CP11

PORTABLE INDOOR AIR MONITORING

- Measures and logs CO2, relative humidity and temperature
- Dew Point and Wet Bulb calculations
- High Accuracy Hygromer® IN-1 humidity sensor
- 18,000 data point memory for CO2, humidity and temperature values
- Maximum, minimum and average value display
- Adjustable audible CO2 alarm
- Display with backlight
- Adjustable auto power off function
- Mini USB interface

rotronic
MEASUREMENT SOLUTIONS

BE PRECISE:
THE MAIN ADVANTAGES AT A GLANCE

The CP11 handheld instrument is the latest development of an economical multiple parameter meter that simultaneously measures and records CO_2, humidity and temperature. It also calculates the dew point and wet bulb temperature. Equipped with the field-tested ROTRONIC HYGROMER® IN-1 humidity sensor, this instrument offers unbeatable value for money. The CP11 includes the ROTRONIC SW21 software which can be used to program, download data and save logged files.

Features
- Calculates dew point and wet bulb temperature
- Automatic or manual data logging
- Easy field calibration by simple connection to a known reference
- Auto power OFF function

Connections
- Mini USB port for connection to a PC
- 5 VDC power supply, for connection of the optionally available AC adapter

Large display
- With backlight

Controls
- Large buttons for easy operation of the measuring instrument

Sensors / Calibration
- HYGROMER® IN-1 humidity sensor
- Calibration of humidity possible at 35/80 %RH
- Calibration of CO_2 possible at 0 and 400 ppm

CO2 calibration
- Opening for a simple CO_2 calibration

APPLICATIONS

Indoor air quality

Monitoring in underground garages (safety)

Leak monitoring in filling plants (safety)

PRINCIPLES

The CP11 handheld instrument evaluates the quality of air with a combined measurement of CO_2, humidity and temperature. A high concentration of carbon dioxide can develop quickly when closed areas with deficient ventilation are filled with people. Carbon dioxide (CO_2) is a colorless and odorless gas that exists in the earth's atmosphere and which is dangerous in high concentrations. The proportion of CO_2 in natural ambient air is about 0.04 % or 400 ppm. When humans and animals exhale this gas, it mixes quickly with the ambient air. A high CO_2 content becomes apparent in humans through rapid fatigue and loss of concentration. In order to initiate suitable countermeasures such as an increase in the supply of fresh air, it is important to measure not only parameters such as relative humidity and temperature, but also the CO_2 content.

Guidelines

350 - 450 ppm	400 - 1,200 ppm	> 1,000 ppm	5,000 ppm (0.5 %vol)	38,000 ppm (3.8 %vol)	> 100,000 ppm (10 %vol)
Fresh air outdoors	Room air	Fatigue and loss of concentration become apparent.	Maximum permissible value at the workplace during an 8-hour workday	Breathing air (direct exhalation)	Nausea, vomiting, loss of consciousness and death

TECHNICAL INFORMATION

Dimensions

42

60.9

173
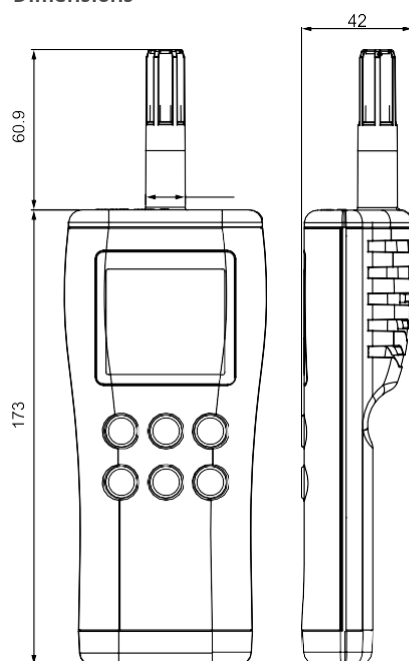
Suitable accessories

Art. no.	Description
AC1214	AC adapter 5 VDC
ER-15	Humidity calibration device
EA35-SCS	Humidity standard 35 %RH
EA80-SCS	Humidity standard 80 %RH
CO2 CALIBRATOR	CO2 calibrator

General	
Type	Handheld device
Parameters	CO_2, relative humidity and temperature
Range of application	0...50 °C / 0...100 %RH, non-condensing
Power supply	4 x AA batteries / optional AC adapter AC1214
IP protection	IP30
Clock	Real time clock
Alarm	Adjustable for CO2 measurement
Technical information / Functions	
Battery life	50 h
Current consumption	40 mA (typical)
Warm-up time	<1 min.
Calculations	Dew point, wet bulb temperature
Measured value memory	18,000 values with time stamp, automatic recording (%RH / °C / ppm)
	99 single values with time stamp, manual recording (%RH / °C / DP / Tw / ppm)
Log interval	1s... 4.59h
CO_2 measurement	
Measurement principle	Non dispersive infrared (NDIR) with automatic baseline correction (ABC)
Measurement range	0...10000 ppm
Accuracy at 23 °C ±5 K	±30 ppm ±5 % of the measured value
Resolution	1 ppm
Response time	<10 sec @ 30 cc/min. flow, <3 min diffusion time
Adjustment points	0, 400 ppm
Pressure dependence	+1.6 % reading per kPa
Null drift	<10 ppm/year
Maintenance	No maintenance (standard indoor application)
Humidity measurement	
Humidity sensor	ROTRONIC HYGROMER® IN-1
Measurement range	0.1. 99.95 %RH
Accuracy at 23 °C ±5 K	±2 %RH (10...90 %RH), others ±5 %RH
Resolution	0.1 %RH
Adjustment points	35, 80 %RH
Response time t63	<30 s, without filter
Long-term stability	<1.5 %RH / year
Temperature measurement	
Sensor	Thermistor
Measurement range	-20...60 °C
Resolution	0.1 °C
Accuracy at 23 °C ±5 K	±0.3 K
Response time	4 s
Software	
SW21	Free software (settings, data download, display of measured values)
HW4	Compatible with optionally available HW4 software
Conformities / Housing	
CE / EMC compatibility	EMC-Directive 2014/30/EU, EN 61326-1:2012
Housing material	ABS
Dimensions	76.7 x 41.8 x 233.9 mm
Weight	290 g