User Manual

PFPN-CO213-001 - CO2 Display

Last change: 05 October 2021
v1.0

Contents

1   Safety notes

Please read this manual carefully and completely before you use the device for the first time. The device may only be used by qualified personnel and repaired by PCE Instruments personnel. Damage or injuries caused by non-observance of the manual are excluded from our liability and not covered by our warranty.

- The device must only be used as described in this instruction manual. If used otherwise, this can cause dangerous situations for the user and damage to the meter.
- The instrument may only be used if the environmental conditions (temperature, relative humidity, …) are within the ranges stated in the technical specifications. Do not expose the device to extreme temperatures, direct sunlight, extreme humidity or moisture.
- Do not expose the device to shocks or strong vibrations.
- Do not open te case of this device.
- Never use the instrument when your hands are wet.
- You must not make any technical changes to the device.
- The appliance should only be cleaned with a damp cloth. Use only pH-neutral cleaner, no abrasives or solvents.
- The device must only be used with accessories from your reseller.
- Before each use, inspect the case for visible damage. If any damage is visible, do not use the device.
- Do not use the instrument in explosive atmospheres.
- The measurement range as stated in the specifications must not be exceeded under any circumstances.
- Non-observance of the safety notes can cause damage to the device and injuries to the user.

We do not assume liability for printing errors or any other mistakes in this manual.

We expressly point to our general guarantee terms which can be found in our general terms of business.
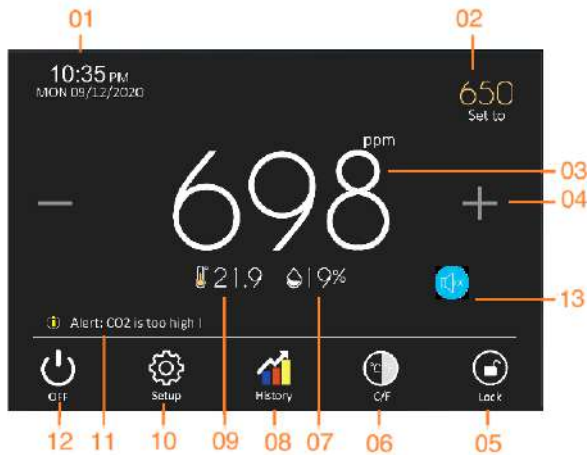
2 Device description

2.1 Technical specifications

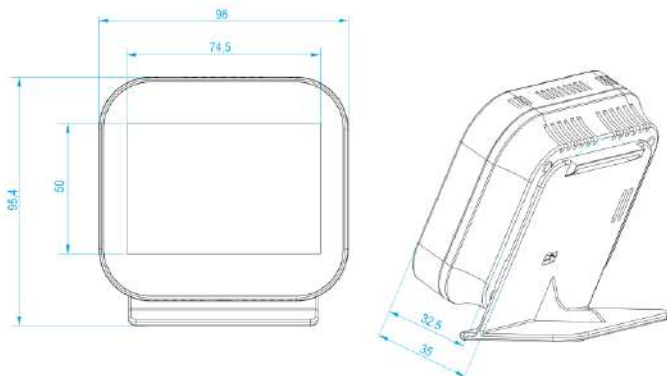| Measured variable CO₂	
Measurement range	0 ... 9999 ppm CO_2
Accuracy	±75 ppm or ±5 % of rdg. (the higher value applies)
Resolution	1 ppm
CO_2 sensor type	NDIR sensor
Measured variable temperature	
Measurement range	-10 ... 50 °C / 14 ... 122 °F
Accuracy	±1 °C
Resolution	0.1 °C
Measured variable air humidity	
Measurement range	20 ... 95 % RH
Accuracy	±5 % RH
Resolution	1 % RH
General technical specifications	
Display	3.5" touch LCD
Alarm display	Traffic light function through colour change of reading Alarm tone
Power supply	5 V mini USB (no rechargeable battery)
Standby power	<0.5 W
Environmental conditions	1 ... 85 °C / 14 ... 122 °F 20 ... 85 % RH
Protection class	IP21
Dimensions	approx. 96 x 86 x 32.5 mm / 3.7 x 3.3 x 1.2 mm
Weight	<200 g / <7 oz

2.2 Display / touch screen

1. Date and time
2. Set lower or upper alarm
3. CO_2 reading (changes ist colour)
4. Increase or decrease alarm value
5. Lock screen
6. Unit change °C / °F
7. Air humidity reading in % RH
8. Show progress diagramme
9. Temperature reading
10. Settings
11. Alarm message
12. On & off
13. Mute alarm

2.3 Dimensions

3 Operating instructions

3.1 On/off

Connect the meter to the power supply. Touch the ⏻ icon to turn on the meter. Touch the ⏻ icon while the power is on to turn off the meter.

3.2 Settings

Touch the ⚙ icon to access the settings.

3.2.1 Setting the language

The following languages can be selected in the meter: English, Spanish, Italian, Russian, Polish, Czech, German, French, Slovenian, Swedish, Portuguese

3.2.2 Setting the date and time

Touch the menu item Clock Setting 🕐 to set the date and time.

3.2.3 Setting the temperature unit

Touch the menu item Temperature Format 🌡 to switch between °C and °F.

3.2.4 Setting the display brightness

Touch the menu item Backlight ☀ to adjust the display brightness using the arrow keys at the bottom right of the display. If you touch the item Ambient Light Dimming, the display brightness is adjusted depending on the ambient light at the time of saving.

3.2.5 Standby screen

Touch the menu item Standby Screen 🖥 to set the time period when the display dims the brightness.

3.2.6 Screen lock

Touch the menu item Screen Lock 🔒 to set a 4-digit PIN to protect against menu access.
Attention: Remember the PIN well. However, if you have forgotten your PIN, you can use the master PIN 8657.

3.2.7 CO$_2$ alarm limits

Touch the menu item 🔲 to set the limits for the lower and upper alarm between 450 ... 4500 ppm.

3.2.8   Calibration

3.2.8.1 CO_2 factory calibration

Touch the menu item RESET CO_2 To Factory Settings to calibrate the CO_2 sensor to factory settings. The meter must be placed in a well ventilated room or placed outside and run for 15 minutes.

3.2.8.2   Automatic calibration

The PCE-CMM 8 has an integrated self-correcting ABC algorithm (Automatic Baseline Correction) for automatic adjustment of the baseline value. This calibration is carried out regularly at intervals of 10-15 days.
For this, the PCE-CMM 8 requires a regular supply of fresh air. The measured value is automatically adjusted.
The ABC function is permanently switched on (cannot be switched off) and adjusts the baseline value at regular intervals when the CO2 level is low. Do not use this meter in a closed environment where the CO2 concentration remains relatively high. This would negatively affect the self-correction of the device. We therefore recommend performing the manual calibration (3.2.8.1) weekly.

3.2.9   Offset settings

3.2.9.1 CO_2 offset

Touch the menu item CO_2 Sensor Calibration to set an offset for the CO_2 reading.

3.2.9.2   Temperature offset

Touch the menu item Built In Sensor to set an offset for the temperature reading.

3.2.9.3   Humidity sensor offset

Touch the menu item Humidity Sensor to set an offset for the humidity value reading.

3.2.10   Selecting the time zone

Touch this menu item to set the time difference from GMT. Press the key to enable synchronisation of the power on/off time with the internet time. To do this, the meter must be successfully connected to the internet.

3.2.11   Daylight saving time

Touch the menu item to set the daylight saving time based on the location.

3.2.12   Home screen colour

In the menu item Home Screen Colour , select whether the background colour should be blue or black.

3.2.13   Alarm tone

Select the option Alarm Speaker Settings ![icon]. Touch the button ![icon] to enable/disable the alarm sound for the lower or upper alarm.

3.2.14   Reset to factory settings

Select Reset To Factory Settings ![icon] to reset the meter to its factory default settings.
Attention: All previously made settings are lost!

3.3   Measurement graph / data history

3.3.1   Graph

Touch the icon ![icon] to view the measurement history of the last 7 days. Here, you can view the course of CO_2, temperature and humidity.
To view the details of a particular day, touch the corresponding area above the date. Touch the icon ![icon] to view the previous screen.

3.3.2   Save data history

Touch the icon ![icon] to view the measurement history of the last 7 days. Then select the menu item Data Log Table. In the next window, you can save the measurement data per hour in a file on the device by selecting the Save to File item.

3.3.3   Read data history on the PC

Connect the meter to a PC using the USB cable. The CO_2 meter is recognised as a mass storage device. In the file DATALOG.TXT, you can view the previously saved measurement data.

3.4   Alarms

Touch the number in the top right corner to set the alarm values for High and Low. The CO_2 meter uses these values to change the colour of the digits for the measured value and an alarm tone can be heard, if selected.

3.4.1   Set upper alarm (High)

As soon as "high" appears in the upper right corner, you can set the upper alarm value using the + and - buttons. This default setting for this alarm threshold is 1200 ppm.

3.4.2   Set lower alarm (Low)

As soon as "low" appears in the upper right corner, you can set the lower alarm value using the + and - buttons. This default setting for this alarm threshold is 800 ppm.

3.4.3   Temporarily deactivating the alarm tone

If the alarm sound has been enabled in the settings, it sounds as soon as the measured value exceeds or falls below the upper/lower alarm value. However, you can also temporarily deactivate it by touching the icon ![icon] on the main screen.

3.5 CO$_2$ traffic light function

The CO$_2$ meter has a traffic light function (CO$_2$ traffic light). This means that the colour if the reading changes, depending on the set alarm limit. The default limit values for changing colours are as follows:

Air quality	CO$_2$ content	Colour
Good	400 ... 800 ppm	Green
Ok	800 ... 1200 ppm	Yellow
Poor	1200 ... 5000 ppm	Red