e-controls electronic intelligent controls, s. l.
Electronic Intelligent Controls, S.L. 08830 Sant Boi de Llobregat Tel.: +34 93 652 55 21 www.e-controls.es
Passatge Garrotxa, 6 Barcelona, Spain Fax: +34 93 652 55 22 info@e-controls.es

AirQualy T + HR + CO2 + PM

Instructions sheet

EN

Tª, HR, CO2 y PM sensor for building interiors

AirQualy is an indoor air quality sensor that is available in different models, which include a sensor or a combination of sensors between Temperature, Humidity, CO2, Volatile Organic Compounds (VOC) and Particulate Matters (PM). The equipment carries out continuous measurement of the sensor or sensors and displays its value through LED indicators or sends the value through its outputs or the communication bus.

For its operation, the equipment requires a coupling unit called "e-Bus Coupling Surface" that must be purchased separately and which is available in 3 models: a stand-alone model, a model with a 0-10V / 4-20 mA output + a relay output and a model with Modbus communication.

The device is configured wirelessly via NFC with the EConfigurator APP, available for Android in the Google Play Store.

Through the ETools APP it is possible to visualize the value measured by each sensor of the equipment in a numerical way on the mobile phone.

Product description

The ***AirQualy T + HR + CO2 + PM*** model includes 4 different sensors to measure temperature, humidity, CO2 with optical NDIR technology and Particulate Matters (PM) to measure particles of size 1 micron, 2.5 microns, 4 microns and 10 microns. The equipment is available in two finishes: a model with 4 columns of LED indicators to signal the measurement of each sensor. The CO2 and PM measurements are displayed in two columns with 5 LED indicators each and the temperature and humidity measurements are displayed in two columns with 3 LED indicators each. There is a second model without LED indicators.

We recommend installing a sensor every 30 m2.

LED indicators to display the measured value

The measurements of the CO2 and PM sensors are represented by 5 blue, green, yellow, orange and red LED indicators, which show the measured levels from best to worst air quality. Each LED is associated with a range of values and lights up when the measured value is within its range. The temperature and humidity measurements are represented by three LED indicators. If the measured value is within a predefined range, the green LED turns on, if it is above the range, the red LED turns on and if it is below the range, the blue LED turns on.

Through the E-Configurator APP (see configuration section) it is possible to modify the range of values associated with each LED indicator and sensor to adapt them to the needs of each installation.

Viewing values through mobile phone

The measured value of each sensor can be viewed with a mobile phone via the NFC interface. To do this, you must download the ETools APP from the Play Store and install it on a mobile phone with an Android operating system.

Run the ETools APP and bring the phone closer to the equipment to view the values of each sensor.

Customisation of the front tailored to each project

The product includes a removable label that comes pre-designed with explanatory icons. Through the e-Touch Creator website at www.e-controls.es, it is possible to define the custom label, being able to choose an icon or text for each LED indicator, as well as the desired colour.

Once the design is finished, a form must be filled in and sent to E-Controls for printing, or the designed image can be downloaded for printing on a conventional printer.

Equipment setup

The equipment is configured through a mobile phone using the E-Controls EConfigurator APP and NFC proximity wireless data transfer technology. To do this, you must download the APP from the Play Store and install it on a mobile phone with Android operating system and download the project by placing the phone on top of the front until the device's antenna is detected. Once the phone has detected the equipment, download the project by pressing the data transfer icon in the APP. For more information, please refer to the operating manual of the EConfigurator APP.

In the model with Modbus coupling unit it is also possible configure the device via bus.

The configuration manual details all the parameters available on the equipment.

The device configuration can be done without powering the equipment, and even without removing it from the packaging box, thus greatly facilitating the configuration work.

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APP download links

EConfigurator

ETools

Installing the product

IMPORTANT NOTE: Install the equipment at a height equal to or greater than 150 cm from the ground. The equipment can react more quickly depending on the speed of the air around the sensor. Avoid installing the equipment near an air outlet with a concentration of CO2.

For a correct CO2 measurement, we recommend installing a sensor every 30 m2.

Product assembly process

1. Fix the *e-Bus Coupling Surface* rack to the wall. If the equipment requires external or bus power supply, connect the cables to the corresponding terminals (see e-Bus Coupling Surface Instruction Sheet).
2. Fix the frame to the rack by the teeth on the upper part and press lightly on the lower part until you hear a "click".
3. Insert the label in the upper slot on the front of the equipment, between the methacrylate and the circuit.
4. Attach the front centred on the frame.
5. Power the equipment and wait 5 minutes to obtain a correct measurement.

Product disassembly

1. Insert a small screwdriver into the window located at the bottom of the frame. Slightly pry out with the screwdriver and remove the frame from the bottom.
2. Slightly move the frame upwards and completely remove the front and frame.

Precautions:

- Disconnect the device from the supply voltage before mounting or moving the equipment.
- Do not leave bare or wrapped cables around the equipment.
- Do not connect the device with wet hands.
- Do not open or pierce the product.
- Keep the device and cables away from moisture and dust.
- Use the equipment in pollution-free environments and in atmospheric pressure environments within the permitted levels.
- Avoid sudden blows on the equipment.
- Keep the ventilation windows of the equipment clean using a cloth or with pressurized air.
- Power the equipment with the recommended power supply and always with a very low voltage isolated power supply.

Installing the product

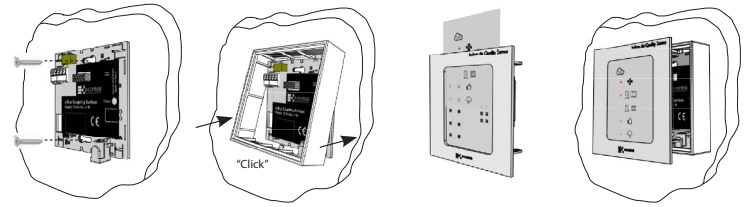
Product assembly process:

1 Fix frame to wall

2 Fix frame to coupling unit

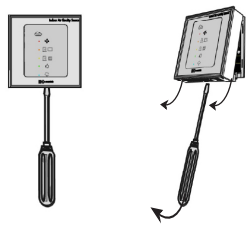
3 Insert label

4 Attach front to frame



Product disassembly:

1 2



Technical specifications

Power supply
Operating voltage . . . . . Through e-Bus Coupling Surface
Maximum consumption . . . . . 1 W
Temperature sensor
Measurement range . . . . . -10ºC a 60 ºC
Resolution . . . . . 0,1 ºC
Typical precision between -10 and 60 ºC . . . . . ±0.2 ºC
Loss of precision throughout its life . . . . . < 0.03ºC / year
Relative humidity sensor
Measurement range . . . . . 0 to 100% HR
Resolution 0,1%
Typical precision between 0 and 80 ºC . . . . . ±1,8 % HR
Loss of precision throughout its life . . . . . < 0.25% RH / year
Sensor CO2
Technology . . . . . NDIR (Non-dispersive infrared technology)
Measurement range . . . . . 0 to 5000 ppm
Resolution . . . . . 1 ppm
Accuracy . . . . . ± (30 ppm + 3%)
Stability with temperature . . . . . +/- 2,5 ppm/ºC between 0 and 50 ºC
Loss of precision throughout its life . . . . . +/- 50 ppm
Sampling time. . . . . 2 seconds
Stable measurement value . . . . . 1 minute
Working pressure range . . . . . 700 to 1200 mBar
Maintenance. . . . . Not required (factory calibrated)
Shelf life. . . . . 15 years
Particulate Matter sensor (PM)
Measurement range . . . . . 0 to 1000 µg/m3
Resolution 0,1 µg/m3
Precision for PM1 and PM2,5. . . . . ±10 µg/m3 @ 0 to 100 µg/m3
±10 % @ 100 to 1000 µg/m3
Precision for PM4 and PM10 . . . . . ±25 µg/m3 @ 0 to 100 µg/m3
±25 % @ 100 to 1000 µg/m3
Lowest limit detection . . . . . 0.3 µm
Shelf life. . . . . More than 10 years
Acoustic emmision levels. . . . . 25 dB(A)
Certification . . . . . MCERTS
LED indicators
Quantity 16
Range configuration. . . . . Through EConfigurator APP
CO2 sensor indicators
Colours . . . . . Blue, Green, Yellow, Orange, Red
Ranges Blue / Green / Yellow / Orange / Red . . . . . 0 - 350 / 351-500 /501-800 / 801-1200 / >1200 ppm
PM sensor indicators
Colours . . . . . Blue, Green, Yellow, Orange, Red
Ranges Blue / Green / Yellow / Orange / Red . . . . . 0 - 6,0 / 6,1-12,0 /12,1-35,0 / 35,1-60,0 / >60 ug/m³
Temperature sensor indicators
Colours . . . . . Blue, Green, Red
Ranges Blue / Green / Red . . . . . 0 to 18,00 ºC / 18,10 to 23,00 / 23,10 to 50,00 ºC
Humidity sensor indicators
Colours . . . . . Blue, Green, Red
Ranges Blue / Green / Red . . . . . 0 to 40,00 / 40,10 to 70,00 / 70,10 to 100 % Hr
Front design
Custom design through e-Touch Creator website
Wireless communication
Functionality . . . . . For configuration and reading of values
Technology . . . . . NFC
Standard . . . . . ISO/EIC 15693
Reading Speed . . . . . Up to 53 Kbit/s
Data security. . . . . 64-bit passwords
Mechanical characteristics
Dimensions (with frame) . . . . . 86 x 86 x 22 mm
Installation type . . . . . Surface
Weight . . . . . 100 g.
Front type . . . . . Methacrylate
Colour. . . . . White
Environmental protection level (assembled) IP20
Temperature
Operation . . . . . -10 ºC to +50 ºC (14 ºF to 122 ºF)
Storage . . . . . -10 ºC to +85 ºC (14 ºF to +185 ºF)
Humidity (non-condensing)
Operation . . . . . 10% to 90% RH to 50 ºC
Storage . . . . . 95% RH to 50 ºC
Product family standards
Automatic electrical control devices for household and similar use . . . . . EN 60730-1
CE conformity
Mark. . . . . CE
Security
Standard . . . . . EN 60730-1
IEC Protection . . . . . Class III
EMC
Emissions. . . . . EN 61000-6-3
Immunity. . . . . EN 61000-6-1

Ordering numbers

AirQualy T+HR+CO2+PM, Indoor Temperature + Humidity + CO2 + PM Sensor, white finish AQ.004400-000
AirQualy T+HR+CO2+PM Leds, Indoor Temperature + Humidity + CO2 + PM Sensor with LED indicators, white finish AQ.014400-000

Related items

e-Bus Coupling Surface SA, Stand-alone coupling unit for AirQualy mounting. 12-24 Vdc power supply with external jack connector. BC.400000-031
e-Bus Coupling Surface 2O, Coupling unit with relay output + 0-10 V/4-20 mA analogue output for AirQualy mounting. 12-24 Vdc power supply. BC.400201-031
e-Bus Coupling Surface Modbus, Coupling unit with Modbus RTU communication for AirQualy mounting. 12-24 Vdc power supply. BC.470002-031

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