

Rotronic CP11 Humidity and Temperature Meter



# Rotronic CP11 Humidity and Temperature Meter Instruction Manual

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# Rotronic

Rotronic CP11 Humidity and Temperature Meter



## Specifications

- **Displays & records:** relative humidity, temperature, CO2, dew point, and wet bulb
- Built-in CO2 sensor with calibration cap
- 5VDC adaptor port
- PC connect port
- **Power supply:** 4pcs AA alkaline batteries or 5VDC adaptor

To connect the CP11 to a PC or Laptop:

1. Use a mini USB cable to connect the device to the computer.
2. Download recorded data using the enclosed software.

## Functions Key

The functions key allows you to:

- Turn on or off the instrument.
- Enter setup mode by pressing longer in normal mode.
- Disable sleep mode by pressing with HOLD key.
- Freeze current readings with HOLD/UP key.
- Start automatic logging mode with START/ESC key.
- Switch displayed parameters with MODE/RECALL key.

## Operation:

To power on/off the device:

- Press ON/OFF SET to turn on the meter.
- To power off, press ON/OFF SET again.

#### FAQ:

##### Q: How can I change the settings on the CP11?

A: Most settings like memory clear, CO<sub>2</sub> alarm, units, sampling rate, etc., can be changed using the function keys. Refer to the detailed instruction manual for specific instructions.

## SHORT INSTRUCTION MANUAL

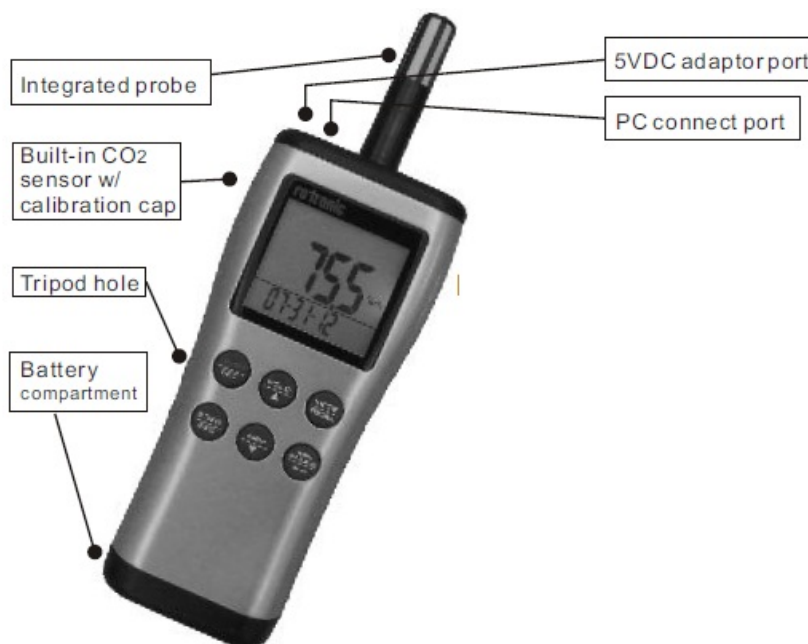
Congratulations on your purchase of the new portable humidity, temperature and CO<sub>2</sub> instrument. Please read these short instructions carefully before installing the device.

### General description

The CP11 is an accurate hand-held datalogger that displays & records relative humidity, temperature, CO<sub>2</sub> and calculated parameters such as dew point and wet bulb. These short instructions are limited to a description of the main functions and installation of the device. The detailed instruction manual can be found on the internet at [www.rotronic-humidity.com](http://www.rotronic-humidity.com)

### Programming

Most of the settings, such as memory clear, CO<sub>2</sub> alarm, units(°C/°F), sampling rate, pressure compensation and real time clock can be changed using the function keys.



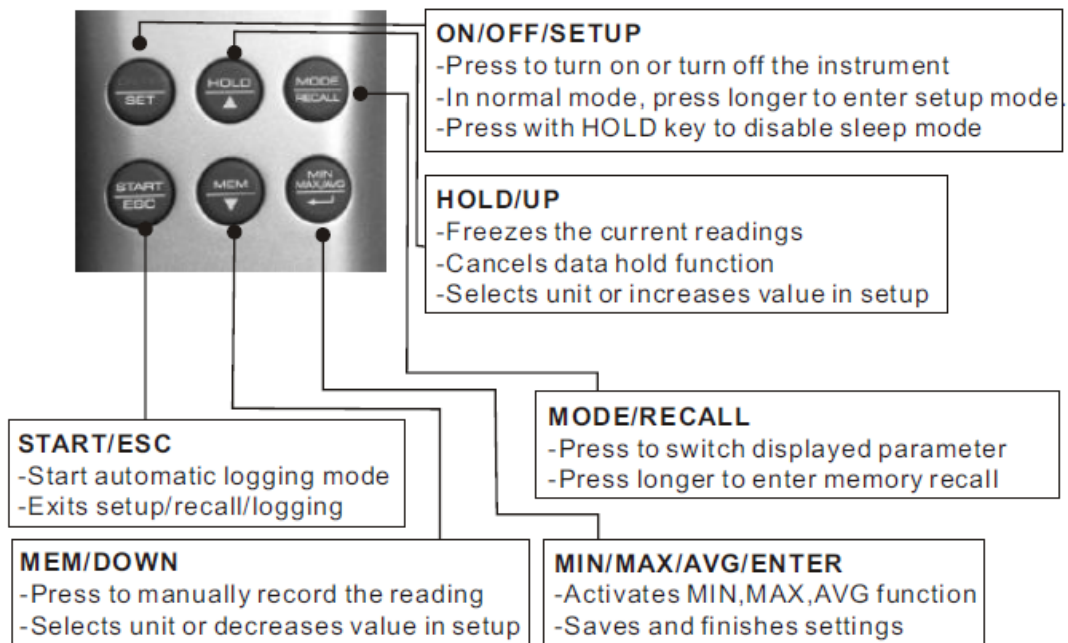
### Power Supply

The CP11 uses 4pcs AA alkaline batteries or 5VDC adaptor (optional accessory). To insert (replace) the batteries, use the screw driver enclosed to loose 2 screws and put in the batteries in correct polarity with good contact.

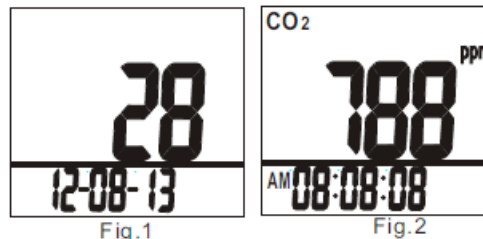
### Connection to PC or Laptop

Connect the CP11 via mini USB cable to a PC or Laptop. Recorded data download can be easily downloaded with the software enclosed.

### Functions Key




## Display




- UpperLCD
- Humidity/TEMP/CO2....reading
- LowerLCD Real time clock display CO2
- Carbon dioxide reading HOLD
- Readings are hold unchanged MIN/MAX
- Minimum/Maximum readings
- AVG Average reading
- Low battery indicator
- DP TEMP WBT %rh °C/°F CAL REC
- Dew point temperature
- Temperature Wet bulb temperature
- Unit of relative humidity Celsius/Fahrenheit of temperature In calibration status
- In manual/automatic logging status
- RECALL In manual records recall mode





## Operation








### POWER ON/OFF

Press  ON/OFF SET to turn the meter on. At power up, it emits a short beep and performs 28 sec. countdown (Fig. 1) for meter warm up, then enters normal mode with real-time clock displayed (Fig.2). Date and time are displayed in turns.





To power off, press  ON/OFF SET again to turn off the meter.





## DATE/TIME SETUP

When meter is powered on, hold down  meter setup mode. Press  or  key to enter. for more than 2 seconds until entering –  key to select the program P80 (rtc) and press.

First, choose the time format as 12hour or 24hour by pressing  or  and then press  to confirm. Second, choose the date format as Month-Day-Year or Day- Month-Year by pressing to  or  and then,  press key to confirm. Now, start to input the real time clock value from year, month, day, hour, minute to second. Press or to select and then press to confirm. Press  to return to normal.

## UNIT SETUP

When meter is powered on, hold down  for more than 2 seconds until entering meter setup mode. Press  or  the VEN key to select the program P50 (unit) and press  key to enter. Press to normal to select °C or °F and then press to confirm.


Press  MEM to select °C or °F  or  and then press to normal. to confirm.  Press to return

## TAKING MEASUREMENT


The meter starts measurement when power on and update readings every second. In the condition of operating environment change, it takes 30 seconds to respond for CO<sub>2</sub> sensor.

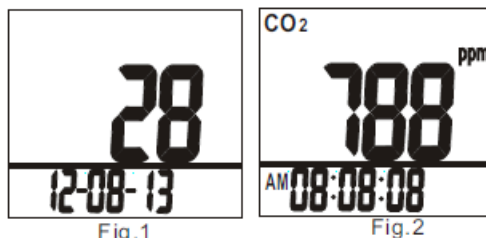
NOTE: Do not hold the meter close to faces in case exhalation affects CO<sub>2</sub> to normal.

## Humidity


Press  MODE RECALY to switch to humidity display. (Fig.3).The lower display shows the real time clock.

## TEMP, DP, WBT



Press  MODEN RECALY to switch to temperatures display(Fig. 4,5,6) The lower display shows the real time clock.



## S CO<sub>2</sub> Carbon Dioxide)

Press  to switch the mode to CO<sub>2</sub>. User can get the CO<sub>2</sub> reading in ppm unit on main display.(Fig.7). The lower display shows the real time clock.

## DATA HOLD

In normal display mode,  press to freeze the readings, "HOLD" icon is flashed on the left top of LCD (Fig.8). All current readings are kept unchanged. Press  again to cancel the hold function.


NOTE: The hold function is disabled in Min/Max/Avg mode.

## BACKLIGHT

The backlight will be activated for 10 seconds by pressing any key.

## N.MAX.AVG. CURRENT REVIEW

This meter allows you to check the minimum, maximum, average, current value from the moment you press the

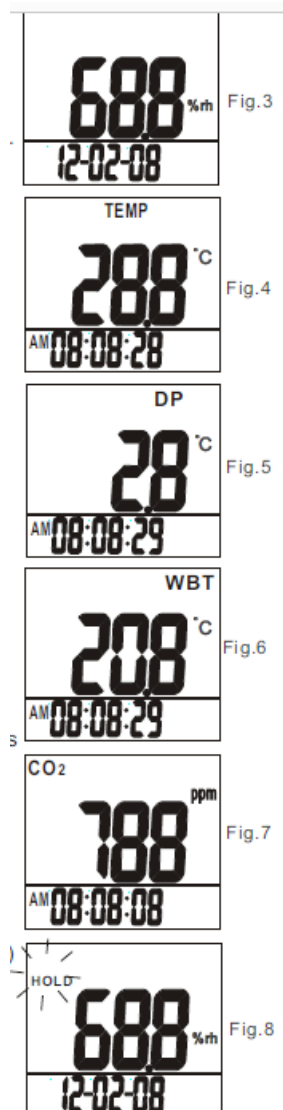
 key. Under normal mode, each press of displays  MIN, MAX, AVG and current value in sequence. (Fig.9~11). To return to normal mode, press to escape(Fig. 12) In this max/min/avg/current modes, it shows the corresponding readings on main display and the accumulated time of how long you are in this mode. The maximum time interval for this function is 18 hours.

Press  can switch the displayed parameters. (Fig. 13)

Distinguishing the normal display and current review by checking the time display format. In normal display, date & time are displayed in turns. In current review, the lower display is the accumulated time of how long you are in max/min/avg mode.

## NOTE: “

HOLD” & “MANUALLY RECORD” & “RECALL” functions are disabled in Min/ Max Ava mode.

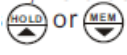


## ALARM

The meter features audible alarm to give warnings when CO<sub>2</sub> concentration exceeds the limit. (See “Meter Setup”

section for setting alarm threshold). It emits beeps (Abt. 80dB) when CO<sub>2</sub> level goes over the set value and stops only when the readings fall below the set value. It beeps again when value goes over the limit.

## AUTO POWER OFF

The meter turns off automatically after 20 minutes of inactivity To override the function, first, the meter is in power off status. Hold  down ON/OFF SET and \*ow for 2 seconds to turn on the meter until “n” appears. (Fig. 14)

NOTE: Auto sleep function will be disabled during calibration & auto recording mode. Auto sleep function WILL NOT be disabled automatically via using adaptor.

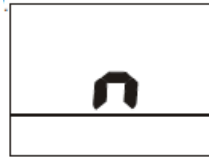




Fig.14

## MANUALLY RECORDING

**MEM** The meter features a 99 point memory. In the normal or hold mode, press  key to start recording, the **REC** icon and the main display will be flashed 3 times. The memory sequential number will show on the main display with 99 points in maximum. The data in the memory contains all parameter information and not only the displayed parameter. When all 99 points memory are occupied, a “FULL” message will be  displayed on the screen. If you think the reading is changing too fast, you can press key to freeze current reading first then manually record the data. This recording function will be disabled in the Min/Max mode.

## 99 MEMORIES RECALL


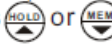

In normal or hold mode,  press **RECALLY** key for more than 2 seconds until the Recall icon flashes. Press  or to scroll the memories. The memory sequential number displayed on main LCD first and reading comes after. (Fig16&17). Press  key to switch the display parameter.(Fig. 18). The time displayed in memory recall mode is the recording time of this memo.



Fig.15



Fig.16

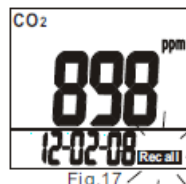


Fig.17

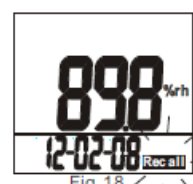

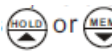




Fig.18


## DATA LOGGING

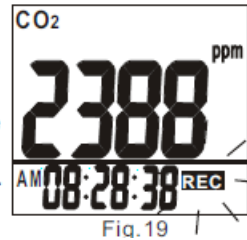
The meter can automatically record Humidity/TEMP./CO<sub>2</sub> for long term environment monitor. The memory capacity is 6000 points for each parameter. Users can set up sampling rate from 1 second to 4hours 59 minutes and 59 seconds.

The factory preset rate is 30 second. To setup  the sampling rate, when meter is powered 2 seconds until entering meter setup mode. Press P60 (rAtE) and press  ( key to enter. hold down for more than key to select the program Press to select the sample rate from hour, minute to second and then press  confirm. Press to return to normal. After sampling rate is selected, press SAy for 2 seconds under normal mode to start logging. The **REG** icon flashes to indicate the logging status and LCD main display shows the real time value. Lower



displays are real time clock. (Fig. 19)








Repeat above to start another run of logging. While the logging space is full, it shows "FULL". To terminate data logging, press  for 2 seconds, **REC** icon stops flashing.
















Press  is key to switch to the mode you want to see. Except the mode switching function, auto power off, min/max, manual record, hold and recall functions are all disabled during logging.



## Meter Setup

When meter is powered on, hold down  meter setup mode. To exit setup, press  SET for more than 2 seconds until entering STARI ESC to return to normal mode.

Press  or  key to select the program and press  The programmable setting flashes on display,  or  press press  key to confirm. To leave without saving, press  key to select. or MEN key to select and key to return.

P10, 99 points MEMORY clear	MEMO	Note: "done" is displayed while memory is cleared.
P11, choose yes or no	NO  YES	
P20, auto LOG data clear	Log	Note: "done" is displayed while memory is cleared.
P21, choose yes or no	NO  YES	
P30, CO2 ALARM setup	ALAr	Note: - Factory preset 1400ppm. - Adjustable scale is every 100ppm
P31, choose from 100 to 9900	100  9900	
P40, CO2 ABC setup	Abc	Note: - Factory preset ABC function as ON
P41, Choose on or off	ON  OFF	
P50, Temp. UNIT setup	un t	Note: - Factory preset °C
P51, choose °C or °F	°C  °F	
P60, logging sampling RATE	rAtE	Note: - Factory preset at 30 sec. - The format is hour:minute:second
P61, choose from 04:59:59 to 00:00:01	04:59:59  00:00:01	
P70, PRESSURE compensation	PrES	Note: - Factory preset at 1013hpa - The adjustable scale is every 1hpa.
P71, choose from 700 to 1990hpa	700  1990	
P80, REAL TIME CLOCK setup	rEtC	Note: - Factory preset at 12H & dd-mm-year format.
P81, choose 12 or 24 hour format	12H  24H	
choose DATE format	ddmmYY  mmddYY	
Input Year/ Month/ Day	year 00  99 month 01  12 date 01  31	
Input Hour/ Min./Sec.	Hour 01  24 or 2 Minute 00  59 Second 00  59	



## Battery low indicator

A battery low icon " " appears when the supplied power is too low to maintain a normal operation. Please replace the batteries for accurate measuring. Suggest to use adaptor (optional part: AC1214) for long term measuring & datalogging.



## Humidity Calibration

This meter can be calibrated either via 35% & 80% salt bottle or humidity generator. The ambient condition is recommended as stable 25°C. While the meter is powered off, plug the sensor probe into 35% salt. Press







simultaneously for 3 seconds to turn on the meter and enter calibration mode. Press  HOLD or H to select 35.0% calibration and press  to start. "CAL" and calibrating value are blinking on the LCD.

### CAUTION:

Do not calibrate the humidity without the default calibration salt. Otherwise, it will cause permanent damage. Contact ROTRONIC for calibration salt or services. Single point calibration will cause error code E11 or non accurate reading. Always do dual point calibration to complete a process. Suggest to calibrate low humidity first.

## CO2 Calibration

The sensor has an automatic calibration function to secure long-term accuracy. If a calibration is desired, press

   IN simultaneously for 3 seconds to turn on the meter and enter calibration mode. Press  or  now or MEN) key to select 400 ppm CO<sub>2</sub> calibration (Outside Air calibration). Press  to start and see "CAL" and CO<sub>2</sub> value blinking on LCD. Wait about 10 minutes until the blinking stops and the calibration is completed and back to normal mode. While choose 0 ppm CO<sub>2</sub> calibration, remove the cap from meter rear side and plug the CO<sub>2</sub> CALIBRATOR pipe into the sensor hole beneath. Wait about 10 min until the blinking stops and the calibration is completed and back to normal mode.

### CAUTION:

Do not calibrate the meter in the air with unknown CO<sub>2</sub> concentration. Otherwise, it will be calibrated as 0 or 400ppm by default and leads to inaccurate measurements. Ensure the batteries are with full voltage during the calibration to prevent from interruption or failed calibration. When the accuracy becomes a concern after a long time usage, return to dealers for standard calibration.

## Trouble Shooting

### Error Messages Solution

- E01 CO sensor is out of order Turn off meter and re-start again 2
- E33 CO sensor is out of order Retry CO calibration 2 2
- E02 measured value is under range Put meter in normal condition
- E03 measured value is over range Put meter in normal condition
- E04 Original data error results in this error (DP, WB)
- E11 RH calibration error Retry humidity calibration
- E31 Temp. sensor or AD damaged Return for repair
- E32 Memory IC damaged Return for repair
- E33 RH sensor or circuit damaged Return for repair

## Technical Data

### Technical Data

Humidity/accuracy:	0.1% to 99.9% / $\pm 3.0\%$ (10~95% @ 25 °C), $\pm 5\%$ (other)
Temperature/accuracy:	-20...60°C / $\pm 0.3^\circ\text{C}$ @ 5~40°C
CO <sub>2</sub> /accuracy:	0...9999ppm / $\pm (30\text{ppm} + 5\% \text{ of reading})$ @ 0~5000ppm
Storage and transit:	-20...60°C / 10...90%rh, non condensing.
Operating limit at electronics:	0...50°C for CO <sub>2</sub> , -20...60°C for rest/ non condensing.
Memory:	99 records manually, 18000 records auto logging.
Dimensions:	234(L)x77(W)x42(H),mm
Weight:	200gr.
Battery type:	4pcs AA alkaline
DC power type:	5VDC, 250mA. Optional available.
PC connection:	mini USB port

### Optional Accessory

- 5VDC universal adaptor: CO2
- calibrator: Part Number

- **AC1214 CO2 CALIBRATOR ROTRONIC AG, CH-8303 Bassersdorf**

Tel. +41 44 838 11 44

[www.rotronic.com](http://www.rotronic.com)

- **ROTRONIC Messgeräte GmbH, D-76275 Ettlingen**

Tel. +49 7243 383 250

[www.rotronic.de](http://www.rotronic.de)

- **ROTRONIC SARL, 56, F – 77183 Croissy Beaubourg**

Tél. +33 1 60 95 07 10

[www.rotronic.fr](http://www.rotronic.fr)

- **ROTRONIC Italia srl, I- 20157 Milano**

Tel. +39 2 39 00 71 90

[www.rotronic.it](http://www.rotronic.it)

- **ROTRONIC Instruments (UK) Ltd, West Sussex RH10 9 EE**

Phone +44 1293 571000

[www.rotronic.co.uk](http://www.rotronic.co.uk)

- **ROTRONIC Instrument Corp, NY 11788, USA**

Phone +1 631 427-3898

[www.rotronic-usa.com](http://www.rotronic-usa.com)

- **ROTRONIC Instruments Pte Ltd, Singapore 159836**

Phone +65 6376 2107

[www.rotronic.com](http://www.rotronic.com)

- **ROTRONIC Shanghai Rep. Office, Shanghai 200233, China**

Phone +86 40 08162018

[www.rotronic.cn](http://www.rotronic.cn)

### Documents / Resources



[Rotronic CP11 Humidity and Temperature Meter](#) [pdf] Instruction Manual  
CP11, CP11 Humidity and Temperature Meter, CP11, Humidity and Temperature Meter, Temperature Meter, Meter

## References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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