

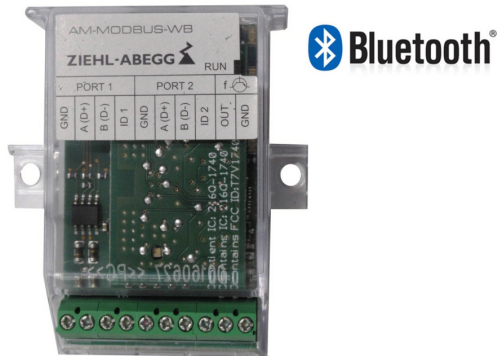
AM-MODBUS-WB

Part.-No. 349077

Bluetooth communication module for frequency inverters from the Basic series and fans from the ECblue (D+G), AMblue and PMblue series

Preliminary edition

Quick Start Guide



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

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1 General notes

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!

The detailed Operating Instructions for this module can be found on our website. The additional information they contain must be observed.

To download the Operating Instructions, go to www.ziehl-abegg.com and enter the article number of the device as the search key (see name plate).

Example:

search key

123456 

Enter the article number

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 AM-MODBUS-WB in Europe

The described module complies with the Radio Equipment Directive (2014/53/EU [RED]).

- Article 3.1[a]: Protection of health and safety of persons and of domestic animals
 - IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
 - EN60950-1:2006+A11:2009+A1:2010+A12:2011+ AC:2011+A2:2013
 - EN62311:2008
 - EN62479:2010
- 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.



Das Endprodukt, in welches das Modul und der Ventilator oder Frequenzumrichter eingebaut wird, muss den Anforderungen der 2014/53/EU entsprechen.

Das Modul darf in folgendenden Ländern eingesetzt werden:

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 AM-MODBUS-WB 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

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

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 réglementaires 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 à 0.9dBi ne doivent en aucune circonstance être utilisées 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"

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 Operational area

Communication module for frequency inverters from the Basic series and fans from the ECblue (D+G), AMblue and PMblue series.



Information

The AM-MODBUS(-W)(-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.

3.2 Function AM-MODBUS-WB

Bluetooth interface

The module features a Bluetooth (Low Energy) interface for wireless communication with a smartphone or tablet. The "ZAsset mobile" app developed by ZIEHL-ABEGG enables easy programming and diagnosis of the end device which hosts this module. The app can be downloaded from Google Play Store or iTunes.

RS-485 interface

The RS-485 interface for MODBUS RTU allows access to the MODBUS registers and also enables menu-guided programming with the A-G-247NW manual terminal.

Devices with integrated auxiliary module AM-MODBUS-WB offer the following functions:

- 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 for the required period of time or can be left in the device.
- Devices can be integrated into existing MODBUS-RTU networks. A MODBUS network with several members can be built up, communication is made via MODBUS-RTU.
- The members connected in a network can be addressed automatically. Manual addressing is not necessary!
- Parameter sets can be saved by the module in the terminal type A-G-247NW and transferred to other devices (☞ Operating Instructions Terminal Type A-G-247NW).
- It is possible to save and exchange parameters sets by PC via the USB interface of the terminal type A-G-247NW (☞ Operating Instructions terminal type A-G-247NW).
- For ECblue fans tachometer output with frequency signal, the evaluation of the signal shows the current fan speed.

3.3 Transport

- The device is packed ex factory to suit the transport method previously agreed.
- Always use the original packaging materials when transporting the device.
- 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



Danger due to electric current

- Always read the safety instructions chapter before mounting!
- 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!

Proceed as follows:

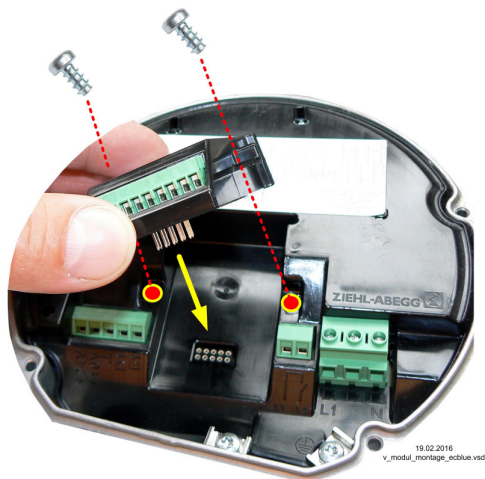
- ▷ ECblue: Mount the module in the housing with the two enclosed screws (permissible tightening torque $M_A = 1.3 \text{ Nm}$).
- ▷ Fcontrol Basic, Icontrol Basic, PMcontrol, PMIcontrol (AMblue/PMblue): Press the module into the retaining clips.
- ▷ Permissible tightening torque of connection terminals $M_A = 0.24 \text{ Nm}$.
- ▷ When an AM-MODBUS-**W**/**WB** module is installed in a fan or converter from ZIEHL-ABEGG, the enclosed label must be stuck to the housing of the terminating device.
 - "FCC/IC" label for AM-MODBUS-**W**



- "FCC/IC" label for AM-MODBUS-**WB**



Example for mounting the add-on module



Example: Sticking the "FCC/IC" label
"AM-MODBUS-W" onto a fan housing.

5 Installation

5.1 Safety precautions



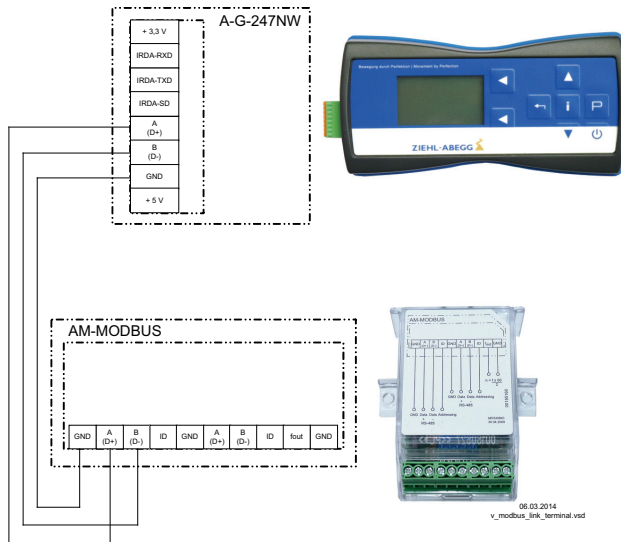
Danger due to electric current

- 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.

5.2 Connection terminal type A-G-247NW for service

If necessary an external terminal can be connected. This can be e.g. necessary to adapt the pre-setting during start-up.

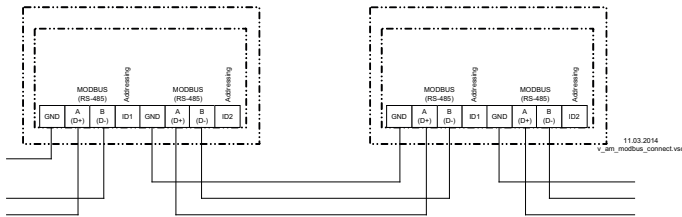
The connection is made by a 4-wire cable at the terminals: A (D+), B (D-) and GND. E. g. telephone cable type: J-Y (St) Y 2x2x0.6 (or similar), maximum cable length approx. 250 m.



The voltage supply of the terminal is made by the accumulators inserted there or the plug power supply unit.

5.3 RS-485 interface for MODBUS

The device comes equipped with a RS-485 interface for networking via MODBUS. Connection at: "A (D+)", "B (D-)" and "GND".



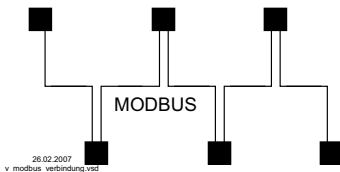
The connections for MODBUS "A (D+)", "B (D-)" are available double on the module and are connected with each other internally.



Information

- You must ensure correct connection; i.e. "A (D+)" must also be connected on the following devices to "A (D+)". The same applies to "B (D-)".
- In addition, a "GND" connection must be established, as dissimilar potential (over 10 V!) will lead to the destruction of the RS-485 interface (e.g. lightning).
- Except the data link "A (D+)", "B (D-)" and "GND" (for automatic addressing additional "ID1" – "ID2" see following chapter) no further cable cores of the data line may be used.
- Make sure the distance from powerlines and motor wires is sufficient (min. 20 cm).
- A maximum of 64 participants can be directly connected to one another, and another 64 participants via a repeater.

Example for MODBUS connection



The data line must be conducted from one device to the next. No other type of wiring is allowed! Always use only two wires of one lead (twisted pair) for the connection.

Recommended wire types

1. CAT5 / CAT7 cables
2. J-Y (St) 2x2x0.6 (telephone cable)
3. AWG22 (2x2 twisted pair)

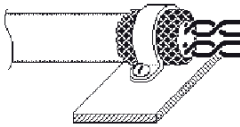
Max allowed wire length 1000 m (CAT5/7 500 m).

Screen

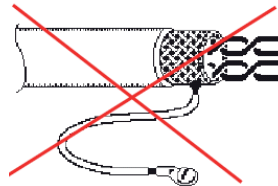
The use of shielded cables is normally not needed but offers high protection against electromagnetic interferences, especially high frequencies. However, the effectiveness of the shield depends on careful installation of the line.

If shielded cables are used, the shield should be placed at “PE” on at least one side (preferably on the master connection). The occurrence of compensating currents may have to be considered if the shield is contacted on both sides.

Shield connection correct



Shield connection incorrect



When using telephone cable with four cable cores, we recommend the following allocation:

- A (D+) = red
- B (D-) = black
- ID1 - ID2 = yellow (for automatic addressing)
- GND = white

Default interface parameter

- Baudrate = 19200
- Bits = 8
- Parity = Even
- Stop bits = 1
- Handshake = none

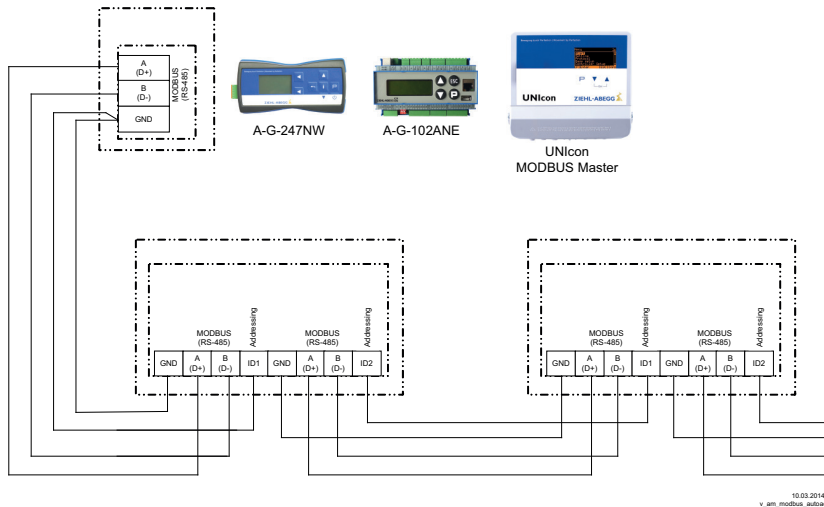
i

Information

- Addressing is performed by an external terminal or a PC with the appropriate software (automatic addressing following chapter).
- The MODBUS register description and the information sheet “Network structure of MODBUS” can be requested from our Support Department V-STE for control systems - ventilation.

5.3.1 Automatic addressing

Automatic addressing can be started when the connections “ID1” and “ID2” for “Addressing” are connected with each other additionally next to the bus connection. I. e. it is no longer necessary to address every user manually in the network.



Connection a MODBUS Master via the terminals: A (1D+), B (1D-), ID and GND
Connection of the Slave members via the terminals: A (D+), B (D-), GND and ID1 / ID2

- Except the data link "A (D+)", "B (D-)" the "ID1 - ID2" and the "GND" connection may no further cable cores of the data line be used.
- The connections for the automatic addressing "ID1" and "ID2" are not directly connected with each other internally. These may not be bridged; any order of connection is possible.
- If a repeater is necessary and automatic addressing should be carried out, only the repeater of the Z-G-1NE type can be used, only it can relay the addressing signal.
- Maximum number of members in automatic addressing:
 - With hand held terminal type A-G-247 and control unit NETcon type A-G-102ANE max. **63** members.
 - With control module UNIcon MODBUS Master max. **32** members.

On the first user that is connected directly to a terminal, MODBUS Master or PC, “GND” and “ID1” or “ID2” must be bridged. This is recognised as a result and occupied by address 1.

For the following users the connection "ID1" or "ID2" of a user respectively is connected with connection "ID1" or "ID2" of the next user.

The automatic addressing of other users is initiated by the previous user via this connection.

6 Operating by terminal

6.1 Menu operation



- ▷ Switch over between actual value* and "Start" with **[Esc]** arrow key.
- ▷ Switch over between "Start" and actual value* with **[i]** key.



* Actual value depending on device type: "Speed" / rpm., "Frequency" / Hz, "Modulation" / %



P ↓ ←



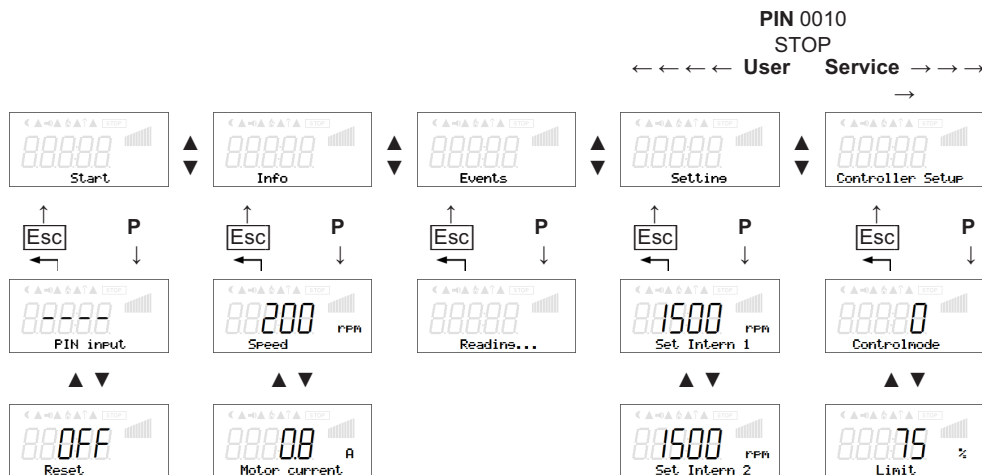
- ▷ By pushing the **P**- key one reaches the menu item "Start".
- ▷ Return to the menu group "Start" using arrow key **[Esc]**.



- ▷ One moves up and down within the menu group using the arrow keys.

Display for english menu language = "GB "

6.2 Menu structure



Display for english menu language = "GB "


Selection of the menu group (e.g. "Setting") to the right through the ▼-key, to the left through the ▲-key. You can go to the menu items in the menu groups (e.g. "Set Intern1") by using the P-key. Use the arrow keys to move up and down within the menu group.

The menu groups consist of one area for the user (user menu) and one area for installation (service). The service area can be protected against unauthorized access by using a PIN.

To make adjustments, press the P -key after selecting the menu item. If the previously set value starts to flash, it can be adjusted with the ▼ + ▲ keys and then saved with the P -key. To exit the menu without making any changes, use the "Esc" key, i.e., the originally set values remain.



Information

The other settings depend on the type of device in which the module is installed  Operating Instructions.

7 Bluetooth® for wireless communication

7.1 AM-MODBUS-WB with Bluetooth version 4.0

The AM-MODBUS-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 in order to have a second interface for communicating with the device (e.g., for configuration and diagnostics).

ZIEHL-ABEGG provides the "ZAsset mobile" app for the use of mobile devices via Bluetooth Low Energy. The app requires Android devices from version 4.3 onwards and iOS devices from version 8 onwards. The app can be downloaded from Google Play Store or iTunes.

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 has no significance for Bluetooth communication, but it is still read and displayed during 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.

Access code (0–9999)

Unlike in the case of RS-485 communication, you can protect your device with an access code (0–9999) for wireless communication via the AM-MODBUS-WB. We strongly recommend that you assign an access code to a Bluetooth device or group of devices. The factory setting is 9999. An access code with the value 0 deactivates the access protection function.

- ▷ If the access code is deactivated, the app prompts you to turn it on.
- ▷ If the access code is set to the factory setting, the app will prompt you to change it.



Information

You must switch off or reset the device to activate the access code after changing it manually. You can change the access code via the app in the device "Controller Setup"; see the Network Key parameter.

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

7.2 Establishing the Bluetooth connection

Proceed as follows:

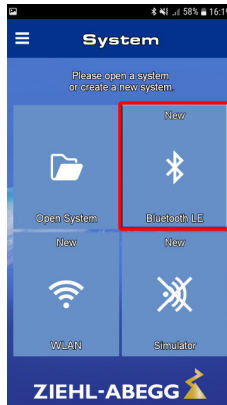
1. Depending on your device, download and install the "ZAsset mobile" app from Google Play Store or iTunes.



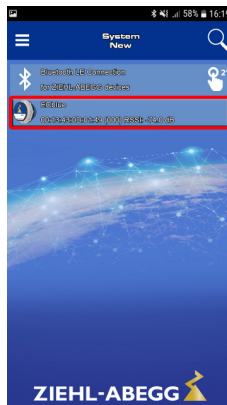
2. Switch on the mains voltage, paying attention to the safety instructions.
3. Activate the Bluetooth connection on the mobile device (smartphone).
4. Start the app and tap the "Connect to..." button to open the system connection page.



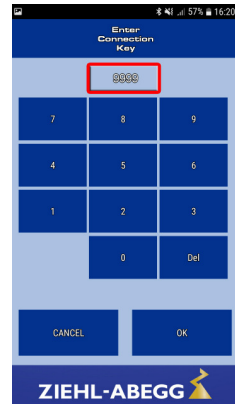
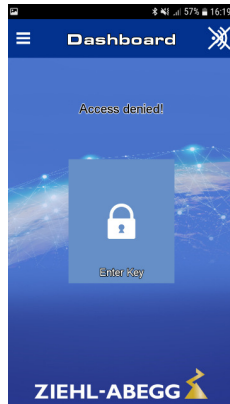
5. Tap the "New Bluetooth LE" button to create a system with a Bluetooth LE data connection.
ZAsset checks whether Bluetooth is activated on your smartphone, and prompts you to activate it if necessary.



6. ZAsset then starts searching for devices in range and adds compatible devices to a list.
You can repeat the search process any time and as often as you wish by using the magnifying glass icon (top right).
7. Briefly tap the desired device in the list to select it. ZAsset then immediately establishes a data connection with this device.



8. Enter **9999** under Connection Key (factory setting) and confirm with "OK".
ZIEHL-ABEGG devices feature access protection which must be unlocked with a four-digit key number. The access protection is deactivated and remains deactivated until 10 minutes without activity have elapsed.



9. Actual values displayed when connection is established successfully.



10. The data connection can be terminated once again using the "End connection" symbol (top right).

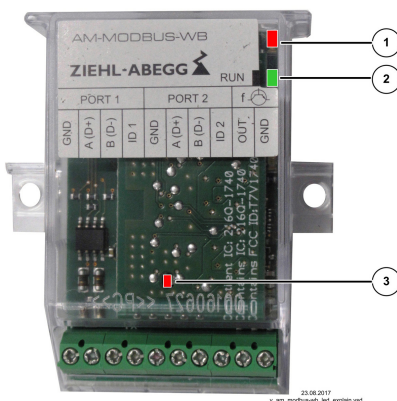
**Information**

Please observe the additional information in the app documentation and the operating instructions (download) for this module.

8 Diagnostic

8.1 Status LEDs on the module

There are three LEDs for the status display on the module:



- 1 Continuously lit when connected to the mains
- 2 Continuously lit when connected to the mains
Flashes once per second when connected to the mobile device via Bluetooth
- 3 Flashes every 2 seconds when connected to the mains
Flashes once per second when connected to the mobile device via Bluetooth

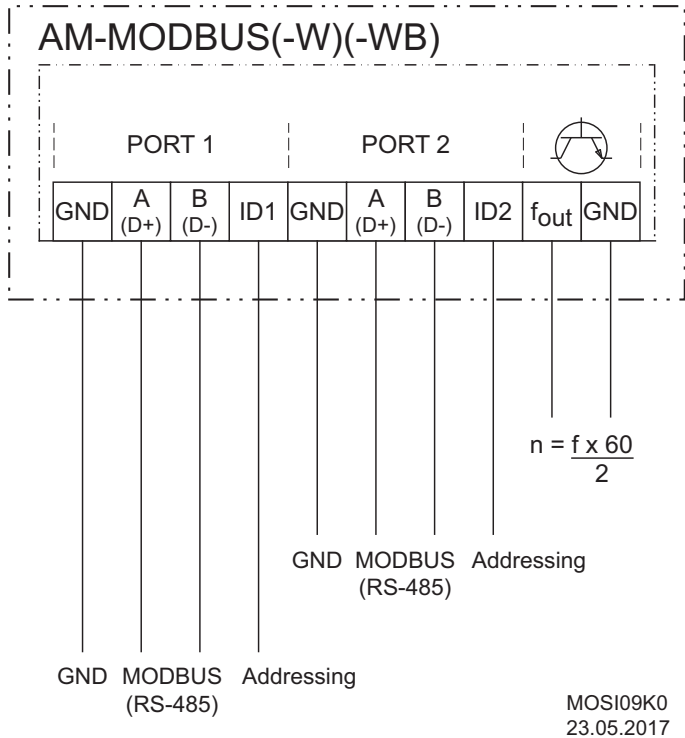


Information

The LEDs are not visible when the lid of the ECblue or frequency inverter is closed.

9 Enclosure

9.1 Connection diagram



f_{out} Tacho output only active when used in ECblue Operating Instructions



Information

The full connection diagram for the terminating device is a combination of the connection diagram of the module plus the connection diagram of the device in which the module is installed (appropriate operating instructions).

9.2 Manufacturer reference

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
Telephone: +49 (0) 7940 16-0
Telefax: +49 (0) 7940 16-504
info@ziehl-abegg.de
<http://www.ziehl-abegg.de>

9.3 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.

If you make returns for inspections or repairs we need certain information in order to facilitate focused trouble shooting and fast repair. Please use our repair ticket for this. It is provided to you after you have consulted our support department.

In addition, you can download it from our homepage. Support - Downloads - General documents.