Cold gas IR analyser

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Cold gas analyser for measurement of pollutants in flue gas and for process control using IR-technology

FUNCTION

A high-precision infrared photometer is used to determine the concentration of up to 8 gas components by means of infrared absorption.

Furthermore an electrochemical cell, zirconium dioxide sensors or paramagnetic sensor can be configured for oxygen measurement.

The analyser MGA 20 includes a high precision optical bench (infrared photometer) consisting mainly of an IR light source with chopper wheel, a measuring cell, a motordriven filter wheel and a detector.

MEASURING RANGES *

	Meas. range 1	Meas. range 2
CO:	0...75 mg/m³	0...300 mg/m³
CO_2:	0...25 vol. %	0...50 vol. %
NO:	0...80 mg/m³	0...400 mg/m³
NO_2:	0...50 mg/m³	0...500 mg/m³
N_2O:	0...50 mg/m³	0...3000 mg/m³
SO_2:	0...75 mg/m³	0...300 mg/m³
CH_4:	0...50 mg/m³	0...500 mg/m³
O_2:	0...25 vol. %	-

* *suitability test in progress*

YOUR BENEFITS AT A GLANCE

- 7" touch colour display and an app-based menu
- automatic zero point setting by means of ambient air; no need of compressed air
- Filtercal technology for reference point adjustment; without gas consumption
- high sensitivity due to optical path length
- remote access
- internal pump (external pump on request)

PRECONDITIONS ON SITE

- ambient temperature: 5...40 °C (with air conditioner 5...45°C)
- installation place indoors and dust-free
- protection against wetness
- protection against percussions/vibrations

CEMS USING MGA 20

OPTICAL BENCH

- includes a broadband infrared (IR) emitter with chopper wheel, measuring cell with zirconium oxide probe, detector unit with pyroelectric broadband detector and filter wheel, preamplifier and evaluation electronics
- constantly temperature regulated at 60 °C
- length of measuring path with direction changes: 7,200 mm
- spectral range: 2 µm to 12 µm

TECHNICAL DATA

Analyser:	robust housing with compact 19" format 3RU, IP40; 483 mm x 133 mm x 350 mm (w x h x d)
Measuring methods:	• bi-frequency measuring method (NO_2, SO_2 , CO_2) • gas filter correlation (CO, NO, N_2O, CH_4) • zirconium dioxide sensor (O_2) • electrochemical cell (optional for O_2) • paramagnetic measuring method (optional for O_2)
Accuracy:	< 2% of the respective measuring range
Sensitivity correction:	manual, with test gas; optional: automatic
Response time:	T_{90} < 180 s (depending on plant and chosen component)
Ambient conditions:	5...40 °C; relative humidity: max. 90% (non-condensing)
Display / Operating:	7" capacitive touch color display, with intuitive menu navigation display possibility in mg/m³, ppm and vol. %; languages (factory-set): German, English, French, Chinese
Analogue outputs:	8 active analogue outputs, 4...20 mA, potential-free, burden max. 500 Ohm
Digital inputs:	14 inputs (optocoupler; e.g. for error signal, sample probe, measuring gas pipe, gas cooling unit)
Digital outputs:	16 outputs, potential-free, 24 V DC with max. 0.4 A (max. 10 W); amongst others: • output signals for failure, maintenance, maintenance request, limit values, measuring range change-over, Autocal • control of automatic probe back-purging • control of metering • control cabinet air conditioning and cabinet fan
Interfaces:	• RS232 (Modbus) • RJ45 (Remote access Ethernet/VNC), RJ45 (Modbus TCPIP), RJ45 (Service Interface) • USB Typ A (USB Stick data exchange), USB Typ B (Service Interface)
Power supply:	110...230 V AC / 50-60 Hz, 250 W
Other functions:	• standard: temperature regulated infrared photometer; automatic zero point correction with ambient air • data logging function • visualization using the display, extensive visualization possibilities and diagnostic options

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