distrame
instruments de mesures électroniques

MRU AIRfair since 1984 ®
EMISSION MONITORING SYSTEMS

NO_x | NO | NO_2 | CO | CO_2 | SO_2 | CH_4 | C_3H_8 | O_2 | H_2S

VARIO*luxx*

Portable, certified stack gas emission analyzer.

TÜV SÜD

Combined NDIR/EC measurement technology for precise measurement results.

VARIO*luxx*

First choice for smart gas analysis

The combination of infrared measurement technology and electrochemical sensors ensures versatility and reliable analysis even of small measuring ranges. VARIO*luxx* – portable industrial measurement technology for high requirements!

With **VARIO*luxx,*** the simultaneous analysis of up to 10 exhaust gas components is possible:

NO_x | NO | NO_2 | CO | CO_2 | SO_2 | CH_4 | C_3H_8 | O_2 | H_2S

We offer you these special advantages:

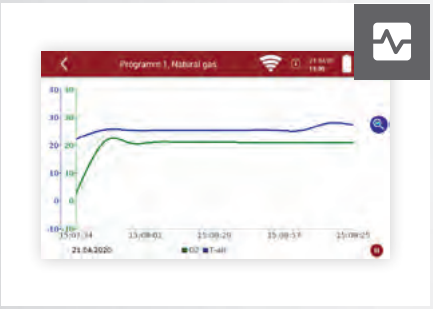
- Automatic measuring program with data recording
- Automatic zero point measurement for long-term measurements
- Lithium-ion battery operation, including gas cooler and measurement technology

TÜV SÜD

acc. DIN EN 50379-1 and 2

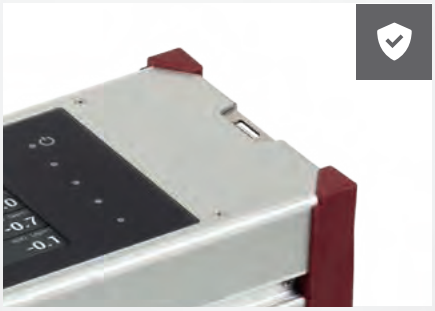
The device in detail

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: 430 x 290 x 150 mm) and light weight (8 kg)

On the go

Aluminum transport case with wheels, robust Pelicase or nylon carrying/protective bags

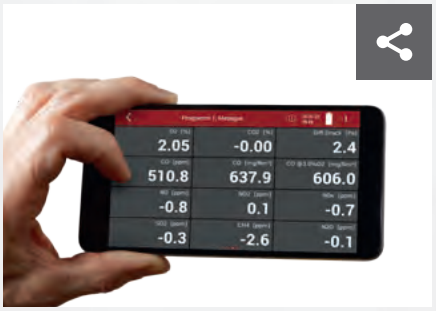
Operation and interfaces

Simple and clear

Operating options

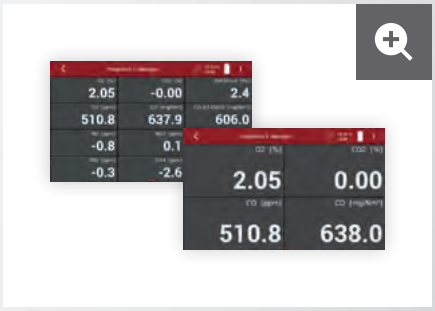
Touchscreen

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

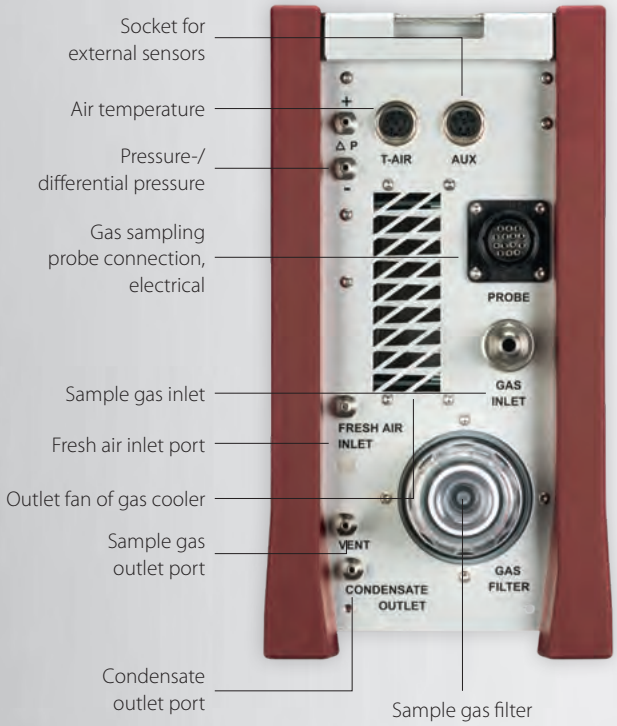


Zoom function

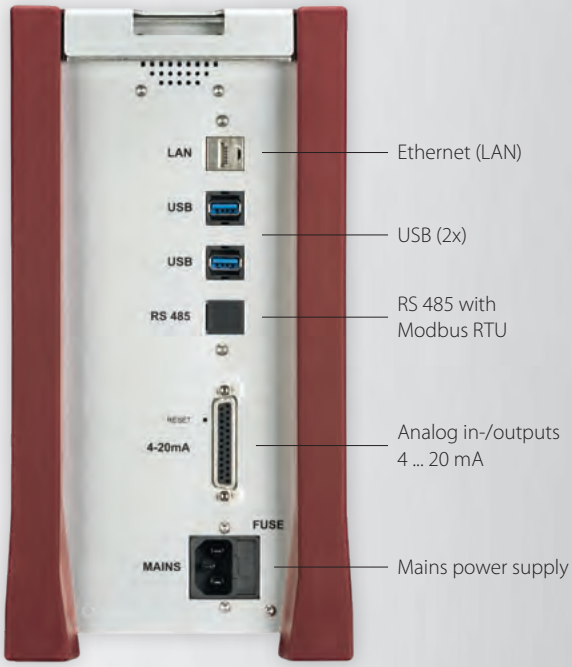
Scalable display mode for the display

Connections and interfaces

Measuring technology



Data communication



The gas conditioning
An overview

Gas sampling probe

- Robust industrial probe with heated filter
- Also possible for flue gas temperatures up to 1,100 °C
- Heated gas sampling line (3 m, 5 m or up to 50 m)
- Exchangeable probe tubes up to 2 m length
- Easy to change filter in the probe head
- Filtermaterial can be easily exhanged at the probe head

Probe for low dirt applications

Peltier gas cooler

Automatic condensate pumps

Gas pump

Powerful pump for fast response times

Data transmission and measurement
The technology behind

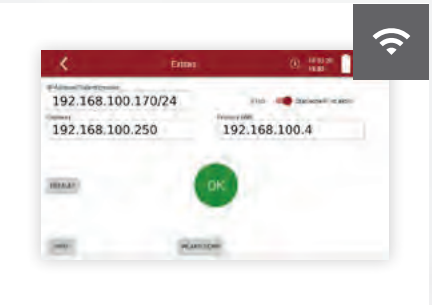
Data transmission

Fully equipped standard device:

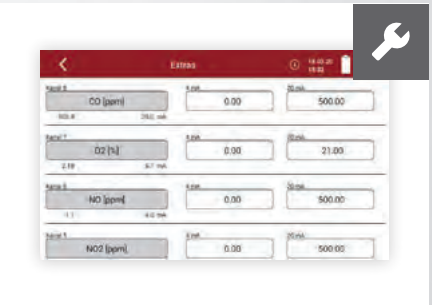
- Ethernet (LAN) TCP/IP
- WiFi
- 8 analog outputs 4 ... 20 mA
- 4 analog inputs
- USB (2x)
- RS 485 (option)

Internal data storage:

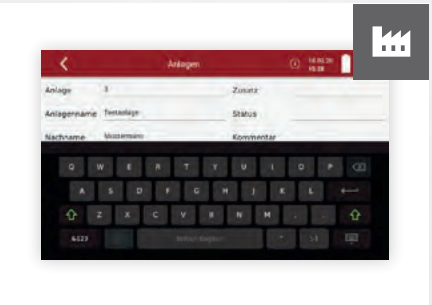
The huge memory with 400 MB offers space for thousands of facilities and data sets.



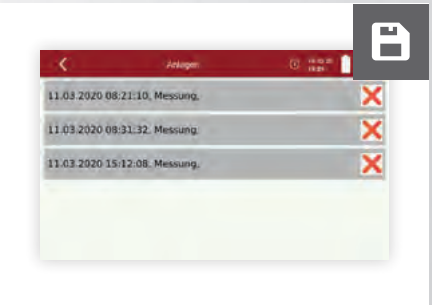
Set LAN



Set analog outputs



Manage facilities

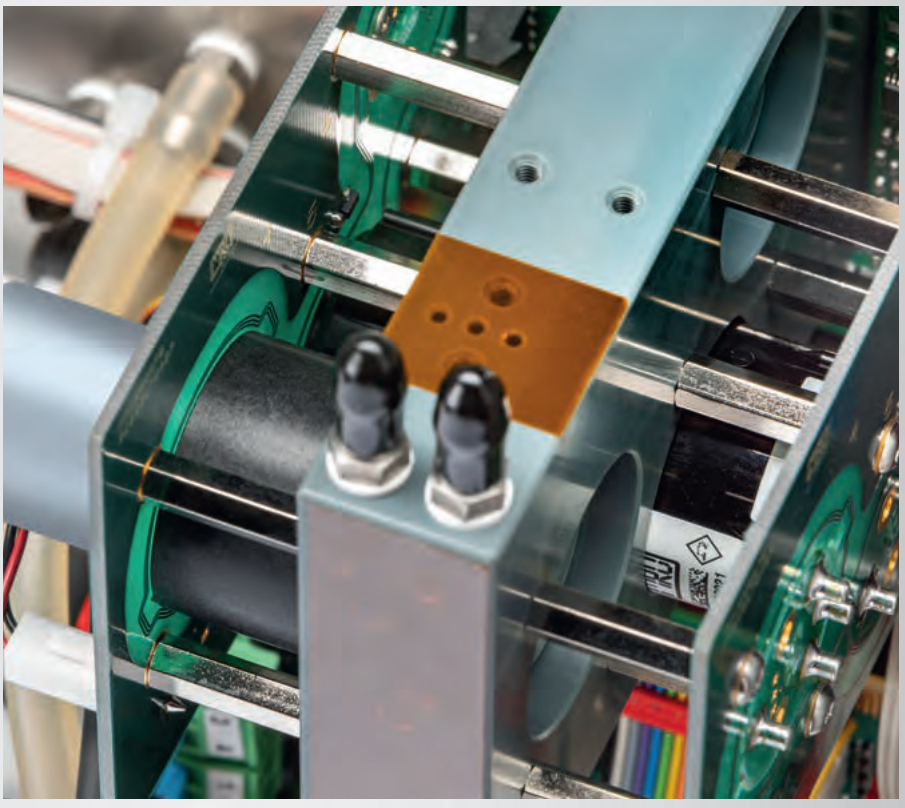


Save measurements by facility

High quality measurement technology

The combination of infrared measurement technology and electrochemical sensors of the VARIO*luxx* guarantees onereliable analysis of small measuring ranges.

- Infrared sensors (NDIR) for CO_2, CO, CH_4, C_3H_8
- Electrochemical sensors (EC) for CO, NO, NO_2, SO_2, H_2S, O_2 (max. 6 sensors simultaneously)
- Paramagnetic O_2 analysis
- Differential pressure measurement
- Temperature measurement of flue gas and combustion air
- Flow rate measurement and volume flow calculation



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 WiFi adapter

- For wireless data transmission

USB to Bluetooth converter set

- wireless long distance data transfer to PC/Notebook with MRU4win (up to 300m)

WiFi printer

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

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

VARIO*luxx* – Technical data

Gas measurement	Note	Method[1]	Measuring range min./max.*	Resolution	Accuracy**
Oxygen (O_2) (long life)	TÜV certified	EC	0 ... 25.00 %	0.01 %	0.2 %
Oxygen (O_2)		PM	0 ... 25.00 %	0.01 %	0.1 %
Carbon monoxide (CO_{low})	***	spec. adjustment	0 ... 500.0 ppm	0.1 ppm	± 2 ppm or 5 % reading
Carbon monoxide (CO_{H2komp})	TÜV certified	EC	0 ... 10,000/20,000 ppm	1 ppm	± 10 ppm or 5 % reading
Carbon monoxide ($CO_{very\ high}$)		EC	0 ... 2.00/10.00 %	0.01 %	± 0.01 % or 5 % reading
Carbon monoxide (CO)		NDIR	0 ... 1,000/30,000 ppm	1 ppm	± 10 ppm or 2 % reading
Carbon monoxide (CO)		NDIR	0 ... 1.00/10.00 %	0.01 %	± 0.1 % or 2 % reading
Carbon dioxide (CO_2)	TÜV certified	NDIR	0 ... 5.00/50.00 %	0.01 %	± 0.3 % or 2 % reading
Methane (CH_4)		NDIR	0 ... 1,000/10,000 ppm	1 ppm	± 10 ppm or 2 % reading
Propane (C_3H_8)		NDIR	0 ... 1,000/10,000 ppm	1 ppm	± 10 ppm or 2 % reading
Methane (CH_4)		NDIR	0 ... 1.00/4.00 %	0.01 %	± 0.05 % or 2 % reading
Nitric monoxide (NO_{low})	***	spec. adjustment	0 ... 300.0 ppm	0.1 ppm	± 2 ppm or 5 % reading
Nitric monoxide (NO)	TÜV certified	EC	0 ... 1,000/5,000 ppm	1 ppm	± 5 ppm or 5 % reading
Nitric dioxide (NO_{2low})	***	spec. adjustment	0 ... 100.0 ppm	0.1 ppm	± 2 ppm or 5 % reading
Nitric dioxide (NO_2)	TÜV certified	EC	0 ... 200/1,000 ppm	1 ppm	± 5 ppm or 5 % reading
Sulphur dioxide (SO_{2low})	***	spec. adjustment	0 ... 100.0 ppm	0.1 ppm	± 2 ppm or 5 % reading
Sulphur dioxide (SO_2)	TÜV certified	EC	0 ... 1,000/5,000 ppm	1 ppm	± 10 ppm or 5 % reading
Hydrogen sulphide (H_2S_{low})	***	spec. adjustment	0 ... 50/500 ppm	1 ppm	± 2 ppm or 5 % reading
Hydrogen sulphide (H_2S)		EC	0 ... 2,000/5,000 ppm	1 ppm	± 5 ppm or 5 % reading
Other measurements		Method	Measuring range	Resolution	Accuracy**
Stack gas temperature (T_{gas})		NiCrNi	0 ... 1,100 °C	1 °C	± 1 °C or 2 % reading
Combustion air temperature (T_{air})		NiCrNi	0 ... 500 °C	1 °C	± 1 °C or 2 % 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)		DiffDruck	3 ... 100 m/s	1 m/s	± 1 m/s or 1 % reading
Standardized ext. signal (AUX connection)		software	for NiCrNi-thermocouple, 0 ... 10 Vdc, 4 ... 20 mA, RS 485		
Combustion calculations (fuel type depend.)		software	Losses, ExcAir, Air Ratio, dew point, CO_2		
Emission calculations		software	mg/Nm³, reference to O_2, g/s, kg/h		
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, external 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, 48 Wh, for standby 1 hour (optional additional battery, 48 Wh Li-Ion)			
Operating conditions		+5 ... +45 °C; RH up to 95 % 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		IP20 (or IP42 inside transport case, optional)			
Dimensions (W x H x D)		430 x 290 x 150 mm			
Weight		approx. 8 kg only device, approx. 13 kg packed in bag with accessories			

Data subject to change without notice. | [1] EC = elektrochemical sensor, PM = paramagnetic sensor, NDIR = non-dispersive infrared spectroscopy
* overload range of ECS is usable only for short duration | ** which ever is larger | *** with hourly reset to zero | N-12745EN-K3-0M-1022

MRU – Competence in gas analysis. Since 1984.

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