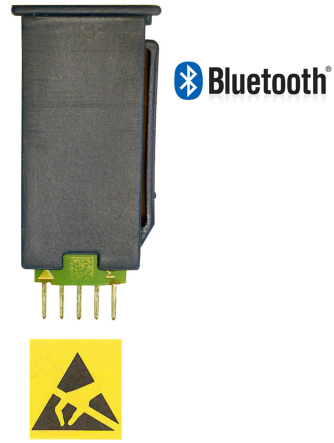
english

# AM-STICK-WB

Part.-No. 349081

**Bluetooth communication module for the latest generation of frequency inverters and ECblue fans (motor sizes D+G) (2nd edition)**

## Quick Start Guide




**Attention, electrostatically sensitive components!**
**Note chapter mounting the module.**

L-BAL-E289-GB 2021/36 Index 005

ZIEHL-ABEGG

# Content

# 1 General notes

Compliance with the following instructions is mandatory to ensure the functionality and safety of the product. If the following instructions given especially but not limited for general safety, transport, storage, mounting, operating conditions, start-up, maintenance, repair, cleaning and disposal / recycling are not observed, the product may not operate safely and may cause a hazard to the life and limb of users and third parties. Deviations from the following requirements may therefore lead both to the loss of the statutory material defect liability rights and to the liability of the buyer for the product that has become unsafe due to the deviation from the specifications.

## 1.1 Structure of the short operating instructions

This Quick Start Guide contains basic information about safety, use, installation and quick start-up and is only valid in connection with the assembly instructions or operating instructions of the device in which this module is installed.
The remarks concerning safety, installation and connection described there must be followed!

## 1.2 Exclusion of liability

Concurrence between the contents of these operating instructions and the described hardware and software in the device has been examined. It is still possible that non-compliances exist; no guarantee is assumed for complete conformity. To allow for future developments, construction methods and technical data given are subject to alteration. We do not accept any liability for possible errors or omissions in the information contained in data, illustrations or drawings provided.
ZIEHL-ABEGG SE is not liable for damage due to misuse, incorrect use, improper use or as a consequence of unauthorized repairs or modifications.

## 1.3 Using in Europe

**The module comply with the Radio Equipment Directive (RED) 2014/53/EU.**

- Article 3.1[a]: Protection of health and safety of persons and of domestic animals
  - ETSI EN 300 328 V2.1.1
  - EN 301 489-1 V2.1.1 (2017-02)
  - EN 62368-1:2014 + AC:2015 + A11:2017

- Article 3.1[b]: Adequate level of electromagnetic compatibility
  - EN 301 489-17 V2.2.1:2012-09

- Article 3.2: Effective and efficient use of radio spectrum
  - EN 300 328 V2.1.1:2016-11

The CE symbol confirms compliance with the directive.

CE

The final product, in which the module and the fan or frequency inverter is installed, must meet the requirements of 2014/53 / EU.

The modules may be used in the following countries:
Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, the Netherlands, the United Kingdom, Switzerland and Norway

## 1.4 Using in the USA or Canada

**Information**
The following information is intended for using the product in the USA or Canada and is therefore not taken into consideration in translations.

### 1.4.1 FCC Statements for US @ AM-MODBUS-WB, AM-STICK-WB

**FCC Notice**
This device contains **FCC ID: T7V1740 (PAN1740)**, including the antennas, which are listed below, complies with Part 15 of the FCC Rules.
The device meets the requirements for modular transmitter approval as detailed in FCC public Notice DA00-1407 transmitter.

**Operation is subject to the following two conditions**

1. this device may not cause harmful interference
2. this device must accept any interference received, including interference that may cause undesired operation

**Caution**
The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by ZIEHL-ABEGG SE may void the user's authority to operate the equipment.
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

**Labeling Requirements**
The Original Equipment Manufacturer (OEM) must ensure that FCC labelling requirements are met. This includes a clearly visible label on the outside of the OEM enclosure specifying the appropriate Panasonic FCC identifier for this product as well as the FCC Notice above. The FCC identifier is FCC ID: T7V1740. This FCC identifier is valid for all PAN1740 modules.
In any case the end product must be labelled exterior with "Contains FCC ID: T7V1740"

**Antenna Warning**
For the related part number of PAN1740.
This device is tested with a standard SMA connector and with the antennas listed below. When integrated in the OEMs product, these fixed antennas require installation preventing end-users from replacing them with non-approved antennas. Any antenna not in the following table must be tested to comply with FCC Section 15.203 for unique antenna connectors and Section 15.247 for emissions.

| Item | Part Number | Manufacturer | Frequency Band | Type | Gain (dBi) |
|---|---|---|---|---|---|
| 1 | LDA212G3110K | Murata | 2.4 GHz | Chip-Antenna | +0.9 |

**RF Exposure**
The radiated output power of PAN1740 with mounted ceramic antenna (FCC ID: T7V1740) is far below the FCC radio frequency exposure limits.
Nevertheless, the PAN1740 shall be used in such a manner that the potential for human contact during normal operation is minimized

### 1.4.2 Industry Canada Certification @ AM-MODBUS-WB, AM-STICK-WB

This device contains "Contains IC: 216Q-1740".
PAN1740 is licensed to meet the regulatory requirements of Industry Canada (IC), license: IC: 216Q-1740.
Manufacturers of mobile, fixed or portable devices incorporating this module are advised to clarify any regulatory questions and ensure compliance for SAR and/or RF exposure limits. Users can obtain Canadian information on RF exposure and compliance from www.ic.gc.ca.
This device has been designed to operate with the antennas listed in the Table above, having a maximum gain of 0.9 dBi. Antennas not included in this list or having a gain greater than 0.9 dBi are strictly prohibited for use with this device. The required antenna

impedance is 50 ohms. The antenna used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
Due to the model size the IC identifier is displayed in the installation instruction only and can not be displayed on the modules label due to the limited size (8.7x15.6mm).

**IC Notice**

The devices contains "Contains **IC: 216Q-1740**", including the antennas, which are listed in above, complies with Canada RSS-GEN Rules. The device meets the requirements for modular transmitter approval as detailed in RSS-GEN.

**Operation is subject to the following two conditions:**

1. This device may not cause harmful interference
2. This device must accept any interference received, including interference that may cause undesired operation

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

**L'exploitation est autorisée aux deux conditions suivantes :**

1. l'appareil ne doit pas produire de brouillage, et
2. l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

PAN1740 est garanti conforme aux dispositions règlementaires d'Industry Canada (IC), licences: IC: 216Q-1740 Il est recommandé aux fabricants d'appareils fixes, mobiles ou portables de consulter la réglementation en vigueur et de vérifier la conformité de leurs produits relativement aux limites d'exposition aux rayonnements radiofréquence ainsi qu'au débit d'absorption spécifique maximum autorisé
Des informations pour les utilisateurs sur la réglementation Canadienne concernant l'exposition aux rayonnements RF sont disponibles sur le site www.ic.gc.ca.
Ce produit a été développé pour fonctionner spécifiquement avec les antennes listées dans le tableau ci-dessus, présentant un gain maximum de 0.9dBi. Des antennes autres que celles listées ici, ou présentant un gain supérieur a 0.9dBi ne doivent en aucune circonstance être utilises en combinaison avec ce produit. L'impédance des antennes compatibles est 50Ohm. L'antenne utilisée avec ce produit ne doit ni être située à proximité d'une autre antenne ou d'un autre émetteur, ni être utilisée conjointement avec une autre antenne ou un autre émetteur. En raison de la taille du produit, l'identifiant IC est fourni dans le manuel d'installation.

**Labeling Requirements**

The Original Equipment Manufacturer (OEM) must ensure that IC labelling requirements are met. This includes a clearly visible label on the outside of the OEM enclosure specifying the appropriate Panasonic IC identifier for this product as well as the IC Notice above. The IC identifier is 216Q-1740. This IC identifier is valid for all PAN1740 modules. In any case the end product must be labelled exterior with "Contains IC: 216Q-1740"

**Obligations d'étiquetage**

Les fabricants d'équipements (OEM) doivent s'assurer que les obligations d'étiquetage du produit final sont remplies. Ces obligations incluent une étiquette clairement visible à

l'extérieur de l'emballage externe, comportant l'identifiant IC du module Panasonic inclus, ainsi que la notification ci-dessus.
Les identifiants IC sont: IC: 216Q-1740
Ces identifiants sont valides pour tous les modules PAN1740. Dans tous les cas les produits finaux doivent indiquer sur leur emballage externe une des mentions suivantes: "Contient IC: 216Q-1740"

### 1.5 Using in Taiwan

The module is NCC approved for use in Taiwan. It meets the requirements of the Low-Power-Radio-Frequency Devices Technology Regulations as detailed in NCC LP0002 (2020) Section 4.10.1. Test report for AM-STICK-WB see CN21293J.

NCC approval mark and identification number for AM-STICK-WB CCAN21LP0300T9

## 2 Safety instructions

**Information**
Mounting, electrical connection, and start-up operation may only be carried out by an electrical specialist in accordance with electrotechnical regulations (e.g. EN 50110 or EN 60204)!

**Danger due to electric current**

- It is generally forbidden to carry out work on electrical live parts. Protection class of the device when open is IP00! It is possible to touch hazardous voltages directly.
- The 5 electrical safety rules must be observed!
- The safe isolation from the supply must be checked using a **two-pole** voltage detector.
- Even after disconnecting the mains voltage, life-threatening charges can appear between the protective ground "PE" and the mains connection.

**Waiting period at least 3 minutes!**

- Opening the device in which the module is to be installed (fan, inverter) is only allowed when the mains power is switched off and after waiting at least three minutes.
- Through use of capacitors, danger of death exists even after switching off the device through directly touching the energized parts or due to parts that have become energized due to faults.

# 3 General description

## 3.1 Application area

Bluetooth communication module for the latest generation of frequency inverters and ECblue fans (motor sizes D+G) (2nd edition)

**Information**
The AM-STICK-WB module is intended exclusively for integration and utilisation in host devices (fans and converters) from ZIEHL-ABEGG.

**Attention!**
The module, and therefore also the end device in which it is installed (fan/frequency inverter), is not designed for use in life-sustaining devices or systems where a malfunction can lead to serious personal injury.
It is not permissible to use the module, or the end device in which it is installed, as a critical component if the failure or malfunction of the component can impair the safety or functionality of life-sustaining devices.
Customers who sell or use these ZIEHL-ABEGG products for these applications do so at their own risk. They undertake to reimburse ZIEHL-ABEGG in full for any possible costs that may occur.
Those customers also agree to assign a new and secure access code (PIN) during the installation of the module device. They are required to disclose the access code to their customers.

## 3.2 Function AM-STICK-WB

**Bluetooth interface**
The module features a Bluetooth (Low Energy) interface for wireless communication with a smartphone or tablet. The "ZAset mobile" app developed by ZIEHL-ABEGG enable easy programming and diagnosis of the end device which hosts this module.
The app can be downloaded from Google Play Store or iTunes.
The ECblue fan and the frequency inverter can be communicated with via the module.
To program desired functions during start-up or for diagnostics, the module can be inserted fort he required period of time or can be left in the device.

## 3.3 Transport

- The device is packed ex factory to suit the transport method previously agreed.
- The device may only be transported in the original packaging.
- Avoid shocks and impacts to the device during the transport.
- During manual handling the human lifting and carrying restrictions must be observed and adhered to.

## 3.4 Storage

- The device must be stored in its original packaging in a dry and weather-proof room.
- Avoid exposure to extreme heat and cold.
- Avoid over-long storage periods (we recommend a maximum of one year).

## 3.5 Disposal / recycling

Disposal must be carried out professionally and in an environmentally friendly way in accordance with the respective national legal stipulations.

▷ Separate the materials by type and in an environmentally friendly way.

▷ If necessary, commission a specialist company with the waste disposal.

# 4 Mounting the module

## 4.1 Safety precautions

**Danger due to electric current**

- Always read the safety instructions chapter before mounting!
- Work on electric components may only be carried out by trained electricians or by persons instructed in electricity under the supervision of an electrician in accordance with electrical engineering regulations.
- It is forbidden to carry out work on electrically live parts.
- The terminating device (fan, converter) in which the module is to be installed must be disconnected from the line voltage for at least 3 minutes before opening!

**Attention, electrostatic sensitive devices!**

- Damage to electronic components by electrostatic charging must be prevented!
- Touch the protective earth connection in the terminal to equalize the potential immediately before removing the module from the packing. This applies regardless of whether the device is already connected to the line.
- Equalize the potential again shortly before installation if the module is not installed immediately after unpacking.
- After unpacking the module, check for possible transport damage and insert it in the slot provided. Do not touch the connection!

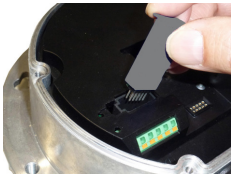
## 4.2 Version

**Proceed as follows:**

▷ Press the module as far as possible into the holder to the correct position and check that it is fitted securely.

▷ When an AM-STICK-WB module is installed in a fan or converter from ZIEHL-ABEGG, the enclosed label "FCC/IC" must be stuck to the housing of the terminating device.

Example: plug in module



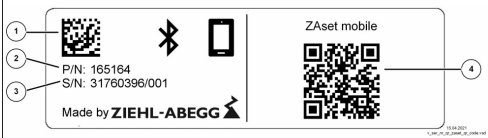
Example: Sticking the "FCC/IC" label onto a fan housing


## 4.3 Label Datamatrix-Code serial number

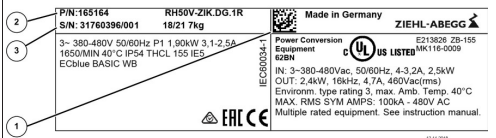
Every ZIEHL-ABEGG product (fan/inverter), supplied with a built-in AM-STICK-WB or with a slot for it, comes with an additional sticker for addressing via Bluetooth®.
This sticker is individualized for the final product. On the sticker is the serial number, which is unique to each product and matches the serial number on the product rating plate. For fans with two rating plates (GR/ER) only the rating plate on the stator flange has the correct serial number for Bluetooth addressing.
Attach the additional sticker at an easily accessible position and make sure that clear assignment to the relevant product is possible. This enables you to guarantee that even if the rating plate is covered up (e.g. due to the installation situation) easy commissioning and service via Bluetooth are possible. There is also a QR code on the sticker, which is used to download the “ZAset mobile” app.
The serial number to link to the AM-STICK-WB can be entered manually or be scanned.

**Example of sticker and rating plate with identical serial numbers**

Additional sticker




Rating plate on stator flange




1 *Serial number data matrix code (only the code on the additional adhesive label has the necessary size for scanning the serial number)*
2 *Article number Product*
3 *Serial number for manual entry*
4 *QR code for ZIEHL-ABEGG website to download the “ZAset mobile” app*

**Information**
When simultaneously unpacking multiple products, make sure the enclosed stickers remain with the relevant product and do not get mixed up.

# 5 Bluetooth® for wireless communication

## 5.1 AM-STICK-WB with Bluetooth version 4.0

The AM-STICK-WB includes a Bluetooth LE (BLE) module that enables the user to take advantage of the 4.0+ Bluetooth technology with an Android device, iPhone, iPad or laptop.
BLE stands for **B**luetooth **L**ow **E**nergy or Bluetooth Smart as of Bluetooth version 4.0.
In a hard-wired system, wireless communication is primarily designed to provide a second interface for communicating with the device (e.g., for configuration and diagnostics).
ZIEHL-ABEGG provides the "ZAset mobile" app for the use of mobile devices via Bluetooth Low Energy. The app requires Android devices from version 4.4 onwards and iOS devices from version 11. onwards. The app can be downloaded from Google Play Store or Apple App Store.
The wireless communication uses the MODBUS protocol (MODBUS-TCP). The Bluetooth addressing takes place via the Bluetooth address.
The Bluetooth scan automatically detects all devices within range. The app can then connect with these devices via the Bluetooth address.
The MODBUS address is read and displayed as part of a Bluetooth scan. This means that you can also identify the device via its MODBUS address if one has been assigned. Therefore, it is a good idea to assign a MODBUS address even if the MODBUS network is not in use.

You can change the MODBUS address via the app in the device "IO Setup"; see the "Bus Address" parameter. Then apply the same procedure to the next device.

**PIN: 0 - 9999 (access code)**

- Unlike in the case of RS-485 communication, you can protect your device with an access code by PIN (0 - 9999) for wireless communication via the AM-STICK-WB.
- During installation, it is essential to assign a dedicated secure PIN to a Bluetooth device or an associated group of Bluetooth devices.
- If the PIN is set to the factory setting, the app will prompt you to change it.

**Information**
You can change the PIN later in the “Controller Setup” under the“Wireless Network Key” parameter; after making a change you must re-establish the Bluetooth connection.

## Technical data for wireless Communication

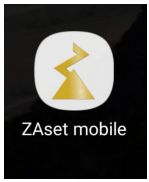
| | |
|---|---|
| Frequency | 2.4 GHz |
| Communications range | Approx. 10 m in rooms, up to 30 m in the free field, generally depends strongly on external influences and the installation situation.<br>For ECblue fans with aluminum controller housing cover, the communication range is reduced by at least 50 %. |

## 5.2 Establishing the Bluetooth connection

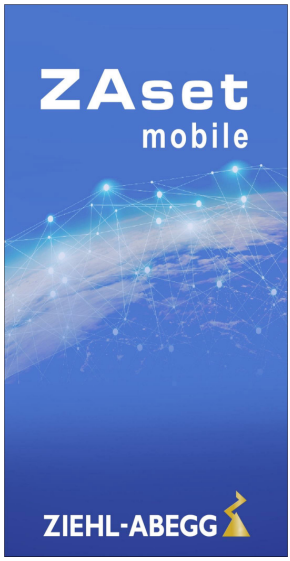
**Proceed as follows:**

- ▷ Depending on your device, download and install the "ZAset mobile" app from Google Play Store or Apple App Store.
- ▷ Switch on the line voltage to the fan/frequency converter in compliance with the safety instructions.
- ▷ Activate the Bluetooth connection on the mobile device (smartphone). Additionally allow location determination in Android.
- ▷ Start the app.

Icon of the app

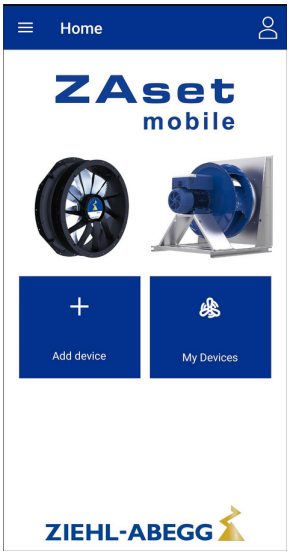



Intro

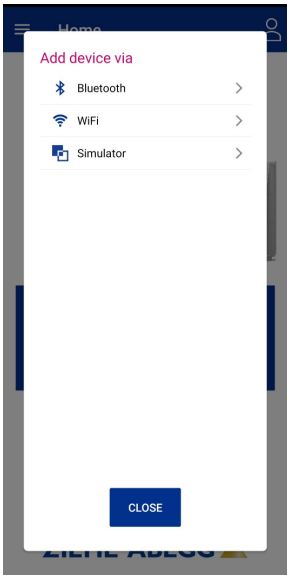


▷ Tap the “Add device” button and select Bluetooth to create a system with a Bluetooth LE data connection.
ZAset checks whether Bluetooth is activated on your smartphone, and prompts you to activate it if necessary.

Main page

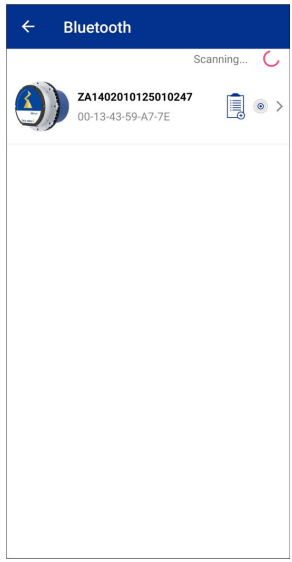



Choose Bluetooth

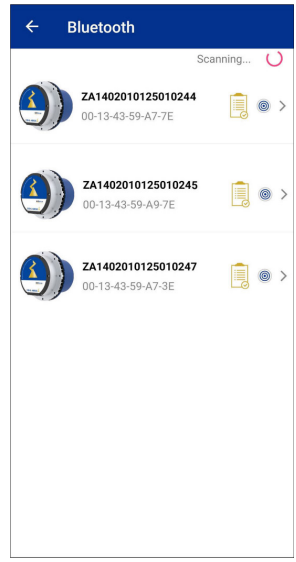


▷ ZAset then starts searching for devices in range and adds compatible devices to a list.

Scanning process




3 Connections made



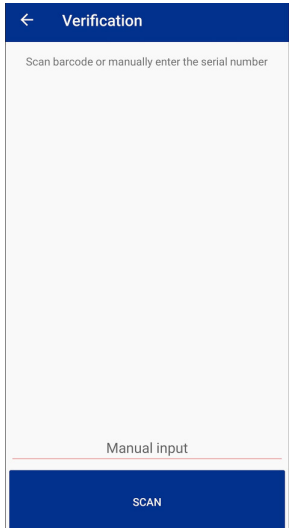

▷ Briefly tap the desired device in the list to select it. ZAset mobile then immediately establishes a data connection with this device.

▷ As soon as a connection to the device is established, a two-stage authentication process is initiated.

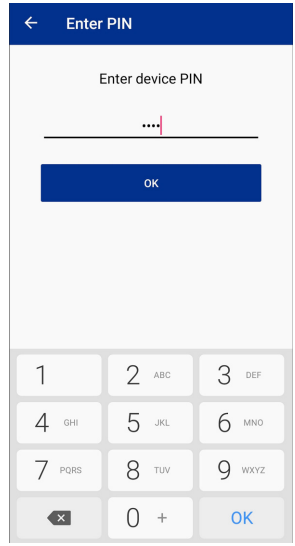
▷ First stage: Binding (linking AM-STICK-WB with device serial number).
The app checks whether the MAC address of the stick has already been assigned a serial number. If not, a dialog automatically opens to link with the serial number. If a binding already exists, you have to enter the PIN (see second stage).
The serial number can either be entered manually by reading it off and entering it in a text field or by scanning the data matrix code (see additional adhesive label).

▷ Second stage: Access code (PIN)
Enter the PIN 9999 (factory setting) and confirm with “OK”.

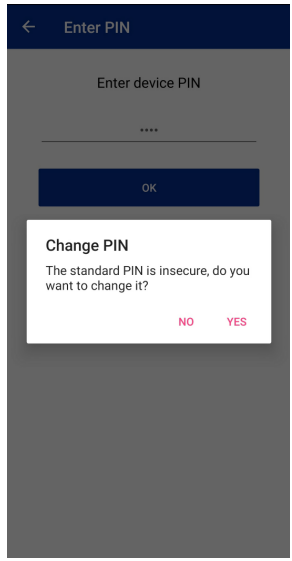
First stage: enter serial number




Second stage: Enter PIN 9999

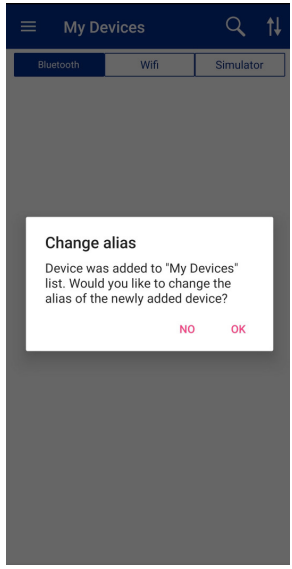



▷ Set a new PIN to prevent unauthorised access.

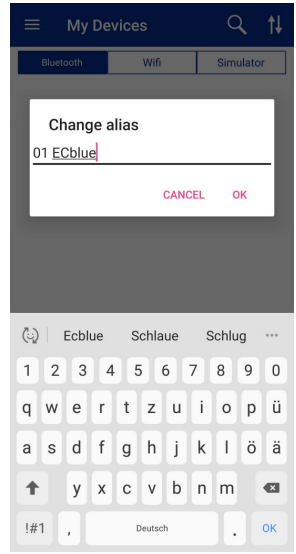


▷ If required, enter a name of your choice (alias).

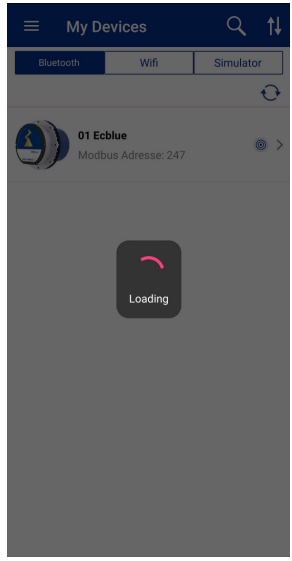
Change alias



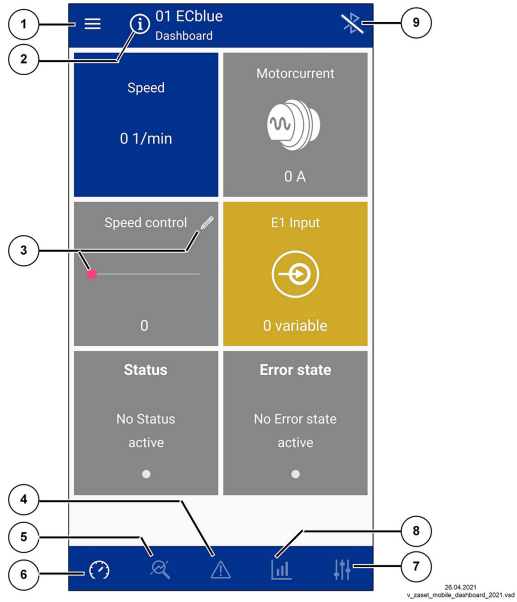

Example: 01_ECblue




▷ Touch the device's button to establish a connection.



▷ Display of actual values on the dashboard when the connection is successful. Buttons for subsequent operation can be found on the dashboard.




*1 Menu: Start, List my devices, Settings*
*2 Info: BLE vesion, MODBUS address, identification etc.*
*3 Speed control via slider or variable*
*4 Error history*
*5 Analysis*
*6 back to Dashboard*
*7 Parameter*
*8 Statistic*
*9 Disconnecting the Bluetooth connection*

# 6 Enclosure

## 6.1 Manufacturer reference CE

Our products are manufactured in accordance with the relevant international regulations. If you have any questions concerning the use of our products or plan special uses, please contact:

**ZIEHL-ABEGG SE**
**Heinz-Ziehl-Straße**
**74653 Künzelsau**
**phone: +49 (0) 7940 16-0**
**info@ziehl-abegg.de**
**http://www.ziehl-abegg.com**

## 6.2 Service information

If you have any technical questions while commissioning or regarding malfunctions, please contact our technical support for control systems - ventilation technology.
**phone: +49 (0) 7940 16-800**
**Email: fan-controls-service@ziehl-abegg.de**

Our worldwide contacts are available in our subsidiaries for deliveries outside of Germany, see www.ziehl-abegg.com.