Series 100 Trace N_2 Gas Analyser

AGC INSTRUMENTS
Gas Chromatography since 1965

Analysis of N_2 in Argon or in Helium to ppb levels

About:

The AGC Series 100 SED is engineered for the continuous monitoring of N_2 in Ar or N_2 in He. Its N_2 specific detector has been derived from our extremely successful High Frequency Argon Discharge Detector (ADD) system, the Series 100 HF-ADD Gas Analyser.

AGC Instruments has been providing this system configuration for several years to the gas manufacturing companies and especially to argon and helium specific plants throughout the world.

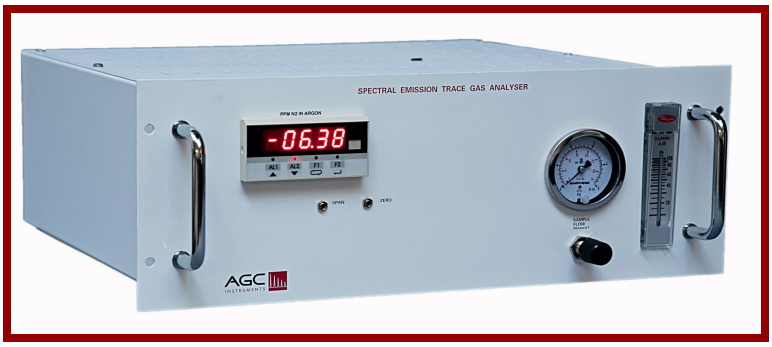
Principal:

The emission wavelength intensity of the Nitrogen molecule is selected to determine the trace amount of Nitrogen in Argon or Helium Matrix Gas.

The response is proportional to the nitrogen concentration in low ppb to high ppm range.

Technique:

Using a spectral emission technique, a unique quartz ionisation chamber is utilised in which the sample gas is ionised by a high frequency tuned oscillator with the resultant emission wavelength intensity of the nitrogen component is directed through a narrow band pass filter and is detected via a photomultiplier tube.



Spectral Emission Detector (SED)

Applications:

Argon or Helium Purification Plants

Steel Industry

Air Separation Plants

Welding Gas Manufacturing

Speciality Gas Manufacturing Plants

Doping Gas Manufacturing

Filling Stations for Cylinder & Trucks

Semiconductor Industry

Chemical Plants

Wafer Fabs in Electronic Industry

Specifications:

Range: 0.01 – 50 ppm

Display: Digital Output (4-½ digit meter)

Response: 0.01 – 10 ppm < 60 secs (95%)

MDL: < 0.01ppm

Accuracy: Better than 0.01% of Full Scale

Zero Drift*(1): <20ppb

*(1) Over 24 hours at dT of operating temperature ±2°C

Zero Drift*(2): <50ppb

*(2) Over 24 hours at dT of operating temperature ±5°C)

Span Drift*(3): <10ppb

*(3) At approximately 5 ppm N_2 in Ar over 24 hours at dT of sample gas of ±2°C)

Span Drift*(4): <10ppb

*(4) At approximately 5 ppm N_2 in Ar over 24 hours at dT of sample gas of ±5°C

Interference*(5) (Relative to O_2): 2ppm O_2 will reduce the N_2 by 20ppb and 0.1ppm will have no effect.

*(5) On a 5 ppm reading N_2 in Ar by an increase of O_2 concentration from < 0.1 ppm to 2 ppm.

Interference*(6) (Relative to CH_4): 2ppm CH_4 will add 0.25ppm to N_2 and 0.1ppm will add 0.01ppm to N_2

*(6) On 5 ppm reading N_2 in Ar by increase of CH_4 concentration from < 0.1 ppm to 2 ppm

Interference*(7) (Relative to H_2O): 2ppm H_2O will add 0.01ppm to N_2 and 0.1ppm will not affect N_2

*(7) On 5 ppm reading N_2 in Ar by increase of H_2O concentration from < 0.1 ppm to 2 ppm

Sample Flow: 50 – 500 mL/min

Sample Pressure: 30 to 600 KPa

Fittings: 2 x 1/8" VCR inlets 2 x 1/8" Swagelok outlets.

Output: Analogue 0-20mA or 4 – 20mA

Alarms: 4 Signal Alarm Contacts (Voltage Free)

(a) Hi Level / low level

(b) Detector Fault Alarm

(c) Temperature Control Alarm

4-20mA: Active 0-10V **Load Resistance:** 0 to 500 ohm

Isolation: 500Vrms **Settling Time:** Conversion + 50 millisec

Electrical Supply: 110/220/240 V, 50/60 Hz; 100 VA

Mounting: Bench or 19" rack

Dimensions: W = 19" (480 mm); H = 4U (180 mm); D = 450 mm

Nett Weight: 25 kgs **Certification:** CE

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