GREENLINE 6000

Hand-held industrial combustion gas analyzer with 6 sensors

GreenLine 6000 is a flue gas analyzer that measures up to 6 gases: O_2, CO, NO, NO_2, SO, C_xH_y with electrochemical sensors, and can calculate others like CO_2. It accepts up to 10 different preloaded fuels. Further fuels can be added using GasConfig PC software.

Description

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Several flue gas sampling probes are available, with different lengths and shapes, in order to match all the requirements of various applications. The sampling probe is connected to the instrument using a single or dual hose through a water trap and a suspended particle line filter. An **optional heated industrial gas probe with heated hose** is recommended for long-term high temperature measurements to dry the flue gas and avoid dilution of NO_2 and SO_2. A sintered pre-filter is suggested for severe and heavy applications.

The gas analyzer is made of two parts communicating through cable or Bluetooth protocol: the Main Control Unit (MCU) and the Remote Control Unit (RCU). The MCU takes in charge gas analyzis while the RCU is used to display the measured data, store the analyzis in its internal memory, print out any data using the built-in impact printer and transfer data to computer.

GreenLine 6000 provides various additional functionalities available in option to enable comprehensive combustion gas analyses:

- Air and boiler surface temperature measurements, using specific probes
- Draft measurement
- Automatic CO sensor internal protection from high CO level by extension of the measuring range up to 10% CO
- Flow measurement: Measuring the flow of gas extracted from the boiler and adjusting the pump in order to obtain a constant sampling volume
- Differential pressure measurement: Measuring pressure at the burner and checking stack draft
- Two 4-20 mA inputs
- Smoke index measurement: Checking the presence of soot in gas pipes behind the heat exchanger, with a manual smoke pump, smoke index reference table and paper filter.
- Gas velocity measurement, using a Pitot tube
- Gas leak detection, using a leak test kit

With gas and air temperature measurements combined to gas analyzis, GreenLine 4000 will calculate the boiler efficiency, excess air and CO_2 concentration.

Key features:

- Accepts **up to 6 gas sensors** in different ranges, O_2, CO, NO, NO_2, SO, C_xH_y
- Measures up to 10 different fuels in standard. Other fuels can be added using GasConfig software
- Up to 6 sound and visual alarms if set limits of gas type and levels are exceeded.
- DBGas 2004 software package allows the operator to easily manage all of the data & analyzis information

Specifications

Measured parameter	Range	Resolution	GreenLine 6000
O2	From 0 to 25% vol.	0.1 %	EC
CO	From 0 to 8000 ppm	1 ppm	EC
CO	From 0 to 20000 ppm	1 ppm	EC
CO LOW	From 0 to 500 ppm	0.1 ppm	EC
CO	From 0 to 10%	0.01%	EC
CO2	From 0 to 99.9%	0.1%	Calc
NO	From 0 to 4000 ppm	1 ppm	EC
NO LOW	From 0 to 500 ppm	0.1 ppm	EC
NOx	From 0 to 4000 ppm	1 ppm	Calc
NO2	From 0 to 1000 ppm	1 ppm	EC
NO2 LOW	From 0 to 100 ppm	0.1 ppm	EC
SO2	From 0 to 4000 ppm	1 ppm	EC
CxHy	From 0 to 5%	0.01%	Pellistore
H2S	From 0 to 1000 ppm	1 ppm	EC
Efficiency	From 1 to 99.9%	0.1%	Calc
Excess air	From 1 to infinite	0.01%	Calc
Delta P	±100 hPa	0.01 hPa	✓
Tair/Tgas	-10...100°C / 0...1000°C	0.1°C	Pt100 / Tc K Calc

Further features

Zero calibration	Automatic calibration procedure at instrument power-on. Fresh air inlet with electrovalve and separate pneumatic circuit
Self-diagnosis	Sensor efficiency test with diagnostic page
Gas level alarms	Programmable from PC with GasConfig software
Sampling pump	2.2 l/min - 220 mbar with electronic flow controller
Smoke measurement	Using the heated probe or the optional external manual pump Index memory store and printout capability as standard

General specifications

Size	MCU: 455 x 205 x 365 mm RCU: 115 x 90 x 330 mm
Weight	MCU: 10 kg RCU: 0.9 kg
Power supply	110 / 230 VAC (50/60 Hz)
Battery	Type: Rechargeable 7.2 Ah Battery life: 10 hours continuous use
Communication ports	RS 232 Bluetooth
Internal test memory	Up to 1,000 complete analysis data points structured by Tags

Environmental specifications

Operating reference range	From -5°C to +45°C (up to 50°C for short time)
Storage temperature limits	From -20 to +60°C (3 months max. at temperatures exceeding the operational limits)

Models and accessories

Instrument:

Ordering code structure: 7846 – A – B – C – D – E – F – L – M – NNNNN – P / X

Please select the required options from tables A, B... below to define the right device reference.

7846 GreenLine 6000

Standard delivery includes:

- Base unit with 2 sensors (O_2 + CO)
- Li-ION battery + charger module
- Internal impact printer
- 1,000 data memory & real time clock
- Configuration software GasConfig
- Data management software DBGas2004 Lite version
- USB adapter
- Draft and differential pressure measurement
- Remote module with 2.5 m long shielded cable
- Factory test report
- Instruction manual
- Warranty: 1 year

OR

7846WL GreenLine 6000 Wireless (Bluetooth MCU/RCU)

Table A – SENSOR No. 1

1	O_2 (0 - 25%)

Table B – SENSOR No. 2

2H	CO (0 - 8,000 ppm) H_2 compensated + Dilution system
2X	CO (0 - 20,000 ppm)
2LO	CO (0 - 500 ppm / res. 0.1 ppm) + Dilution system

Table C – SENSOR No. 3

0	None
4	NO (0 - 4,000 ppm / res. 1 ppm) & NO_x calculation
4LO	NO (0 - 500 ppm / res. 0.1 ppm) & NO_x calculation

Table D – SENSOR No. 4

0	None
5	NO_2 (0 - 1,000 ppm)

5LO	NO_2 (0 - 100 ppm)
8	C_xH_y (0 - 5%)

Table E – SENSOR No. 5

0	None
6	SO_2 (0 - 4,000 ppm)
8	C_xH_y (0 - 5%)

Table F – SENSOR No. 6

0	None
7	CO% (0 - 10%)
8	C_xH_y (0 - 5%)
9	H_2S (0 - 1,000 ppm)

Table L – Sample probes

0	None
1	Ø8 / 300 mm gas + draft probe (dual hose)
2P	Ø10 / 750 mm gas + draft probe (dual hose) removable tip
3P	Ø10 / 1500 mm gas + draft probe (dual hose) removable tip
2SP	Ø10 / 750 mm heated* gas + draft probe (dual hose) removable tip
3SP	Ø10 / 1500 mm heated* gas + draft probe (dual hose) removable tip
F10	Sintered filter for 2, 3, S & P probes Ø10 mm

* Heated gas probe used for smoke index measurement.

Table M – Mains adapter / Charger

1	115 V (50/60 Hz) – USA plug
2	230 V (50/60 Hz) – Schuko plug
3	230 V (50/60 Hz) – UK plug
4	230 V (50/60 Hz) – European plug
5	100 V (50/60 Hz) – USA / Japan plug

Table N – Accessories

0	None
1	DBGas 2004 standard software
2	300 mm Pitot tube
3	750 mm Pitot tube

4	Pt100 remote combustion air temperature probe, length: 2 m

Table P – Calibration certificate

1	Factory certificate (gas + pressure + temperature)

Table X – Customization

INTL	English language - manual in English - English keyboard
USA	English language - manual in English - English keyboard
FR	French language - manual in French - French keyboard
HOL	Dutch language - manual in English - English keyboard
POL	Polish language - manual in English - English keyboard
SPA	Spanish language - manual in English - English keyboard
UK	English language - manual in English - English keyboard

Accessories:

Probes and sensors:

BB830006	Pt100 remote air sensor + positioning cone (with 2 m cable)
BB830025	External probe for natural boiler draft (200 Pa)
BB610032	Pitot tube 300 mm
BB610033	Pitot tube 800 mm
BB610034	Pitot tube 1000 mm
EE610106	Ø8 / 300 mm tip (max. 800°C)
EE610105	Ø8 / 750 mm tip (max. 800°C)
EE610015	Ø8 / 1000 mm tip (max. 800°C)
EE610104	Ø8 / 1500 mm tip (max. 800°C)
EE610098	Ø10 / 300 mm tip (P option)
EE610102	Ø10 / 750 mm tip (P option)
EE610029	Ø10 / 1000 mm tip (P or SP option)
EE610100	Ø10 / 1500 mm tip (P option)
BB610058	Ø8 / 300 mm gas or draft probe (dual hose)
BB610066	Ø10 / 750 mm gas + draft probe (dual hose) removable tip
BB610067	Ø10 / 1500 mm gas + draft probe (dual hose) removable tip
BB610068	Ø10 / 750 mm heated gas + draft probe (dual hose) removable tip
BB610069	Ø10 / 1500 mm heated gas + draft probe (dual hose) removable tip

F2132100	130 mm air TC K-type probe
F2137100	130 mm contact TC K-type probe
F2139000	Pipe Velcro TC K-type probe
Consult us	3 m extension for dual hose probe and Tc
Consult us	6 m extension for dual hose probe and Tc

Test tools and miscellaneous:

EE300088	Single hose pressure probe and burner hose kit
EE300248	Kit for detecting leaks in gas networks (pump + hose + adapters)
F7828000	Manual pump for smoke index measurements + 40 filters + table

Software and connectors:

BB260166	DBGas 2004 standard software

Consumable parts:

EE340005	Printer paper roll - *Minimum order of 10* pcs
EE490002	Printer ribbon - *Minimum order of 3 pcs*
EE650072	Line and autozero filter cartridge - *Minimum order of 10 pcs*
EE650073	NOx / SOx filter cartridge - *Minimum order of 10 pcs*
EE650074	Filter cartridge for EE650076 / EE 650082 water trap + filter - *Minimum order of 10 pcs*
EE650091	Quartz filter for heated head probe - *Minimum order of 3 pcs*
EE650099	Sintered filter for Ø10 mm tip
EE650100	Sintered filter for Ø8 mm tip

Packing information:

Size: Main Control Unit: 455 x 205 x 365 mm
Hand-Held Remote Control Unit: 115 x 90 x 330 mm

Weight: Main Control Unit: 10 kg
Hand-Held Remote Control Unit: 0.9 kg