

# CP11



THORNE &  
**DERRICK**  
INTERNATIONAL

Thorne & Derrick  
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[www.heatingandprocess.com](http://www.heatingandprocess.com)

## PORTABLE INDOOR AIR MONITORING

- Measures and logs CO<sub>2</sub>, relative humidity and temperature
- Dew Point and Wet Bulb calculations
- High Accuracy Hygromer® IN-1 humidity sensor
- 18,000 data point memory for CO<sub>2</sub>, humidity and temperature values
- Maximum, minimum and average value display
- Adjustable audible CO<sub>2</sub> 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<sub>2</sub>, 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 CO<sub>2</sub> possible at 0 and 400 ppm

### CO<sub>2</sub> calibration

- Opening for a simple CO<sub>2</sub> calibration





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## 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<sub>2</sub>, 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<sub>2</sub>) is a colorless and odorless gas that exists in the earth's atmosphere and which is dangerous in high concentrations. The proportion of CO<sub>2</sub> 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<sub>2</sub> 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<sub>2</sub> 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

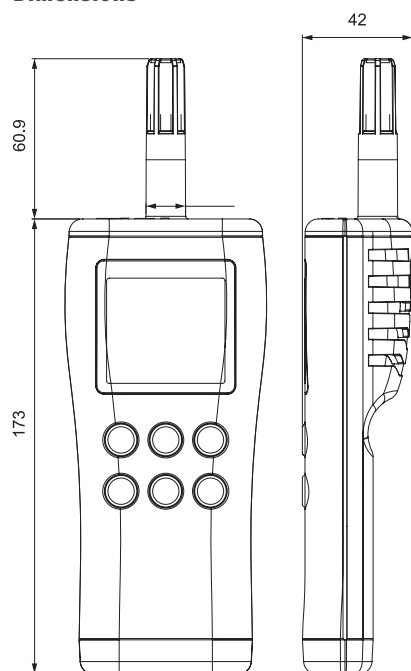


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## TECHNICAL INFORMATION

### 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
CO <sub>2</sub> CALIBRATOR	CO <sub>2</sub> calibrator

General	
Type	Handheld device
Parameters	CO <sub>2</sub> , 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 <sub>2</sub> 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)
CO <sub>2</sub> 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 t63	<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



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