MRU AIR fair since 1984 ®
EMISSION MONITORING SYSTEMS

NO_x | NO | NO_2 | CO | CO_2 | SO_2 | N_2O | CH_4 | HC as C_3H_8 | O_2

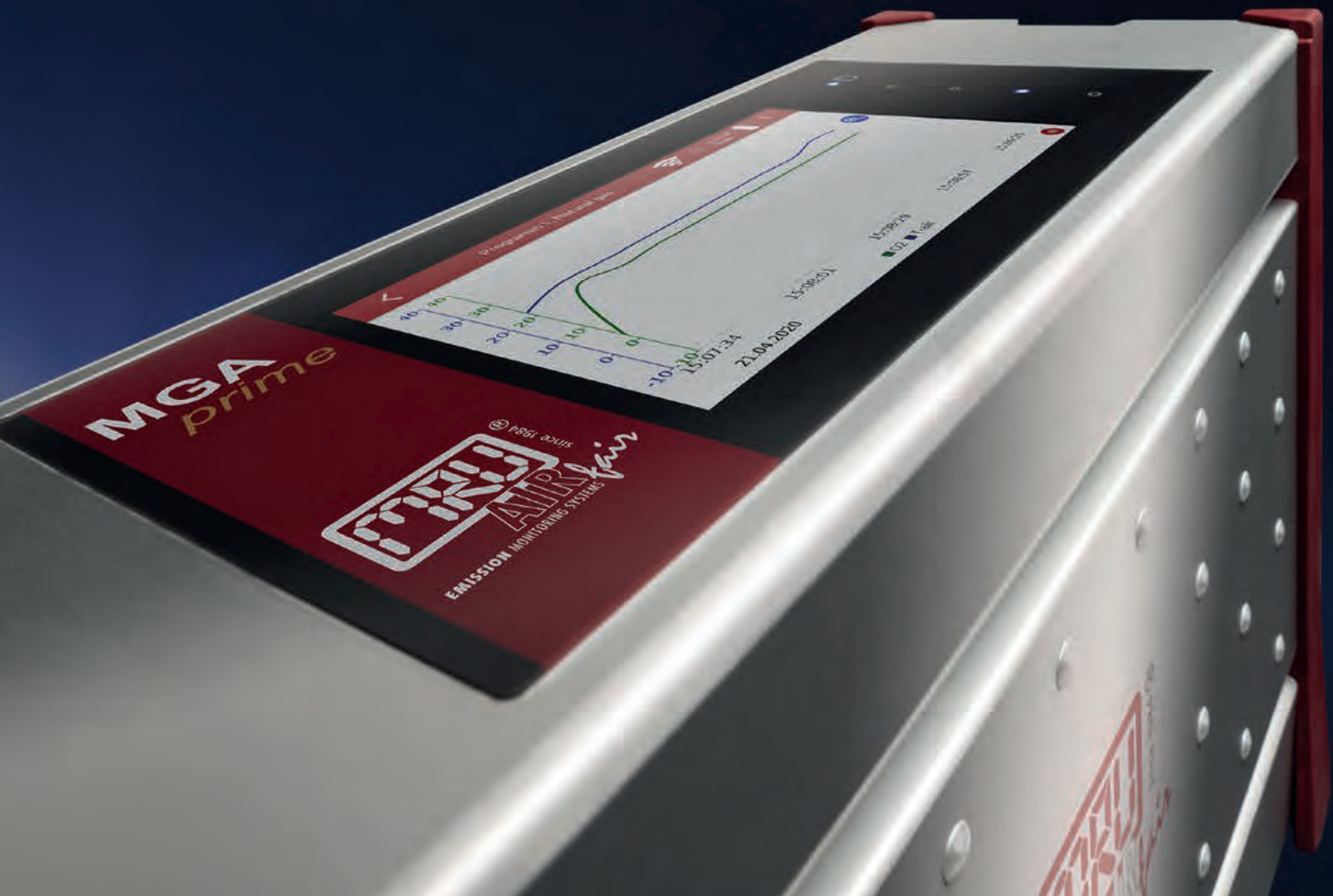
MGA*prime Q*

Portable emissions analysis.

TÜVRheinland CERTIFIED
Tested AMS Regular Surveillance
www.tuv.com ID 0000072196

MCERTS
Sira Certificate No. MC200366/00

Verified and certified according to EN 15267 sheets 1, 2 and 4.



MGA*prime Q*

Certified for official measurements

We offer you these special advantages:

- duration of measurement, interval and averaging can be set by user, measured value display also possible as a curve chart
- Lithium-ion battery operation, including gas cooler and measurement, but without heated hose
- Data transmission LAN, WiFi, USB, RS 485, analog as well 400 MB internal data storage
- gas conditioning according CEN/TS-17021
- CH_4 cross sensitivity compensation to SO_2
- O_2-measurement by means of standard reference method paramagnetic EN 14789

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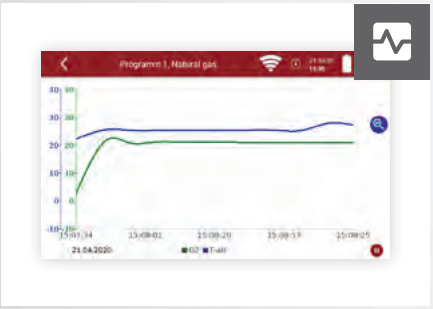
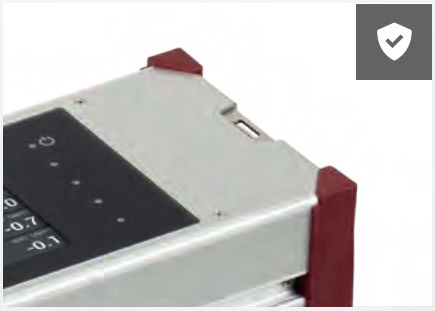
The device in detail

An overview of the special features



Practical touch display

High resolution 7" color display with graphical output of the measured values



Optimal protection

All-metal housing with soft bumper corners for the harsh industrial everyday use

Comfortable size

Very compact dimensions (W x H x D: 460 x 330 x 200 mm) and light weight (15 kg) including nylon pouch, IP 42

Well protected during transport

(room for analyser and nylon bag)

On the go

Handy nylon IP42 protective bag (part of the certification)

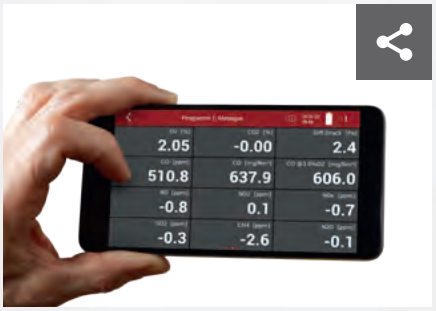
Operation and interfaces

Simple and clear

Operating options

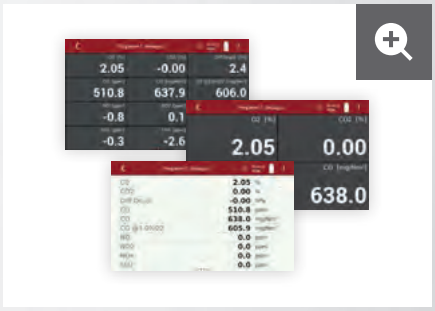
Touchscreen

Device operation via the 7" touch/swipe display, resolution 800 x 480 px, 750 cd/m²



Contactless

Operation via smartphone or PC via VNC connection, mirrored device display on smartphone

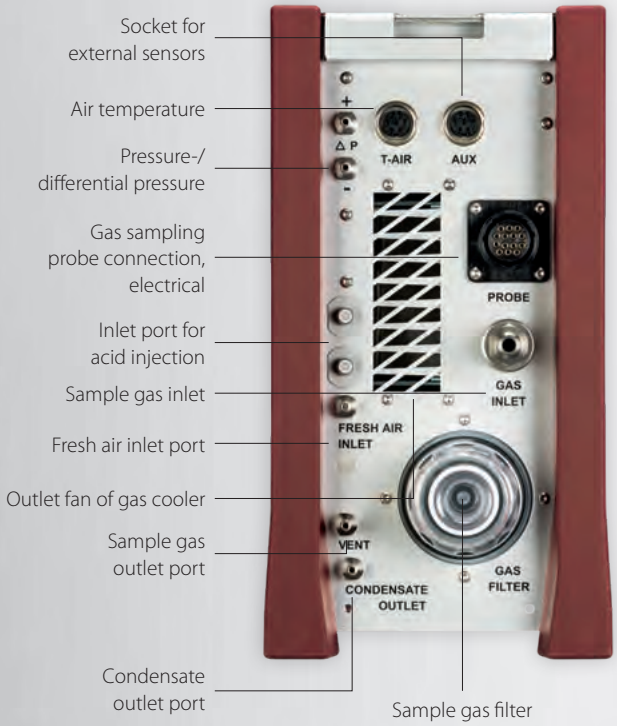


Zoom function

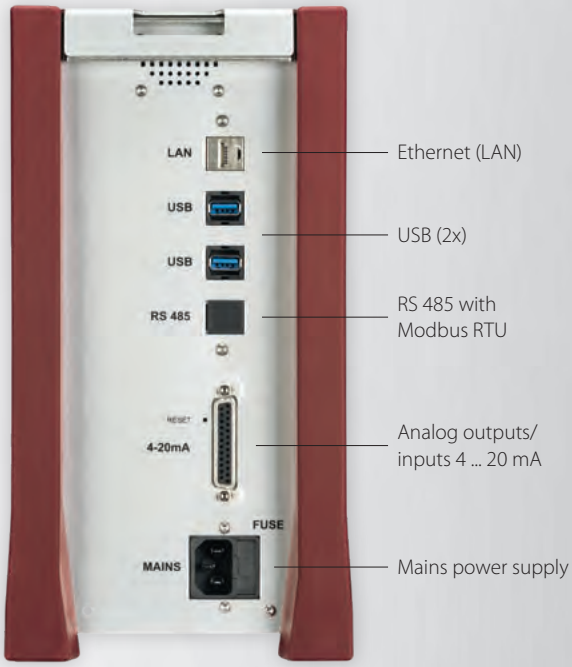
Variable display modes for the display

Connections and interfaces

Measuring technology



Data communication



The gas conditioning
An overview

Gas sampling probe

- Robust industrial probe with heated hose
- Equipped with probe tube Ø12/300 mm (changeable)
- Also for exhaust gas temperature measurement
- Heated gas sampling line (3 m)
- Easy to change filter in the probe head
- Filters can be filled with different material, depending on the amount of dirt

Effective filter system, quickly exchangeable by the user, filled with:

- Glass wool for high amounts of dirt
- Filter sleeve for little dirt

Double stage gas cooler

- Keeps sample gas at a constant dew point of 4 °C
- Constant dew point compensates the cross sensitivity of water on the measured gas components
- Automatic condensate delivery

Gas pump

- Powerful pump for use with high negative pressure
- Regulation on low, constant flow volume to increase in filter life
- High contamination alarm of the filter

Phosphoric acid dosage

- Controlled injection of 10 % phosphoric acid for reliable, precise measurement of SO_2 and NO_2

Data transmission and measurement

The technology behind

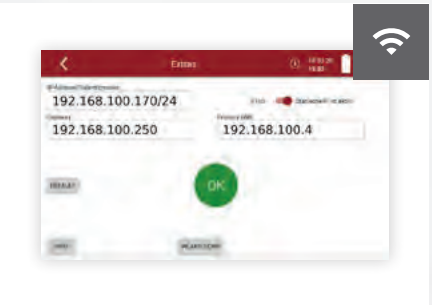
Data transmission

Fully equipped standard device:

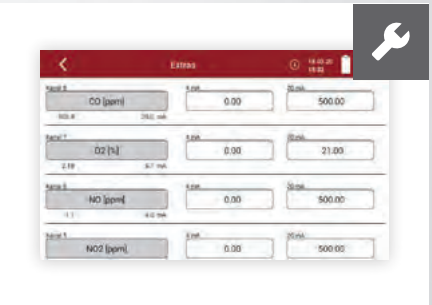
- Ethernet (LAN) TCP/IP
- WiFi
- 8 analog outputs 4 ... 20 mA
- 4 analog inputs
- USB (2x)
- RS 485

Internal data storage:

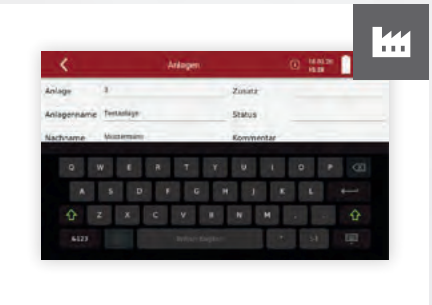
The huge memory with 400 MB offers space for thousands of facilities and data sets.



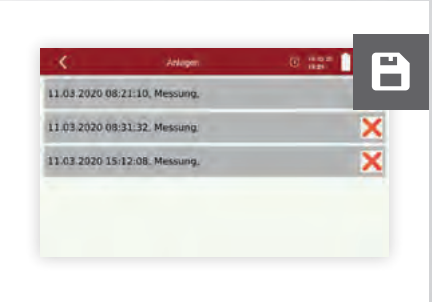
Set LAN



Set analog outputs



Manage facilities



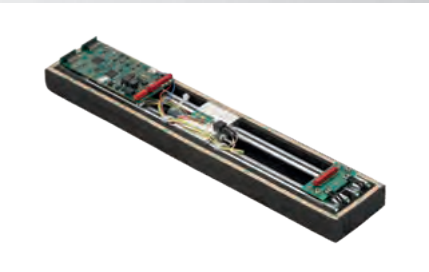
Save measurements by facility

High quality measurement technology

The optimized NDIR measurement technology of the MGA*prime Q* guarantees standard-compliant measuring ranges and accuracies without zero point drift.

8 channel NDIR module

NO, NO_2, CO, CO_2, SO_2, N_2O, CH_4, HC as C_3H_8



Double tube infrared module for gas analysis

Equipment

- Paramagnetic O_2 analysis
- Differential pressure measurement ± 120 hPa
- Temperature measurement of flue gas (1,100 °C) and combustion air (100 °C)
- Flow rate measurement and volume flow calculation

Paramagnetic sensor for O_2 according to EN 14789

Practical accessories

For more flexibility

Pitot tubes for flow velocity measurement

- L-type or S-type with temperature measurement (up to 1,000 °C), length: 300 ... 1,500 mm
- Measuring ranges from 3 to 100 m/s at a resolution of 0.1 m/s
- Additional calculation of the volume flow (m³/s)

USB to Bluetooth converter set / USB to WLAN converter

- wireless data transfer to PC/ notebook with MRU4win
- WiFi for short distance and Bluetooth for up to 300m

PC software "MRU4Win"

- Software for Windows to visualize measure data, manage, export and print
- Connect multiple devices at the same time and read out live values
- Logging and saving live values
- Database with customer contacts, attachments and manage users
- Export measurement reports as PDF
- Documents with customized logo and print out the address
- Read out data storage, save measurements, print and save as PDF

WiFi printer

- With lithium-ion battery and USB socket
- Suitable for 80 mm paper width

Dosage unit for phosphoric acid

- Controlled dosage and injection of 10 % phosphoric acid for reliable, precise measurement of SO_2 and NO_2 according CEN/TS-17021

MGA*prime Q*

Technical data

Gas measurement (NDIR)	Measuring range min./max.	Certified range min./max.	Resolution	Repeatability*	8h-Drift*	Linearity
Nitric monoxide (NO)	0 ... 200/4,000 ppm	0 ... 200/2,000 ppm	0.1 ppm	2 ppm or 1 % reading	2 ppm or 1 % reading	1 % m. r.
Nitric dioxide (NO_2)	0 ... 150/1,000 ppm	0 ... 150/500 ppm	0.1 ppm	1 ppm or 1 % reading	2 ppm or 1 % reading	1 % m. r.
Sulphur dioxide (SO_2)	0 ... 150/4,000 ppm	0 ... 150/3,000 ppm	0.1 ppm	2 ppm or 1 % reading	2 ppm or 1 % reading	1 % m. r.
Carbon dioxide (CO_2)	0 ... 40 %	0 ... 20 Vol.%	0.01 Vol%	0.2 % or 1 % reading	0.2 % or 1 % reading	1 % m. r.
Carbon monoxide (CO)	0 ... 175/10,000 ppm	0 ... 175/3,000 ppm	0.1 ppm	2 ppm or 1 % reading	2 ppm or 1 % reading	1 % m. r.
Nitrous oxide (N_2O)	0 ... 100/500 ppm	0 ... 100/250 ppm	0.1 ppm	2 ppm or 1 % reading	2 ppm or 1 % reading	1 % m. r.
Methane (CH_4)	0 ... 500/10,000 ppm	—	0.1 ppm	10 ppm or 1 % reading	2 ppm or 1 % reading	1 % m. r.
Propane (C_3H_8)	0 ... 200/5,000 ppm	—	0.1 ppm	2 ppm or 1 % reading	2 ppm or 1 % reading	1 % m. r.

Gas measurement (PM)	Method[1]	Measuring range	Resolution	Accuracy
Oxygen (O_2)	PM	0 ... 25 %	0,01 %	0,1 %

Other measurements	Method	Measuring range	Resolution	Accuracy*
Stack gas temperature (T_{gas})	NiCrNi	0 ... 1,700 °C	1 °C	± 2 °C or 1 % reading
Ambient air temperature (T_{amb})	NiCrNi	0 ... 100 °C	1 °C	± 1 °C or 2 % reading
Differential pressure (P-Druck)	Piezoresistive	–120 ... +120 hPa	1 Pa	± 2 Pa or 1 % reading
Flow velocity measurement (v)	Pitot	3 ... 100 m/s	1 m/s	± 1 m/s or 1 % reading
Standardized ext. signal (AUX connection)	software	for K-thermocouple, 0 ... 10 Vdc, 4 ... 20 mA, RS 485		
Combustion calculations (fuel type depend.)	software	Losses, ExcAir, Air Ratio, dew point		
Emission calculations	software	mg/Nm³, reference to O_2		

General technical data	
Operating system	LINUX
Display, operation	7" TFT (800 x 480 px) colour display, backlit, with touch pad
Data storage type	dynamic, internally 10,000 data sets. Internally stored data can be exported to USB-stick
Interface to PC/notebook	Ethernet, WiFi, RS 485
Cable/wireless communication interface	RS 485, RJ45 (Ethernet), WiFi
Printer	external USB/WiFi printer
Analog output/input 4 ... 20 mA	8 channel out, 4 channel in, user configurable
Universal analog input (AUX)	0 ... 10 Vdc, 4 ... 20 mA, NiCrNi-thermocouple, RS 485
System warm up time	30 minutes, typical
Mains free operation time	Li-Ion, 96 Wh, for standby 1 hour
Operating conditions	+5 ... +40 °C; RH up to 90 % non condensing
Storage temperature	-20 ... +50 °C
Power supply	86 ... 265 Vac, 47 ... 63 Hz, 105 W (up to 600 W with heated gas sample line)
Protection class	IP42 inside transport case
Dimensions (W x H x D)	430 x 290 x 150 mm
Weight	approx. 15 kg only device, approx. 10 kg bag with accessories

MRU – Competence in gas analysis. Since 1984.

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