



Multi Component Detector. For N_2 , H_2O , C_xH_y , oil aerosole and other impurities.



Multi Component Detector



Photodiode

General Traces of impurities like nitrogen, water or hydrocarbons 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 The key element 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 in front of a photodiode.

Standard types The standard WE34DM-3 Multi Component Detector model is designed to operate as a stand-alone process gas analyser for helium process plants. It measures the three most commonly occurring components:

- Moisture (H_2O)
 - Nitrogen (N_2) and
 - Hydrocarbons (C_xH_y)
- Argon (Ar), Neon (Ne), Oxygen (O_2) or Hydrogen (H_2) are possible on demand.

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

- Key features**
- Measurement of moisture, nitrogen and hydrocarbons in the vpm range with only one analyser
 - Measurement of oil mist concentration in the ppb range (only in conjunction with the optional pyrolyser unit)
 - Online measurement and indication with minimum lag time
 - Operator interface with backlit LCD, foil keypad and status LEDs
 - 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 analyser malfunction like cell pressure, arc and pyrolyser fault
 - High degree of stability
 - Robust design
 - Maintenance-free

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

- Process gas analyser for helium liquefiers, refrigerators and purifiers
- Surveillance of oil removal systems
- Quality control for cryogenic trailer and helium cylinder filling operations
- Welding gas management

Technical specifications

The schematic overview illustrates your plant as a process flow diagram. Different kinds of overviews are available to represent the plant in its actual operation modes and states. Process parameters, instrument values, warnings, alarms and other relevant data can instantly be observed.

Multi Component Detector

Measurement of gaseous impurities in helium

Operational data

Standard measurement range	1-30 vpm C _x H _y
depending on impurities	1-100 vpm N ₂ , H ₂ O
Zero point accuracy	± 2 vpm
without re-calibration	
Indicated range	1-199 vpm
Resolution	0.1 vpm
Reproducibility	± 0.1 vpm
	typical value for range
	2-30 vpm
Sample flow	30 slph

Technical data

Sample gas pressure limits	1.5-20 bar g
Ambient temperature limits	0-40 °C
Voltage	230 VAC; 50/60 Hz
Power consumption	50 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

Pyrolyser

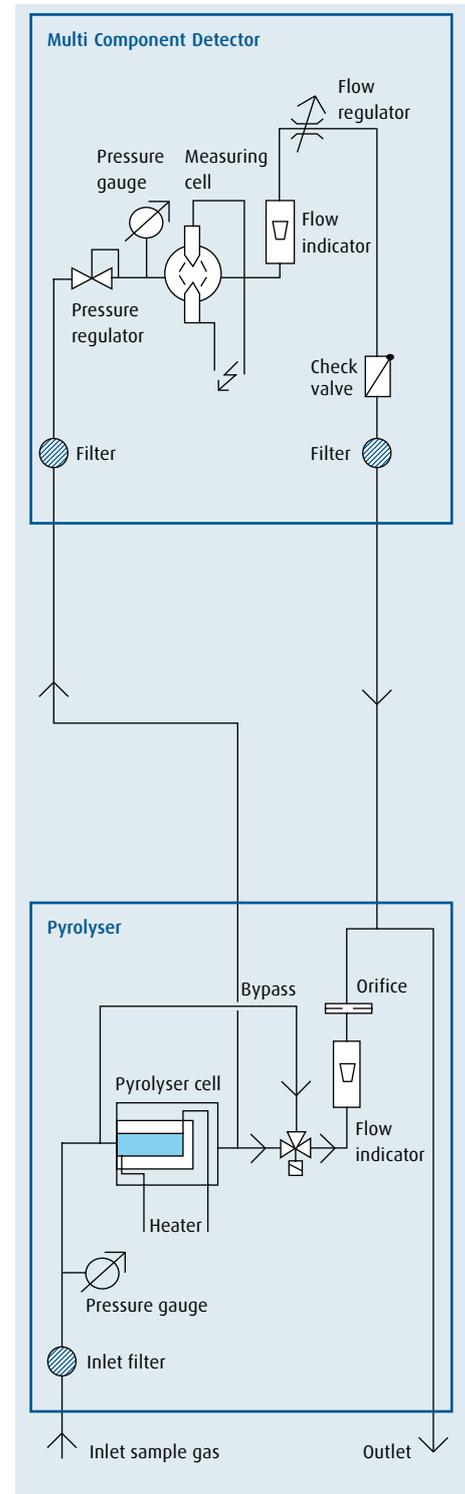
Measurement of the oil aerosole

Operational data

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

Technical data

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	4-20 mA
corresponding to	0-250 ppb (m)



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