# AIR QUALITY MONITOR
Instructions manual

INTRODUCTION:
Congratulations on purchasing this Air Quality Monitor with display of indoor temperature and humidity. It is further acting as a DCF-77 radio controlled clock with calendar display and alarm clock function. This innovative product is ideal for use in the home or office.

FEATURES:

Function key

LCD display

Function keys

Battery compartment
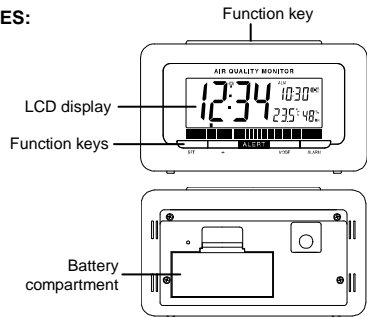
- DCF radio controlled time with manual setting
- DCF Time reception ON/OFF
- Time zone setting: ± 12 hours
- 12/24h time display
- Calendar display
- Alarm setting with snooze function
- Indoor temperature display in ºC / ºF
- Indoor humidity display in RH%
- Air quality alert setting
- Air quality indicator
- Low battery indicator
- LED Back-light

SETTING UP:
1. Open the battery cover at the back of the air quality monitor as indicated below.
2. Checking the correct polarization, insert 2 x C, IEC LR14, 1.5V Alkaline batteries into the battery compartment and replace the cover.
3. When the batteries are inserted, all the segments of the LCD will light up briefly and a "beep" will sound. The air quality monitor will now start receiving the DCF time signal. After approximate 3 to 5 minutes, the DCF time will be displayed.
4. If after 10 minutes, the DCF time has not been received, press the SET key to manually enter a time initially.

Note:
- The Equivalent CO_2 ppm will only be displayed after 30 minutes.
- The air quality sensor will take up to 5 days after inserting batteries to condition itself for the room it is placed. If the unit is placed into another room, there might be a reconditioning time of several days as well.

INSTALLING AND REPLACING THE BATTERY IN THE AIR QUALITY MONITOR
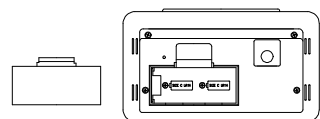
The air quality monitor uses 2 x C, IEC LR14, 1.5V batteries. To install and replace the batteries, please follow the steps below:

1. Remove the cover at the back of the air quality monitor.
2. Insert batteries observing the correct polarity (see marking).
3. Replace compartment cover.

BATTERY CHANGE:
It is recommended to replace the batteries in the unit regularly to ensure optimum accuracy of the unit (Battery life See **Specifications** below).

Please participate in the preservation of the environment. Return used batteries to an authorised depot.

DCF RADIO CONTROLLED TIME
The time base for the radio controlled time is a Cesium Atomic Clock operated by the Physikalisch Technische Bundesanstalt Braunschweig which has a time deviation of less than one second in one million years. The time is coded and transmitted from Mainflingen near Frankfurt via frequency signal DCF-77 (77.5 kHz) and has a transmitting range of approximately 1,500 km. Your radio-controlled clock receives this signal and converts it to show the precise time in summer or wintertime.

The quality of the reception depends greatly on the geographic location. In normal cases, there should be no reception problems within a 1,500 km radius of Frankfurt.

DCF reception is done twice daily at 02:00 and 03:00 am. If the reception is not successful at 03:00 am, then the next reception takes place the next day at 02:00 am.

If the tower icon flashes, but does not set the time or the DCF tower does not appear at all, then please take note of the following:
- Recommended distance to any interfering sources like computer monitors or TV sets is a minimum of 1.5 - 2 meters.
- Within ferro-concrete rooms (basements, superstructures), the received signal is naturally weakened. In extreme cases, please place the unit close to a window and/ or point its front or back towards the Frankfurt transmitter.
- During nighttime, the atmospheric disturbances are usually less severe and reception is possible in most cases. A single daily reception is adequate to keep the accuracy deviation below 1 second.

KEY FUNCTIONS:
The Air Quality Monitor has 5 easy-to-use keys:

SNOOZE key

SET key

ALARM key

+ key

MODE key
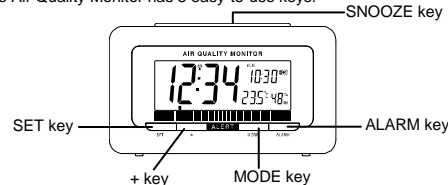
SET key:
- Press and hold to enter the manual setting modes: time zone, DCF ON/OFF, 12/24 hour time display, manual time, calendar display, snooze time, ºC / ºF temperature display, alert settings
- Press briefly to display the calendar for about 6 seconds
- Stop alarm ringing

+ key:
- Press to change, set, toggle all manual settings
- Stop alarm ringing

MODE key:
- Press to toggle between: alarm time, seconds, and Equivalent CO_2 ppm display
- Stop alarm ringing
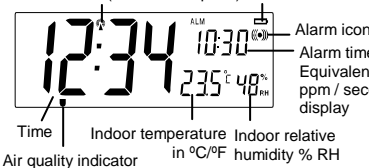- Exit the manual setting mode

ALARM key:
- Press and hold to enter the alarm setting mode
- Activate / deactivate the alarm
- Stop alarm ringing
- Exit the manual setting mode

SNOOZE key:
- Enter snooze during alarm ringing
- Exit the manual setting mode

LCD SCREEN
DCF Tower icon (for time reception)   Low battery icon

Alarm icon

Alarm time / Equivalent CO_2 ppm / seconds display

Time

Indoor temperature in ºC/ºF

Indoor relative humidity % RH

Air quality indicator

MANUAL SETTINGS:
The following manual settings can be done in the setting mode:
- Time zone setting
- DCF ON/OFF setting
- 12/24 hour time setting
- Time setting
- Calendar setting
- Snooze setting
- ºC / ºF temperature display setting
- Air quality alert setting

Press and hold the SET button for about 3 second to enter the setting mode:

TIME ZONE SETTING
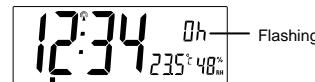
Flashing

The time zone default is "0" hour. To set a different time zone:
1. The current time zone value starts flashing.
2. Use the + key to set the time zone. The range runs from 0, 1, 2…12, -12, -11, -10… -2, -1, 0, in consecutive 1-hour intervals.
3. Confirm with the SET key and enter the **Time reception On/Off setting**.

TIME RECEPTION ON/OFF SETTING

Flashing

Flashing

In area where reception of the radio-controlled time (DCF time) is not possible, the time reception function can be turned OFF. The clock will then work as a normal quartz clock. (Default setting is ON).
1. The digit "ON" and tower icon will start flashing on the LCD.
2. Use the + key to turn OFF the time reception function if necessary.
3. Confirm with the SET key and enter the **12/24 hour time display setting**.

Note:
If the Time Reception function is turned OFF manually, the clock will not attempt any reception of the radio-controlled time (DCF time) as long as the Time Reception OFF function is activated. The Time Reception icon and the DCF icon will not be displayed on the LCD.

12/24 HOUR TIME DISPLAY SETTING

Flashing
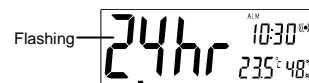
1. "12hr" or "24hr" flashes in the LCD. (default 24hr)
2. Press the + key to select the "12hr" or "24hr" display mode.
3. Confirm with the SET key and enter the **Manual time setting**.

Note:
When 24h time display is selected, the calendar format will be date and month display. When 12h time display is selected, the calendar format will be month and date display.

MANUAL TIME SETTING
In case the air quality monitor is not able to detect the radio-controlled time (DCF time) signal (disturbances, transmitting distance, etc.), the time can be manually set. The clock will then work as a normal Quartz clock.

Hours (flashing)   Minutes (flashing)

To set the clock:
1. The hour digits start flashing in the time display section.
2. Use the + key to adjust the hours and then press SET key to go to the minute setting.
3. The minute will be flashing. Press the + key to just the minutes.
4. Confirm with the SET key and enter the **Calendar setting**.

Note:
The unit will still try to receive the signal despite a manual setting. When the signal is received, the manually set time will automatically be replaced by the received time. During reception attempts, the DCF tower icon will flash. If reception has been unsuccessful, the DCF tower icon will not appear but reception will still be attempted.

CALENDAR SETTING
The date default of the air quality monitor is 1. 1. of the year 2013 after initial set-up. Once the radio-controlled time signals are received, the date is automatically updated. However, if the signals are not received, the date can also be set manually. To do this:

Year (flashing)

"Date. Month."
(for 24h time display)
"Month. Date."
(for 12h time display)
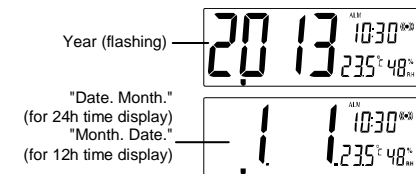
1. The year starts flashing. Use the + key, set the year required. The range runs from 2013 to 2049 (default is 2013).
2. Press the SET key to enter the month setting.
3. The month digit will be flashing. Press the + key to set the month.
4. Press the SET key to enter the date setting.
5. The date digit will be flashing. Press the + key to set the date.
6. Confirm with the SET key and enter the **Snooze setting**.

SNOOZE SETTING
The snooze time can be set OFF or to a maximum time of 30 minutes (default is 10 minutes):
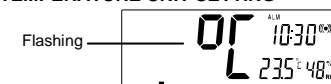

Flashing

1. The snooze time (in minute) digit will be flashing. Use the + key to set the snooze time (in minute). Each pressing of the button will increase the snooze time by 5 minutes (5, 10…30 min). The snooze can also be set OFF when the "OFF" digit is being displayed.
2. Confirm with the SET button and enter the **ºC/ºF temperature unit setting**.

Note:
If the snooze time has been set "OFF", the snooze function will not be activated.

℃/℉ TEMPERATURE UNIT SETTING

Flashing

The default temperature reading is set to ℃ (degre e Celsius). To select ℉ (degree Fahrenheit):
1. The "℃" will be flashing, use the + key to toggle between "℃" and "℉".
2. Confirm with the SET key and enter the **Air quality alert setting**.

AIR QUALITY ALERT SETTING
The air quality monitor has 3 alert settings (default: ALL):

- **ALL:** LED alert flashing with alert sound
- **OFF:** alert off (no LED alert flashing, no alert sound)
- **LED:** LED alert flashing only

"ALL" flashing

1. The setting starts flashing. Use the **+** key to set the required setting (ALL, LED, OFF).
2. Confirm with the **SET** key and the **exit the manual settings**.

Note:
If the air quality alert has been set to "ALL" or "LED":
- **Equivalent CO_2 ppm > 1500ppm:**
  LED alert blinks at a slower speed (1.5s) and no alert sound.
- **Equivalent CO_2 ppm > 2000ppm:**
  LED alert blinks at faster speed (0.5s) and has alert sound. (Alert will sound only if the air quality setting has been set to ALL).

Note about the air quality alert:
- The air quality alert will sound for a maximum duration of 30 minutes. To stop the alert, press any key.
- If the time alarm or the DCF reception occurs while the air quality is on alert mode, the air quality alert sound and LED flashing will momentarily stop. It will restart once the time alarm is stopped, or after the DCF time reception is done.

AIR QUALITY INDICATOR
The air quality indicator is located on the bottom of the LCD. It changes from GREEN to RED by measuring the Equivalent CO_2 ppm. The Equivalent CO_2 ppm can be displayed when pressing the **MODE** key briefly:

Equivalent CO_2 ppm (parts per million) value*

Air quality indicator   Bar graph
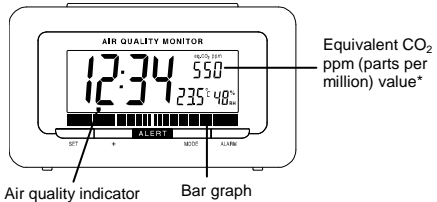
* The air quality value shown, after sensor conditioning, may differ +/- 250 ppm.

Note:
A 9-level bar graph is used to indicate "GREEN" to "RED" air quality level in the surrounding environment:

Levels	Equivalent CO_2 ppm
GREEN (level 1)	450 – 600ppm
Level 2	650 – 800ppm
Level 3	850 – 1000ppm
Level 4	1050 – 1200ppm
Level 5	1250 – 1500ppm
Level 6	1550 – 1800ppm
Level 7	1850 – 2100ppm
Level 8	2150 – 2400ppm
RED (level 9)	≥ 2450ppm

ALARM SETTING

Alarm icon (ON)
Alarm time

To set alarm:
1. Press and hold **ALARM** key for about 3 seconds until the alarm time display flashes.
2. The hour digit will be flashing. Press the **+** key to adjust the hour.

3. Then, press **ALARM** key and the minute digit will start flashing. Press **+** key to set the minute.
4. Press again the **ALARM** key to confirm the setting and exit the alarm setting.

Note:
- To activate/ deactivate the alarm function, press the **ALARM** button once. The display of the alarm icon represents that the alarm is "ON".
- The duration of alarm sounding is 180 seconds.

TO ACTIVATE THE SNOOZE FUNCTION AND STOPPING THE ALARM:
1. When the alarm is sounding, press the **SNOOZE** key to activate the snooze function. The alarm will stop and re-activate after the time interval of the snooze time pre-set by user.
2. To stop the alarm completely, press any keys other than the **SNOOZE** key.

CARE AND MAINTENANCE:
- Extreme temperatures, vibration and shock should be avoided as these may cause damage to the unit and give inaccurate forecasts and readings.
- Precautions shall be taken when handling the batteries. Injuries, burns, or property damage may be resulted if the batteries are in contact with conducting materials, heat, corrosive materials or explosives. The batteries shall be taken out from the unit before the product is to be stored for a long period of time.
- Immediately remove all low powered batteries to avoid leakage and damage. Replace only with new batteries of the recommended type.
- When cleaning the display and casings, use a soft damp cloth only. Do not use solvents or scouring agents as they may mark the LCD and casings.
- Do not submerge the unit in water.
- Special care shall be taken when handling a damaged LCD display. The liquid crystals can be harmful to user's health.
- Do not make any repair attempts to the unit. Return them to their original point of purchase for repair by a qualified engineer. Opening and tampering with the unit may invalidate their guarantee.
- Never touch the exposed electronic circuit of the device as there is a danger of electric shock should it become exposed.
- Do not expose the units to extreme and sudden temperature changes, this may lead to rapid changes in forecasts and readings and thereby reduce their accuracy.

SPECIFICATIONS:
Recommended temperature range:
+5ºC to +40ºC / +41ºF to 139.8ºF
Temperature measuring range:
Indoor : -9.9ºC to +59.9ºC with 0.1ºC resolution / 14.1ºF to +139.8ºF with 0.2ºF resolution (OFL displayed if outside this range. In degree F display, OFL will displayed when over 99.9ºF)
Relative humidity measuring range:
Indoor : 20% to 95% with 1% resolution (display "- -" if temperature is OFL, except when the temperature is 100ºF to 139.8ºF; display "19%" if < 20% and "96%" if > 95%)
Equivalent CO_2 ppm measuring range:
450ppm to 6950ppm with 50ppm resolution (display OFL > 6950ppm)
Measuring intervals:
Indoor temperature checking interval : every 16 seconds
Indoor humidity checking interval : every 16 seconds
Air quality level checking interval : every 3 minutes
Power consumption: 2 x C, IEC LR14, 1.5V
Dimensions (L x W x H): 149.4 x 49 x 83.7mm

LIABILITY DISCLAIMER:
- The electrical and electronic wastes contain hazardous substances. Disposal of electronic waste in wild country and/or in unauthorized grounds strongly damages the environment.
- Please contact your local or/and regional authorities to retrieve the addresses of legal dumping grounds with selective collection.
- All electronic instruments must from now on be recycled. User shall take an active part in the reuse, recycling and recovery of the electrical and electronic waste.

- The unrestricted disposal of electronic waste may do harm on public health and the quality of environment.
- As stated on the gift box and labeled on the product, reading the "User manual" is highly recommended for the benefit of the user. This product must however not be thrown in general rubbish collection points.
- The manufacturer and supplier cannot accept any responsibility for any incorrect readings and any consequences that occur should an inaccurate reading take place.
- This product is designed for use in the home only as indication of the temperature and other weather data.
- This product is not to be used for medical purposes or for public information.
  The specifications of this product may change without prior notice.
- This product is not a toy. Keep out of the reach of children. No part of this manual may be reproduced without written authorization of the manufacturer.

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Summary of the Declaration of Conformity : We hereby declare that this wireless transmission device does comply with the essential requirements of R&TTE Directive 1999/5/EC.