



## Analysis of your Binary Stream



### About the 50 Series

The newest model of the legendary Binary Stream Gas Analyser from AGC Instruments is used to measure  $N_2$ ,  $H_2$ , He,  $CO_2$ , Ar or other gases in Binary gas mixtures or pure gases. We monitor impurities in a major gas based on the difference of thermal conductivities.

Using hotwire or thermistor elements, an analyser which has accuracy and sensitivity, coupled with a robust platform is achieved with a response time of < 30 second ( $T_{90}$ ). To interface with the analyser is via the new 5.7" QVGA LCD touch screen display, where all status, alarm conditions, diagnostics and direct reading of results are available with ease.

Using a high quality flow detection devices with Alarms, the gas flows are measured & displayed to the LCD display ensuring accuracy and stability to allow great confidence in all results.

The 50 Series model contains a temperature regulated TCD which allows continuous monitoring of the gas stream. Through the use of solenoid valves, drift has been eliminated as a constant reference to Zero Gas is utilised for greater accuracy. Using temperature control of the measuring sensor, excellent stability is guaranteed with <1% drift over a 24 hour period.

### Principle of Operation

The Detector consists of an electrically heated hotwire (or thermistor) element in a temperature regulated metal housing. The detection principle is based on any change in the thermal conductivity of a gas flowing through the detector will change the rate of heat loss from the element to the metal housing. The signal resulting from the temperature change is proportional to the change in sample gas conductivity.

|             |                  |
|-------------|------------------|
| Series 5300 | % Analyser       |
| Series 5400 | 500 ppm to low % |
| Series 5500 | 2 - 500 ppm      |

### Features:

- 5.7" QVGA LCD Display
- Alarm/Fault Status LED
- Direct value reading - % or ppm
- Debug Diagnostic function
- Autovalidation/Autocheck
- Choice of TC Detectors
- Low Sensitivity
- Temperature Controllers option
- Solenoids for Switching of Auto Zero/ Span Gas
- 2 off 4-20 mA outputs
- Alarm Status
- Rack and Wall Mount Versions

### Typical Applications:

- Hydrogen Plants
- Air Liquefaction Plants
- Chemical Plants
- Refrigeration Plants
- Iron & Steel Industry
- Air Separation Units
- Gas Blending Equipment
- Refineries
- Ammonia Plants
- Industrial Gas Production Units
- Power Generation Plants



AGC Series 5500-W

## Applications

Please contact AGC Instruments for other binary gas combinations if not listed below. ppm values shown are Minimum Detectable Levels only (MDL), under stable conditions

|                                     |  |                          |  |                                      |                                     |                                      |
|-------------------------------------|--|--------------------------|--|--------------------------------------|-------------------------------------|--------------------------------------|
| Air/Ar in He                        | N <sub>2</sub> /O <sub>2</sub> in He                       | Air/Ar in H <sub>2</sub> | N <sub>2</sub> /O <sub>2</sub> in H <sub>2</sub> | Ar/CO <sub>2</sub> in N <sub>2</sub> | He/H <sub>2</sub> in N <sub>2</sub> | Ar/CO <sub>2</sub> in O <sub>2</sub> |
| <10ppm                              | <10ppm   | <10ppm                   | <10ppm   | <200ppm                              | <20ppm                              | < 200ppm                             |
| He/H <sub>2</sub> in O <sub>2</sub> | Air/N <sub>2</sub> or O <sub>2</sub> in Ar/CO <sub>2</sub> | He in Ar/CO <sub>2</sub> | H <sub>2</sub> in Ar/ CO <sub>2</sub>            | CH <sub>4</sub> in Air               | Ar/CO <sub>2</sub> in Air           | He/H <sub>2</sub> in Air             |
| <50ppm                              | <100ppm  | <20ppm                   | <20ppm   | <500ppm                              | <100ppm                             | <50ppm                               |

| Specification                    |   |
|----------------------------------|---|
| Display                          | 5.7" Touch Screen LCD Display with CCFL backlight (Backlight/Contrast adjustable)   |
|                                  | QVGA 320 x 240 pixel resolution   |
|                                  | Easy to use interface   |
| Sensitivity                      | Dependent on Application, Equal to 1ppm of Air in He  |
| Ranges                           | 0.01 – 100% / 0.001 – 10.00%, 0-1000ppm   |
| Maximum Resolution               | 1ppm  |
| Zero Drift                       | ±5ppm **  |
| Auto Signal Drift                | Zero drift can be removed by periodic automatic instrument Zero (suitable Zero Gas required)  |
| Response time (T <sub>90</sub> ) | < 30 seconds  |
| Warm up time                     | 1 hour typically  |
| Sample Flow Range                | Max inlet pressure 2 bar [200kPa]   |
| Minimum Pressure required        | 0.015 Bar   |
| Zero Gas requirements            | 1 bar   |
| Flow Measurement                 | Digitally monitored flow control on sample line. Range 0-100ml/min  |
|                                  | Visual High/Low alarms provided   |
| Calibration                      | 5 point calibration curve   |
| Detector                         | Model 10-454 TCD (Default), Filaments/Thermistor choice dependent on application and levels of detection required. The TCD is temperature stabilised with internal cabinet heater for additional stability for ppm applications |
| 4-20mA Outputs                   | 2 off   |
|                                  | Measurement available at current loop 3kv isolation, reverse voltage protected - Passive  |
|                                  | Reverse voltage protected   |
| Alarms                           | Yes. System alarm relays providing voltage free relay contacts, High / Low / Fault Alarms, Fault alarm can be used for system debug   |
| Solenoids                        | Internal Zero/Span/ Sample solenoids provided   |
| Auto Calibration Check           | To be used to validate current measurement against a known calibration gas  |
| Data Logger                      | Data can be logged live via RS 232 to a remote station. 10,000 measurements can be stored internally for retrieval at a later date.   |
| Diagnostics                      | 20 Debug fault codes To quickly identify and correct faults   |
| Power                            | 100/115Vac. 220Vac, 50/60Hz, 300W   |
| Configurations                   | 19" Rack / Bench Top / Wall Mounted / Purged Unit   |
| Dimensions                       | Rack: W = 19" Rack H = 4U (180mm) D = 450mm   |
|                                  | Wall Mount: W = 500mm H = 500mm D = 300mm   |
| Weight                           | Rack: 17 kg Wall Mount: 29 kg   |
| Pump                             | Optional  |

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