

Technical data sheet

EX-TEC[®] HS 650

Device data	
Dimensions (W x D x H)	approx. 148 x 57 x 205 mm approx. 148 x 57 x 253 mm with supporting bracket
Weight	approx. 1000 g, depending on equipment

Certificates	
Certificate	TÜV 07 ATEX 553353 X II2G Ex d e ib IIB T4 Gb basic device without leather bag for: CH ₄ , C ₃ H ₈ , C ₄ H ₁₀ , C ₉ H ₂₀ , H ₂ S, CO II2G Ex d e ib IIC T4 Gb basic device with leather bag for: CH ₄ , C ₃ H ₈ , C ₄ H ₁₀ , C ₉ H ₂₀ , H ₂ S, CO, H ₂ BVS 09 ATEX G 001 X, PFG 08 G 002 X (applies to Warning LEL and Warning ExTox applications for CH ₄ , C ₃ H ₈ , CO ₂ , O ₂ , CO, H ₂ S).

Device elements	
Display	monochromatic graphic display, 320 x 240 pixels
Buzzer	frequency 2.4 kHz, volume 80 db (A) / 1 m
Signal light	red
Pump capacity	vacuum > 250 mbar, volume flow approx. 50 l/h
Interface	USB
Memory	8 MB
Operation	ON/OFF key, 3 function keys, jog dial

Operating conditions	
Operating temperature	-20 °C – +40 °C
Storage temperature	-25 °C – +60 °C (temperatures above 40 °C reduce the lifetime of the sensors)
Humidity	5 – 90 % r.h., non-condensing
Atmospheric pressure	950 – 1100 hPa
Protection rating	IP54

Power supply	
Power supply	NiMH rechargeable or disposable alkaline batteries, type Mignon (AA)
Operating time, typical	at least 8 h
Charging time	approx. 3 h (complete charge) depending on capacity
Charging voltage	12 V DC, max. 1 A

Data transmission	
Communication	USB

Gas types	
Standard	methane
Optional	propane C ₃ H ₈ (% LEL / % vol.) butane C ₄ H ₁₀ (% LEL)

Infrared sensor C_xH_y LEL range	
Measuring range	0 – 4.4 % vol. (CH ₄), 0 – 100 % LEL
Resolution	0.05 % vol.
Response times	t ₅₀ < 8 s (CH ₄), t ₉₀ < 14 s (CH ₄)
Warm-up time	17 s
Measuring error	±1 % LEL (short-term stability as per EN 60079-29-1) ±4 % LEL (long-term stability as per EN 60079-29-1)
Interference	all hydrocarbons
Lifetime, expected	5 years

Infrared sensor C_xH_y % vol. range	
Measuring range	0 – 100 % vol. (CH ₄)
Resolution	0.1 % vol. (0 – 9.9 % vol.) 1 % vol. (10 – 100 % vol.)
Response times	t ₅₀ < 9 s (CH ₄), t ₉₀ < 17 s (CH ₄)
Warm-up time	17 s
Measuring error	3 % (as per EN 60079-29-1)
Interference	all hydrocarbons
Lifetime, expected	5 years

Infrared sensor CO2 TOX range	
Measuring range	0 – 5 % vol.
Resolution	0.02 % vol.
Response times	t ₉₀ < 20 s
Warm-up time	17 s
Measuring error	±0.04 % vol. (long-term stability as per EN 45544)
Interference	none
Lifetime, expected	5 years

Infrared sensor CO2 % vol. range	
Measuring range	0 – 30 % vol.
Resolution	1 % vol.
Response times	t ₉₀ < 20 s
Warm-up time	17 s
Measuring error	1 % vol.
Interference	none
Lifetime, expected	5 years

Electrochemical sensor oxygen O2	
Measuring range	0 – 25 % vol.
Resolution	0.1 % vol.
Response times	t ₉₀ < 15 s
Warm-up time	approx. 1 min
Measuring error	±3 % or ±0.3 % vol. (±3 digits)
Interference	none
Lifetime, expected	36 months

Electrochemical sensor carbon monoxide CO	
Measuring range	0 – 500 ppm
Resolution	1 ppm
Response times	t ₉₀ < 30 s
Warm-up time	approx. 1 min
Measuring error	±10 % or ±3 ppm (±3 digits) ±5 ppm (long-term stability as per EN 45544)
Interference	H ₂ , NO
Lifetime, expected	36 months

Electrochemical sensor hydrogen sulphide H₂S	
Measuring range	0 – 100 ppm
Resolution	1 ppm
Response times	t ₉₀ < 30 s
Warm-up time	approx. 1 min
Measuring error	±10 % or ±3 ppm (±3 digits) ±2 ppm (long-term stability as per EN 45544)
Interference	e. g. H ₂ , SO ₂ , CO
Lifetime, expected	36 months

106913 – 06-06-2012 – Subject to technical changes.