Technical Data Sheet

SEWERIN
Protecting Water, Gas and Life.

Multitec® 520

Series

Type/model	066 01

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 • valid for CH4, C3H8, C9H20, CO2, O2, CO, H2S

Device data

Dimensions (W × D × H)	approx. 148 × 57 × 205 mm (5.83 x 2.24 x 8.07 in) approx. 148 × 57 × 253 mm (5.83 x 2.24 x 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 • 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
Controls	• ON/OFF key • 3 function keys • jog dial
Sensors	• IR for flammable gases (CH4, C3H8, C4H10, C9H20) • IR for CO2 optional: • EC for O2, H2S, CO, NH3

Operating conditions*

Operating temperature	-20 – 40 °C (-4 to 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 °F – 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 °F – 95 °F)
Charging voltage	12 V DC (max. 1 A)

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Data transmission

Communication	USB

Gas types

Default	CH4
Optional	• C3H8 • C4H10 • C9H20

Sensors

Note:
Probes increase the stated response times.

Methane CH4, propane C3H8, butane C4H10, nonane C9H20

Type	infrared sensor	
Measuring range	0 – 100% LEL	
Resolution	• CH4: • C3H8, C4H10, C9H20:	0,05 Vol.-% 0,02 Vol.-%
Response times	• CH4: • C3H8, C4H10: • C9H20:	t50 < 8 s t90 < 14 s t50 < 9 s t90 < 17 s t50 < 16 s t90 < 120 s
Warm-up time	< 30 s	
Temperature range	-20 – 40 °C	
Measuring error	as per EN 60079-29-1 • CH4: • C3H8: • C9H20:	 ±1% LEL (short-term stability) ±4% LEL (long-term stability) ±1% LEL (short-term stability) ±1% LEL (long-term stability) ±5% LEL
Interference, known	all hydrocarbons CxHy	
Lifetime, expected	5 years	
Adjustment	test gas concentration: • zero point: • CH4: • C3H8: • C4H10: • C9H20:	 hydrocarbon-free, clean air 2.20% vol., utilisable 1.00 – 4.00% vol. 1.00% vol., utilisable 0.85 – 1.50% vol. 1.00% vol., utilisable 0.50 – 1.30% vol. 0.22% vol. (substitute test gas: 0.3% vol. C3H8)

Carbon dioxide CO2

Type	infrared sensor
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 to 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.

Oxygen O2

Type	electrochemical sensor
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 to 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
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 to 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
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 to 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

Ammonia NH3

Type	Electrochemical sensor
Measuring range	0 – 100 ppm
Resolution	1 ppm
Response times	t90 < 60 s
Warm-up time	up to 90 s
Temperature range	-20 – 40 °C (-4 to 104 °F)
Measuring error	±3 %, minimum ±3 ppm (±3 digit)
Drift	< 5% within 6 months
Interference, known	at 20°C (68 °F) • H2 20 ppm: approx. 1 ppm NH3
Humidity	15 – 90% r.h., non-condensing • short term: 0% r.h
Lifetime, expected	> 2 years
Adjustment	test gas concentration: • zero point: clean air • NH3: 50 ppm in N2, utilisable 10 – 50 ppm