

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



CP11

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 CO₂, 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 SW2.1 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 CO₂ possible at 0 and 400 ppm

CO₂ calibration

- Opening for a simple CO₂ calibration



APPLICATIONS



Indoor air quality



Monitoring in underground garages (safety)



Leak monitoring in filling plants (safety)

PRINCIPLES

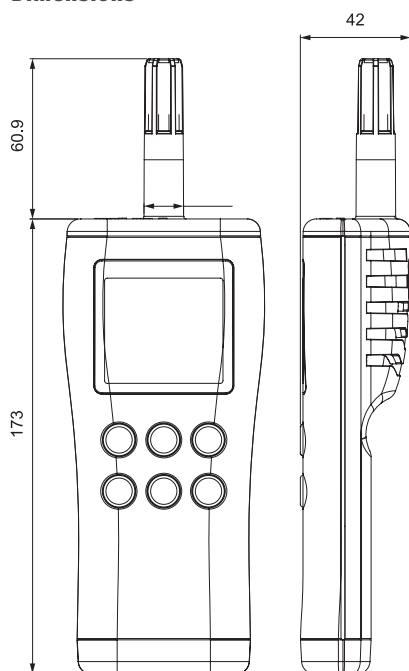
The CP11 handheld instrument evaluates the quality of air with a combined measurement of CO₂, humidity and temperature. A high concentration of carbon dioxide can develop quickly when closed areas with deficient ventilation are filled with people. Carbon dioxide (CO₂) is a colorless and odorless gas that exists in the earth's atmosphere and which is dangerous in high concentrations. The proportion of CO₂ 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 CO₂ 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 CO₂ 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



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 CO ₂ 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) |
| CO₂ measurement | |
| Measurement principle | Non dispersive infrared (NDIR) with automatic baseline correction (ABC) |
| Measurement range | 0...5000 ppm |
| Accuracy at 23 °C ±5 K | ±30 ppm ±5 % of the measured value |
| 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 | <2.5 %RH (10...90 %RH) |
| Adjustment points | 35, 80 %RH |
| Response time t ₆₃ | <30 s, without filter |
| Long-term stability | <1.5 %RH / year |
| Temperature measurement | |
| Sensor | Thermistor |
| Measurement range | -20...60 °C |
| Accuracy at 23 °C ±5 K | ±0.3 °K |
| Response time | 4 s |
| Software | |
| Supplied with the instrument or available as download | SW2.1 (settings, data download, display of measured values) |
| HW4 | Compatible with optionally available HW4 software |
| Conformities / Housing | |
| CE / EMC compatibility | CE conformant 2004/108/EC |
| Housing material | ABS |
| Dimensions | 76.7 x 41.8 x 233.9 mm |
| Weight | 290 g |