





436 SERIES

TRI-GAS ANALYZER FOR MONITORING PURITY AND PURGING OF HYDROGEN COOLED POWER GENERATORS

APPLICATIONS

For continuous analysis of hydrogen (H₂) purity and for purge monitoring of hydrogen-cooled generators and synchronous converters.

FEATURES

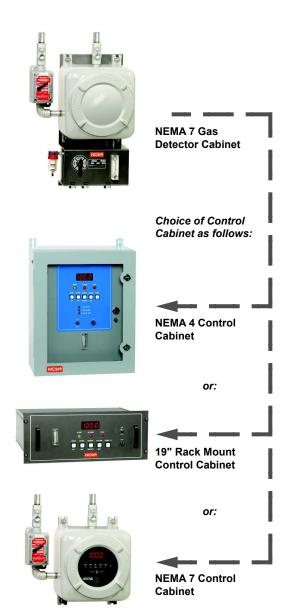
- One analyzer monitors all 3 gases for purity (Range 1) or purging (Ranges 2 and 3):
 - Range 1: 0-100% H₂ in Air
 - Range 2: 0-100% H₂ in CO₂
 - Range 3: 0-100% Air in CO2
- Bright digital readout, 4-20 mA output non-isolated
- Thermal-conductivity cell with high accuracy and repeatability, cannot be burned out.
- Explosion-proof gas detector enclosure suitable for Class 1 Division 1 Group BCD rated areas
- Fast response (T90 -10 to 15 secs)
- Easy to maintain modular layout
- Built in pressure regulator
- 2 levels of low H₂ purity alarms and detector failure alarm

OPTIONS

- Outputs isolated 4-20mA, RS485/USB, Ethernet with MODBUS® protocol
- Magnetic switches in 436N7MC explosion proof control cabinet permits easy calibration without having to open cabinet cover
- Oil vapor filter assembly

CALIBRATION

- Channel 1 Air for Zero, 100% H₂ for Span
- Channel 2 100% CO₂ for Zero, 100% H₂ for Span
- Channel 3 100% CO₂ for Zero, Air for Span





Oil Vapor Filter Assembly
- protects analyzer from sensor fouling caused by oil-vapors from power generator

DESCRIPTION

The Nova Model 436RMN7 Tri-gas analyzer is designed specifically for monitoring H₂ purity in a power generator and to monitor the purging procedure during shut down. The analyzer can measure the following gases by switch selection: Range 1: 0-100.0% H₂ in Air; Range 2: 0-100.0% H₂ in CO₂; Range 3: 0-100.0% Air in CO₂. A 4-20 mA output is provided for the range of 85-100% H₂ in air, along with two low H₂ purity alarms and a sensor fail alarm.

The Model 436 analyzer is typically divided into 2 sections which are electrically connected. The control section contains the main microprocessor board as well as the digital readout meters, alarms, calibration and range switches, power supply and temperature controller for the T/C cell. The gas detector section contains the temperature controlled thermalconductivity (TC) cell, a five way selector valve, gas pressure regulator, flow indicator and 2 flame arrestors.

Either the gas detector section on its own or both gas detector and control sections may be purchased in explosion-proof cabinets. The explosion-proof cabinets are UL listed and CSA certified for use in Class 1, Division 1, Groups BCD hazardous areas. If the gas detector section only is explosion-proof, the control section is typically enclosed in a 19" rack mount cabinet for use in a general purpose, non-hazardous area. The control section can also be mounted in a NEMA 4 wall mount cabinet.

MODELS

- 436N4N7 gas detector in explosionproof cabinet; control section in general purpose NEMA 4 cabinet
- 436RMN7 gas detector in explosionproof cabinet; control section in general purpose 19" rack mount cabinet
- 436N7MC gas detector and control cabinet both in explosion-proof cabinets

SPECIFICATIONS

Nova reserves the right to specification changes which may occur with advances in design without prior notice.

Description	
Method of Detection:	Temperature controlled thermal conductivity (T/C) cell, cannot be burned out due to loss of flow or changing gases
Ranges Available:	Range 1: 0-100% H ₂ in Air; Range 2: 0-100% H ₂ in CO ₂ ; Range 3: 0-100% Air in CO ₂
Resolution:	± 0.1% of gas measured
Accuracy and Repeatability:	\pm 1% F.S except in 85-100% H_2 in Air output range which is within 0.2% absolute H_2
Drift:	H_2 in CO_2 or Air in CO_2 , 1% F.S. per week maximum drift, 0-100% H_2 in Air range is \pm 0.2% per week
Response Time (T-90):	10-15 seconds to 90% step change - not including sample transport time
Ambient Temperature Range:	32-120°F (0-50°C)
Linearity:	± 0.4% of F.S. on H ₂ in Air range, ± 1% of F.S. in H ₂ or Air in CO ₂ ranges
Size and Weight:	Dimensions will vary depending on enclosure style and options required
Power:	115VAC 60Hz (220VAC 50Hz available)
Output Options:	4-20 mA into 500 ohms non-isolated - standard Isolated 4-20mA, RS485/USB
Alarms:	Dual alarms are provided for low H_2 purity. Detector fail alarm also provided as standard. Alarms have front panel light for each alarm and SPDT (normally energized) relay with 5A rating at 250VAC non-inductive load. Alarm set points are field adjustable.





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