



CH<sub>4</sub> | CO<sub>2</sub> | H<sub>2</sub>S | O<sub>2</sub> | H<sub>2</sub> | N<sub>2</sub> | CO | NO | NO<sub>2</sub> | NO<sub>x</sub>

## OPTIMA Biogas

Professional rugged handheld biogas analyzer.



For fast gas analysis at biogas, biomethane and landfill plants.



# OPTIMA Biogas

Multi-use handheld device for fast control measurements

**With OPTIMA Biogas we offer you additionally measurement of biogas pressure and temperature, gas flow velocity, with normalized flow rate calculation.**

OPTIMA Biogas may measure, given an appropriate sensor configuration, CHP engine exhaust gases as well.

## These are your special advantages:

- Biogas measurement: CH<sub>4</sub>, CO<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>S
- Exhaust gas measurement: O<sub>2</sub>, CO<sub>2</sub>, CO, NO, NO<sub>2</sub>
- Ambient air measurement: CH<sub>4</sub> (LEL), H<sub>2</sub>S
- Different measuring units settable by user
- Intuitive menu navigation with function keys
- Glass fiber reinforced enclosure with fixing magnets
- High volume data memory with interface to App and PC software
- Strong Lithium-Ion battery for at least 15 h continuous operation





# The device in detail

## An overview of the special features



### Operation and colour display

Intuitive guidance through the measuring programs, thanks to simple display and keypad interaction



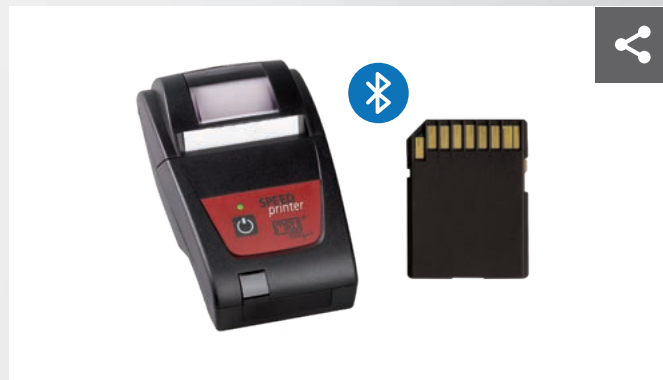
### Condensate and dirt are kept out

Large-volume condensate separator with proven star filter including water stop function



### Combination probe

For simultaneous measurement of flow velocity and biogas sampling, with temperature and pressure measurement for normalized flow rate calculation



### Store, transfer and print measurement data

SD card, Mini-USB and Bluetooth for data transfer to Smartphone, Tablet or PC – or infrared speed printer



### Simultaneous measurement of biogas and flow velocity

Measurement of bio- or landfill gas, using special S-type probe, with 2 ... 100 m/s and calculation of the flow rate in m<sup>3</sup>/h



### Practical accessories to carry along

Optionally: transport case, gas sampling probe, MRU speed printer and nylon transport bag

# OPTIMA Biogas

## Technical data



Biogas/-methane	Measuring method	Measuring range min./max.	Resolution	Accuracy
<b>Methane (CH<sub>4</sub>)</b>	NDIR	0 ... 100%	0.01 %	± 0.3 % or 3 % reading* or 0,5 % reading after calibration*
<b>Carbon dioxide (CO<sub>2</sub>)</b>	NDIR	0 ... 100%	0.01 %	± 0.3 % or 3 % reading* or 0,5 % reading after calibration*
<b>Hydrogen sulphide (H<sub>2</sub>S)</b>	electrochemical	0 ... 2,000/5,000 ppm	1 ppm	± 5 ppm or 5 % (0 ... 500 ppm), 10% (> 500 ppm) reading
<b>Oxygen (O<sub>2</sub>)</b>	electrochemical	0 ... 25 %	0.01 %	± 0.2 % absolute
<b>Hydrogen (H<sub>2</sub>)</b>	electrochemical	0 ... 1,000/2,000 ppm	1 ppm	± 5 ppm or 5 % (0 ... 500 ppm), 10% (> 500 ppm) reading
<b>Nitrogen (N<sub>2</sub>)</b>	calculated	0 ... 100%	0.1 %	
<b>Calorific value (Hu)</b>	calculated	0 ... 50 MJ/m <sup>3</sup>	0.1 MJ/m <sup>3</sup>	

Engine exhaust gas (CHP)	Measuring method	Measuring range min./max.	Resolution	Accuracy
<b>Oxygen (O<sub>2</sub>)</b>	electrochemical	0 ... 25 %	0.01 %	± 0.2 % absolute
<b>Carbon dioxide (CO<sub>2</sub>)</b>	NDIR	0 ... 100%	0.01 %	± 0.3 % or 3 % reading*
<b>Carbon monoxide (CO)</b>	electrochemical	0 ... 10,000/20,000 ppm	1 ppm	± 10 ppm or 5 % (0 ... 4,000 ppm), 10% (> 4,000 ppm) reading
<b>Nitric monoxide (NO)</b>	electrochemical	0 ... 1,000/5,000 ppm	1 ppm	± 5 ppm or 5 % (0 ... 1,000 ppm), 10% (> 1,000 ppm) reading
<b>Nitric dioxide (NO<sub>2</sub>)</b>	electrochemical	0 ... 200/1,000 ppm	1 ppm	± 5 ppm or 5 % (0 ... 200 ppm), 10% (> 200 ppm) reading
<b>Nitric dioxide (NO<sub>x</sub>)</b>	calculated	0 ... 5,000 ppm	1 ppm	± 5 ppm or 5 % (0 ... 1,000 ppm), 10% (> 1,000 ppm) reading
<b>Methane (CH<sub>4</sub>)</b>	NDIR	100 ... 40,000 ppm	10 ppm	± 400 ppm or 5 % reading*

Landfill gas	Measuring method	Measuring range min./max.	Resolution	Accuracy
<b>Methane (CH<sub>4</sub>)</b>	NDIR	0 ... 100%	0.01 %	± 0.3 % or 3 % reading*
<b>Carbon dioxide (CO<sub>2</sub>)</b>	NDIR	0 ... 100%	0.01 %	± 0.3 % or 3 % reading*
<b>Hydrogen sulphide (H<sub>2</sub>S)</b>	electrochemical	0 ... 2,000/5,000 ppm	1 ppm	± 5 ppm or 5 % (0 ... 500 ppm), 10% (> 500 ppm) reading
<b>Oxygen (O<sub>2</sub>)</b>	electrochemical	0 ... 25 %	0.01 %	± 0.2 % absolute
<b>Hydrogen (H<sub>2</sub>)</b>	electrochemical	0 ... 1,000/2,000 ppm	1 ppm	± 5 ppm or 5 % (0 ... 500 ppm), 10% (> 500 ppm) reading
<b>Nitrogen (N<sub>2</sub>)</b>	calculated	0 ... 100%	0.1 %	
<b>Calorific value (Hu)</b>	calculated	0 ... 50 MJ/m <sup>3</sup>	0.1 MJ/m <sup>3</sup>	
<b>Gas flow velocity</b>	S-type probe	1 ... 100 m/s	0.1 m/s	± 0.2 m/s (2 ... 10 m/s), ± 0.5 % (> 10 m/s)
<b>Flow rate</b>	calculated	0.1 ... 6,000 m <sup>3</sup> /s	0.1 m <sup>3</sup> /s	user settable cross section area
<b>Differential temperature</b>	NiCrNi	-40 ... +1,200 °C	1 °C	± 2 °C, 0.5 % reading*
<b>Differential pressure</b>		± 300 hPa	0.01 hPa	0.03 hPa, 1 % reading*

General technical data	
<b>Operating conditions</b>	+5 ... +45 °C; RH up to 95 % non condensing
<b>Storage conditions</b>	-20 ... +50 °C
<b>Data storage</b>	>20,000 data sets
<b>Interface</b>	Mini-USB, SD, IRDA, Bluetooth (data transfer to Smartphone, Tablet or PC)
<b>Internal power supply</b>	Li-Ion battery
<b>Mains power supply</b>	wall plug unit 100 ... 240 Vac, 50 ... 60 Hz, 5 V DC, 1.2 A
<b>Protection class</b>	IP30
<b>Dimensions (W x H x D)</b>	113 x 244 x 54 mm
<b>Weight</b>	approx. 750 g

**MRU – Competence in gas analysis. Since 1984.**

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