



# EMISSION MONITORING SYSTEMS

We *care* about the environment

NEVER BE SATISFIED WITH LESS



**SIGMA**  
THE SLIM MULTI TALENT  
HAND HELD ANALYZER

O<sub>2</sub>

CO<sub>2</sub>

CO

NO

NO<sub>2</sub>

NO<sub>x</sub>

CO<sub>high</sub>

SO<sub>2</sub>

# SIGMA

## THE SLIM MULTI TALENT HAND HELD ANALYZER

A powerfull device fitting the palm of your hand.

- Up to 4 measuring electrochemical cells
- Efficient CO sensor purging
- Battery and grid power supply
- Automatic internal test of hard- and software functions
- Stack draft and differential pressure measurement
- 100 measurements data storage
- Ergonomical design

Modular probe with integrated dust filter

Soft side strips

Large, backlit, graphic LCD with page header  
User selectable 8/4 measured values display



Belt holding clip with integrated fixing magnet



SIGMA-basic set with O<sub>2</sub>, CO (H<sub>2</sub> comp), NO, with printer and ABS transport case

Standard probe 300 x Ø 8 mm, up to max.650 °C  
Industrial probe, up to 2.000 mm tube length and up to 1.100 °C ... on demand

Interface RS 232



# MOBILE GAS ANALYSIS



SIGMA Industrial model  
SO<sub>2</sub>, NO<sub>2</sub>, CO<sub>high</sub>

Bluetooth /  
IR Interface for  
thermal printer



SIGMA is a high-grade gas analyzer which guarantees accurate readings. A Viton sampling line will be used to achieve correct measuring results for NO<sub>2</sub> and SO<sub>2</sub>

## Options:

- Bluetooth module for wireless data transfer to PC / PDA
- RS 232 special cable for data transfer to PC / PDA
- RS 232 / USB converter for data transmission to PC / PDA
- Ambient air temperature probe, short plug style
- Combustion air temperature probe, 300 mm length with 2,5 m cable
- Infrared thermal printer
- Robust, ABS-transport case
- CO (H<sub>2</sub> comp.) sensor purge by means of 2nd pump, for sensor protection

## Measuring ranges:

- O<sub>2</sub> 0 ... 21 %
- CO (H<sub>2</sub> comp) 0 ... 2.000 ppm ( \* overload up to 10.000 ppm)
- NO 0 ... 1.000 ppm ( \* overload up to 5.000 ppm)
- CO (high) 0 ... 4.000 ppm ( \* overload up to 20.000 ppm)
- CO (very high) 0 ... 4 % ( \* overload up to 10 %)
- NO<sub>2</sub> 0 ... 200 ppm ( \* overload up to 1.000 ppm)
- SO<sub>2</sub> 0 ... 2.000 ppm ( \* overload up to 5.000 ppm)

\* for SHORT-TERM measurements only!

## Recommended sensor combinations (O<sub>2</sub> is standard):

O <sub>2</sub>	basic	basic	basic	basic	basic	basic	basic
CO (H <sub>2</sub> comp)	●	●	●		●	●	●
NO		●	●	●	●	●	●
NO <sub>2</sub>			●	●			
SO <sub>2</sub>				●	●		
CO (high)						●(**)	
CO (very high)							●(**)

(\*\*) to protect the CO (H<sub>2</sub> comp) sensor, we recommend the optional CO sensor purging



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## SIGMA – TOP PERFORMANCE WITHIN MOST COMPACT DIMENSIONS

### TECHNICAL SPECIFICATIONS

<b>SIGMA Gasanalyzer</b>	Handheld analyzer with up to 4 electrochemical sensors
<b>Fuel types</b>	natural gas, liquid gas, oil heavy, oil light, pellets, wood, bio diesel, expandable fuel type list
<b>Measurement components:</b>	
<b>Oxygen O<sub>2</sub></b>	0 ... 21,0 Vol-%, accuracy ± 0,2 Vol-% abs.
<b>Carbon monoxide CO<sub>H2-comp</sub> (option)</b>	0 ... 2.000 ppm, overload up to 10.000 ppm accuracy ± 20 ppm or 5 % reading ≤ 2.000 ppm / 10 % reading > 2.000 ppm
<b>Carbon monoxide CO<sub>high</sub> (option)</b>	0 ... 4.000 ppm, overload up to 20.000 ppm accuracy ± 20 ppm oder 5 % reading ≤ 2.000 ppm / ± 100 ppm or 5 % reading ≤ 4.000 ppm
<b>Carbon monoxide CO<sub>very high</sub> (option)</b>	0 ... 4%, overload up to 10% accuracy ± 0,02% or 5 % reading ≤ 0,4% / 10 % reading > 0,4%
<b>Nitrogen monoxide NO (option)</b>	0 ... 1.000 ppm, overload up to 5.000 ppm accuracy ± 5 ppm or 5 % reading ≤ 1.000 ppm / 10 % reading > 1.000 ppm
<b>Nitrogen dioxide NO<sub>2</sub> (option)</b>	0 ... 200 ppm, overload up to 1.000 ppm accuracy ± 5 ppm or 5 % reading ≤ 200 ppm / 10 % reading > 200 ppm
<b>Sulfur dioxide SO<sub>2</sub> (option)</b>	0 ... 2.000 ppm, overload up to 5.000 ppm accuracy ± 10 ppm or 5 % reading ≤ 2.000 ppm / 10 % reading > 2.000 ppm
<b>Stack gas temperature T.Gas</b>	0 ... 650 °C by means of stainless steel sampling tube, accuracy ± 2 °C ≤ 200 °C / 1 % reading > 200 °C 0 ... 1.100 °C by means of Inconel steel sampling tube, accuracy ± 2 °C ≤ 200 °C / 1 % reading > 200 °C
<b>Combustion air temperature T.Air</b>	0 ... 100 °C, accuracy ± 1 °C
<b>Draft / Differential pressure</b>	± 100 hPa, accuracy ± 0,02 hPa (fuel type depending)
<b>Calculated values:</b>	
<b>Carbon dioxide CO<sub>2</sub></b>	0 ... CO <sub>2</sub> max, accuracy ± 0,3 Vol-% abs.
<b>Dewpoint H<sub>2</sub>O</b>	°C
<b>Losses</b>	0 ... 99,9 %
<b>Efficiency</b>	0 ... 120 %
<b>Excess Air</b>	1, ... 9,99 %
<b>Measured values as</b>	mg/Nm <sup>3</sup> , referenced to O <sub>2</sub> , NO <sub>x</sub> as mg/Nm <sup>3</sup> NO <sub>2</sub>
<b>Data transfer</b>	RS 232, baud 9600
<b>CO-sensor purge (option)</b>	by means of 2nd pump, for sensor protection
<b>Bluetooth module (option)</b>	for wireless data transfer to PC / PDA ...
<b>General specifications:</b>	
<b>Operation temperature</b>	+ 5 ... + 45 °C, max. 95 % RH, not condensing
<b>Storage temperature</b>	- 20 ... + 50 °C
<b>Ambient conditions</b>	not in aggressive, corrosive or high dust ambient, not for use in hazardous areas
<b>Power supply</b>	internal: 4 x Mignon NiMh battery, min 8 h operation wall-plug grid power supply, 100 - 240 Vac / 50 ... 60 Hz
<b>Protection class</b>	IP 42
<b>Weight</b>	approx. 750 g
<b>Dimensions</b>	( W x H x D ) 75 x 210 x 55 mm

Dealer:



EMISSION MONITORING SYSTEMS

MRU · Measuring instruments for flue gases  
and environmental protection GmbH  
Fuchshalde 8 · 74172 Neckarsulm-Obereisesheim  
Phone +49 7132-99620 · Fax +49 7132-996220  
info@mru.de · www.mru.eu