

CODEL

A Forbes Marshall Company

Product Brochure

GCEM 40 Series

CO, NOx, SO₂, HCl, CH₄, CO₂ & H₂O



Single or Multi-Species Infrared Absorption Analyser



Tested AMS
Regular
Surveillance

www.tuv.com
ID 0000050624

ISO 9001:2015

Quality Certification

ISO 14001:2015

Environmental Certification

Monitoring Solutions

SmartCem

www.codel.co.uk

The GCEM40 series is the latest generation of CODEL's world renowned in-situ monitors. Our development, knowledge and practical experience have been utilised to produce this advanced technology gas analyser which gives complete flexibility of use on process or emissions applications whilst delivering super accuracy and repeatability at a very competitive price.

The analyser uses a field proven in-situ 316 stainless steel probe designed for the harshest stack conditions to measure directly in the flue stream. The design of the probe enables accurate measurements to be made even in very high dust level processes exceeding several gram/m³.

All models are fitted with a probe mounted temperature sensor Pressure, CO₂ and H₂O can be measured as an additional option to provide fully normalised data in mg/Nm³.

Designed for use primarily on combustion processes, the GCEM40 series measures key pollutants such as CO, NO, NO₂, NO_x, SO₂, CH₄, CO₂ and H₂O using an infra-red spectroscopy to ensure that there is no cross sensitivity from other contaminants in the gas stream.

Features and Benefits

- ▶ In-situ stainless steel probe measurement.
- ▶ CO, NO, NO₂, NO_x, SO₂, CH₄, HCl, CO₂ & H₂O
- ▶ Gas temperature and pressure sensors, on-board normalisation
- ▶ Export of data to SCADA, DCS and Data Acquisition System
- ▶ Analogue & serial digital output
- ▶ Certified to EN15267

Typical Applications

- ▶ Large Combustion Plants
- ▶ FGD Process
- ▶ Renewable Energy
- ▶ Steel Plant
- ▶ Small Combustion Plants
- ▶ Power Generation
- ▶ Power Generation
- ▶ SCR and SNCR Process
- ▶ Energy From Waste
- ▶ Metals Processes
- ▶ Glass Manufacturing
- ▶ Chemical Plant

The GCEM40 Series has both TUV and MCERT certification which signifies the accuracy and reliability of its measuring capabilities.

The GCEM40 series analysers can be configured in either single or multi-gas mode to give operators a full range of options. Fully automated zero and span calibrations are performed using clean dry compressed air and protocol gas mixtures to provide long-term accuracy along with minimal maintenance requirements.

Remotely mounted pneumatics in a panel allow zero air to be injected automatically to verify the zero calibration as well as clean and protect the filters on the probe. Span gas can be injected manually to verify the analyser response.



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Technical Specification

Sensor Unit

Operating Principle	NDIR gas filter correlation
Span	0 to 3000ppm (CO, NO, SO ₂) 0 to 25% (CO ₂ , H ₂ O)
Certified Ranges	0-500ppm, 0-1000ppm for CO,NO & SO ₂ to EN15267
Response Time	<200secs
Accuracy	+/-2ppm, +/-2mg/Nm ³ or +/-2% of span
Resolution	1ppm, 1mg/m ³ , 1mg/Nm ³
Calibration	Zero - automatic every 24 hours Span - manually on demand
Probe Length	1m , 2m and 2.2m (NEW low weight 1m)
EMC	EN50270:2006,EN61000-3-2+A1&A2:2009,EN61000-3-3:2008
Low Voltage	61010-1 (Edition 3)
Analogue Output	5 x 4 to 20mA isolated, 500Ω load, fully configurable from keypad.
Logic Output	5 x volt-free SPCO contacts, 50V, 1A max, configurable as alarms 1 x volt-free SPCO contact, 50V, 1A max, for data valid
Serial Output	RS485 modbus configured
DDU display	32-character alpha-numeric back lit LCD
Keypad	4-key soft-touch entry
Construction	Probe - 316L stainless steel Head & DDU - Powder coated aluminium (IP66)
Ambient Temperature	-20 to +50°C Certified -20 to +55°C On request
Flue Gas Temperature	up to 300°C (standard probe) up to 400°C (high-temperature probe)
Power Requirements	24V DC @ 15A
Compressed Air Requirements	Dry & oil free, 20 litre/min @ 4bar for calibration and purging; 2 litre/min @ 4bar normal operation
	-20 to +55°C On request
	up to 300°C (standard probe)
	up to 400°C (high-temperature probe)
	24V DC @ 15A
	dry & oil free, 20 litre/min @ 4bar for calibration and purging; 2 litre/min @ 4bar normal operation
Options	
Dust Shield	For applications with over 400mg of constant dust loading
Power Supply	110/220VAC , 50Hz +/- 10%, 400VA to 24V DC @ 15A



The GCEM40E can be GSM enabled allowing online remote diagnostic information for technical support.

CODEL

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