MaMoS-400

4-Channel
Gas monitoring system

Properties

Measurement of gas concentrations
- Gas concentrations measured with NDIR sensors: CO, CO_2, CH_4, N_2O
- Gas concentrations measured with electrochemical sensors: CO, NO, NO_2, SO_2, H_2S.
- O_2 gemessen mit Partial pressure sensor
- Please ask for quote for other gases

Other measurements
- Atmospheric pressure
- Differential pressure
- Temperature using thermocouples
- Temperature using thermistors Pt-500

Processing and presentation of measured data
- Gas concentrations shown as ppm or mg/m3
- All results shown as instantaneous values on display
- Powerful PC programme for analyser settings and data communication
- Optional: Datalogger with 256 MB MMC (Memory card)
- Optional calculation of combustion parameters: Lambda, qA, Eta
- Optional calculation of NOx from NO or NO and NO2

Software capabilities
- Stationary operation: Zeroing and measurement times user programmable
- Permanent automatic check of the instruemnt
- Compensation of cross sensitivity and temperature drift of gas sensors

Hardware capabilities
- ABS housing for wall-mounting with internal ventilation
- Microprocessor controlled
- IR Sensors (CO, CO_2, CH_4, N_2O) with short reaction time (T90 < 15 seconds)
- Integrated Peltier sample conditioner with cndensate pump and filter
- Solenoid valve for automatic ventilation during zeroing
- Membrane pump for sample extraction
- 4 current (0/4 - 20 mA) and 4 voltage (0 - 10 V). Freely allocated to the measurment channels
- Up to 5 LCD displays. Freely allocated to the measurment channels
- RS232C or RS485 connection for data transfer
- PC-Programm für komfortable und einfache Gerätekonfiguration und Datentransfer
- Optional integrated clock/calendar
- Optional: Converter for connection to USB or Ethernet

Possible uses
- Biogas plants
- Landfills
- Greenhouses
- Stationary control of combustion systems
- Incinerators
- Safety such as CO2 (0...2000 ppm) or CH4 (0...5 %)

The maMoS-400 is a high quality stationary monitor for continuous measurement of four gas components. It is produced using all the newest techological developments. The monitor comes complete with filter, Peltier dryer and condensate pump.

It can be fitted with either infrared or electrochemical sensors or both. The possible sensors are: (electrochemical) O_2, CO, NO, NO_2, SO_2, H_2S or: (IR) CO, CO_2, CH_4, N_2O.

The gas monitor is fitted with analogue outputs for current and voltage to allow control functions as well as measurement. There is also a digital data output if needed.
The instrument operates fully automatically in one of two standard cycles:
- continuous
- measurement according to set timetable

Both cycles are freely programmable

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Technical data

Component	Method	Range	Resolution	Detection Level	Accuracy	Time (T90)
NDIR sensors						
CO - Carbon monoxide-Volume concentration	IR Sensor	0...100 %	0.10 %	0.10 %	+/- 3 % rel., or 0.5 % abs.	45 s.
		0....50 %	0.10 %	0.10 %	+/- 3 % rel., or 0.3 % abs.	
CO_2 - Carbon dioxide-Volume concentration		0...25 %	0.01 % (100 ppm)	0.01 % (100 ppm)	+/- 3 % rel., or 0.15 % abs.	
		0...10 %	0.01 % (100 ppm)	0.01 % (100 ppm)	+/- 3 % rel., or 0.05 % abs.	
CH_4 - Methane-Volume concentration		0...5 %	0.01 % (100 ppm)	0.01 % (100 ppm)	+/- 3 % rel., or 0.03 % abs.	
		0...2.5 %	0.001 % (10 ppm)	0.001 % (10 ppm)	+/- 3 % rel., or 0.015 % abs.	
N_2O - Nitrous oxide -Volume concentration		0...500 ppm	1 ppm	1 ppm	+/- 3 % rel., or 5 ppm abs.	
Electrochemical sensors						
CO - Carbon monoxide, Volume concentration	Electrochemical sensors	0...20000 ppm	1 ppm	1 ppm	+/- 5 % rel., or 5 ppm abs.	45 s.
NO / NOx - Nitric oxide, Volume concentration		0...5000 ppm	1 ppm	1 ppm		
NO_2 - Nitrogen dioxide, Volume concentration		0...1000 ppm	1 ppm	1 ppm		
SO_2 - Sulphur dioxide, Volume concentration		0...5000 ppm	1 ppm	1 ppm		
H_2S - Hydrogen sulphide, Volume concentration		0...1000 ppm	1 ppm	1 ppm		
H_2 - Hydrogen, Volume concentration		0...2000 ppm	1 ppm	1 ppm		
Partial pressure sensor						
O_2 - Oxygen, Volume concentration	partial pressure sensor	0...25 %	0.01 %	0.01 %	+/- 5 % rel., or 0.2 % abs.	45 s.

Operating data	
Parameter	**Description**
Size	W x L x H: 420 x 360 x 140 mm
Weight without probe	ca. 5 kg
Supply	24 VAC / 120 W
Gas pump	Membrane pump 1.5 l/min
Display	LCD, for up to 4 measurement results
Data logger	MMC Card 256 MB
Analoge Ausgänge	Current 0/4 - 20 mA, Voltage 0 - 10 V, linear for each gas channel
Interface	RS 232C
Operating temperature	0°C ÷ 50°C
Storage temperature	-20 ÷ +55°C
Ambient humidity	5 ÷ 90 %, non-condensing

Only NDIR sensors	
Parameter	**Description**
Measuring method	NDIR light absorption, 1 channel with light modulation
Averaging time	2 ÷ 60 s freely programmable
Calibration	10 point calibration, stored in EEPROM. Correction of the calibration curve possible with zeroing and one calibration gas.
Recalibration	not usually necesary. If desired, a 2 poiint calibration can be carried out by the user.

Only electrochemical sensors	
Parameter	**Description**
Measuring method	electrochemical
Averaging time	2 ÷ 30 s freely programmable
Calibration	2 point calibration, variable
Recalibration	At least every 12 months