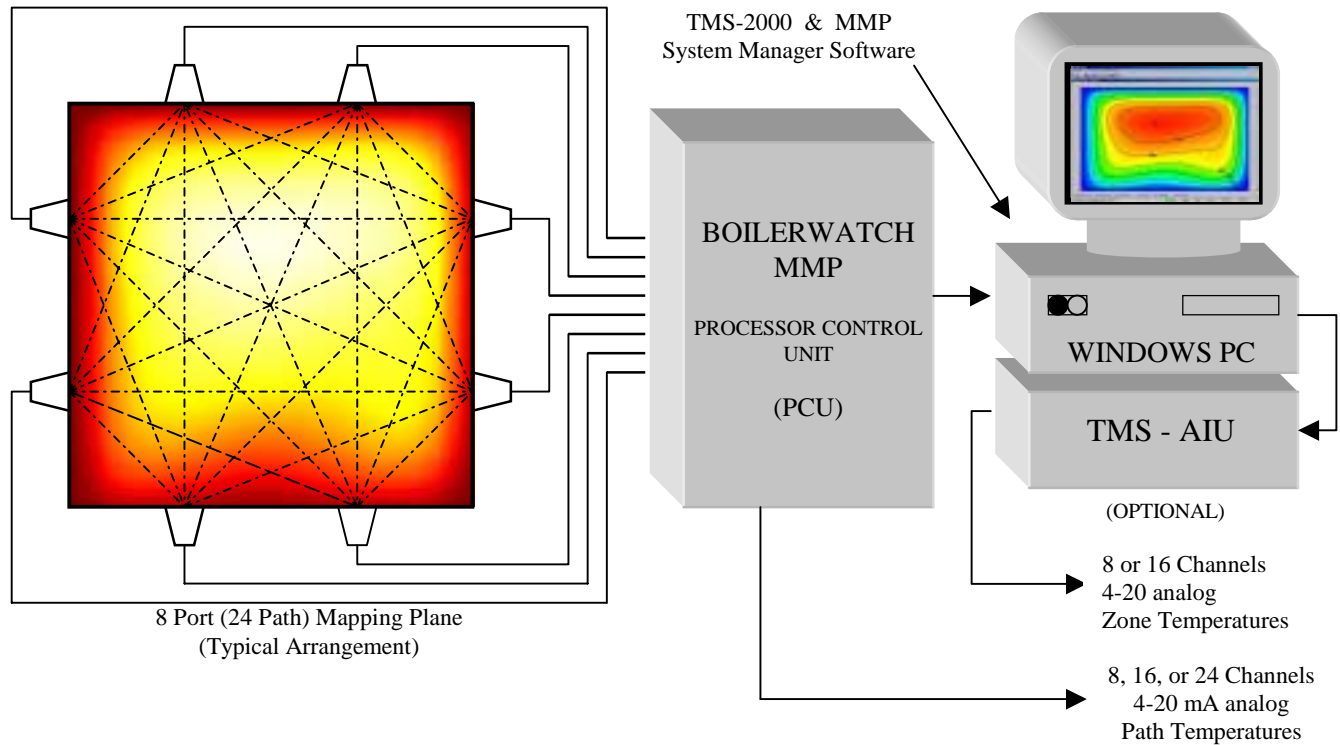




BOILERWATCH[®] Acoustic Pyrometer MMP



Features

- True gas temperature measurement
35 to 3500 °F (0-1927 °C)
- Non-Intrusive & Fully Automatic
Equivalent to a full HVT traverse
every eight seconds
- 4-20 mA & RS-232/422 Serial Outputs
- Flexible Configurations
- Simplified Installation and Start-up
- Automatic recovery after power loss
- Operates on units fired with any fuel
- Includes System Manager software for
Microsoft Windows 95/98/NT/2000/XP
- Affordable, Reliable, Proven Technology

Applications

- Furnace Exit Gas Temperature (FEGT)
- Economizer Exit Gas Temperature
- Soot blower optimization
- Thermal Probe Replacement
- Minimum Temperature Compliance
(refuse/hazardous waste fired units)
- Burner Balancing - Replaces cumbersome
HVT traverses
- Fossil fired utility power boilers, chemical
recovery units, waste-to-energy, hazardous
waste incineration
- Industrial kiln process monitoring
- Other industrial thermal processes

Benefits

- Protect boiler tubes from thermal stress; extend service life, prevent tube leaks
- Reduce forced outages, lost generation, and replacement power purchases
- Optimize soot blowing; reduce use of steam/air, less tube fireside corrosion
- Increase operating efficiency and heat-rate
- Reduce NO_x by eliminating over-temperature conditions
- Reduce O₂ AND NO_x fluctuations while increasing throughput in Waste to Energy
- Provide accurate gas temperature data for real-time process control

The **BOILERWATCH® MMP** acoustic pyrometer is an advanced industrial instrument that provides fully automatic measurement of high combustion-gas temperatures within boilers and furnaces. The system is completely non-intrusive in the hot gas stream, and operates on the principal that the speed of sound in a gas is proportional to the temperature of that gas. An acoustic sound source and a sound receiver are located on the outside of opposing walls of the boiler/furnace, and a low intensity acoustic signal is launched through the gas stream. Since the distance between the sound source and receiver is known and fixed, the average temperature of the gas along the acoustic path is computed from an accurate measurement of the sound signal's transit time. **BOILERWATCH® MMP** systems are available in a variety of configurations. With up to 24 individual path temperatures available, systems may be configured for spatial temperature mapping, independent temperature measurements, or a combination of both. **BOILERWATCH® MMP** systems are easy to install, commission, and operate.

Specifications

Number of Ports:	Two minimum, Sixteen maximum
Number of Paths:	One Path to twenty-four Paths
Measurement Range:	35 to 3500 °F (0 to 1927 °C)
Temperature Units:	English or Metric (°F or °C)
Resolution:	12 °F (6.7 °C) for 20 meter path length @ 2000 °F (1093 °C)
Accuracy:	Better than 1.5%
Measurement Acquisition Time:	5 seconds per path typical
Data Output:	Eight 4-20 mA analog current loop outputs for path temperatures 16 or 24 4-20 mA analog current loop outputs for path temperatures (Optional) RS-232 or RS-422 to TMS-2000 & MMP System Manager Software Standard internal modem for remote access
Alarm Output:	Relay output for hardware fail indication
AC Power Input:	100 to 240 VAC, 50/60 Hz, single phase, 6.0/3.0 amps, auto-sensing
Acoustic Sound Generation:	Pneumatic sound generator driven by plant general service compressed air (instrument air not required)
Air Pressure to Sound Source:	80 - 120 psig (5.5 - 8.3 Bar)
MMP PCU	
Ambient Air Temperature:	+ 130 °F (54°C) maximum, No solar loading on cabinet
Enclosure:	30"H x 24"W x 12"D (762 x 610 x 356mm) NEMA 4 Steel
Weight:	110 lb. (50 Kg)
3020TR Waveguide	
Material:	Stainless Steel 316L
Dimensions:	7.88" (200mm) flange diameter, 12.78" (325mm) length
Flange:	In accordance with ASTM standard 3-inch 150 lb. pipe flange (for proper acoustic impedance matching, a transition adapter horn should be used - consult SEI for information regarding your specific boiler or furnace opening.)
Weight:	26 lb. (11.8 Kg)
Temperature Environment:	Flange: +450°F (+232°C) max.; Ambient Air: +130°F (+54°C) max.
3020TR Pre-Amp Enclosure	
Ambient Air Temperature:	+ 140 °F (60°C) maximum, No solar loading on cabinet
Enclosure:	13.5"H x 11.4"W x 5.1"D (343 x 288 x 130mm) NEMA 4 Fiberglass or Steel
Weight:	14 lb. (6.4 Kg)
Warranty:	One (1) year

Transition adapter horns for boiler/furnace wall openings can be fabricated by SEI or customer. Consult SEI for details, pricing or fabrication drawings.

Ordering Information

Please contact SEI for current system pricing and availability. One of our application engineers will gladly assist you in configuring a **BOILERWATCH® MMP** system to suit your requirements.



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