



# ***Operating instructions***

*(Translation of the original operating instructions)*

## **Airtracker**

### Indoor air monitoring instrument



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## Table of contents

1	General information .....	3
1.1	About this manual.....	3
1.2	Scope of supply .....	3
2	Device description / intended use.....	3
3	Technical data.....	4
3.1	Device information .....	4
3.1.1	Overview of the device elements.....	4
3.2	Technical data.....	5
3.2.1	General .....	5
3.2.2	Measurement data / measurement ranges .....	5
3.2.3	Electrical connection data .....	5
4	Safety instructions.....	6
4.1	General .....	6
4.2	Residual hazards.....	6
5	Commissioning .....	6
5.1	Service label.....	6
5.2	Mounting the antenna.....	7
5.3	Electrical connection .....	7
5.4	Mounting/ceiling mounting .....	7
5.5	Triggering external devices.....	7
5.5.1	General .....	7
5.5.2	Connecting the relays.....	8
5.5.3	Connecting the digital inputs .....	8
6	Function .....	8
7	Operation.....	10
7.1	Connection build-up.....	10
7.2	Configuration and utilisation .....	11
7.3	Data storage and transfer .....	21
7.4	Standard values.....	21
7.5	Reset-Button .....	22
8	Maintenance and repair.....	22
9	Warranty clauses.....	22
10	Disposal .....	22

11 EC declaration of conformity TEKA-Airtracker ..... 23

## 1 General information

### 1.1 About this manual



This operating manual describes the installation, operation and maintenance of the device. Carefully read this manual prior to installation and commissioning.

Use the device only as described in this manual. The non-observance of the operating instructions and the improper use of the device may lead to property damage or personal injury.

The installation, operation and maintenance of the device should be carried out by qualified personnel.

Protect the device against mechanical influences. It is recommended to select the installation site according to these specifications.

Operating instructions are an integral part of the product and should be kept in the immediate vicinity of the unit and accessible at any time for all users. They serve as support for the operation and as a source of information.

### 1.2 Scope of supply

Included in the scope of supply:

- indoor air monitoring instrument “Airtracker”
- plug for the counterpart of the relay switch outputs
- power cable 1.5 m
- Wireless Network antenna
- operating instructions
- quick reference guide

## 2 Device description / intended use

The Airtracker is an indoor air monitoring instrument for use in industrial halls. The permanent monitoring of the air quality contributes significantly to protect the health of employees as the particulate matter pollution and the volume level are measured in addition to the temperature and the air humidity. A LED bar with traffic light function displays the current status of the particulate matter pollution in the ambient air. The Airtracker can be connected with any internet-enabled device (smartphone, tablet, PC) via WLAN or LAN. The current values of the ambient temperature, air humidity, particulate matter pollution and volume level can be shown in the browser via the Airtracker website, which is accessible via the network.

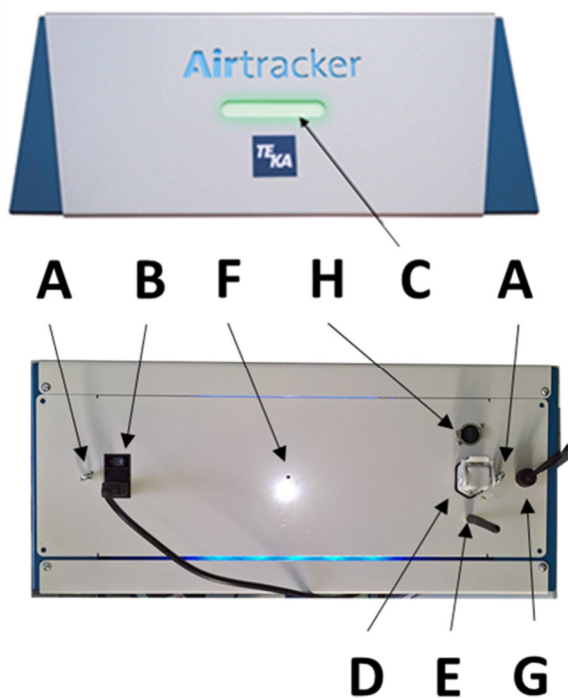
The device disposes of two digital inputs that are provided for the connection of external components (FireDetection and ProcessControl).

The 3 potential-free closing contacts can be used for the integration of fans or similar devices. The relays are also connected to the LED bar. When in the operation mode “dust” the configured threshold value of the particulate matter pollution is reached, the LED bar changes its colour and the connected devices are activated. In the operation mode “THN” the control of the LED bar and the relays are carried out depending on the measured temperature, air humidity and sound level. When the digital inputs are activated, the LED display also changes depending on the state of these inputs.

### 3 Technical data

#### 3.1 Device information

##### 3.1.1 Overview of the device elements



<b>A</b>	2 eyelets for the ceiling mounting (left/right)
<b>B</b>	power socket with toggle switch
<b>C</b>	LED bar with traffic light function
<b>D</b>	single throw for relay connections
<b>E</b>	Wireless Network antenna
<b>F</b>	reset button (countersunk)
<b>G</b>	connection of the digital inputs
<b>H</b>	Ethernet connection

## 3.2 Technical data

### 3.2.1 General

functions	<ul style="list-style-type: none"> <li>• measurement of the particle density in the ambient air</li> <li>• measurement of the temperature, the air humidity and volume level in the ambient air</li> <li>• LED-display (red, yellow, green)</li> <li>• 3 potential-free switching contacts</li> <li>• display and reading of the measurement data via mobile phone</li> <li>• switching on/off via mobile phone</li> <li>• standby indication on Airtracker inscription with blue backlight</li> <li>• Possibility to integrate into an external LAN/WLAN</li> <li>• optionally expandable (to Airtracker Pro): MQTT and OPC/UA</li> </ul>
Wireless Network/LAN Standard	2.4 GHz IEEE 802.11n/ 1 Gbps IEEE 802.3
dimensions	570 mm x 250 mm x 223 mm (W x D x H)
weight	approx. 12 kg
casing	metal, IP20
voltage supply	230/110 VAC, 50/60 Hz, 35 W, 0,42 A
storage temperature	-40°C up to +70°C
operating temperature	-10°C up to 60°C (without dew)
mounting height	up to 2000 m above mean sea level

### 3.2.2 Measurement data / measurement ranges

temperature	measurement range -10°C up to + 60°C (accuracy $\pm 1^\circ\text{C}$ )
air humidity	10% up to 80% (accuracy $\pm 5\%$ ) 80% up to 95% (accuracy $\pm 7\%$ )
fine particulate matter measurement	
particle size	from 0.5 $\mu\text{m}$
density	0 $\text{mg}/\text{m}^3$ up to 15 $\text{mg}/\text{m}^3$ (accuracy $\pm 0,1 \text{ mg}/\text{m}^3$ )
sound level	40 dB up to 110 dB (accuracy $\pm 5 \text{ dB}$ )

### 3.2.3 Electrical connection data

voltage supply	230/110 VAC, 50/60 Hz
internal fuse	microfuse 5x20 mm, 1,6 A/250V (delay-action)
relay switch outputs	max. 230 VAC / 5 A / max. 1.1 kVA minimum load 12 VDC / 100 mA
digital inputs	according to DIN EN 61131-2:2015-06, rated voltage 24 VDC, input type 3

## 4 Safety instructions

### 4.1 General

The device is designed according to the state of the art and the recognised safety regulations. However, danger to the life and limb of the user or third parties can arise during use. Damage to the device is possible as well. Therefore, read and follow the safety instructions before using the product.

#### **WARNING**

**The work on the device and on electrical voltage components represents considerable danger to life and limb in the event of improper handling.**

The operator must make sure that personnel authorized by him are familiar with all the safety instructions of this manual. The operator must ensure that all work is only carried out by authorized and qualified personnel.

**Do not work on live electrical components and elements (electric motors, switching cabinets, etc.) if you are not sure that these are disconnected. Electric shock represents a danger to life.**

The device must be disconnected from the power supply before being connected. The device must be protected against overcurrent by taking appropriate measures. The device is internally protected by a fuse that can be exchanged if required.

### 4.2 Residual hazards

In condition at delivery no electrical leads are freely accessible. A health hazard can therefore be excluded.

To prevent damage to the device, do not short-circuit conductive parts!

The casing of the **Airtracker** may not be opened.

## 5 Commissioning

### 5.1 Service label



There is a service label attached to the device. When it is started up mark the date of the next maintenance on the service label. The maintenance is due 12 months after the initial commissioning.

## 5.2 Mounting the antenna

The supplied Wireless Network antenna must be screwed in the thread on the **Airtracker** casing.

## 5.3 Electrical connection

Power supply is provided via the power socket (230/110 VAC). Connect the cable and switch on the device by means of the toggle switch.

## 5.4 Mounting/ceiling mounting

The Indoor air monitoring instrument **Airtracker** can be mounted or suspended.

### Instructions about the operation site

- the supply of the tested ambient air should be possible without restriction
- protect against moisture
- protect against direct sunlight
- protect against direct draught
- not close to devices that emit interferences such as plasma and laser cutting devices
- not close to heavily polluting sources (oily vapours or similar can shorten the functional life of the sensor and also the associated recommended period between two calibrations)

In case of operation on a table, look for a suitable place and mount it.

In case of mounting on the hall ceiling, the device may be attached maximum 5 metres above the ground in the open field. For attachment use the 2 eyelets at the **Airtracker** casing.



When used as a table device, the device must be placed on a level, clean, dry and non-slip ground. In case of a suspended mounting, the admissible load capacity must be respected.

If the device is transported from a cold environment into the working room, dew may occur. Therefore, the device must be at room temperature before commissioning.

## 5.5 Triggering external devices

### 5.5.1 General

The relay connections can be used to trigger other devices (maximum 1.1 kVA, potential-free contact) or their transducers. The **Airtracker** therefore offers the opportunity to react to critical measured data with automatic “countermeasures”. Possible applications could be for example switching on/off fans, filter units, ventilation systems, air conditioning, alarm systems and much more. The digital inputs can be used for the connection of the external components **FireDetection** and **ProcessControl**.

## 5.5.2 Connecting the relays

Connector ILME CK03I:

Connector position	Allocation	Function in operation mode "dust" <sup>1)</sup>	Function in operation mode "THN" <sup>1)</sup>
2	REL1 Common	represents LED state green	represents the excess of the threshold value of the temperature
3	REL1 closing contact		
7	REL2 Common	represents LED state yellow	represents the excess of the threshold value of the air humidity (and when the digital input 1 is activated its state)
1	REL2 closing contact		
5	REL3 Common	represents LED state red	represents the excess of the threshold value of the noise nuisance (and when the digital input 2 is activated its state)
4	REL3 closing contact		

<sup>1)</sup> The choice of the operation mode is made in the Airtracker user interface, see chapter 6

## 5.5.3 Connecting the digital inputs

The connection is carried out via 4-pole M12-connector, A-coding.

Type on the device: plug

Connector position	Allocation	Function
1	IN1+	digital input 1, positive connection (+24VDC)
2	IN2+	digital input 2, positive connection (+24VDC)
3	IN1-	digital input 1, negative connection (GND)
4	IN2-	digital input 2, negative connection (GND)

# 6 Functions

## 6.1 Sensors

Various variables for the assessment of the air quality in the application area and the evaluation of the ambient conditions are measured in the Airtracker. These include dust pollution, volume level, temperature and air humidity.

Measurement of the dust pollution in the ambient air is carried out by means of an optical sensor in an air channel. The measurements are shown in the Airtracker website. The measurement of the volume level is carried out via a sensor in the Airtracker. The current values can be read out in the Airtracker website.

The temperature and the air humidity are measured.





## 6.2 Signal LED bar

The signal LED bar is activated depending on the setup of the operating mode:

- Operating mode “dust”
  - Normal range = LED green (low particle density)
  - Limit range 1 = LED yellow (middle particle density)
  - Limit range 2 = LED red (high particle density)
  - “FireDetection“ activated = LED red during alarm
  - “ProcessControl“ has no influence
- Operating mode “THN”
  - Normal range = LED green (respective sensor-limit value is not exceeded)
  - Limit range = LED red (respective sensor limit range is exceeded)
  - “FireDetection“ activated = LED red during alarm
  - “ProcessControl“ has no influence

## 6.3 Other connections

The 3 potential-free switching contacts are activated depending on the measurement values:

- Operation mode “dust”: relays 1/2/3 are dedicated to the measuring data of the particle density
  - relay 1 conducting / relay 2&3 non-conducting = low particle density,
  - relay 2 conducting / relay 1&3 non-conducting = middle particle density,
  - relay 3 conducting / relay 1&2 non-conducting = high particle density
- Operation mode “THN”:
  - digital inputs 1 and 2 not activated:
    - relay 1 is dedicated to the measuring data of the temperature
    - relay 2 is dedicated to the measuring data of the air humidity
    - relay 3 is dedicated to the measuring data of the sound level
    - relay 1 conducting = temperature threshold value is exceeded,
    - relay 2 conducting = air humidity threshold value is exceeded,
    - relay 3 conducting = sound level threshold value is exceeded,
  - digital input 1 activated: as above but relay 2 is dedicated to the digital input 1,  
relay 2 conducting = alarm digital input 1 (FireDetection)
  - digital input 2 activated: as above but relay 3 is dedicated to the digital input 2,  
relay 3 conducting = alarm digital input 2 (ProcessControl)



## 7 Operation

### 7.1 Airtracker website in the network

If a network-capable device (PC, smartphone, etc.) is present in the same network as the Airtracker or is connected to the Airtracker-specific WLAN Access Point, then the current measured values can be viewed on the Airtracker website and functions can be configured under Settings.

### 7.2 Connection build-up

To display the Airtracker website, the Airtracker's IP- address in the connected network must be entered in the browser's address line.

**IP address:** 192.168.12.1 (Airtracker WLAN Access Point) or assigned IP address (LAN, external WLAN)

#### 7.2.1 WLAN Access Point

The measuring instrument **Airtracker** provides a WLAN Access Point to which your internet-capable terminal device can be connected. Therefore, the Wireless Network of the web-enabled terminal device must be activated, the terminal device must be integrated into the Airtracker WLAN Access Point, at the first usage there is a password request to log into the Airtracker- Wireless Network.

**SSID:** TEKA-Airtracker-XXXXXX (*XXXXXX = individual internal device no.*)  
**password:** TEKA24364



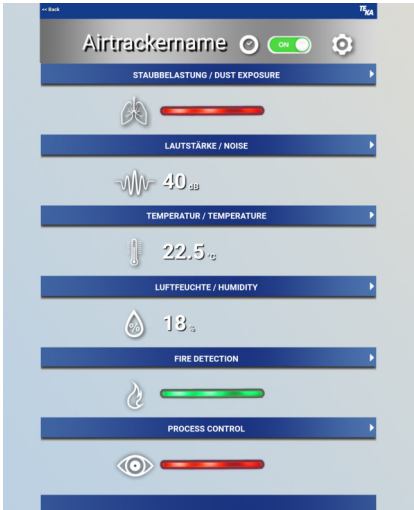


If the connection to the Airtracker is established via the LAN cable, DHCP must be activated at the network router so that the Airtracker is automatically assigned an IP address.

#### 7.2.2 Connection to LAN or WLAN networks

Airtracker connection to an external WLAN can be configured in the Airtracker website under Preferences via the WLAN Access Point. When the Airtracker is integrated into an external WLAN, the Airtracker is automatically assigned an IP address via the router when the DHCP server is switched on. The connection status as well as the IP address of the external LAN or WLAN is displayed in the Airtracker website under Preferences. The Airtracker website can now be reached using this IP-address from the external LAN or WLAN.

### 7.3 Configuration and utilisation

The Airtracker website and the configuration pages it contains are described below.

	<p>The first page of the Airtracker user interface</p> <p>The “enter” button leads the user to the overview of the sensors and their measuring data.</p> <p>The “info” button "initial start" leads the user to the instruction of the commissioning.</p> <p>Attention: When you use the browser we recommend you delete the browser information (cached pictures and files) before start-up.</p>
	<p>Initial Start</p> <p>Follow the steps of the instructions shown on the user interface.</p> <p>If you have any questions, please phone <b>+49 800 835 2225</b> or <b>+49 2863 9282 765</b> and you will be connected to the TEKA support.</p>
	<p>Overview:</p> <p>The device name top left can be individually assigned.</p> <p>In the overview next to the device name there is a watch. When pressing the watch, a window opens in which the automatic standby can be set (see next table row). ). As soon as the Airtracker is in sleeping mode the watch gets blue and the Airtracker will be switched off. With the slide switch you can switch on the Airtracker manually even the standby is activated.</p> <p>Right beside the watch there is a slide switch  to switch on/off the measuring instrument (“Standby”), i.e. to switch off the LED display, fan and switch outputs. The Wireless Network remains switched on in order to reactivate the measuring instrument via the user interface. The blue interior lighting in the Airtracker remains active.</p> <p>By pressing the control dial  top right, you get to the page with the settings and explanations.</p> <p>By pressing the field “back” top left you get to the previous page.</p>



Hereinafter you can see all the current measuring data at a glance in that order top down: LED display of the dust pollution according to the signalling at the device, the noise [dB], temperature [°C] and relative air humidity [%]. The update of the measuring data is automatically carried out every second.

When the additional sensors FireDetection and ProcessControl are activated, the current status is shown on this page (green: no alarm, red: alarm). When the sensors are deactivated, the display is grey.




Automatic standby:

By pressing the watch left next to the device name in the overview, you get to a page where the automatic timer can be configured. The start and end time for the automatic standby can be set here and this mode can be activated and deactivated.



Configuration:

By pressing the icon  in the overview, you get to the page with the settings and explanations.

On the display for “calibration” the remaining days till the next maintenance/calibration are shown. For the initial commissioning the counter is activated after a run-time of at least 15 min. In the table below you get more information of done calibrations.

In the section “sensor-configuration” you can set to which measured value the LED signalling and relay functionality at the Airtracker should be applicable (operation mode “dust” or “THN”).


By choosing the dust pollution as a sensor (operation mode “dust”), you can configure 2 threshold values. For the upper threshold value you have to choose the country where the Airtracker is put into operation. The country-specific threshold value is adopted for the upper threshold value. The lower value can be set individually by the user between 0 % and 75 % maximum of the upper threshold value.

LED-Signalling:

- green = lower than the 1st threshold value
- yellow = between the 1st and the 2nd threshold value
- red = higher than the 2nd threshold value

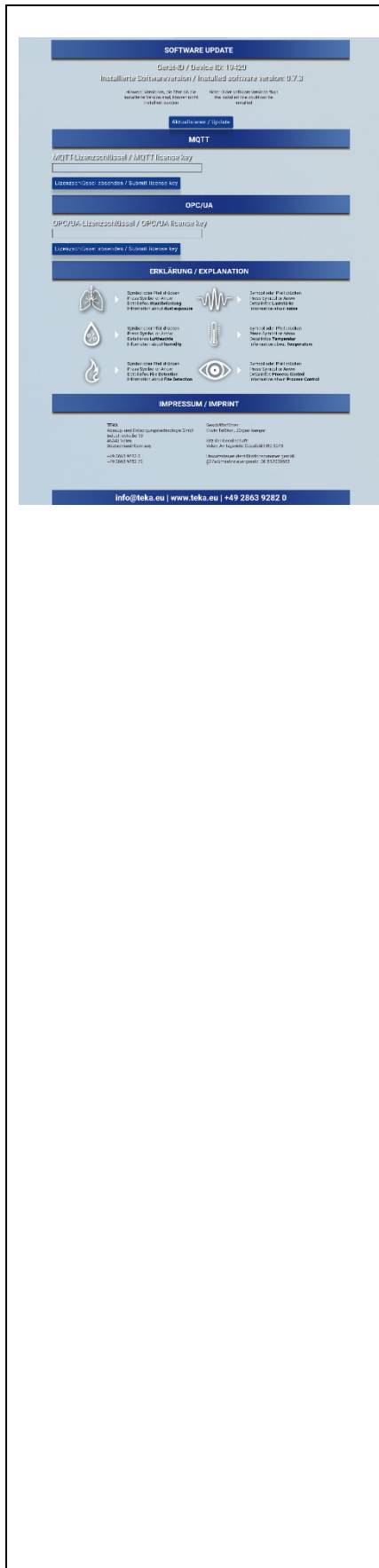
By choosing the volume, temperature and/or air humidity as a sensor (operating mode “THN”), you can set these threshold values. If the measured value(s) are/is below the set threshold value(s), the LED is green. If at least one threshold value is exceeded, the LED is red.

You can enter a separate email address for every sensor to which an email is sent when the respective limit value is exceeded. To test this function, you can check the sending of an email with the button “send testmail” (please note: this function is only possible with an internet connection or the integration into the customer Wireless Network)

The set values (limit values, country codes, e-mail addresses) are accepted by pressing the save icon .


By pressing the button “reset to factory settings” all limit values and the country codes are reset to initial values and the email addresses are deleted. The initial values are: Germany 0.5/1.25 mg/m<sup>3</sup>, 80 dB, 40 °C and 85%.

It is possible to connect and integrate the external sensors “FireDetection” (digital input 1) and “ProcessControl” (digital input 2). Therefore, these must be activated; after that they can be individually designated. The activation of “FireDetection” has influence on the signalisation of the device LED bar. The activation of “ProcessControl” has no influence on the device LED bar.



If the function “2 min delay” is activated by the slide switch, a signal is sent to the device-LED and relay and a command is given to email dispatch if there is an alarm holding time (FireDetection and ProcessControl) or a threshold values is exceeded for at least 2 min.

The “relay shut-off delay time” can be activated/deactivated which changes the switching characteristics of the relays. If the “relay shut-off delay time” is deactivated, the relays switch into the respective state as soon as an event occurs (exceeding/going below limit values). If the “relay shut-off delay time” is activated, changing from a critical to an uncritical state is delayed by 5 minutes (also in case of going below a limit value). Therefore a continuous switch on and off of the relays and the connected devices is prevented in the threshold zones. But this concerns only the relays - the LED always switches to the current notification.

With a set up service password there is the possibility to control the LED display manually and to make it glow as desired. Indication: For the normal function the LED-controller has to be released with the button .

The country-specific limit values for transmission power has to be adjusted in the section Wireless Network by choosing the relevant country from the list. In addition to that you can choose an alternative channel.

SSID and passwords can be entered in the section “Wireless Network integration” in order to connect the Airtracker to an existing Wireless Network. A status message above the “connect” button indicates if the process has been successfully completed or not. If the Airtracker has been integrated into the existing Wireless Network the IP address of the Airtracker will be shown. This one can be used to access on the device from the Wireless Network.

Note: After each confirmation to change the WLAN access data (connect, reset), the device is automatically restarted.

If an AirController is used (additional external control): To initiate a pairing procedure of the Airtracker and the AirController, the respective button on this page must be pressed. After activating the button, a countdown of 3 minutes shows up. Within this time, the push-button of the AirController which is to be linked must be pushed. An emerging message shows the result of the procedure - if a pairing has been successfully made or not.

The setting of the time zone is done by choosing the country and city from the list. Additionally, the local time and the date can be set here and the switching between summer and winter time can be activated. The set values are accepted by pressing the “save” button.

By pressing the “download” button in the Airtracker website, the measured values stored in the device can be downloaded as a CSV file. Here you can also by an analysis and evaluation tool (AAS). With the help of this software stored data can be



	<p>transferred into a table view. An optimised search function and a PDF memory export function are available.</p> <p>By pressing the “download” button in the browser, the measured values stored in the device can be downloaded as a CSV file. Here you can also by an analysis and evaluation tool (AAS). With the help of this software stored data can be transferred into a table view. An optimised search function and a PDF memory export function are available.</p> <p>In the section “restart Airtracker“ the Airtracker can be restarted. A new commissioning might be necessary (see chapter 7.1 Connection build-up and 7.2 Configuration and utilisation).</p> <p>In the section "Software Update" you can find the device ID and can display and update the software version of the Airtracker by pressing the button "Update". The next table line describes this process in more detail.</p> <p>In the section "MQTT" and "OPC / UA", the interfaces can be activated via a license key (device- and interface-specific, no temporal validity restriction), which can be acquired as part of an extension to Airtracker Pro. In this table further down the process of unlocking is described in more detail.</p> <p>On the settings page in the section “explanation” you can also inform yourself about the operation of the Airtracker user interface.</p>
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## Software Update

You can update the device software on the settings page in the section software update. The software version installed on the Airtracker is displayed, with the button “update” you can start the update procedure.

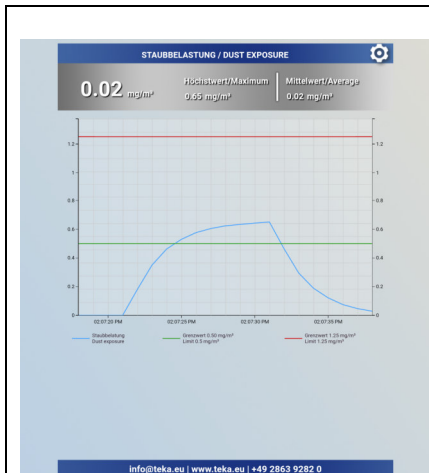
On the page shown afterwards you can choose the update file with the button “search” and with the button “upload” you can upload it to the Airtracker device. The update procedure can take several minutes. The update file can be obtained via TEKA or via <https://service.airtracker.eu/>.

If the procedure has been interrupted, you can use “back” (top left) to get back to the settings page.

When the update file is uploaded, it is automatically checked by the Airtracker device and a status message is shown. In case of a successful check (“upload successful”), the update can be installed with the button “install update”. The installation process can take several minutes, during this procedure the device is not ready to operate, an interruption of the power supply should be avoided. A status message of the update process is shown (“update is installing”). After the successful update (“software update successfully completed”), an automatic restart of the device is carried out (“device is restarted”). The successful completion is shown by a status message (“device is ready for operation”). Attention: Please check if your terminal device is connected with the right Wireless Network after you have finished the update process. With the button “start page” you can navigate to the Airtracker start page. If there is no message after about 2 minutes, the terminal device (PC, tablet, mobile phone) must be manually reconnected to the Airtracker via WIRELESS Network.


The entire update process can be interrupted with the “cancel” button and you can get back to the settings page. With “back” top left you get back to the upload page to upload the update file again.





### Viewing Sensor Data

If you press one of the sensors dust pollution, volume, temperature or air humidity on the overview page, a diagram shows up. The diagram shows the course over a specific period of time, and also the actual value. The maximum value and the mean value for the whole period of time are determined and shown.

By pressing the control dial on the right next to the measuring value , you get to the setting mode.

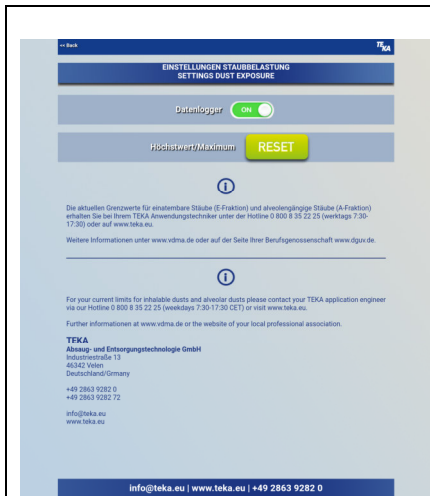
 The current limit values for inhalable dust (E fraction) and alveolar dust (A fraction) can be obtained by contacting your TEKA application engineer by calling the hotline +49 2863 9282 765 (on weekdays 7:30-17:30) or at [www.teka.eu](http://www.teka.eu). Further information at [www.vdma.de](http://www.vdma.de) or on the website of your professional organisation <http://www.dguv.de>

### FireDetection



If you press the sensor “FireDetection” on the overview page, the current status (LED bar) as well as a functional description are shown.

### ProcessControl

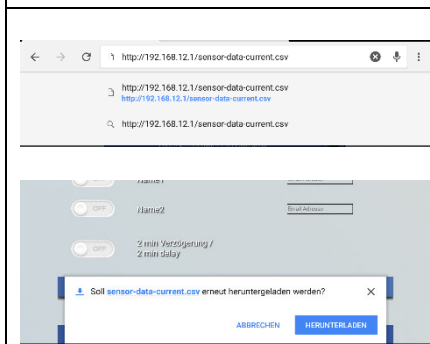
If you press the sensor “ProcessControl” on the overview page, the current status as well as a functional description are shown.



### Setting of the sensors

The page “settings”  can be opened for every measured value. Here the data logging can be activated and deactivated  which defines if the internal storage of the values should be carried out or not.

The maximum value can be reset. When resetting the maximum value, the maximum value is reset to the current measured value.



### Current Measured values

The current measured values of the temperature / humidity / volume and dust sensors can be issued for the control of other systems, for example. To do this, enter the following in the browser in the address bar after the corresponding Airtracker IP address:

**192.168.12.1/sensor-data-current.csv**

If this entry is confirmed, the csv file is downloaded.



### MQTT

In the section “MQTT”, a license key can be entered if the license / activation has not yet been completed. After confirming the entry ("send license key") and successful check by the device (pop-up window with successful status message), the function MQTT will be configured as configurable for the user.


After successful licensing, activation and configuration of the MQTT interface is required by the user (MQTT broker address, MQTT broker port, if required user name and password), the corresponding input fields incl. checkbox are available. The input is confirmed via a button and the entered data is saved. To apply the stored data to the device, a manual device restart by the user is necessary (operation of the toggle switch on the device cover or restart function on the configuration page). Once the device is properly booted up and ready for use, the MQTT feature is fully operational.



	<p>Protocol: Data will be sent (time interval &lt;1s) according to the following scheme: Topic = "airtracker-"<id&gt; &lt;subtopic&gt;<br=""></id&gt;>e.g. airtracker-00178/dust</p> <table border="1"> <thead> <tr> <th>subtopic</th> <th>Data-typ</th> <th>unit</th> <th>e.g.</th> <th>name</th> </tr> </thead> <tbody> <tr> <td>temperature</td> <td>float</td> <td>°C</td> <td>"23.581"</td> <td>temperature</td> </tr> <tr> <td>noise</td> <td>int</td> <td>dB</td> <td>"40"</td> <td>noise</td> </tr> <tr> <td>humidity</td> <td>float</td> <td>%</td> <td>"31.372"</td> <td>humidity</td> </tr> <tr> <td>dust</td> <td>float</td> <td>mg/m<sup>3</sup></td> <td>"0.005"</td> <td>dust</td> </tr> <tr> <td>di1</td> <td>bool</td> <td>(on,off)</td> <td>"true", "false"</td> <td>FIRE DETECTION</td> </tr> <tr> <td>di2</td> <td>bool</td> <td>(on,off)</td> <td>"true", "false"</td> <td>PROCESS CONTROL</td> </tr> <tr> <td>relay1</td> <td>bool</td> <td>(on,off)</td> <td>"true", "false"</td> <td>Relay 1</td> </tr> <tr> <td>relay2</td> <td>bool</td> <td>(on,off)</td> <td>"true", "false"</td> <td>Relay 2</td> </tr> <tr> <td>relay3</td> <td>bool</td> <td>(on,off)</td> <td>"true", "false"</td> <td>Relay 3</td> </tr> </tbody> </table>	subtopic	Data-typ	unit	e.g.	name	temperature	float	°C	"23.581"	temperature	noise	int	dB	"40"	noise	humidity	float	%	"31.372"	humidity	dust	float	mg/m <sup>3</sup>	"0.005"	dust	di1	bool	(on,off)	"true", "false"	FIRE DETECTION	di2	bool	(on,off)	"true", "false"	PROCESS CONTROL	relay1	bool	(on,off)	"true", "false"	Relay 1	relay2	bool	(on,off)	"true", "false"	Relay 2	relay3	bool	(on,off)	"true", "false"	Relay 3
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	<p>OPC/UA</p> <p>In the section "OPC / UA", a license key can be entered if the license / activation has not yet been completed. After confirming the entry ("send license key") and successful check by the device (pop-up window with successful status message), the function OPC / UA will be configured as configurable for the user.</p> <p>After successful licensing, activation of the OPC / UA interface is required by the user side. A checkbox is available for this purpose. The input is confirmed via a button and the entered data (activation / deactivation) is saved, so that the OPC / UA function is fully operational, a manual device restart is not necessary.</p> <p>Protocol: Data will be sent (time interval approx. 1s) according to the following scheme: object = "airtracker-"<id&gt; &lt;objectstructur&gt;<br=""></id&gt;>e.g. airtracker-00178/dust</p>																																																		

Objekt-structur	Data-typ	unit	e.g.	name
temperature	double	°C	"23.581"	Temperature
noise	double	dB	"40"	noise
humidity	double	%	"31.372"	humidity
dust	double	mg/m <sup>2</sup>	"0.005"	dust
DI1	bool	(on,off)	"true", "false"	FIRE DETECTION
DI2	bool	(on,off))	"true", "false"	PROCESS CONTROL
relay1	bool	(on,off)	"true", "false"	Relais 1
relay2	bool	(on,off)	"true", "false"	Relais 2
relay3	bool	(on,off)	"true", "false"	Relais 3



**Service**

For a particle sensor change, a ServiceKit can be purchased. As part of the change a recalibration of the sensor is necessary, which can be performed in the Service section. The procedure for sensor replacement can be found in the ServiceKit.

To perform the calibration, a service code is required, more information can be found in the ServiceKit.

Country-specific limit values for dust pollution

Position	Country	Limit values for A-dust
01	Germany	1,25 mg/m <sup>3</sup>
02	Poland	1,00 mg/m <sup>3</sup>
03	Czech Republic	1,5 mg/m <sup>3</sup>
04	Austria	5,00 mg/m <sup>3</sup>
05	Switzerland	3,00 mg/m <sup>3</sup>
06	France	5,00 mg/m <sup>3</sup>
07	Belgium	5,00 mg/m <sup>3</sup>
08	Netherlands	1,00 mg/m <sup>3</sup>
09	England	5,00 mg/m <sup>3</sup>
10	Ireland	5,00 mg/m <sup>3</sup>
11	Spain	1,25 mg/m <sup>3</sup>

12	Portugal	1,25 mg/m <sup>3</sup>
13	Italy	3,00 mg/m <sup>3</sup>
14	Croatia	5,00 mg/m <sup>3</sup>
15	Hungary	1,25 mg/m <sup>3</sup>
16	Slovenia	1,5 mg/m <sup>3</sup>
17	Romania	5,00 mg/m <sup>3</sup>
18	Estonia	5,00 mg/m <sup>3</sup>
19	Latvia	5,00 mg/m <sup>3</sup>
20	Lithuania	5,00 mg/m <sup>3</sup>
21	Belarus	5,00 mg/m <sup>3</sup>
22	Ukraine	5,00 mg/m <sup>3</sup>
23	Russia	5,00 mg/m <sup>3</sup>
24	Turkey	5,00 mg/m <sup>3</sup>
25	Slvakia	1,50 mg/m <sup>3</sup>
26	China	4,00 mg/m <sup>3</sup>

#### 7.4 Data storage and transfer

The measured, saved data of the 4 sensors temperature/humidity/noise/dust exposure are hourly mean values. 24 values per sensor are stored per day. Also the data of the digital input are stored: when 1 x alarm within measuring time (1h) occurs, "1" is logged, otherwise "0".

When the measuring device is switched off ("standby") or the data logging is inactive, the data are not saved.

On the Airtracker website, the measured values can be downloaded as a csv-file that is available for editing. Hourly mean values or current instantaneous values are available for download.

The current measured values and relay states are transmitted via MQTT and OPC / UA if this function has been activated in the configuration page.

#### 7.5 Standard values

Basic setting of the Airtracker for signalling the state of the particle concentration (applicable for Germany):

State range	Particle concentration	LED colour
Normal range	0 mg/m <sup>3</sup> up to 0.5 mg/m <sup>3</sup>	green
Limit range 1	0.5 mg/m <sup>3</sup> up to 1.25mg/m <sup>3</sup>	yellow
Limit range 2	1.25 mg/m <sup>3</sup> up to 3 mg/m <sup>3</sup>	red

## 7.6 Reset-Button

You can use the countersunk reset button in the middle of the housing lid in following situations:

- your terminal device (Smartphone, Tablet, PC) cannot find the Airtracker-WIRELESS NETWORK
- In the Airtracker-user interface will be shown just the standard values (Dust exposure 0 (Green), 40 db, 20°C, 30 %, FireDetection off (Grey out), ProcessControl off (Grey out))

## 8 Maintenance and repair

The ambient air is sucked in and measured by the **Airtracker** in order to evaluate the quality of the ambient air in industrial halls. The ambient air can be polluted with dust and soot particles that can deposit on the sensors.

Due to the pollution the sensitivity of the sensors can be reduced and incorrect measurement results may occur.

The Airtracker browser page contains an operating hours counter that is activated after 15 minutes in case of the initial commissioning. It is recommended to carry out maintenance work after 365 days or it is possible to purchase a service kit, which allows a particle sensor change.

In order to change the fuse, the fuse holder at the power socket with toggle switch must be taken out and the fuse must be changed.

## 9 Warranty clauses

Excluded from the warranty are defects resulting from improper handling, damage or repair attempts. This shall also apply to normal wear.



We reserve the right to carry out technical modifications to the product within the scope of the improvement of the functional properties and development.

## 10 Disposal



When the device is decommissioned and disposed of at the end of its service life, contact your regional disposal company in order to ask how to deal with electronic waste. Do not dispose of the device in the normal waste! Proper disposal protects the environment.



## 11 EC declaration of conformity TEKA-Airtracker



TEKA Absaug- und Entsorgungstechnologie GmbH

Millenkamp 9, D-48653 Coesfeld

Tel.:+49 2541 84841-0 E-Mail: [info@teka.eu](mailto:info@teka.eu) Internet: [www.teka.eu](http://www.teka.eu)

We herewith declare that the above mentioned device complies with the Low Voltage Directive 2014/35/EU.

Device type:	indoor air monitoring instrument
Applied harmonized standards:	
EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements
EN 61326-1:2013	EMC standard for measurement, control and laboratory use - Part 1: General requirements
EN 61000-6-2:2005	EMC - Immunity for industrial environments
EN 61000-6-4:2007 +A1:2011	EMC - Emission standard for industrial environments
EN 61000-4-6:2014	Immunity to conducted disturbances, induced by radio-frequency fields
EN 60664-1:2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests

This declaration becomes invalid if the device is modified without the manufacturer's written consent.

**Responsible for technical documentation:**

TEKA Absaug- und Entsorgungstechnologie GmbH, Millenkamp 9, D-48653 Coesfeld

(Jürgen Kemper, General manager)

Coesfeld, 21/06/2021