

## FORNEY F-8010 CROSS-DUCT CARBON MONOXIDE ANALYZER

*The Forney F-8010 Cross-Duct Analyzer was developed for use on Power Generation, Cement, Chemical and Incineration plants and is the industry standard for reliable, low maintenance CO analysis throughout the world.* The analyzer may be used as a complete stand alone monitor or as part of an integrated performance/safety monitoring system on stacks from 1m to 8m and flue gas temperatures up to 300C.

The Forney F-8010 projects an infrared beam across the duct, through the flue gas to a receiver unit. The light beam is tuned to a specific wavelength where the CO absorbs light. The more CO in the light beam the greater the absorption.

To isolate the interference of dust particles the F-8010 uses the principle of Gas Filter Correlation (GFC) where a live and reference measurement are generated in the receiver. The live measurement is sensitive to changes caused by CO or dust. The reference channel is desensitized to CO using a high concentration gas cell. Therefore, the difference between the live and reference channels is a function of CO concentration.

The F-8010 transmitter unit is a small heater assembly that produces a high intensity uniform source of infrared energy over a long lifetime. The heater has a stainless steel cylindrical core, plasma coated with refractory around a 'Kanthal' heating element enclosed within refractory fibers and encapsulated in an aluminum cartridge, for quick, easy replacement in the infrequent event of failure.

The precision and reliability of the measured transmission determines the performance of the complete instrument. Therefore, Forney provides an extremely simple and robust infrared receiver unit. It contains no moving parts, is fully sealed and designed to give many years of maintenance-free operation.

- No sampling system to maintain
- Minimal lens contamination
  - high-efficiency air purges to maintain optical efficiency
- Automatic on-line zero calibration
  - continual correction using integral reference gas cell
- Real-time normalization
  - to standard reference conditions
- Choice of data presentation
  - ppm, mg/m<sup>3</sup> and mg/Nm<sup>3</sup>
- Low maintenance overhead
  - only simple, infrequent checks of the quartz lenses required
- Optional independent verification
  - using Forney certified test cells
- One year parts and labor warranty



ENVIRONMENTAL



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### SPECIFICATIONS

Span*:	CO	Selectable from 0-100ppm to 0-10,000ppm, within the range 200 to 6,000ppm meters at STP
Display Units:		ppm mg/m <sup>3</sup> (measured) mg/Nm <sup>3</sup> (normalized)
Averaging:		Four averages selectable from 10 seconds to 30 days
Accuracy:		± 2% of measurement or ± 5ppm whichever is greater
Outputs:	Analog	Isolated, 500Ω max.
	High alarm	Volt-free contact, 10A @ 250V
	Data valid	Volt-free contact, 10A @ 250V
Inputs:		Oxygen 4-20mA
	Temperature	4-20mA
	Pressure	4-20mA
	Plant status	Contact volt-free contact
Serial Port		For remote instrument operation, normalizing inputs and outputs
Path Length		0.5 to 8m (1.5' to 26.5')
Flue Gas Temperature		0 to 300° C (0-572° F)
Construction		Cast aluminum, fully sealed to IP65 (NEMA IV)
Transmitter		Electrically heated silicon nitride cylinder
Detector		Lithium tantalate pyro-electric detector
Ambient Temperature Limits		-20° C to 70° C (-4° F to 158° F)
Power Requirements		85-132/170-264V AC, 50/60 Hz, 50VA
Purge Air Consumption		1 litre/sec @ 1bar (compressed air) 5 litre/sec (blower air)

\*The range of the output span is quoted in ppm. meters. To obtain the minimum and maximum span for your application, divide these figures by the path length in meters.

### SYSTEM COMPONENTS

