EX-TEC® HS 680

Technical Information

Using the device to detect and repair leaks (LDAR)

Information as per EU Methane Regulation 2024/1787

Leak detection capacity	Application • Inspection above ground: ◦ Minimum resolution (MDL): 1 ppm ◦ Capacity: approx. 1.3 – 4 km/h (0.81-2.49 mph) (depending on network topology) ◦ Threshold: 3 – 5 ppm • Structure, facilities: ◦ Minimum resolution (MDL): 1 ppm ◦ Capacity: approx. 3 – 5 m/min (9.84-16.40 ft/min) ◦ Threshold: 5 – 100 ppm
Purpose	The **EX-TEC HS 680** is a portable measuring device that can be used for all gas pipe network inspection applications according to DVGW G465-4.
Intended use	This device is intended for professional residential and commercial use including small firms and commercial operations. The appropriate specialist knowledge is required to operate the device. The device may only be used to measure the following gases (depending on the device model and additional equipment): • Methane CH4 / Propane C3H8 / Butane C4H10 • Carbon dioxide CO_2 • Oxygen O_2 • Hydrogen sulphide H2S • Carbon monoxide CO
Limitations	The device must **not** be used for: • Gas analysis of technical processes • Monitoring liquids The device's gas input or the connected probe must be as close as possible to the gas to be measured. High temperatures (> 40 °C) (> 104 °F) reduce the service life of the sensors and rechargeable batteries. If a device with an electrochemical sensor is exposed to gas concentrations above the measuring range limit, this can reduce the lifetime of the sensor.

Suitability as per DIN EN 15446:2008

Introduction to standard:

“A portable instrument is used to detect VOC leaks from individual sources. Any detector type is allowed, provided it meets the specifications and performance criteria contained in Clause 5. This procedure is intended to locate the leaks, and to estimate the mass emission rate from individual sources and the total emission of the industrial facility over a reporting period by using:

- *EPA or user-defined correlations whenever possible;*
- *fixed emission factors, in all other cases.“*

VOC: Volatile Organic Compounds
EPA: (U.S.) Environmental Protection Agency

Application of standard:

“The leak sources include, but are not limited to, valves, flanges and other connections, pressure relief devices, process drains, open-ended valves, pump and compressor seal systems, agitator seals, and access door seals.“

The standard cannot be applied to measuring leaks in underground gas pipes.

Specification (Section 4.1)	The product meets the following requirements: 1. Reacts to target gas 2. Detection limit < 10 ppm in the inspection above ground, structure and facilities applications 3. Resolution ±5% (equivalent to 25 ppm at a threshold value of 500 ppm as per EU Methane Regulation) 4. Pump capacity 0.42 – 0.83 l/min (depending on application) 5. Explosion protection II2 G Ex db eb ib IIB T4 Gb 6. Gas sample can be removed individually, inner diameter of probe hose < 3.6 mm (< 0.14″) 7. End of measuring range > 5% vol.
Performance criteria (Section 4.2)	The product has the following features: • Correction factor < 10 for CH4 • t90: ◦ Target: < 5 s ◦ Actual: 7 s (ppm range), 14 s (% vol. range) The product meets the requirements of the DVGW G465-4 code of practice and can be used to detect leaks without restriction in above ground inspection, structure and facilities applications. The T90 time is irrelevant for quantifying the leak volume. • Accuracy: ◦ Target: 10% ◦ Actual: 30% (ppm range), 3-4% (% vol. range)