

PORTABLE GAS ANALYSER FOR TURBINE GENERATORS



TGAT 700

The Model TGAT 700 is a Rugged, Portable, Easy-to-use Gas Analyser that monitors purge gases and the cooling gas in hydrogen-cooled turbine generators. It measures hydrogen in air & hydrogen in CO₂ as well as CO₂ in air during maintenance purging of hydrogen rooted turbine generators. Switch selectable ranges on the instrument make it easy to choose the measurement required.

SENSOR PRINCIPLE

The Sensor works on Thermal Conductivity Principle. Two thin film resistors are used for heating and measuring the temperature of the membrane. Two resistors are integrated on the silicon beside the membrane for the compensation of the ambient temperature changes.

Gases that have a lower density than air (H₂) cause a decrease in membrane temperature. Gases with densities heavier than air (CO₂) increase the temperature of the measuring resistor.

APPLICATIONS

- 1) Before workers can perform periodic maintenance inside a hydrogen-cooled turbine generator, the hydrogen (H₂) cooling gas must be purged and replaced with a breathable atmosphere (air). However, air / H₂ mixtures are potentially explosive, so a maintenance purge is used that proceeds in two stages. First, carbon dioxide (CO₂) is used to purge out the H₂. Then, in the second stage, air purges out the Co₂.
- 2) Spot check hydrogen purity during normal generator operation.

MINIMIZE COSTLY DOWNTIME

To minimize downtime, it is important for the 2-step purge process to proceed quickly and effectively. The 7001 helps achieve those objectives. During the first stage of maintenance purging, the unit monitors the changing H₂ / CO₂ mixture. This allows operators to know the earliest moment to begin the second stage (air purge). This also saves money by minimizing CO₂ usage. During the second stage, the 7001 monitors air-in-CO₂, which helps you decide when workers can begin maintenance.

SPECIAL FEATURES

- Portable, Rugged, Lightweight
- Sealed reference cell; no need for a flowing reference support gas
- Uses no consumables and is virtually maintenance free
- Proven Thermal Conductivity detector
- Switch-selectable Gas for easy choice of desired measurement
- Large, easy to read readout for observing rate of change (trending) of purge gas mixtures

BENEFITS

- No Installation Required
- Minimizes costly maintenance downtime
- Saves money by avoiding needless waste of CO2 purge gas
- Assures optimum efficiency by detecting air contamination

SPECIFICATIONS

Ranges (Switch Selectable)	:	0 - 100% H2 in Air 0 - 100% CO2 in Air 0 - 100% H2 in CO2 (Optional)
Accuracy	:	± 1% Full scale
Sensor Type	:	Thermal Conductivity
Resolution	:	±0.1% of the Gas Measured
Linearity	:	±0.4% Full Scale for each range
Response Time	:	0-90% in less than 10 seconds @ 0.5 SCFH
Drift Rate	:	Less than 1% (range)
Display	:	Alpha Numeric LCD
Flow Rate	:	0.1 - 2.5 SCFH Normal 2.5 SCFH maximum (0.5 - 30 psig)
Flow Meter	:	Required
Wetted Parts	:	Brass, SS, Aluminum, Teflon, Nylon
Operating Temperature	:	0 - 60°C
Certification	:	Intrinsically Safe
Gas Connections	:	1/4 Tube
Digital Output	:	RS-232
Analog Output	:	0 - 1 VDC
Accessories	:	Battery Charger, Operation Manual
Supply Voltage	:	240 VAC 50-60Hz
Power	:	12 VDC Battery Inbuilt (Model 7001) 6 VDC Battery Inbuilt (Model 700)
Enclosure	:	NEMA - 4 XPET Plastic Housing

The above Parameter and Ranges are only indicative. Endee will build up and supply the analyser with Parameters, range and features to any Practical Configuration.

Note : Specifications and Features will vary with application. The above are established and validated during design, but are not to be construed as test criteria for every product. Due to endee's commitment to research, design and product improvement, specifications are subject to change without notice.



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