TELEDYNE
ANALYTICAL INSTRUMENTS
Everywhereyoulook™

GFC Series

Infrared Analyzers with Gas Filter Correlation

FEATURES

- Models available for CO_2, CO and N_2O gas detection
- Gas filter correlation method provides part-per-billion (ppb) detection
- Large color touch-screen provides large, luminescent interface
- Adaptive signal filtering optimizes response time
- Temperature and pressure compensation
- USB ports on front panel for peripheral devices and firmware upgrades
- Commonality of parts across all models

GFC Series Configurations

Model	Gas Analyzed
GFC-7000T	**CO_2**
GFC-7001T	**CO**
GFC-7002T	**N_2O**

The GFC Series gas filter correlation analyzers measure low ranges of gases (CO_2, CO, and N_2O detecting models available) by comparing infrared energy absorbed by a sample to that absorbed by a reference according to the Beer-Lambert law.

Using a Gas Filter Correlation Wheel, a high energy IR light source is alternately passed through a target gas-filled chamber and a chamber with no target gas present. The light path then travels through the sample cell, with a variable length folded path depending on the gas being detected. The energy lost through the sample cell is compared with the reference signal provided by the filter wheel to produce a signal proportional to concentration, with little effect from interfering gases within the sample. This design produces excellent zero and span stability and high signal to noise ratio, allowing excellent performance over a wide concentration range.

All GFC Series instruments offer an advanced color display, capacitive touch screen, intuitive user interface, flexible I/O and built-in data acquisition capability. All instrument set up, control and access to stored data and diagnostic information is available through the front panel or via RS232, Ethernet or USB com ports either locally or by remote connection using the included APIcom™ software.

CALIBRATION OPTIONS:

- Ambient zero/ambient span
- Ambient zero/pressurized span
- Zero scrubber/pressurized span
- Zero scrubber/ambient span

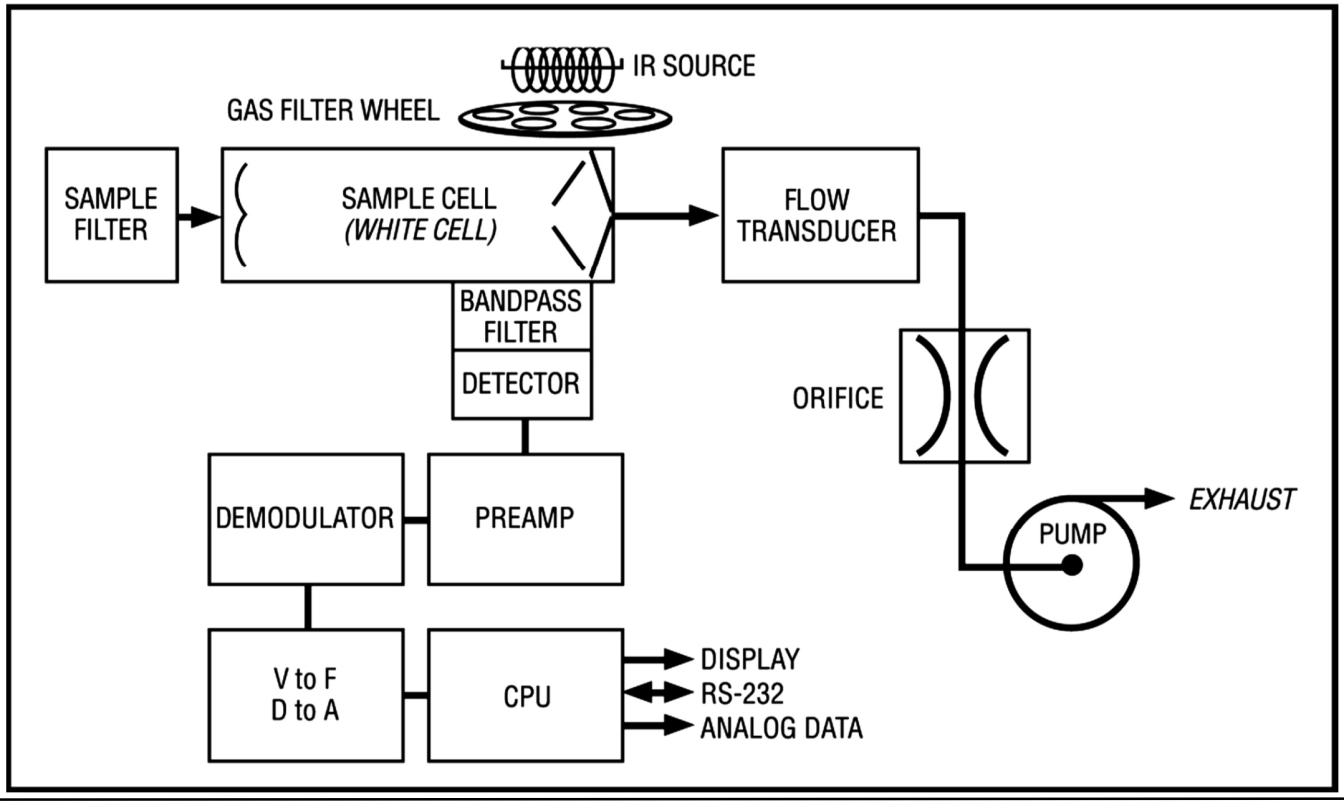
MOUNTING OPTIONS:

- Rack mount brackets with chassis slides
- Rack mount brackets only
- Handles

OTHER OPTIONS:

- Paramagnetic O_2 Sensor
- CO_2 Sensor
- Concentration alarm relays
- Expendables kit

GFC Series Schematic



GFC Series – Infrared Analyzers

SPECIFICATIONS	GFC-7000T	GFC-7001T	GFC-7002T
Gas Analyzed	CO_2	CO	N_2O
Range	0 - 2 ppm to 0 - 2.000 ppm full scale (0 - 100 ppb to 0 - 100 ppm full scale for –U version) (dual ranges and auto-ranging supported)	0 - 1 ppm to 0 – 1.000 ppm full scale (0 - 100 ppb to 0 - 100 ppm full scale for –U version) (dual ranges and auto-ranging supported)	0 - 1 ppm to 0 – 1.000 ppm full scale (0 - 200 ppb to 0 - 200 ppm full scale for –U version) (dual ranges and auto-ranging supported)
Measurement Units	ppb, ppm, µg/m^3, mg/m^3	ppb, ppm, µg/m^3, mg/m^3	ppb, ppm, µg/m^3, mg/m^3
Zero Noise	< 0.1 ppm (RMS) (< 2.5 ppb (RMS) with -U option)	< 0.02 ppm (RMS) (< 10 ppb (RMS) with -U option)	< 0.02 ppm (RMS) (< 10 ppb (RMS) with -U option)
Span Noise	< 1% of reading (RMS) (< 5% of reading (RMS) with -U option)	< 0.5% of reading (RMS) above 5 ppm (< 0.5% of reading above 2.5 ppm with -U option)	< 0.5% of reading (RMS) above 5 ppm (<0.5% of reading (RMS) for -U option)
Lower Detectable Limit	< 0.2 ppm (< 5 ppb with -U option)	0.04 ppm (< 20 ppb with -U option)	0.04 ppm (< 10 ppb with -U option)
Zero Drift	< 0.25 ppm/24 hours	< 0.1 ppm/24 hours (< 20 ppb/24 hours with -U option)	< 0.1 ppm/24 hours (< 25 ppb/24 hours with -U option)
Span Drift	< 0.5% of reading /24 hours	< 0.5% of reading /24 hours (< 0.5% of reading/24 hours above 5 ppm with -U option)	< 0.5% of reading /24 hours
Lag Time	10 seconds	10 seconds	10 seconds
Rise and Fall Time	< 60 seconds to 95%	< 60 seconds to 95%	< 60 seconds to 95%
Linearity	1% of full scale	1% of full scale	1% of full scale
Precision	0.5% of reading	0.5% of reading	0.5% of reading
Sample Flow Rate	800 ml/min ± 10%	800 ml/min ± 10% (1,8 l/min +/- 20% with -U option)	800 ml/min ± 10%
ELECTRICAL SPECIFICATIONS			
Power Requirements	100 – 120 V or 220 – 240 V, 50/60 Hz		
Analog Output Ranges	10 V, 5 V, 1 V, 0.1 V (selectable)		
Recorder Offset	± 10%		
PHYSICAL SPECIFICATIONS			
Operating Temp Range	5 – 40 °C (41 – 104 °F)		
Dimensions (HxWxD)	178 x 432 x 597 mm (7 x 17 x 23.5 inches)		
Weight	18 kg (40 lbs)	18 kg (40 lbs)	22.7 kg (50 lbs)
COMMUNICATIONS			
Included I/O	1 x Ethernet: 10/100Base-T, 2 x RS232 (300-115, 200 baud), 4 x analog outputs (3 x 4 - 20mA current outputs) 2 x USB ports for firmware upgrades, 8 x opto-isolated digital outputs, 6 x opto-isolated digital inputs		
Optional I/O	2 x USB communication ports, 1 x RS485, 8 x analog inputs (0 – 10 V, 12-bit), 4 x digital alarm outputs Multidrop RS232		

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