

Multi-Component Detector

Linde Kryotechnik AG

Linde

Multi-Component Detector For N_2 , H_2O , C_xH_y and others as well as Oil Aerosole

General

Traces of impurities like nitrogen, water, hydrocarbons and others may cause malfunction of helium process plants with expensive consequences. Contamination plugging for example can shut down cryoplants for a long time.

To allow the operator to detect these potentially harmful traces of impurities, Linde Kryotechnik AG has developed a detector which can even be used in closed circuit systems.

Measuring Principle

Core of the Multi-Component-Detector is a measurement cell where the sample gas is set to an excited state of luminescence by a discharge of alternating current. The light emission that is significant for the component is selectively assigned a photoelectric current in the detector, which contains sensors that consist of an interference filter located ahead of a photodiode.

Standard Types

The standard model WE34M-3 of the Multi-Component-Detector is designed to operate as a stand-alone process gas analyzer for helium process plants. It measures the three most commonly occurring components:

- Moisture [H_2O]
- Nitrogen [N_2] and
- Hydrocarbons [C_xH_y]

Other traces are possible on demand.

For measuring oil mist in helium, the detector is available with an additional pyrolyzer unit of type SM38.

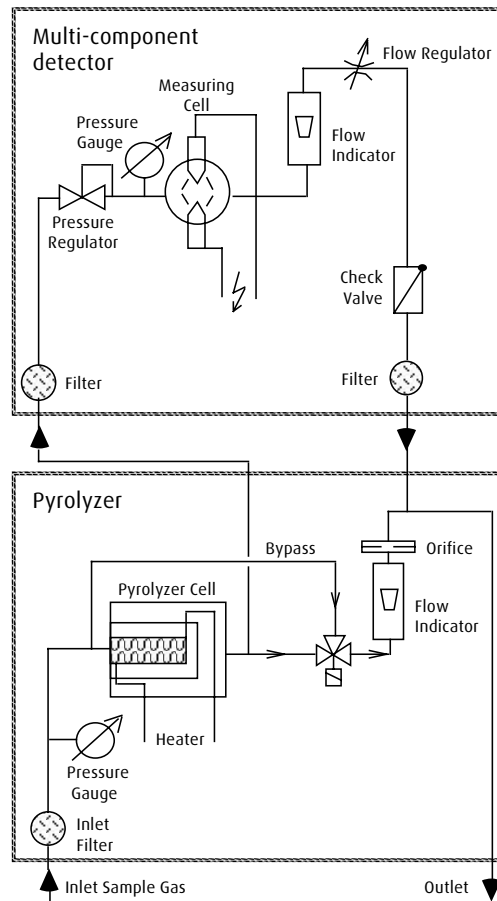
Key Features

- Measurement of moisture, nitrogen, hydrocarbons in the vpm range with only one analyzer
- Measurement of oil mist concentration in the ppb range (only in conjunction with the optional pyrolyzer unit)
- Online measurement and indication with minimum lag time
- Operator interface with backlit LCD, foil keypad and status LED's
- Ready-to-operate
- No carrier or burn gases required
- Built-in pressure-regulator and sample flow meter with regulating valve
- Sample gas can be fed back into the process
- Four impurity output signals 4-20 mA
- Four alarm relays for impurity levels
- Three system status relays for analyzer malfunction like cell pressure, arc and pyrolyzer fault)
- High degree of stability
- Robust design
- Maintenance free

Applications

This all-in-one analyzer is the perfect solution for the helium industry. The fast measuring and the high reliability provide safe running conditions for your plant. The 4-20 mA process signals and the dry contacts for alarm signals allow the implementation into various applications.

- Process gas analyzer for helium-liquefiers, -refrigerators and -purifiers
- Surveillance of oil removal systems after lubricated screw compressors
- Quality control for cryogenic trailer fill-stations and helium cylinder fillings
- Welding gas management



Measurement of Gaseous Impurities in Helium

Multi-Component Detector	Range
Standard measurement range depending on impurities	1 - 30 vpm C _x H _y 1 - 100 vpm N ₂ , H ₂ O
Zero point accuracy without re-calibration	± 2 vpm
Indicated range	1 - 199 vpm
Resolution	0.1 vpm
Reproducibility	± 0.1 vpm typical value for range 2 - 30 vpm
Sample flow	30 slph
Sample gas pressure limits	1.5 - 20 bar g
Ambient temperature limits	0 - 40 °C
Voltage	230 VAC; 50 / 60 Hz
Power consumption	200 W
Dimensions W x H x D without handle, connectors and tubing	480 x 177 x 305 [mm] 4 units in 19" rack
Weight	11 kg
Output	four 4 - 20 mA signals four alarm relays three system status relays
Conformity	CE

Measurement of the Oil Aerosole

Description Pyrolyzer Unit	Range
Standard measurement range	0 - 250 ppb oil aerosole
Relay output adjustable	0.5 - 250 ppb (m)
Lower level of detection	10 ppb mass (m)
Upper level of detection	250 ppb (m)
Sample flow	0.08-0.2 g/sec
Sample gas pressure limits	8 - 20 bar g
Ambient temperature limits	0 - 40 °C
Voltage	230 VAC; 50 / 60 Hz
Power consumption	250 W
Dimensions W x H x D without handle, connectors and tubing	480 x 177 x 305 [mm] 4 units in 19" rack
Weight	14 kg
Analog signal corresponding to	4 - 20 mA 0 - 250 ppb (m)

Linde Kryotechnik reserves the right to change the specifications without prior notice, especially to make revisions regarding design and technology, which improve the functionality ; errors in description and illustration excepted.



Linde Kryotechnik AG
Daettlikonerstrasse 5, 8422 Pfungen, Switzerland
Phone +41 52 304 05 55, FAX +41 52 304 05 50
info@linde-kryotechnik.ch, www.linde-kryotechnik.ch