

Fluctuations in black liquor firing or combustion air can result in the entrainment of unburned char particles, or carryover, in flue gas and deposited on tubes in a boiler's convection pass. The entrainment of char and smelt is one of the major causes of convection pass plugging.

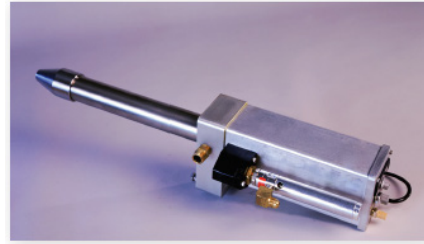
The Diamond Power® Carryover Monitor offered by Babcock & Wilcox (B&W) scans luminous particle activity in the boiler. Equipped with multiple sensors to detect particle activity at selected locations in the upper boiler, this device allows operators to monitor particle carryover in several locations at the same time.

Operators can track particle activity frequency to identify a boiler problem and ensure that changes are made in operating conditions to reduce the carryover. The Carryover Monitor is a perfect tool for anticipating gas-side tube pluggage problems and correcting them before a critical problem occurs. Recovery boiler availability can be increased as the need for chill and blows and waterwashing is reduced.

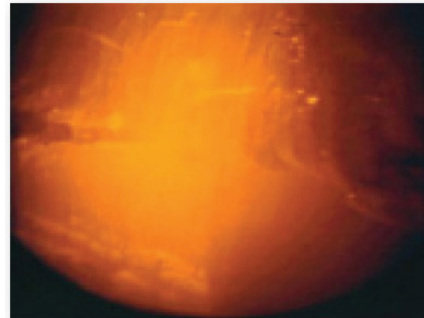
This monitor can also be used on stoker-fired and bubbling and circulating fluidized-bed boilers to monitor carryover of unburned carbon to the convection pass of the boiler. Variations in firing conditions can lead to increased carryover of unburned particles leading to pluggage in the convection passes and lower efficiency due to incomplete combustion.

FEATURES AND BENEFITS

- Includes optical sensor to measure luminous particles (carryover) at the furnace exit
- Provides a 4-20 mA and local display output signal, which can be input to plant distributed control system (DCS) or TemPro® II system
- Offers broad coverage as sensors can be installed in multiple locations to detect variations in fouling across the boiler width
- Identifies conditions likely to result in plugging problems, and likely locations, before they become critical
- Indicates abnormal boiler conditions and combustion regions for improving efficiency



Our Carryover Monitor can help detect particle activity for the prevention of gas-side tube pluggage.



Carryover particles collecting on superheater

APPLICATIONS

Reducing the carryover of unburned fuel particles can reduce fouling and increase boiler run times in pulp & paper and utility applications

Pulp & Paper Recovery Boilers

The Carryover Monitor can be used to identify instances, operating conditions and regional variations of carryover from unburned char to the convection section of the boiler.

Utility Boilers

The Carryover Monitor can be used on stoker-fired, and bubbling and circulating fluidized-bed boilers to monitor carryover of unburned fuel particles to the convection section of the boiler.

SPECIFICATIONS

Power Requirements - 120/240 VAC, 50/60 hz, 2 amp

Cooling Requirements - 15 to 20 psig (130 to 138 kPa), 15 scfm (0.007 m³/s) compressed air at <130F (54C)

Operating Requirements - 0 to 185F (-18 to 85C), 0 to 90% relative humidity

Measurement Field-of-View - 8-degree cone

Data Output - Four (4) individual 4-20 mA outputs per PC (Optional)

Data Readout Update Period - 1 second to 15 minutes (adjustable); 5 seconds typical

Diamond Power® Carryover Monitor



Dynamic Response - 10 Hz to 10,000 Hz

Weight - 15 lb (7 kg)

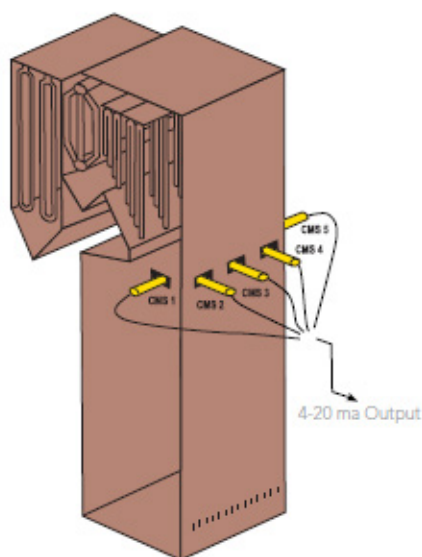
Date Outputs: Analog - Self- or loop-powered

Current: 4 to 20 mA, 1500 volt isolation

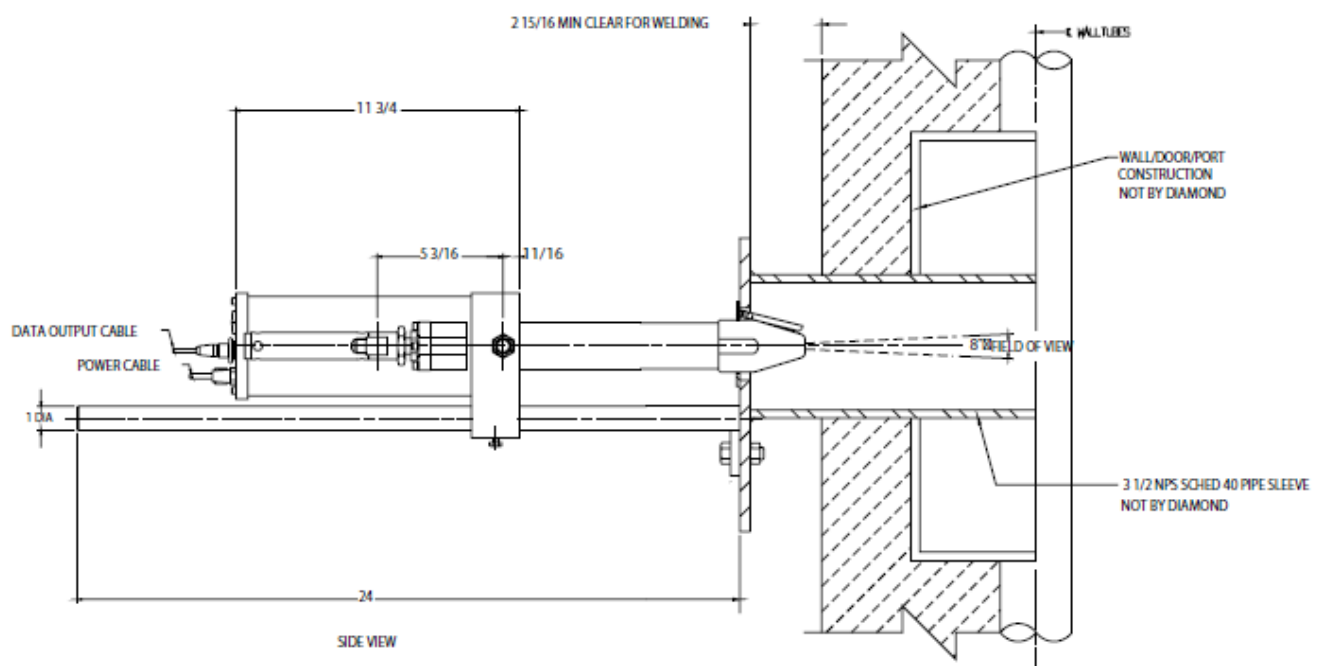
Measurable Count - 1 count/sec. to 100 counts/sec.

Weight - 22 lb (10 kg) for 24 in. optical probe

Safety Standards - CE-certified



Typical installation of Carryover Monitors positioned at furnace nose arch level



Carryover Monitor Mounting Assembly

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