7866 Digital Thermal Conductivity Gas Analyzer

FEATURES

- Factory configured for hydrogen purity applications, providing continuous sample analysis during start-up, shut-down and operating cycles
- Easy-to-read display with digital readout of gas concentration and indication of the range being monitored
- Rapid response sensor provides immediate indication of any process change
- Low maintenance costs, especially with *optional* 7872 sample panel
- Control unit packaged in corrosion-proof aluminum case
- Sensor packaged in an explosion-proof, cast aluminum housing
- Individually set high and low alarms
- *Optional* sample panel pre-engineered for hydrogen purity applications lowers installation and maintenance costs
- *Optional* remote indicator provides display of concentration and range.
- *Optional* Modbus communication supports configuration and data acquisition.

APPLICATIONS

- Electric utilities
- Power plants at large industrial facilities
- Dissociated ammonia

The Honeywell 7866 gas analyzer is designed to provide a highly sensitive and accurate analysis of a binary (2-component) mixture of gases. The principles of thermal conductivity are used to determine the sample gas concentration. The 7866 analyzer compares the thermal conductivity of the gas being measured with that of a reference gas of known thermal conductivity. The analyzer then calculates the concentration of the gas and displays it on the operator interface.

NEW USER FRIENDLY OPERATOR INTERFACE

The easy-to-read displays on the ¼ DIN sized display unit provide a continuous digital readout of the gas concentration. Plain language prompts enable easy setup, field calibration and maintenance. The 7866 control unit is supplied with one or two alarms, which are individually configured using the keyboard on the face of the instrument. The alarms include numeric indication on the display. The control unit outputs a 4-20 mA signal to a remote device for monitoring or recording purposes.

SPECIAL MODEL FOR TRIPLE RANGE HYDROGEN PURITY APPLICATIONS

The 7866DHH2 model is specifically configured for triple range, hydrogen cooled generator applications. The analyzer continuously monitors the gas concentration at start-up and shutdown (Ranges 1 and 2) and during normal operation (Range 3).

Range 1 – Carbon Dioxide Purge:
The analyzer measures CO_2.

Range 2 – Hydrogen Fill:
As hydrogen is introduced into the system, the 7866 measures the hydrogen concentration in CO_2.

Range 3 – Normal operation:
The analyzer monitors H_2 concentration in air.

Each 7866DHH2 model arrives factory configured for hydrogen purity applications, which reduces your installation time and cost. This factory pre-configuration also results in quick, easy, and convenient calibration in all three ranges.

LONG HISTORY OF RELIABLE PERFORMANCE, RAPID RESPONSE

The 7866 sensor assembly has a long history of reliability with thousands of successful installations worldwide. Its rapid response time provides an immediate indication of any change in the process being monitored.

LOW MAINTENANCE AND INSTALLATION COSTS

The low maintenance requirement of the 7866 reduces start-up and shutdown times and minimizes costly maintenance downtime.

OPTIONAL 7872 SAMPLE PANEL

The sample panel is engineered for hydrogen purity applications and is pre-packaged with filters, pressure regulators, flow meters and selector relief valves which properly condition the gas being measured. Conditioning consists of reducing or regulating the pressure of the sample gas, filtering contaminants such as gland seal oil and maintaining the temperature within a specific range. The pre-packaged sample panel design ensures an accurate and reliable sample measurement at a low installation cost.

OPTIONAL 7866DRRI REMOTE INDICATOR

The 7866DRRI provides a digital display of the concentration of the gas under analysis, as well as an indication of the range the process is in or the gas mixture being monitored. This indicator allows monitoring of the operation in the control room as well as near the generator.

SPECIFICATIONS

Performance	
Accuracy	±2% of span (output signal) at reference conditions for binary gas mixtures
Response Time	Maximum, for 4 cfh (2000 cc/min.) flow: for H_2; initial, less than 1 second; 63%: 13 seconds 90%: 23 seconds 99%: 40 seconds For CO_2; Initial, less than 2 seconds; 63%: 24 seconds 90%: 45 seconds 99%: 80 seconds
Operating	
Measuring Range	***Triple Range Analyzer:*** Three ranges - Range 1 measures CO_2 in Air; Range 2 measures H_2 in CO_2 and Range 3 measures H_2 in Air ***Single Range Analyzer***: One range, as specified. For standard ranges, see Selection Guide in the Model Selection Guide
Output Ranges	0-20 mA; maximum load 800 ohms 4-20 mA; maximum load 800 ohms
Sample Requirements	Sample Flow: 0.2 to 4.2 cfh (100 cc/min to 2000 cc/min) Sample Pressure: 37 mm Hg (20" H_2O) minimum (with filter and flowmeter)
Power Requirements	(Control Unit only) Universal Supply 90 to 264 Vac; 50-60 Hz; (consumption is 18VA maximum) or 24 Vac/dc (consumption 12VA maximum): 50 to 60 Hz
Physical Specifications	Sensing Unit Weight: 8.5 kg (18 ¾ lb) Dimensions: Approx. 150 x 150 x 325 mm (6 x 6 x 12 ¾") Finish: Gray textured enamel Control Unit Weight: 1.3kg (3 lb) Dimensions: Bezel: 96 mm H x 96 mm W (3.78" H x 3.78"W) Case: 92 mm H x 92 mm W x 192 mm D (3.62"H x 3.62"W x 7.55"D)

To learn more about the 7866 or other Honeywell products, contact your Honeywell representative, or call 1-800-343-0228. Visit us on the Web at www.honeywell.com/sensing.

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