

EMISSION MONITORING SYSTEMS



We *care* about the environment

FASCINATING OPTICS AND HIGH-CARAT QUALITY



O₂

CO

CO₂

NO_(x)

°C

CHIMNEY
DRAFT

DIFFERENTIAL
PRESSURE

AUX

ETA/
LOSSES

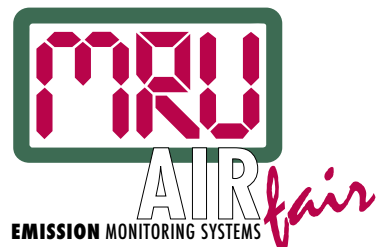
LAMBDA

RS 232

IRDA

PRINTER

SPECTRA 2000



Outstanding advantages of the new SPECTRA 2000



Standard Set

- ▶ continuous analysis of O₂ and CO ppm
- ▶ separate temperature measurement of combustion air and exhaust
- ▶ **continuous chimney draft**
- ▶ calculation of CO undiluted, CO₂, Lambda, Eta, losses, mg/m³, mg/kWh, dew point
- ▶ reference oxygen freely selectable
- ▶ fuels: natural gas H/E, natural gas L/LL, liquid gas P/B, fuel oil EL, extensions possibles

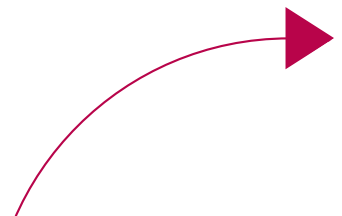
Equipment:

- ▶ RS 232 computer interface and measuring data storage for 300 measuring data
- ▶ CO sensor cutoff via solenoid valve with programmable CO limit value
- ▶ battery and mains power operation
- ▶ 300 mm gas sampling probe with 2700 mm gas sampling line, 3-way tube
- ▶ upgrade possible for simultaneous measurement of up to 3 sensors

Options:

- ▶ differential pressure measurement
- ▶ NO_(x) measurement
- ▶ infrared thermo printer, paper width 58 mm
- ▶ measuring data storage for 3000 measuring data
- ▶ bi-directional infrared interface for data exchange

- 1 Integrated room temperature sensitive element
- 2 AUX socket
- 3 RS 232 computer interface
- 4 Large illuminated graphical display with graphical flow search
- 5 CO sensor cutoff via programmable limit value control
- 6 Logical menu guided operation / individually programmable menu
- 7 Differential pressure (option)
- 8 Continuous chimney draft
- 9 Solid polarity-safe quick-lock coupling in industrial quality
- 10 Intelligent battery servicing: the device knows the perfect moment for conditioning



Functional overview:

Electro-chemical sensors continuously analyze O₂, CO, NO (NO_x). Highly sensitive NiCrNi thermocouples separately measure combustion air and exhaust gas temperature. Exhaust gas is sucked by

means of an integrated automatic gas pump and supplied to the sensors. Analysis will be effected automatically within seconds. 7 measuring values are shown well legible by means of a large illuminated LCD display.

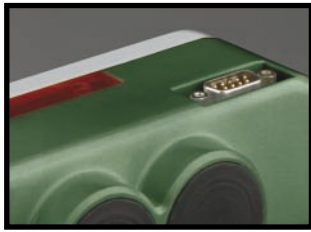


NEW! MRU mobility warranty:
Generally 24 months* warranty for all parts including sensors, excluding wearing parts. *Precondition: The device will have a maintenance check by MRU or an authorized MRU service partner once a year for the valid flat rate. For all other cases, the legal guarantee period is effective. The General Business Conditions of MRU are applied unless specified otherwise in a written form.

SPECTRA 2000



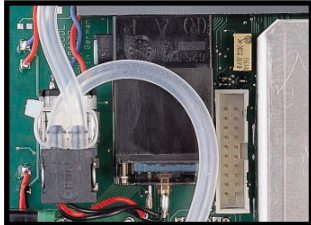
1 The integrated room temperature sensitive element without any annoying cable saves space and avoids a cable break-off.



3 The RS 232 computer interface allows a measuring data transmission to your PC (optional PC program). Alternatively also via bi-directional infrared interface (IRDA).



4 The very large display (6,5 cm x 6,5 cm) with 7 measured values at one glance is pleasant for your eyes and saves time-intensive scrolling of the display.



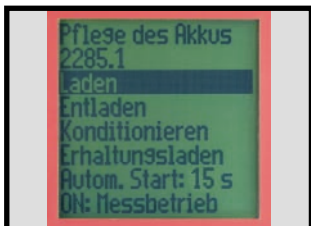
5 CO sensor cutoff via solenoid valve with programmable CO limit value.



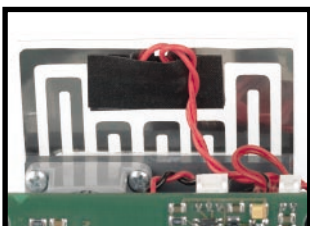
6 The new operator's guidance (via functional keys) is simple, serviceable and menu-guided with display-memory-function.



9 The new connection plugs are solid, polarity-safe and easy to handle.



10 Intelligent battery servicing program prolongs readiness to measure per loading and lifetime of the battery.



Serial device heating inside for quick readiness to measure in winter time and to avoid the forming of condensate inside the device.



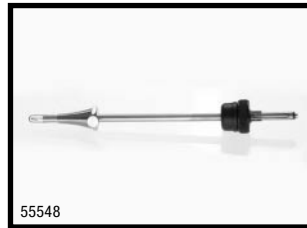
The well legible freely programmable print via infrared thermo printer contains all measuring data as well as the manually entered and stored soot spot number including the customer name and address, if necessary service print for easier error diagnosis, e. g. O₂ sensor failure.



Condensate trap with well-tried star filter and larger volume.

Graphical flow search.

Recommended accessories and spare parts



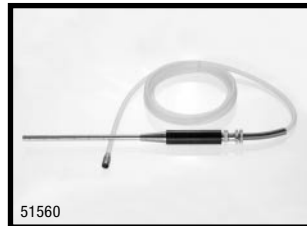
55548

probe tube 180 mm, slip-on type incl. cone



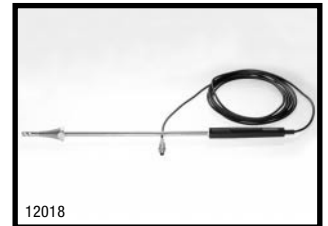
55498

multihole probe tube, slip-on type for standard probe handle



51560

multihole probe with probe tube



12018

combustion air temperature sensitive element in 300 mm probe tube application



11789B

combustion air temperature sensitive element, 65 mm, including rubber cone and magnet fixing with cable 2,5 m



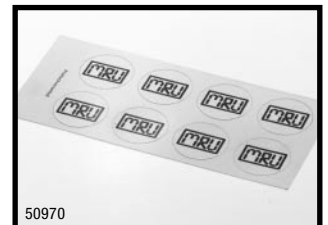
56484

room temperature sensitive element, short



56548

servicing cleaning set



50970

control port sealing (1 sheet = 16 sealing stickers)



11700

soot paper (1 bag contains 200 pieces)



11701

soot comparison scale



51833

hand soot pump



56116

spare printer rolls (1 selling unit = 5 rolls à 15 m)



51867

transparent envelope for measuring protocol (minimum delivery: 10 pieces)



11165

star filter, washable

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ORDER DATA:

▶ Standard Set _____ 400000

Options

▶ NO_(x) measurement _____ 56523
 ▶ infrared thermo printer, paper width 58 mm _____ 55425
 ▶ handy plastic transportation case for device and accessories _____ 56522
 ▶ aluminium frame case for device and accessories _____ 56521
 ▶ integrated differential pressure measurement _____ 56524
 ▶ measuring data storage for 3000 measuring data _____ 56527
 ▶ AUX socket _____ 56526
 ▶ IRDA interface _____ 56525

Accessories / spare parts

▶ 180 mm probe tube, slip-on type _____ 55548
 ▶ special length tube line 1,5 m _____ 56528
 ▶ special length tube line 4 m _____ 56529
 ▶ multi-hole probe with 2 m probe tube (for exhaust tubes Ø 60–180 mm) _____ 51560
 ▶ 65 mm combustion air sensitive element, incl. rubber cone and magnet fixing device with cable 2,5 m _____ 11789B
 ▶ combustion air sensitive element, probe tube application with steep cone and 2,5 m cable 300 mm probe tube _____ 12018
 ▶ connection cable to PC, 3 m _____ 51531
 ▶ probe holder, slewable, Ø 8 mm _____ 50648
 ▶ measuring data visualizing program for Windows 95/98 and NT, MRU Online View _____ 15150
 ▶ manual soot pump _____ 51833

ART.NR.

TECHNICAL DATA:

Programmed fuel types

Natural gas H/E, natural gas L/LL, liquid gas P/B, fuel oil EL, extensions possible.

Mesuring ranges:

O₂ 0-21%
 CO 0-4000 ppm
 1 supplementary sensor expandable
 NO 0-2000 ppm
 temperature range 0-650 °C
 draft/pressure ± 100 hPa
 storage temperature -20 - +50 °C
 ambient temperature +5 - +45 °C
 battery capacity min. 8 hrs. mains power, operation possible

Calculated values:

NO_(x)
 CO₂
 Lambda
 dew point
 Eta 0-99,9%
 Losses 0-99,9%
 reference O₂ adjustable

Dimensions:

L x W x D 150 x 200 x 55 mm
 weight app. 1000 g

Overview of MRU's possibilities

Functions	MRU Exhaust Gas Analyzers				
	Spectra 1600 L	Spectra 2000	Delta 2000 CD	NOVA H8	VARIO plus
suction temperature	●	●	●	●	●
exhaust gas temperature	●	●	●	●	●
O ₂ analysis	●	●	●	●	●
CO analysis	●	●	●	●	●
NO _(x) analysis	●	○	○	○	●/○
NO ₂ analysis	●	●	●	●	○
SO ₂ analysis	●	●	●	●	○
CO ₂ analysis	●	●	●	●	○
HC analysis	●	●	●	●	○
further measuring signal inputs	●	○	●	●	●/○
chimney draft measurem.	●	●	●	●	●
diff. pressure measurem.	●	○	●	○	●/○
soot spot number determ.	●	●	●	●	○
RS 232	●	●	●	●	●
Centronics	●	●	●	●	○
data memory	●	●	○	●	●
gas cooler	●	●	●	●	○
heated gas sampling line	●	●	●	●	○
portable unit	●	●	●	●	●
stationary unit	upon demand				
automatic condensate monitoring	●	●	○	●	○

- standard
- option
- ◐ not available



Dealer's stamp

MRU

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