

# Monitor & Reduce Boiler Emissions

## Enables patented 3 parameter trim • Monitor up to 6 gases

### Overview

For decades, boilerhouses have used our Exhaust Gas Analysers (EGA) to monitor flue emissions to comply with environmental regulations and to reduce fuel usage as well as emissions. The EGA's readings are transmitted to the Autoflame Micro Modulation (MM) Controller, which the MM can use to adjust the combustion for optimised burner performance.

### Features

- Continuous Emissions Monitoring System (CEMS) for display & data trending.
- Specifically designed for current regulations on emissions monitoring.
- Simultaneous & continuous sampling of up to 6 exhaust gases: O<sub>2</sub>, CO<sub>2</sub>, CO, NO, NO<sub>2</sub>, SO<sub>2</sub>.
- 12.1" multi-touch full colour touch screen.
- Stored information is updated every minute.
- Online monitoring of cell status to identify cell replacement requirement.
- MM Controller or Standalone Operation modes.
- Complete diagnostic information.

- Quick & easy installation using plug-in connectors.
- Designed to minimize maintenance.
- Six 4-20mA analogue outputs of all combustion data for remote logging, printing or chart recording.
- Warnings for cell failure, probe blockage & analyser failure.
- EGA's instantaneous online data can be transferred to a Building Management System (BMS) over Ethernet or RS422 via the Autoflame Mk7 Data Transfer Interface (DTI).
- Online manual.
- Replacement cells contain calibration data and serial number for easier cell replacement during servicing.
- Automated cell calibrations on bottled calibration gas (EPA version of EGA).

### Maintenance

It is recommended that the EGA is sent back to an Autoflame service centre for full service & recalibration every 12-18 months. System includes reusable packaging to simplify shipping.

## Online Data Logging & Historical Trending

- Online trending & logging of all combustion parameters, including totalised values.
- Historical data is updated every minute & hourly averages are calculated.
- Data graphs scalable from very narrow range (for example, the last 10 minutes) to extended periods (over the course of several days, weeks, months or up to two years.)
- Two years of data stored within the EGA including gases, pressures, atmospheric pressure, temperatures, efficiency, & fuel usage.

## CEMS Auditing

- Ability to input accurate fuel composition data from the MM to improve CEMS analysis.
- 4-20mA input from a fuel flow meter for accurate fuel usage in CEMS calculation.
- View reports in Excel by user-definable time periods (one day, four weeks, 16 months, etc) based on:
  - Total weight & volumetric emissions.
  - Total cost of fuel (calculated by current cost per tonne of fuel).
  - Weight & volumetric emissions per exhaust gas (O<sub>2</sub>, CO<sub>2</sub>, CO, NO, NO<sub>2</sub>, SO<sub>2</sub>) & per fuel.

### Improvements over Mk8 EGA

- Larger 12.1" multitouch touchscreen (compared to 10.4")
- Full glass front.
- Improved user interface.
- Diagnostics screen and system log for fault finding.
- Graphical calibration schedule.
- Complete multiple language support.
- Full download and upload of settings using updated Download Manager. This allows for easier diagnostics, as well as backing up settings and then installing the same settings on a new EGA.
- PC download of CEMS data for data reporting in Excel available. Includes custom Excel-based application for easy analysis. (Requires Excel.)

## Operation with Autoflame MM Controller

By connecting the Mk8 EGA EVO to an Autoflame MM Controller, all of the following functionality is available for improving combustion performance, reducing energy costs & improving safety:

- The EGA enables Autoflame's unique 3 parameter trim. The system sends output signals based on three exhaust gases (O<sub>2</sub>, CO<sub>2</sub> & CO) to enable the MM Controller to perform trim. The controller will impose corrections to the air damper (all MM Controllers) or Variable Speed Drive (Mk8 MM only) in order to maintain optimum combustion performance for the system. These changes ensure that the original commissioned combustion data is maintained irrespective of changes to stack pressure, barometric pressure & temperature.
- The MM Controller may be set with upper & lower limits on O<sub>2</sub>, CO<sub>2</sub>, CO, NO & exhaust gas temperature. The system can be optioned so that the burner locks out or a warning is triggered when limits are exceeded.

## Additional Components

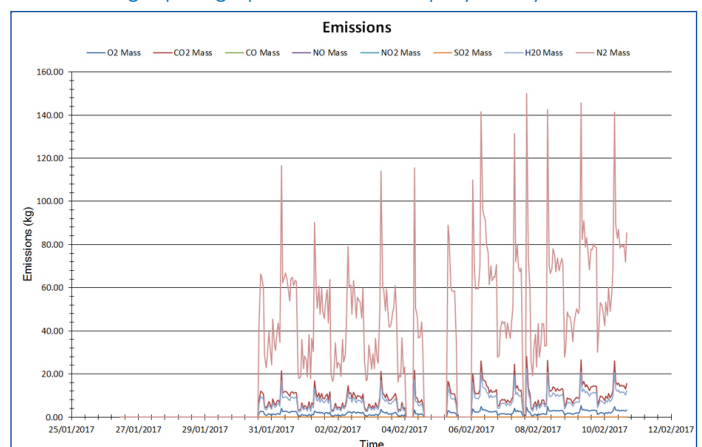
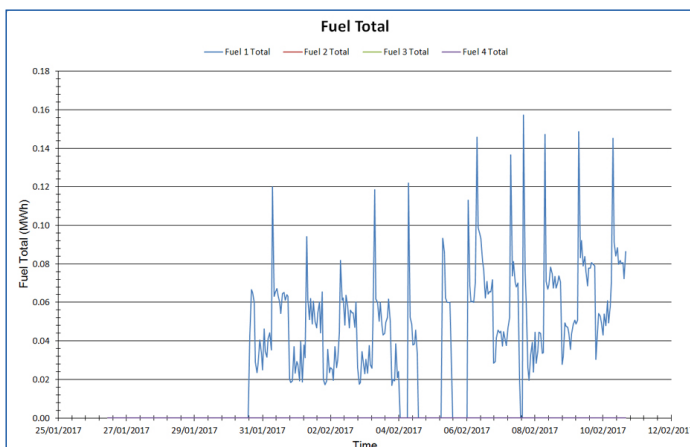
- Optional exhaust gas sampling probe available complete with internal filter, thermocouple and sampling tube.
- Optional environmental enclosure available for non-standard conditions, harsh environments.
- Optional external filter available for high condensate fuels or humid environments.

## Technical Specification

- Power Supply: 110 - 240V, 50 - 60Hz
- Ambient Temperature Limits: 5°C (41°F) to 40°C (104°F)
- Environmental Rating: IP20 (NEMA1)



Output up to 2 years of raw data via IR port to PC for viewing and manipulation in Excel. Custom-designed emissions graphing spreadsheets simplify analysis.



# MK8 EGA EVO: Exhaust Gas Analyser

Autoflame Engineering Ltd. Autoflame.com

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