

ExDetector HC150-M
ExDetector HC150-K-M

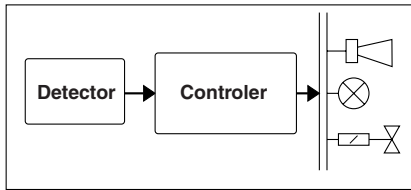


Data Sheet

Gas Detection and Warning Systems



Applications/ Set-up



The gas detector ExDetector HC150 in combination with an evaluation system has the following functions:

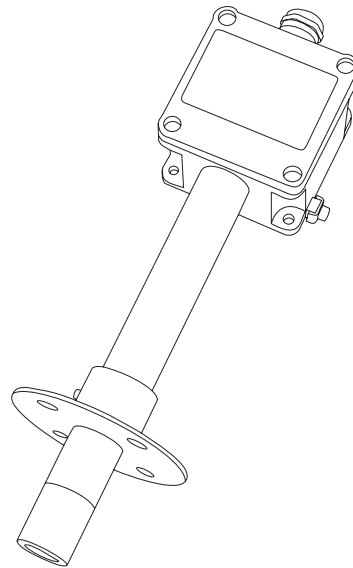
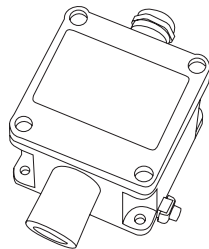
- Measurement and display of the current concentration of potentially explosive gases and vapours
- Monitoring these gases and warning of their presence
- Triggering protective measures:
 - Technical: measures to prevent the concentration increasing (fans; switching equipment off ...).
 - Organisational: optical and acoustic signals.

A gas warning installation consists of the following components:

- A sensor
- An evaluation system
- Controllable devices such as fans, illuminated warning signs, and solenoid valves

Product Features

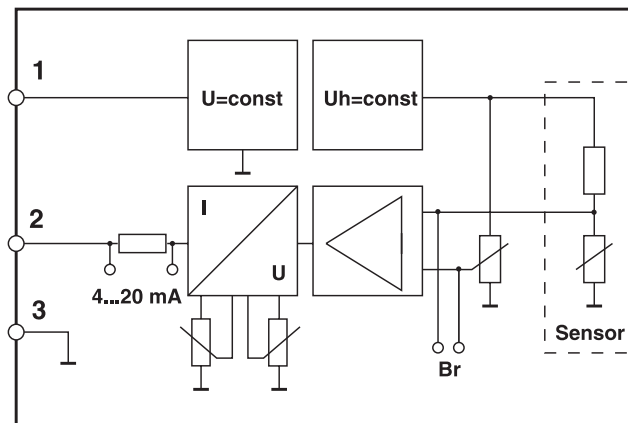
- Detection of combustible gases and vapours in air
- Measurement range: 0 ... 100 % LEL
- Measurement principle: catalytic combustion
- Linear measurement signal 4 ... 20 mA
- One-man calibration
- Suitable for areas where there is a Zone 2 explosion hazard
- Models available:
 - **HC150-M:**
Standard, for wall mounting
 - **HC150-K-M:**
For installation in ventilation ducts



How It Works

The detector electronics regulate the operating parameter (heating voltage) of the sensor. The sensor is made up of active and an inactive elements. The inactive and active sensor elements are connected together in a Wheatstone's bridge circuit to compensate for environmental influences, such as variations in the ambient temperature. As soon as combustible gases reach the active sensor, combustion of the measurement gas occurs. The heat of this reaction changes the electrical resistance and thus the bridge signal. The resultant, small voltage signals are processed and converted to a 4 ... 20 mA measurement signal.

Circuit Block Diagram



**Technical Data
(gases)**

	ExDetector HC150-M	ExDetector HC150-K-M
Application	Wall-mounting	Ventilation duct mounting
Field of use	Zone 2 hazardous areas	
Category	3	
Equipment group	II	
Atmosphere	G	
Detectable gases	Combustible gases and vapours 1)	
Messfunktion	Tested gases: Methane, Ethane, Propane, n-Pentane, n-Hexane and Hydrogen in air	
Measurement range	0 ... 100 %LEL	
Measurement principle	Catalytic combustion (heat of reaction)	
Response time T90	depending on the sample gas (6 ... 60 s) - Hydrogen: 6.9 s - Methane: 13 s - Propane: 20.5 s Measurement setting times were determined by diffusion. The test gas was applied to the sensor via the calibration adapter (0.25 l / min).	
Warm up time	< 10 s	
Max. flow speed	6 m/sec	
Temperature range	-20 °C ... +55°C	Housing: -20 °C ... +55°C Sensor: -20 °C ... +80°C
Air pressure range	800 ... 1200 hPa	
Humidity range	20 ... 90 % rel. humidity	

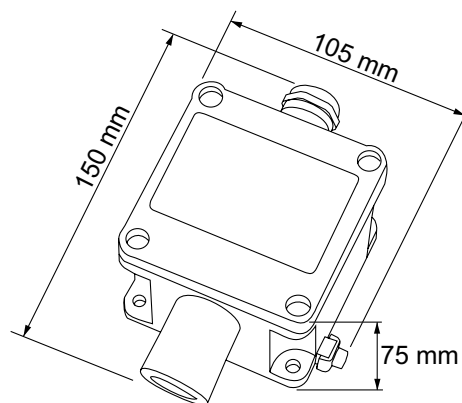
1) The useful life of a catalytic combustion sensor is affected by what are known as catalyst poisons. These substances include sulphur, phosphorus, silicon and lead compounds. Corrosive substances which liberate chlorine or fluorine compounds during reactions at the sensor element also reduce the anticipated working life, normally > 3 years.


**Technical Data
(installation)**

	ExDetector HC150-M	ExDetector HC150-K-M
ATEX designation	II 3 G Ex nA de IIC T4 Gc	
ATEX Certificate of conformity	PTB 10 ATEX 1023	
Performance Certification	BAM 16 ATEX 0801 X	
Field interface	4 ... 20 mA, load resistance max 240 Ohm	
Supply voltage (at sensor terminals)	18 ... 28 VDC SELV / PELV; external 100 mA T series fuse required; max power consumption 5,5 W	
Max. cable length	1000 m (geschirmte Leitung)	
Connecting cable	screened cable H05VVC4V5-K	
Storage conditions	Temperature: -25°C bis 60°C Air pressure: 800 hPa bis 1100 hPa Humidity 20% r.F. bis 90% r.F	
Suitable evaluation device	Gasmesscomputer GMC 8022, GMC 8022E, GMC 8364, GMC 8420	

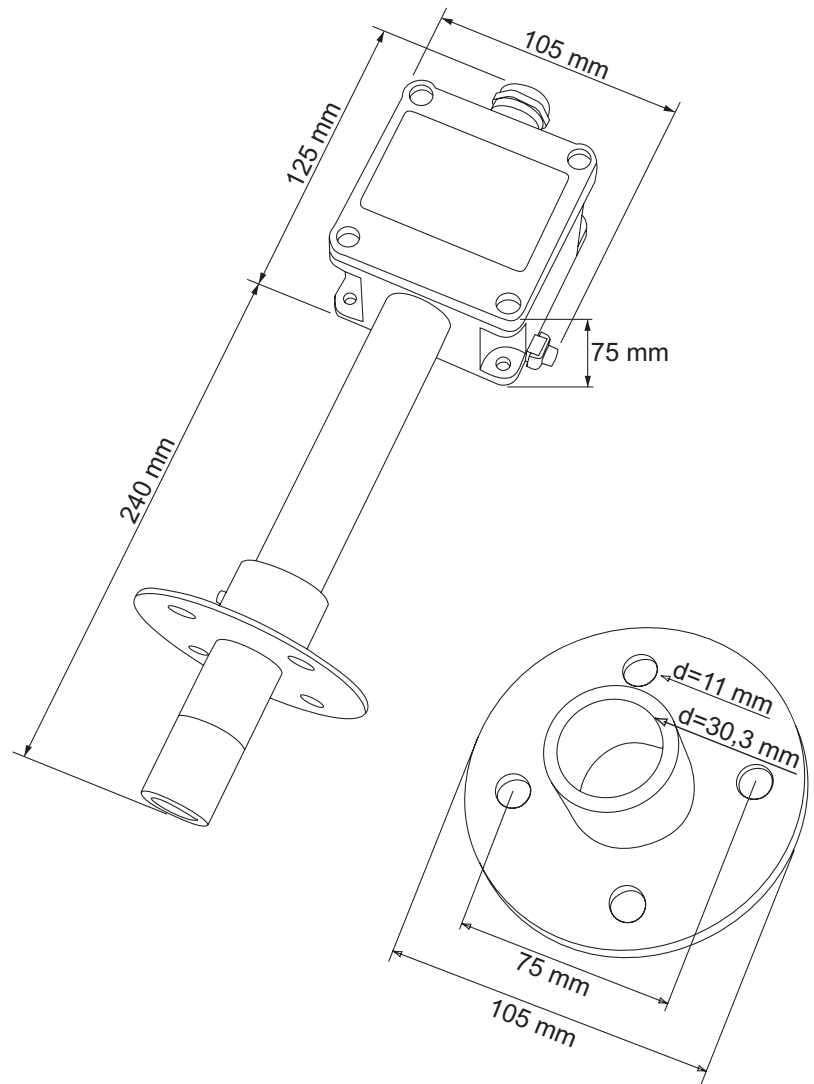
Mechanical Data

	ExDetector HC150	ExDetector HC150-K
Degree of protection (housing)	IP54	
Housing materials	Sensor: stainless steel Housing: aluminium	
Weight	ca. 600 gr	ca. 1600 gr
Cable gland	Cable gland fitting for cable diameter 7... 12 mm	
Connection terminals	0.5 ... 2.5 mm ² (without end sleeve) 0.5 ... 1.5 mm ² (with end sleeve)	

Exdetector HC150


**Mechanical Data**

Exdetector HC 150-K-M

**Accessories**

- Test gas set
- Calibration gases

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Mobiele Service

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