp™ is an optical temperature measurement system that provides continuous, accurate, and reliable temperature monitoring of hot, particulate-laden gas streams.

SpectraTemp has most commonly been used for monitoring furnace exit gas temperature in utility and industrial boilers fired by coal, heavy oil, wood, or municipal waste. In these installations, SpectraTemp reduces operating costs by providing:

- ▶ better control of furnace wall blowers and soot blowers,
- ▶ better burner control (tilt and excess air), and
- ▶ superior steam temperature control.

SpectraTemp can also be used for improved process optimization in other industrial processes where accurate control of the temperature of particulate laden gas streams is important. Examples of such processes include waste incinerators, cement kilns, and smelters.



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Direct Measurement

SpectraTemp determines particulate temperature by measuring light emissions for the particulates at three different wavelengths. These wavelengths are selected to avoid interferences from cool, heat-transfer surfaces (e.g. boiler walls). SpectraTemp's design gives it a unique capability to determine a line-of-sight average temperature all the way across a particulate-laden stream. Automatic calibration, fault detection, and alarms are incorporated into SpectraTemp; and both analog and digital outputs are supplied for interfacing with plant control systems.

Superior Benefits

- ▶ Improved boiler efficiency
- ▶ Less boiler tube damage
- ▶ More precise steam temperature control
- ▶ Lower NOx emissions
- ▶ Lower urea or ammonia consumption and fewer problems with ammonia slip

Applications

- ▶ Furnace wall blowers and soot blowers
- ▶ Burner tilt and excess air
- ▶ Steam temperature
- ▶ Urea or ammonia injection
- ▶ Furnace gas temperature and boiler performance

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Performance Specifications

Lowest Measurable Temperature:
360°C (675°F)

Highest Measurable Temperature:
1600°C (2900°F)

FEGT Measurement:
Absolute accuracy: ±28°C (±50°F)
Relative accuracy: ±17°C (±30°F)

Measurement Field-of-View:
6° cone

Temperature Readout Update Period: 4 seconds

Speed of Response: 90 seconds nominal

Verification: with supplied verification light source

Relay Contacts:
High temperature alarm
Low temperature alarm
Annunciator SPDT, 120 VAC, 1A, Resistive load

Data Outputs:

Analog:
Voltage: 0-10 VDC
Current: 4-20 mA
1500V isolation
Serial:
EIA RS232
ASCII characters
4800 Baud
No parity, 8 data bits
1 stop bit
No handshaking

Power Requirement: 120 VAC, ±10%, 47 to 63 Hz

Cooling Requirement:

80 to 100 psig
35 scfm compressed air at less than 55°C (less than 130°F)

Operating Environment:

Ambient temperature: -40° to 60°C (-40° to 140°F)
Humidity: Up to 100% RH condensing

Installation: On boiler side wall with 2 inch port

Physical Dimensions:

Lens removed HxWxD:
749 x 495 x 1359 mm
(29.5 x 19.5 x 53.5 in)



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F-0186 Rev 2 (1210)

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