

3rd GENERATION MULTI-COMPONENT INFRARED GAS ANALYZER

EcoChem MC3



MC3, the 3rd generation multi-component IR analyzer that measures multiple gases at unbelievable cost-to-benefit ratios!

In the field of continuous emission monitoring there has been steady advancement in performance and capabilities. First, the discrete analyzer extractive systems were the only way to meet regulatory approval, then dilution based instruments met some challenges for limited applications. Then in 1989 there became available the first generation multi-component infrared analyzers. They solved numerous problems associated with maintenance and meeting regulatory requirements, saving the users considerable grief. In the mid-nineties improved versions appeared and now a major step forward is making multi-component Continuous Emission Monitoring System (CEMS) not just better but also affordable.

Using newly available technology the MC3 offers the following advantages:

- ✓ 70% less noise in the detector and 110% improvement in source strength provide twice the sensitivity, making it great for single digit applications.
- ✓ Innovative mechanical and thermal design improves stability and reproducibility.
- ✓ New folded path sample cell is fully adjustable to allow optimization for each application.
- ✓ Sample cell volume allows greatly reduced flow rates significantly decreasing maintenance and calibration gas usage.
- ✓ Modbus, modem, network or discrete output interfaces ensure easy plant integration.
- ✓ New iterative algorithm made possible by powerful microprocessors gives increased level of accuracy to measurements.

MC3 Specifications

Lowest Full Scale Measurement Ranges

MC3-HW Hot and Wet Measurement System			MC3-CD Cold and Dry Measurement System		
All components at 185 °C or above Sample Cell Path 6 meters			Dried Sample at 2.5 °C Dewpoint Sample Cell Path 6 Meters		
GAS	LOWEST RANGE	METHOD	GAS	LOWEST RANGE	METHOD
NH ₃	0-10 PPM	GFC	CO	0-20 PPM	GFC
HCl	0-10 PPM	GFC	SO ₂	0-10 PPM	SBDW
CO	0-35 PPM	GFC	NO	0-10 PPM	GFC
SO ₂	0-20 PPM	SBDW	NO ₂	0-10 PPM	SBDW
NO	0-20 PPM	GFC	CO ₂	0-5 %	SBDW
NO ₂	0-20 PPM	SBDW	O ₂	0-25 %	ZRO
CO ₂	0-5 %	SBDW			
H ₂ O	0-10 %	SBDW			
O ₂	0-25 %	ZRO			

GFC = Gas Filter Correlation SBDW = Single Beam Dual Wavelength ZRO = Zirconium Oxide

It should be noted that full-scale sensitivities are dependant on the water vapor content of the measured gases. Thus when measuring with hot/wet gas and high levels of water vapor the measurement accuracy of other gases may be reduced. It is economically and physically practical with the MC3 to use both techniques in the same CEMS.

Weight	38 lb.
Dimensions	Standard 19in rack mount 8.75in x 23in x 19in (Height x Depth x Width)
Flow Rate	3 liter per minute with ¼" Swagelok connectors
Display	Menu-driven customizable LCD Panel
Power	115 volts AC / 60 Hz and 220 volts AC / 50 Hz
Accuracy	± 2 % of full-scale value
Lower Threshold	1 % of lowest range
Response Time	10 sec
Output Signals	Analog: 8 signals of 0/4 – 20 mA Digital: 2 ports RS 232-C, 1 port RS 422-A Relays: Failure Indicator, Service and Maintenance
Operating Temperature	0 – 40°C

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