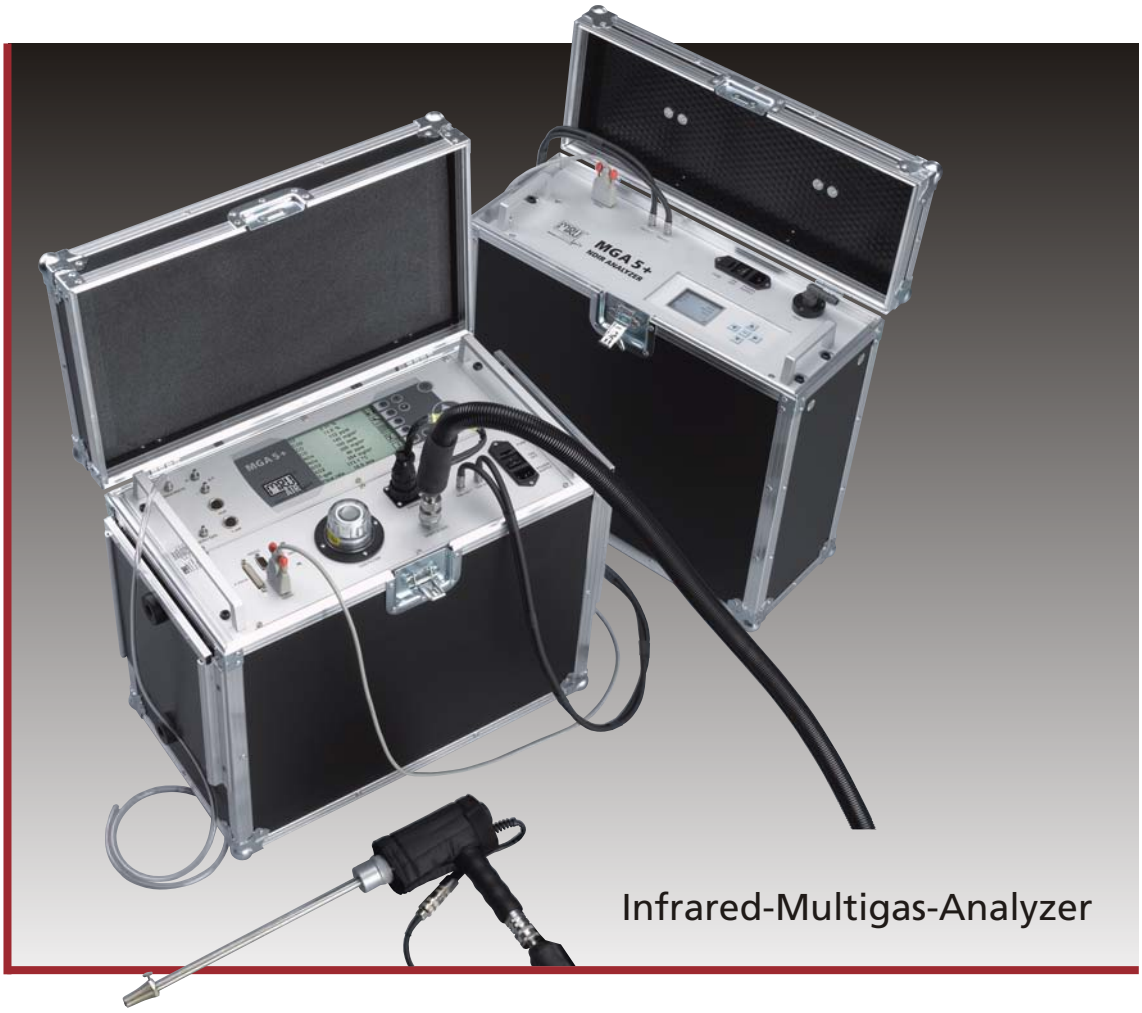
EMISSION MONITORING SYSTEMS

We *care* about the environment

RELIABLE, MOBIL MONITORING OF EMISSIONS



MRU AIR fair since 1984®
EMISSION MONITORING SYSTEMS

MGA 5+

Monitoring of
- Flue gas emissions
- Process gases

High accuracy flue gas analysis

O_2 CO_2 CO CH_4 NO NO_2 SO_2

MGA 5+

High-quality, mobile INFRARED-MULTIGAS ANALYZER for emission monitoring and combustion analysis

The **MGA 5+** is designed for accurate measurements.

The high-quality infrared modules permit the detection of even low gas concentrations. To maximize the portability and flexibility of use, the two case solution was chooen. Analyzer and gas conditioning are placed in seperate cases.

Further useful options are:

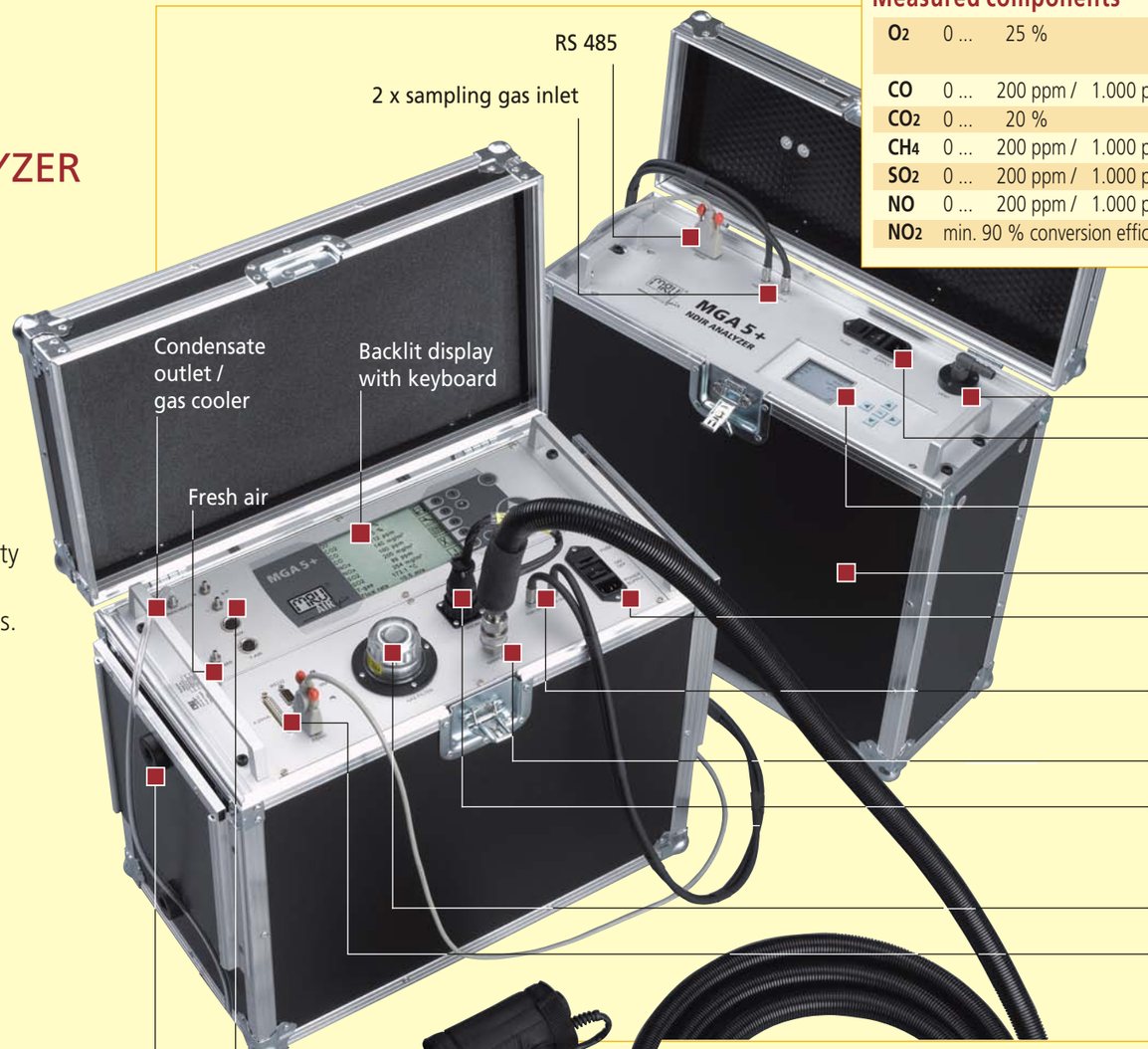
- Flue gas temperature for up to 1.700 °C
- Combustion air temperature measurement
- Differential pressure measurement
- Gas flow velocity measurement (Pitot tube)
- Emission and combustion calculations like:
  Excess air, mg/m³ referenced to O_2, NOx as mg/m³NO_2

Important features and performance characteristics

- Double stage gas cooler with automatic condensate draining pump
- Heated gas sampling line (3 m or 5 m length) with 300 ... 2.000 mm sampling tube
- Automatic internal test and control of soft- and hardware functions
- Large, high-contrast and backlit graphical display with zoom function
- Large fuel type list incl. self choose fuels with user definable parameters
- RS 232 interface and internal data memory for approx. 8.500 measurements
- RS 485 interface for external MRU smart sensor (transmitter) connection
- Automatic interval measurement
- Data-visualization and evaluation software for PC (32bit Data Logger)
- Solenoid valve for automatic zeroing and for calibration
- Universal analog signal input (4 ... 20 mA or 0 ... 10 V) or additional NiCrNi thermocouple input
- 8 channel analog output 4 ... 20 mA with user configurable output
- Automatic calibration by means of integrated calibration gas cells

Measured components

O_2	0 ... 25 %	paramagnetic sensor electrochemical sensor
CO	0 ... 200 ppm / 1.000 ppm	NDIR-bench
CO_2	0 ... 20 %	NDIR-bench
CH_4	0 ... 200 ppm / 1.000 ppm	NDIR-bench
SO_2	0 ... 200 ppm / 1.000 ppm	NDIR-bench
NO	0 ... 200 ppm / 1.000 ppm	NDIR-bench
NO_2	min. 90 % conversion efficiency	catalytic converter



Gas sampling probe with heated grip and temperature regulated quarz glass wool filter

Differential pressure measurement for Pitot tube connection

Device ventilation flap for application with low ambient temperature

Gas sampling probes and lines

The standard scope of delivery of the MGA 5+ is a gas sampling probe (300 mm) with heated filter in the probe grip, probe tube Ø 12 x 300 mm for flue gas temperature for up to 650 °C and 3 m temperature regulated, heated gas sampling line.

Further probes, e.g. for up to 2.000 mm, for up to 1.700 °C as well as longer or unheated gas sampling lines are possible.

- see separate gas sampling probe brochure

Handheld remote control incl. 10 (20) m transmission cable

Pitot tube for gas velocity measurement and mass emission calculation

Technical specifications

Measured components	*measuring range*	*accuracy*	*resolution*
Oxygen O_2, EC or paramagnetic	0… 25 Vol.-%	±0,2 Vol.-% abs.	0,01 %
NDIR-multi-gas bench	*min. measuring range*	*max. measuring range*	*linearity error*
Carbon monoxide CO	0 … 200 ppm	0 ... 1.000 ppm	2 % of full scale
Carbon dioxide CO_2	0 … 4 %	0 ... 20 %	2 % of full scale
Nitric monoxide NO	0 … 200 ppm	0 ... 1.000 ppm	2 % of full scale
Sulfur dioxide SO_2 or Methane CH_4	0 … 200 ppm	0 ... 1.000 ppm	2 % of full scale
Catalytic converter NO_2 to NO	min. 90 % conversion efficiency		
Flue gas temperature TF	*measuring range*		*accuracy*
	0… 650 °C with stainless steel probe tube		±2 °C <200 °C, 1 % of full scale >200 °C
	0... 1.100 °C with Inconel steel probe tube		±2 °C <200 °C, 1 % of full scale >200 °C
	0... 1.700 °C with ceramic probe tube		±2 °C <200 °C, 1 % of full scale >200 °C
Combustion air temperature TL	*measuring range*		*accuracy*
	0 … 100° C		±1℃
Diff. pressure measurement (option)	±100 hPa		±0,02 hPa or 1 % of full scale
Flue gas flow velocity measurement	1 ... 100 m/s		±1 m/s or 1 % of full scale
Calculated values	ppm reference to xx % O_2 mg/m^3 mg/m^3 mg/m3 reference to xx % O_2 mg/s with Pitot tube		
General specifications			
Operating temperature	+5 … +45 °C, max. 90% rh, non condensing		
Storage temperature	-20 … +50 °C		
Power supply	110 ... 240 Vac / 250 W		
Main fuse	6,3 / 10 A		
Warm-up time	1h minimum		
Response time T90	approx. 20 seconds from analyzer sample gas inlet port		
Display	full graphic, backlit LCD display		
Data transfer / output signals	digital data transfer, RS 232 digital, 8 channel analog output 4 … 20 mA		
Sample gas conditioning	integrated gas cooler with automatic condensate pump and constant dew point = +5 °C		
Sample gas filtering	filtering particle size <2 µ		
Sample gas monitoring	internal sample flow measurement and supervision		
Calibration	By software, calibration gases for every gas required, instrument air or clean ambient air for auto-zero		
Protection class	IP 21		
Dimensions (gas conditioning)	(W x H x D) 500 x 520x 295 mm		
Weight (gas conditioning)	approx. 17 kg		
Dimensions (NDIR-analyzer)	(W x H x D) 500 x 520x 205 mm		
Weight (NDIR-analyzer)	approx. 19 kg		
Further features	– Measurement of flue gas temperature by means of thermocouple – Heated and temperature regulated gas sampling line (3 m or 5 m length) – Flow measurement by means of Pitot tube and mass emission calculation [mg/s] – Data recording of an external transmitter 4… 20 mA attached at AUX connector – NO_2 / NO converter for true NOx measurement – Automatic calibration by means of integrated gas cells in the NDIR analyzer		

Data subject to change without notice.

Dealer:

MRU since 1984 ®
AIR fair
EMISSION MONITORING SYSTEMS

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