Technical Data Sheet

SEWERIN
Protecting Water, Gas and Life.

EX-TEC®
HS 680/660/650/610

Series

Type/model	• HS 680: 064 01 • HS 660: 064 11 • HS 650: 064 21 • HS 610: 064 31

Certificates

Certificate	TÜV 07 ATEX 553353 X • II 2G Ex db eb ib IIB T4 Gb basic device without leather bag for: ◦ CH4, C3H8, C4H10, C9H20, H2S, CO • II 2G Ex db eb ib IIC T4 Gb basic device with leather bag for: ◦ CH4, C3H8, C4H10, C9H20, H2S, CO, H2 BVS 09 ATEX G 001 X, PFG 08 G 002 X • applies to Warning %LEL and Warning ExTox applications for CH4, C3H8, CO2, O2, CO, H2S

Device data

Dimensions (W × D × H)	approx. 148 × 57 × 205 mm (5.83 × 2.24 × 8.07 in) approx. 148 × 57 × 253 mm (5.83 × 2.24 × 9.96 in) with supporting bracket
Weight	approx. 1000 g (35 oz), depending on equipment

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Features

Display	monochrome, 320 x 240 pixel
Buzzer	• frequency: 2.4 kHz • volume: 80 dB (A) / 1 m (3.28 ft)
Signal light	red
Pump	• vacuum: > 250 mbar • volume flow: typically 50 l/h ±20 l/h ◦ inspection above ground, measuring in bar holes, gas measuring, plants applications: approx. 50 l/h ◦ structure, warning applications: approx. 30 l/h ◦ application ethane analysis when sampling: approx. 50 l/h • pump error (F100) depending on volume flow: ◦ ≤ 20 l/h F100 certain ◦ > 20 l/h – ≤ 35 l/h F100 possible
Interface	USB
Memory	8 MB
Control	• ON/OFF key • 3 function keys • Jog dial
Sensor	HS 680 • IR and SC for flammable gases (CH4, C3H8, C4H10) • IR for CO2 optional: • EC for O2, H2S, CO HS 660 • IR and SC for flammable gases (CH4, C3H8, C4H10) • IR for CO2 optional: • EC for O2, CO HS 650 • IR for flammable gases (CH4, C3H8, C4H10) • IR for CO2 optional: • EC for O2, H2S, CO HS 610 • IR for flammable gases (CH4, C3H8, C4H10) • IR for CO2 optional: • EC for O2

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Operating conditions*

Operating temperature	-20 – 40 °C (-4 – 104 °F)
Humidity	5 – 90% r.h., non-condensing
Atmospheric pressure	900 – 1100 hPa
Pressure at gas inlet	max. 100 mbar
Protection rating	IP54
Position of use	any

*Optional sensors can affect the operating conditions of the device.

Storage conditions

Storage temperature	-25 – 60 °C (-13 – 140 °F) temperatures above 40 °C (104 °F) reduce the service life of the sensors

Power supply

Power supply	4 cells, type Mignon AA, optionally: • rechargeable batteries: NiMH • disposable batteries: Alkaline
Operating time, typical	at least 8 h
Charging time	approx. 3 h (complete charge), depending on capacity
Charging temperature	0 – 35 °C (32 – 95 °F)
Charging voltage	12 V DC (max. 1 A)

Data transmission

Communication	USB

Gas types

Default	CH4
Optional	C3H8 • HS 680/660/650/610: % vol. • HS 680/660: ppm • HS 680/650: % LEL C4H10 • HS 680/660: ppm • HS 680/650: % LEL

Sensors

Note:
probes increase the stated response times.

Methane CH4, propane C3H8, butane C4H10 (Warning %LEL and Warning ExTox applications)

Type	infrared sensor		
Use	HS 680/650		
Measuring range	0 – 100% LEL		
Resolution	• CH4:	0.05% vol.	
	• C3H8, C4H10:	0.02% vol.	
Response times	• CH4:	t50 < 8 s	t90 < 14 s
	• C3H8, C4H10:	t50 < 9 s	t90 < 17 s
Warm-up time	< 30 s		
Temperature range	-20 – 40 °C (-4 – 104 °F)		
Measuring error	according to EN 60079-29-1		
	• CH4:	±1% LEL (short-term stability)	
		±4% LEL (long-term stability)	
	• C3H8:	±1% LEL (short-term stability)	
		±1% LEL (long-term stability)	
Interference, known	all hydrocarbons CxHy		
Lifetime, expected	5 years		
Adjustment	test gas concentration:		
	• zero point:	hydrocarbon-free, clean air	
	• CH4:	2.20% vol., utilisable 1.00 – 4.00% vol.	
	• C3H8:	1.00% vol., utilisable 0.85 – 1.50% vol.	
	• C4H10:	1.00% vol., utilisable 0.50 – 1.30% vol.	

Methane CH4, propane C3H8 (Gas measuring application)

Type	infrared sensor
Use	HS 680/660/650/610
Measuring range	0 – 100% vol.
Resolution	• 0.1% vol. (0 – 9.9% vol.) • 1% vol. (10 – 100% vol.)
Response times	• CH4: t50 < 9 s t90 < 17 s • C3H8: t50 < 11 s t90 < 22 s
Warm-up time	< 30 s
Temperature range	-20 – 40 °C (-4 – 104 °F)
Measuring error	±3% vol. (according to EN 60079-29-1)
Interference, known	all hydrocarbons CxHy
Lifetime, expected	5 years
Adjustment	test gas concentration: • zero point:: hydrocarbon-free, clean air • CH4: 100% vol., utilisable 20 – 100% vol. • C3H8: 100% vol., utilisable 20 – 100% vol.

Carbon dioxide CO2 (Warning ExTox application)

Type	infrared sensor
Use	HS 680/650
Measuring range	0 – 5% vol. • lower limit: 0.02% vol.
Resolution	0.02% vol.
Response times	t90 < 20 s
Decay times	t10 < 14 s
Warm-up time	< 30 s
Temperature range	-20 – 40 °C (-4 – 104 °F)
Measuring error	as per EN 45544: ±0.04% vol. (long-term stability)
Zero point deviation	0.04% vol.
Interference, known	none
Humidity	5 – 90% r.h., non-condensing • short term: 0% r.h.
Lifetime, expected	5 years
Adjustment	test gas concentration: • zero point: carbon dioxide-free, clean air • CO2: 2.00% vol., utilisable 2.00 – 5.00% vol.

Carbon dioxide CO2 (Measuring in bar holes application)

Type	infrared sensor
Use	HS 680/660/650/610
Measuring range	0 – 30% vol.
Resolution	1% vol.
Response times	t90 < 20 s
Warm-up time	< 30 s
Temperature range	-20 – 40 °C (-4 – 104 °F)
Measuring error	±1% vol.
Interference, known	none
Humidity	5 – 90% r.h., non-condensing • short term: 0% r.h.
Lifetime, expected	5 years
Adjustment	test gas concentration: • zero point: carbon dioxide-free, clean air • CO2: 20% vol., utilisable 10 – 30% vol.

Oxygen O2

Type	electrochemical sensor
Use	HS 680/660/650/610
Measuring range	0 – 25% vol.
Resolution	0.1% vol.
Response times	t90 < 15 s
Warm-up time	up to 90 s
Temperature range	-20 – 40 °C (-4 – 104 °F)
Measuring error	±3 %, minimum ±0.3 % vol. (±3 digit)
Drift	< 2% within 3 months
Interference, known	none
Humidity	5 – 90% r.h., non-condensing • short term: 0% r.h.
Lifetime, expected	3 years
Adjustment	test gas concentration: • zero point: ◦ oxygen-free air ◦ 100% vol. N2 ◦ 100% vol. CH4 • O2: 20.9% vol., e.g. clean air

Carbon monoxide CO

Type	electrochemical sensor
Use	HS 680/650
Measuring range	0 – 500 ppm • lower limit: ◦ 0 – 100 ppm: 4 ppm ◦ > 100 ppm: 11 ppm
Resolution	1 ppm
Response times	t90 < 30 s
Decay times	t10 ≤ 25 s
Warm-up time	up to 90 s
Temperature range	-20 – 40 °C (-4 – 104 °F)
Measuring error	• ±3 %, minimum ±3 ppm (±3 digit) • Long-term stability as per EN 45544 ◦ test gas: ≤ 4% of measured value ◦ zero point (fresh air): ≤ 1 ppm
Drift	< 10% within 6 months
Zero point deviation	• 0 – 100 ppm: 3 ppm • > 100 ppm: 13 ppm
Interference, known	at 20 °C (68 °F) • C2H2 100 ppm: approx. 90 ppm CO • C2H4 100 ppm: approx. 96 ppm CO • Cl2 15 ppm: approx. 1 ppm CO • H2 200 ppm: approx. 30 ppm CO • H2S 50 ppm: approx. 1 ppm CO • NH3 50 ppm: approx. 0 ppm CO • NO 50 ppm: approx. 15 ppm CO • SO2 20 ppm: approx. 0 ppm CO
Humidity	15 – 90% r.h., non-condensing • short term: 0% r.h.
Lifetime, expected	3 years
Adjustment	test gas concentration: • zero point: clean air • CO: 40 ppm, utilisable 10 – 150 ppm

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Hydrogen sulphide H2S

Type	electrochemical sensor
Use	HS 680/650
Measuring range	0 – 100 ppm • lower limit: 1 ppm
Resolution	1 ppm
Response times	t90 < 30 s
Decay times	t10 < 27 s
Warm-up time	up to 120 s
Temperature range	-20 – 40 °C (-4 – 104 °F)
Measuring error	• ±3 %, minimum ±3 ppm (±3 digit) • long-term stability as per EN 45544 ◦ test gas: ≤ 12% of measured value ◦ zero point (fresh air): ≤ 1 ppm
Drift	< 10% within 6 months
Zero point deviation	2 ppm
Interference, known	at 20 °C (68 °F) • CO 200 ppm: approx. 5 ppm H2S • H2 100 ppm: approx. -2 ppm H2S • NO 50 ppm: approx. 10 ppm H2S • NO2 200 ppm: approx. -3 ppm H2S • SO2 20 ppm: approx. 3 ppm H2S
Humidity	15 – 90% r.h., non-condensing • short term: 0% r.h.
Lifetime, expected	> 3 years
Adjustment	test gas concentration: • zero point: clean air • H2S: 40 ppm, utilisable 10 – 100 ppm

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Methane CH4, propane C3H8

Type	gas-sensitive semiconductor
Use	HS 680/660
Measuring range	0 – 1% vol.
Indication range	0 – 1.5% vol.
Resolution	• 0 – 10 ppm: 1 ppm • 10 – 100 ppm: 2 ppm • 100 – 999 ppm: 20 ppm • 0.10 – 1.0% vol.: 0.02% vol. (200 ppm)
Response times	CH4: t90 < 7 s
Warm-up time	approx. 1 min
Measuring error	±30%
Interference, known	all flammable gases
Lifetime, expected	5 years
Adjustment	test gas concentration: • zero point: hydrocarbon-free, clean air • CH4: ◦ 10 ppm ◦ 100 ppm ◦ 1000 ppm ◦ 1.0% vol. • C3H8: ◦ 10 ppm ◦ 100 ppm ◦ 1000 ppm ◦ 1.0% vol.

Ethane-detector

Type	gas chromatograph
Use	HS 680/660
Gases, separable	CH4, C2H6, C3H8
Sensor, used	gas-sensitive semiconductor
Measuring range	0 – 12000 ppm
Separating capacity	25 ppm
Resolution	1 ppm
Measurement time	4 min
Warm-up time	approx. 1 min
Measuring error	±30%
Lifetime, expected	5 years
Test gases	gas mixture: 1% vol. CH4 / 100 ppm C2H6 in synth. air

Diensten van EURO-INDEX

EURO-INDEX is fabrikant van BLAUWE LIJN en importeur/distributeur van diverse A-merken test- en meetinstrumenten. Wij leveren naast instrumenten ook de diensten om het gebruik hiervan in uw bedrijfsvoering te optimaliseren. Dit omvat uiteraard onderhoud, reparatie en kalibratie van instrumenten, maar ook kennisdeling via de EURO-INDEX Academy en verhuur van meetinstrumenten.

Geautoriseerd Service Centrum

EURO-INDEX is van de meeste merken in ons assortiment een Geautoriseerd Service Centrum. Dit betekent dat uw instrumenten worden behandeld door technici die zijn opgeleid door de fabrikant en beschikken over de juiste gereedschappen en software. Er worden uitsluitend originele onderdelen toegepast en de garantie van uw instrument blijft intact, net als de certificering (ATEX, EN50379, etc.).

Kalibratielaboratorium

Ons moderne service- en kalibratielaboratorium beschikt over een RvA accreditatie naar NEN-EN-ISO/IEC 17025. Deze accreditatie geldt voor grootheden, zoals gespecificeerd in de scope bij accreditatienummer K105.

Meer info

Kijk voor een overzicht van al onze diensten op euro-index.nl/diensten

KWS®

KWS® is een unieke kalibratieformule voor uw test- en meetinstrumenten met periodiek onderhoud en kalibratie tegen vaste, lage kosten.
Uw kalibratiecertificaten zijn digitaal beschikbaar via Mijn KWS (gratis webportaal en app) en door de QR-code te scannen van de kalibratiesticker op het instrument.

Meer info

Verhuur van meetinstrumenten

Er zijn diverse situaties waarbij huren handig is:
- U heeft tijdelijk extra toestellen nodig.
- Uw eigen meetinstrument wordt onderhouden en/of gekalibreerd.
- U moet een eenmalige meting verrichten.

Meer info

EURO-INDEX Academy

- Trainingen (individueel en klassikaal)
- Cursussen, infosessies en workshops
- Demonstratie- en instructievideo's
- Whitepapers

Meer info

Servicebalie

Onderhoud, reparatie en kalibratie

Cursussen en workshops

Kalibratielaboratorium

Wijzigingen voorbehouden EURO-INDEX® NL 26006

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