

G5xxx Boiler Protection

Dynamic Multi-Parameter Monitoring

Dependent on Actual Load



Perfecting Sensible Technology

Protect your boilers and economizers by monitoring their thermal conditions and performance. The unique feature of the G5xxx Series is the dynamic load dependent monitoring. Any boiler and economizer behaves differently under different load conditions. Problems that are harmless under low-load conditions can become fatal under high load. Here the G5xxx Series gives you adequate and early warnings.

The G5xxx Series:

- G5000 EGE Monitor
- G5200 EGE Monitor Light
- G5500 OFB Monitor



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G5000/5200 Exhaust Gas Economizer Monitor

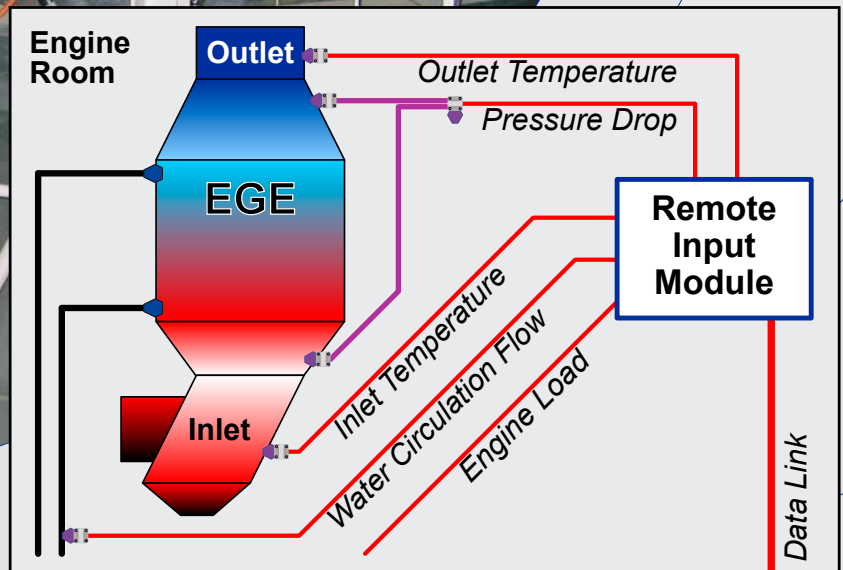
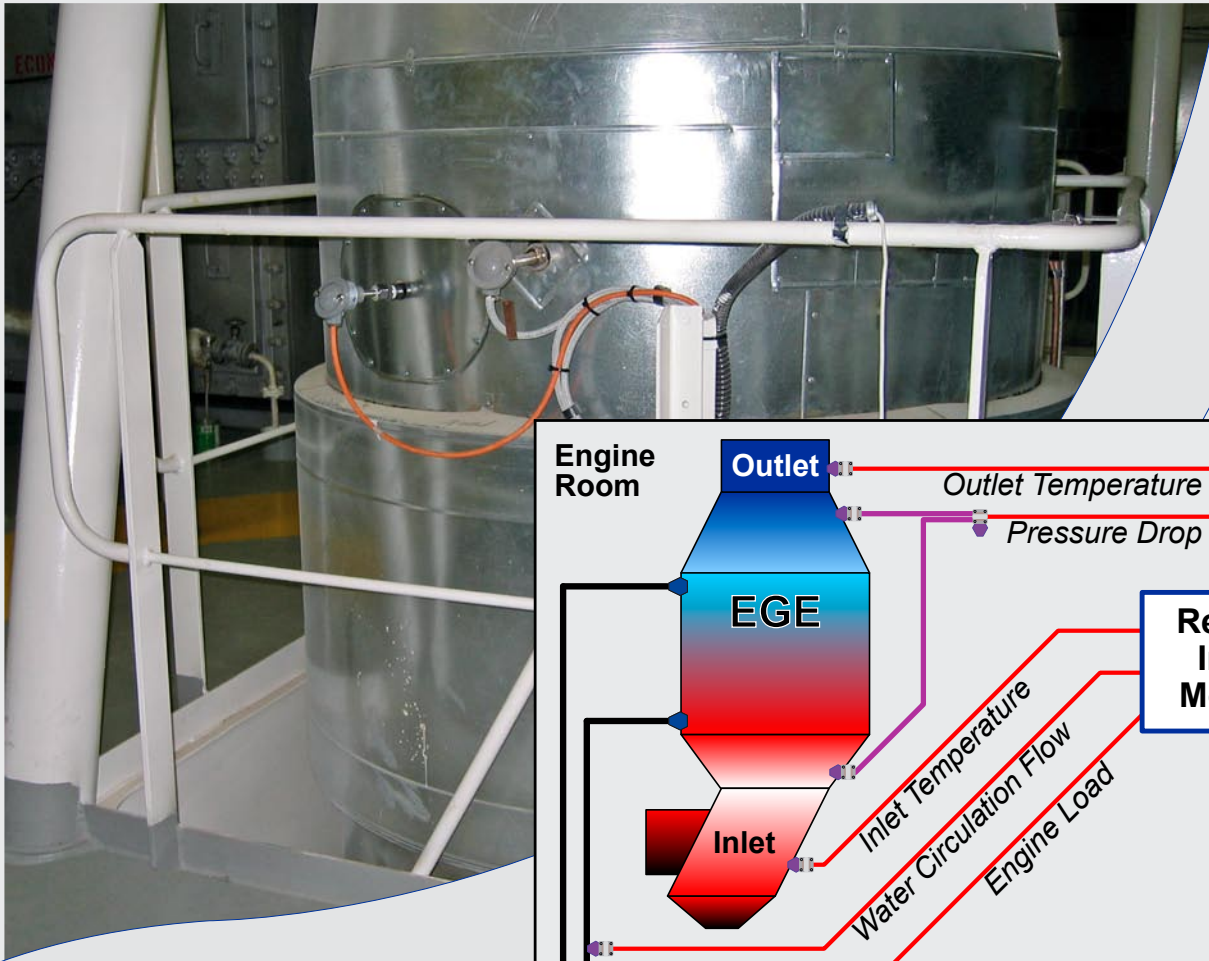


Diagram of the G5000 EGE Monitor

RS 485 Data Link

Temperature & Pressure Drop Monitoring for G5000 EGEM and G5200 EGEM light

Soot-fire accidents in exhaust gas economizers after diesel engines are an increasing problem often caused by low grade fuels and reduced engine speed. The solution to prevent this problem is simple: Keep the economizer reasonably clean at all times. Our monitors provide your crew with the information to ensure this.

The data on pressure drop and temperatures in comparison to the current load gives you information concerning the economizers heat exchange conditions and thus information about factors such as soot deposits on the gas side or oil contamination on the water side.

Water Circulation Monitoring for G5000 EGEM

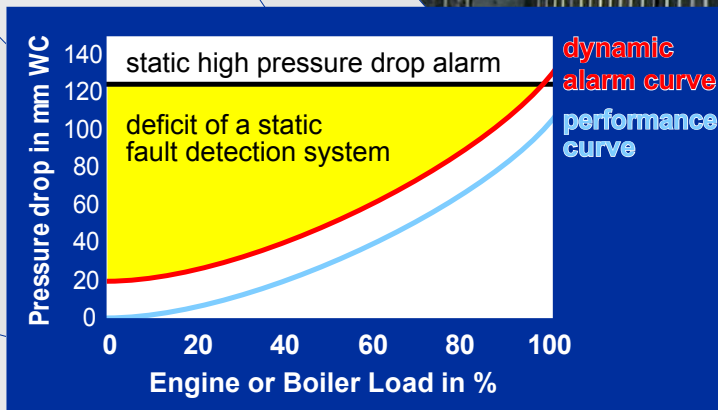
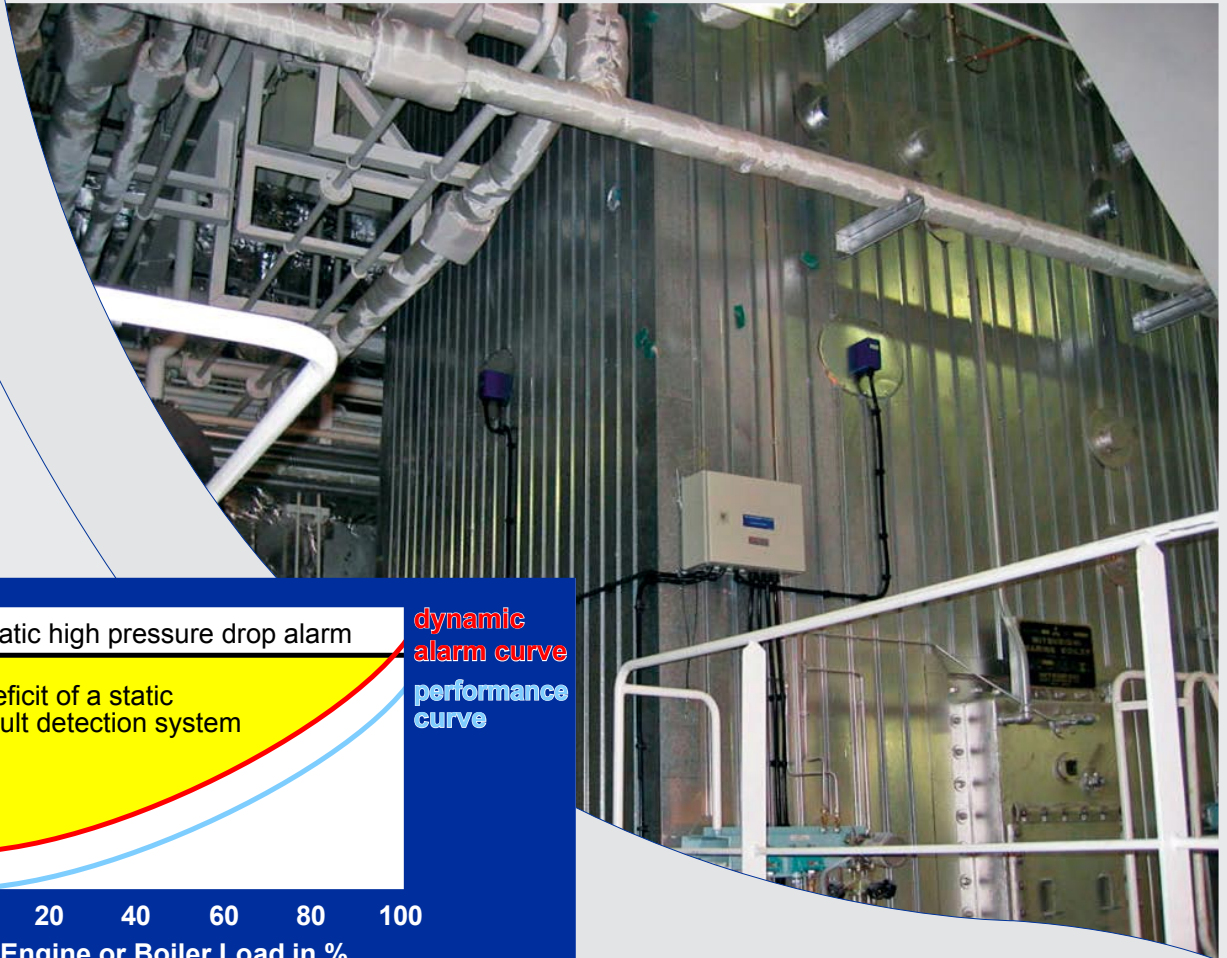
Sufficient water circulation is crucial for containing soot burning, which is likely to occur. Soot burning is by itself not enough to cause a major EGE breakdown. It usually dies out due to the cooling effect of the boiler water. If however the water circulation is reduced (e.g. due to excessive steam production, steam blockage, pump cavitation, scale build up, or the like), the heat transfer is reduced or even lost. This will let soot burning develop into high-temperature fires and boiler meltdown.

Monitoring the water circulation is therefore the key to preventing fatal failures.



Monitor of the G5000 mounted in a control room panel

G5500 Oil-Fired Boiler Monitor



Dynamic, load-dependent pressure drop curve

Key Features G5xxx Series

- Maintain economizer/boiler efficiency
- Reduce thermal stress
- Prevent soot-fires
- Cost-effective protection against high damage risk

- Indication for optimized cleaning intervals
- Alarms for reduced heat-transfer due to soot, scale, oil contamination, or water failure
- Direct alarm for low water circulation (G5000)

- Modular design for customized configuration
- Configurable measuring range and output
- Configurable alarms
- Easy integration to any boiler control system
- Analog output — option for RS485 data link

- Worldwide customer support via service partners

The G5500 Oil-Fired Boiler Monitor is designed as a modular system for dynamic monitoring of the boiler's thermal condition and furnace back-pressure. It measures the flue gas temperature and pressure drop across the boiler. This gives a good indication for a range of potential problems:

- poor combustion and soot deposits on the gas side;
- scale build-up or oil contamination on the water side.

With the G5500 OFB Monitor your crew can maintain its efficiency with appropriate cleaning, optimize the boiler performance, and save fuel.

Both flue gas temperature and pressure drop depend on the actual boiler load. Some boilers have a temperature sensor or even a static pressure drop alarm. But the information derived from these systems is of limited use. Such a static control system cannot detect problems while operating under low and medium load conditions. They are designed not to give false alarms even under high load conditions and thus these control systems only have alarms for a temperature and pressure-drop level that occur under full load.

The G5500 Oil Fire Boiler Monitor on the contrary will add full value to your boiler control system and a true protection for your boiler as it gives dynamic alarms along with the actual boiler load.

Specifications

Input requirements (see also optional equipment):

Temperature	0/4...20 mA linearized – range selectable – default 0°C to 500°C — inlet & outlet for temperatures for G ₅₀₀₀ EGEM and G ₅₂₀₀ EGEM light — flue gas temperature for G ₅₅₀₀ OFBM
Pressure Drop	0/4...20 mA linearized – range selectable – default 0 mm WC to 300 mm WC
Load (Engine/Boiler)	0/4...20 mA linearized – range selectable – default 0% to 100%

Monitor:

Power supply/consumption	Standard 210–250 V AC – 50/60 Hz – 20 VA max or optional 105–130 V AC / 30 VA max .
Ambient temperature	0°C to 55°C
Digital display	LED type 5 digits
Analog output signal	Active 4...20 mA linearized – range selectable – Load (max.): 20 mA/200 ohm/4 VDC
Alarm relays	250 VAC/8A – alarm levels configurable — 4 relays for G ₅₀₀₀ EGEM and G ₅₂₀₀ EGEM light — 2 relays for G ₅₅₀₀ OFBM

Standard Modules:

Remote Input Module for G₅₀₀₀ EGEM and G₅₂₀₀ EGEM light:

Power supply	24 VDC (via Load Input Module)
Input signals via module	4...20 mA for all input signals
System interface via module	Analog 4...20 mA & RS485/GI Bus
Cabinet dimensions	H×W×D: 300×200×160 (wall mounted)

Load Input Module for G₅₀₀₀ EGEM / G₅₂₀₀ EGEM light / G₅₅₀₀ OFBM:

Power supply	210–250 V AC or optional 105–130 VAC
Load input signal	default 4...20 mA for 0–100 % load
Load signal amplifier	4...20 mA in/4...20 mA out
Cabinet dimensions	H×W×D: 300×200×160 (wall mounted)

Water Circulation Sensor for G₅₀₀₀ EGEM:

Flow sensor	Pitot tube with DP-Transmitter
Flow signal output/range:	4... 20 mA / 0–50 m ³ /h

Optional Equipment:

Sensors & transmitters for temperatures and differential pressure
Engine Load signal pick-up

Data-system integration via RS485
Visualization and data logging

Specifications subject to changes without notice



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