COMPACT CO-MEASURING DEVICE

AUTOOFF
HOLD
MAXALARM
MIN MAX

HIGHLIGHTS:

- 3 display units selectable (ppm, mg/m³ and % CO Hb)
- Alert at exceeding the maximum concentration at work (MAK/AGW)
- incl. interface
- incl. calibration protocol

THE DEVICE IS ONLY INTENDED FOR CONTROL. IT IS NOT A REPLACEMENT FOR A MONITORING DEVICE SUBJECT TO AUTHORISATION!

GCO 100

Art. no. 600062

Compact CO - measuring device with alarm

General:

Carbon monoxide (CO) is created by the combustion of carbon. Depending on the effectiveness of the combustion (oxygen supply) and the temperature of the combustion more or less CO gas is created. The gas is inflammable and highly toxic. It is invisible, tasteless and scentless.

Even smallest concentrations are dangerous for humans!

Therefore a directive exists in Germany, which limits the maximum concentration of CO gas at work (MAK / AGW) to 30 ppm.

Application:

- Control of the air quality (e.g. at work place)
- Checking of heating systems, gas central-heating, fireplace
- Control of the air at maintenance work (tunnel, flue gas tract, ...)
- Detection of CO in the breath of smoker (% CO Hb)
- Cognition of CO poisoning i.e. at burnt offering (fire fighters, ...)

Specifications:

Measuring principle:	electrochemical CO measuring cell
Measuring range:	0 ... 1000 ppm CO concentration
Display ranges:	0 ... 1000 ppm CO concentration 0 ... 1250 mg/m³ CO concentration 0 ... 60.0 % CO Hb (estimation via exhaled breath gas)
Resolution:	1 ppm, 1 mg/m³ or 0.1 % CO Hb
Sensor element:	integrated in device, measuring inlet at front plate, with inner thread for accessories screw in
Life time:	>5 years at proper usage at air suggested test interval: every 6 months (depending on precision requirements)
Accuracy: (at range 0 ... 500 ppm)	
Linearity:	<±5 % of measured value ±1 digit
Repeatability:	<±5 % of measured value ±1 digit

Interference (extract)

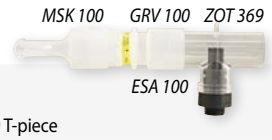
	Concentration (ppm)	Residence time (min.)	Display (ppm)
Sulphur dioxide	50	600	<1
Nitrogen dioxide	50	900	-1
Nitric oxide	50	5	8
Hydrogen	100	5	20
Carbon dioxide	5000	5	0

Display:	approx. 11 mm high, 4½-digit LCD-display
Pushbuttons:	3 membrane keys
Nominal temperature:	25 °C
Operating conditions:	-10 ... +50 °C, 15 ... 90 % RH (non-condensing)
Storage temperature:	-10 ... +50 °C
Interface:	Serial interface, direct connection to RS232 or USB interface of a PC via electrically isolated interface adapter
Power supply:	9 V battery as well as additional d.c. connector for external 10.5 ... 12 V direct voltage supply. (suitable power supply: GNG 10 / 3000)
Battery life:	>1000 h
Housing:	Impact-resistant ABS plastic housing, membrane keyboard, transparent panel, integrated pop-up clip
Dimensions:	142 x 71 x 26 mm (H x W x D)
Weight:	approx. 155 g
Scope of supply:	Device, battery, calibration protocol, manual

Accessories and spare parts:

ESA 100
Art. no. 603013
Tube adapter, flowdiverter to screw in front plates.

ZOT 369
Art. no. 603094
T-piece to plug on ESA 369 / ESA 100



GRV 100
Art. no. 603093
unidirectional valve to be plugged on ZOT 369 T-piece

MSK 100
Art. no. 603012
Mouth peace, plastic

GAS 100
Art. no. 603587
Extension set for inhaled air control
(consisting of ESA 100, ZOT 369, GRV 100 and 5 x MSK 100)

GZ-10
Art. no. 603133
Test gas cap GCO (for controlled flow with test gas)

GZ-02
Art. no. 606710
Gas bottle with 12 l test gas: 30 ppm CO

GZ-03
Art. no. 606711
Gas bottle with 12 l test gas: 300 ppm CO

GZ-04
Art. no. 603570
Gas valve unit MiniFlo for gas bottles with 12 l

GB 9 V
Art. no. 601115
Spare battery 9V, type IEC 6F22

GKK 3000
Art. no. 601048
Device case soft lining for 1x GMH 3000 (275 x 229 x 83 mm)

USB 3100 N
Art. no. 601092
Interface Converter GMH3xxx <=>PC, USB, electrical isolated

INDOOR AIR QUALITY MONITORS

AIR QUALITIY

HIGHLIGHTS:

- Indoor air qualitiy permitting calculation of automatic ventilation rate by CO2 analysis correlate to the real presence of people in the rooms

HD21-ABE-17

Art. no. 409559

Indoor air quality monitors

General:

HD21-AB-17 IAQ Monitor is a bench-top/portable instrument manufactured by Delta Ohm for the analysis of indoor air quality (IAQ, Indoor Air Quality).

The instrument simultaneously measures the parameters:

- Carbon Dioxide CO2
- Carbon Monoxide CO
- Atmospheric Pressure
- Temperature
- Relative Humidity

and it calculates:

- Dew Point
- Wet Bulb Temperature
- Absolute Humidity
- Mixing Ratio
- Enthalpy

These regulations apply to all confined spaces that could be used by people. Kitchens, baths, changing rooms and swimming pools are included, due to their high humidity. You should take into account, in regard to air quality, possible chemical, physical and biological contaminants. The instruments have a wide Dot Matrix graphic display with a resolution of 160 x 160 dots.

The instruments typical applications are:

- Measurement of IAQ (Indoor Air Quality) and comfort conditions in schools, offices and indoor spaces.
- Analysis and study of the Sick Building Syndrome, and of the resulting consequences.
- Checking the HVAC (Heating, Ventilation and Air Conditioning) system efficiency.
- Examination of IAQ conditions in factories to optimize microclimate and improve productivity.
- Building Automation checks.

Specifications:

Device	
Dimensions:	300 x 90 x 40 mm (H x W x D) (with probe)
Material:	ABS, rubber
Display:	Backlight, Dot Matrix, 160 x 160 dots, visible area 52 x 42 mm
Operating conditions	
Working temperature:	-5 ... +50 °C
Storage temperature:	-25 ... +65 °C
Working relative humidity:	0 ... 85 % RH without condensation
Protection rating:	IP30
Instrument uncertainty:	±1 digit @ 20 °C
Power supply	
Mains adapter (Code SWD-10):	12 V DC/1 A
Batteries:	4 x 1.2 V Ni-MH rechargeable batteries AA type
Autonomy:	8 h of continuous use in measure mode
Serial interface	
Socket:	mini-USB
Type:	USB 1.1 or 2.0 not insulated
Storage capacity:	67.600 recordings
Scope of supply:	IAQ Monitor datalogger kit. Complete with: DeltaLog10 software (version 0.1.5.3 and later), monitor, and data processing on Personal Computer, 4 x 1.2 V NiMH rechargeable batteries, manual, case, with USB cable and mains adapter

CO_2 Carbon Dioxide	
Sensor:	NDIR Dual Wavelength (two frequences)
Measuring range:	0 ... 5.000 ppm
Sensor working range:	-5 ... +50 °C
Accuracy:	±50 ppm ±3 % of measurement
Resolution:	1 ppm
Temperature dependence:	0.1 % f.s./°C
Response time (T_{90}):	<120 s (air speed = 2 m/s)

CO Carbon Monoxide	
Sensor:	Electrochemical cell
Measuring range:	0 ... 500 ppm
Sensor working range:	-5 ... +50 °C
Accuracy:	±3 ppm ±3 % of measurement
Resolution:	1 ppm
Response time (T_{90}):	<50 s
Service life:	>5 years in normal environment conditions

Atmospheric Pressure (Patm)	
Type of sensor:	Piezo-resistive
Measuring range:	750 ... 1.100 hPa
Accuracy:	±1.5 hPa @ 25 °C
Resolution:	1 hPa
Temperature drift:	±3 hPa with temperature -20 ... +60 °C

Relative Humidity (RH)	
Type of sensor:	Capacitive
Sensor protection:	Stainless steel grid filter (on request 10 µm sintered filter P6 in AISI 316 or 20 µm sintered filter P7 in PTFE)
Measuring range:	0 ... 100 % RH
Sensor working range:	-20 ... +60 °C
Accuracy:	±1.5 % RH (0 ... 90 % RH) ±2 % RH (elsewhere) for T=15 ... 35 °C ±(1.5 +1.5 % of the measure) % RH for T= -20 ... +60 °C
Resolution:	0.1 °C
Temperature dependence:	±2 % on all temperature range
Hysteresis and repeatability:	1 % RH
Response time (T_{90}):	<20 s (air speed = 2 m/s) without filter

Temperature T	
Sensortyp:	NTC 10 kΩ
Measuring range:	-20 ... +60 °C
Accuracy:	±0.2 °C ±0.15 % of measurement
Resolution:	0.1 °C
Response time (T_{90}):	<30 s (air speed = 2 m/s)

Accessories:

SWD-10
Art. no. 700039
Stabilized power supply at -100 - 240 V AC/12 V DC/-1 A mains voltage.

CP-23
Art. no. 475163
Connection cable with type B MiniUSB connector on instrument's side and USB 2.0 connector on PC's side.

BAT-40
Art. no. 700051
Spare batteries with built-in temperature sensor.

MINICAN-12-A-0
Art. no. 475309
Gas can with testgas for CO and CO2 calibration at 0 ppm,
Gas cylinder with 20 l test gas: N2

HD-37-36
Art. no. 700053
Anschlussrohr-Set für CO-Kalibrierung

HD-37-37
Art. no. 700054
Connection tube kit between HD21-ABE and MINICAN, for CO2-calibration

HD-33-0
Art. no. 700055
Humidity reference cell incl. adapter, 33 % r.h.