A-G-247NW

Part.-No. 380090

Hand held terminal

Operating Instructions

Software version: from Version 8.05

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Content

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1 General notes

1.1 Structure of the operating instructions

Before installation and start-up, read this manual carefully to ensure correct use! We emphasize that these operating instructions apply to specific units only, and are in no way valid for the complete system!

Use these operating instructions to work safely with and on the device. They contain safety instructions that must be complied with as well as information that is required for failure-free operation of the device.

Keep these operating insturctions together with the device. It must be ensured that all persons that are to work on the device can refer to the operating instructions at any time.

1.2 Exclusion of liability

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.

We accept no liability for damage caused by misuse, incorrect use, improper use or as a consequence of unauthorized repairs or modifications.

1.3 FCC / IC Statements

FCC Compliance (US)
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) this device may not cause harmful interference, and(2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Warning
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

IC Compliance (Canada)
This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

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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.

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

2 Safety instructions

Attention!
- These operating instructions are valid only in combination with the device's operating instructions which can controlled by these terminal. The remarks concerning safety, installation and connection described in those operating instructions must be followed!
- Persons entrusted with the planning, installation, commissioning and maintenance and servicing in connection with the device must have the corresponding qualifications and skills for these jobs. In addition, they must be knowledgeable about the safety regulations, EU directives, rules for the prevention of accidents and the corresponding national as well as regional and in-house regulations.
- The equipment is to be used solely for the purposes specified and confirmed in the order. Other uses which do not coincide with, or which exceed those specified will be deemed unauthorised unless contractually agreed. Damages resulting from such unauthorised uses will not be the liability of the manufacturer. The user will assume sole liability.
- It is strictly forbidden for work to be carried out on any components while they are connected to live voltage.
- The owner is obliged to ensure that the device are operated in perfect working order only.
- Never clean electrical equipment with water or similar liquids.

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3 Product overview

3.1 Function

Terminal for setting of compatible Ziehl-Abegg devices.

The connection to the member is made by a connecting cable (RS-485 interface) or wirelessly by means of radio.

Parameter sets of devices with integrated AM-MODBUS(-W) type communication module can be saved in the terminal and transferred to other devices.

It is possible to save and exchange parameter sets with a PC via the terminal's USB interface.

i | **Information**
The terminal software is continuously developed and improved.
Ziehl-Abegg will provide free firmware upgrades for downloading in future.

3.2 Storage

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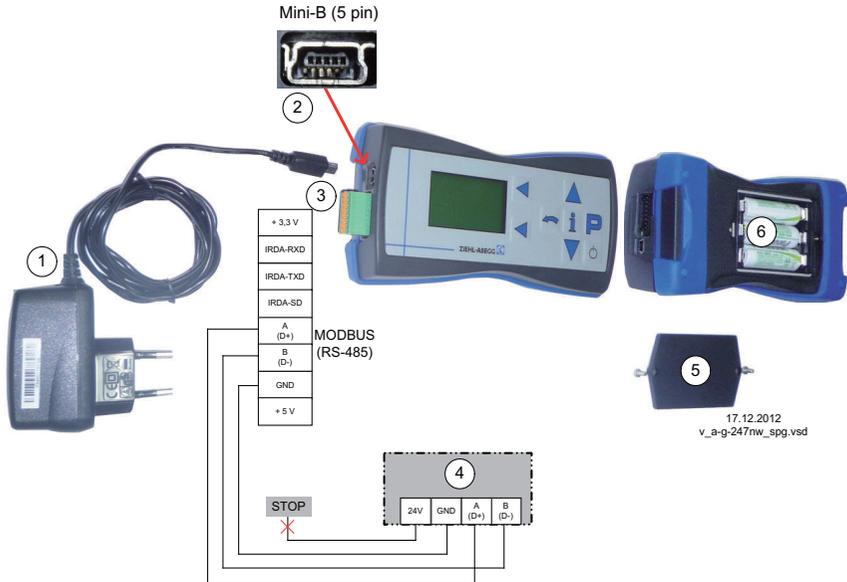- Avoid over-long storage periods (we recommend a maximum of one year).

3.3 Disposal / recycling

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

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4 Structure of the terminal

4.1 Components / connection

Mini-B (5 pin)

1 Plug power supply unit
2 Connection voltage supply / USB interface for filetransfer
3 Connection to the terminal line-commutated. Do not connect the 24 V at the terminal!
4 Terminal connection of compatible Ziehl-Abegg device
5 Rechargeable battery compartment lid
6 Mignon accumulators (NiMh 1.2 V)

4.2 Voltage supply

The voltage supply of the terminal is made by the internal accumulators or the plug power supply unit.
The device switches off automatically if the plug power pack is left connected with fully charged batteries and no key is pressed for about 1 minute.

Attention!
- Only **rechargeable Mignon batteries (NiMh 1.2 V)** may be used. These are automatically loaded when the power supply unit is plugged-in.
- There is a risk of fire and explosion if non-rechargeable batteries are used and the power supply unit is plugged in!
- It is only permissible to operate or load the terminal with the plug power pack contained in the scope of supply.

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4.3   MODBUS (RS-485) interface

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

Example for devices with MODBUS connection and automatic addressing
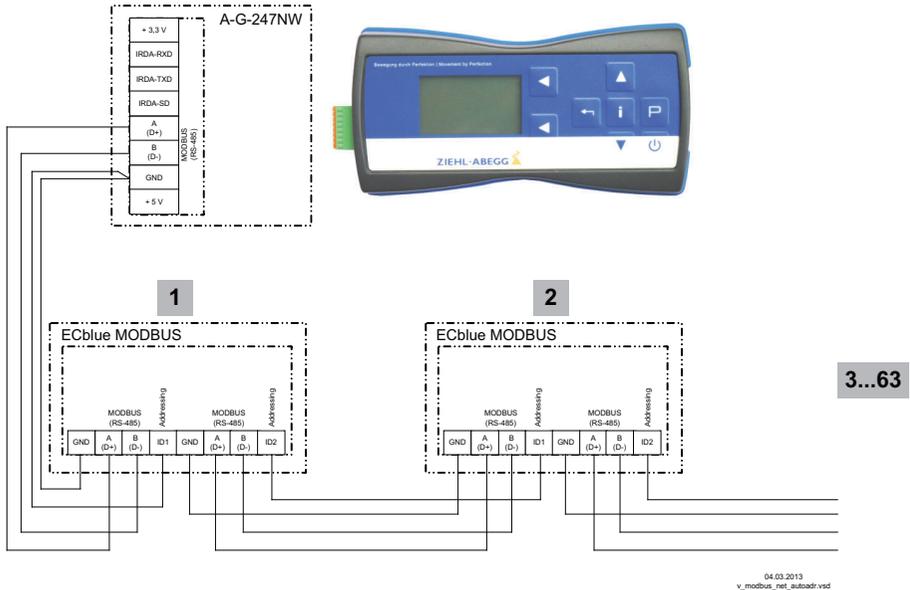
The connection is made at the terminals: A (D+), B (D-) and GND.
Connection of the users via the terminals: A (D+), B (D-), GND and ID1 / ID2

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 "A (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).
- Pay attention to sufficient distance from powerlines and motor wires (min. 20 cm).
- A maximum of 63 users can be connected directly with each orther in automatic adressing.
- Another 63 users are connected by a repeater in manual addressing (no connection of connections "ID1", "ID2").
- When using the automatic addressing, no repeaters can be used because these do not pass the signal through to the addressing.

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Example for MODBUS connection

MODBUS

02.02.2007
v_modbus_verbindung.vsd
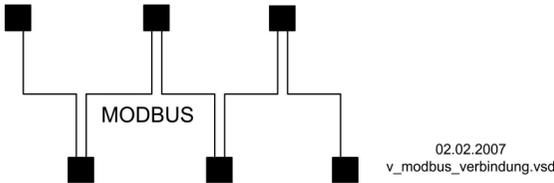
The data line must be conducted from one device to the next. No other type of wiring is allowed! Always use only two wires of one lead (twisted pair) for the connection.

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

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

When using telephone flex with four cable cores, we recommend the following allocation:
- A (D+) = red
- B (D-) = black
- ID1 - ID2 = yellow
- GND = white

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

**Information**
- If any matters are unclear, please contact our V-STE support department for control systems - ventilation technology. The information sheet "Network structure of MODBUS" R-TIL08_01 contains detailed information about "MODBUS".
- The MODBUS register description can be found on our homepage for downloading. Enter "MODBUS" under search term for this if required.

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5 Operation

5.1 Display and operating elements of the terminal

Hand held terminal type A-G-247NW
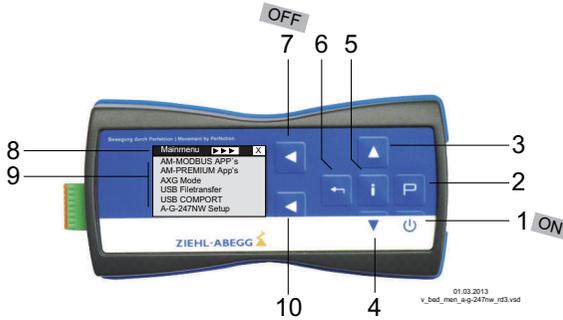
1   *Switch on terminal*
2   *Program key and open menu*
3   *Menu selection, increase value*
4   *Menu selection, reduce value*
5   *From each menu (member) directly back to the display for "Speed"*
6   *Escape = exit menu for settings (user), cancel input*
7   *- Select type of user*
     - back to selection of user (exit application)
     - Switch off terminal (keep key pressed for a few seconds)
8   *"Main menu" = momentarily active menu level ($\boxed{>>>}$ = batteries being charged, $\boxed{====-}$ = full)*
9   *Selection option of the sub-menu (display in menu language English)*
10   *Key not assigned (soft key, program-dependent function)*

Explanation of display (menu User)
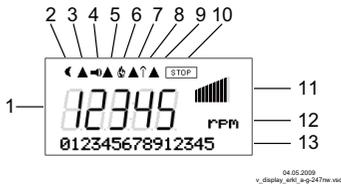
1. Numeric display 5 digit
2. Moon-Symbol for set point 2 (only AM-PREMIUM)
3. Current derating active
4. Alarm-Symbol (☞ member's operating instructions)
5. Brake motor or motor heating active
6. Fire-Symbol for heating operation (only AM-PRE-MIUM)
7. Temperature management active
8. No connection to Modul (only AM-MODBUS)
9. Quench mode active
10. STOP-Symbol (enable)
11. Bargraph Fanlevel
12. Text line 3 figures (display unit, etc.)
13. Text line 16 figures (display text menu.)

Display of symbols depending on the type of member and used communication module.

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6 Programming

6.1 Overview mainmenu

Mainmenu		Exit menu with the top left key ◀.	
▼ ▲			
AM-MODBUS APP`s	P → ▼ ▲ → P	▼ ▲ → P	
	Configuration online	RS-485	
		Programming of devices with integrated communication module AM-MODBUS (RS-485).	
		Wireless	
		Programming of devices with integrated communication module AM-MODBUS-W (wireless).	
	Auto Addressing	Automatic addressing of the members in the MODBUS network.	
	Load Parameterset	Load paramterset from terminal to AM-MODBUS(-W).	
	Device Check	Checking of the members in the network (as of version 9.00).	
▼ ▲			
AM-PREMIUM App's	P → P	▼ ▲ → P	
	Configuration online	RS-485	
		Programming of devices with integrated universal control module AM-PREMIUM (RS-485).	
		Wireless	
		Programming of devices with integrated universal control module AM-PREMIUM-W (wireless).	
▼ ▲			
AXG Mode	P → ▼ ▲ → P		
	247	Operation of Ziehl-Abegg devices with RS-485 MODBUS interface **without** built in Add-on module AM-MODBUS(-W) or AM-PREMIUM(-W)!	
▼ ▲			
USB Filetransfer	P		
	USB Filetransfer	Filetransfer terminal ↔ PC via USB	
▼ ▲			
USB COMPORT	P → ▼ ▲ → P		
	RS-485	Interface converter USB ↔ RS-485	
	Wireless	Interface converter USB ↔ wireless	
▼ ▲			
A-G-247NW Setup	P → ▼ ▲ → P		
	Start	Basic settings for terminal	

6.2 AM-MODBUS App's

6.2.1 Configuration Online

Configuration online	Open menu with the **P** key and close it again with the top left key ◀.
Interface	Select type of interface with the ▼ + ▲ keys and confirm with the **P** key.
RS-485	Programming of devices with integrated communication module AM-MODBUS (RS-485).
Wireless	Programming of devices with integrated communication module AM-MODBUS-W (wireless).

Establish connection to member

Select device	Setting for the device address
247	The device address is factory set to the highest available MODBUS address: 247 • Confirm the factory set address "247" with the **P** key for the first connection. • For members with changed addresses, set these from 001 to 246 with the ▼ + ▲ keys and confirm with the **P** key to make the connection.
RF Network Key	Radio control key only for wireless communication
9999	• Confirm the factory set radio key "9999" for the first connection. • For members with a changed radio key, set this with the ▼ + ▲ keys and confirm with the **P** key to make the connection.
BASIC-247	Example of correctly set address: 247
	☺ Successful connection!
BASIC-246	Example of incorrectly set address: 246
	No connection! Settings are not possible! In the display the two symbols for alarm and antenna appear Cause: wrong address, no connection via wire and/or radio

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6.2.2 Auto Addressing

Auto Addressing	Automatic addressing
	Open menu with the **P** key and close it again with the top left key ◄.
Start **P**	Start automatic addressing with the **P** key.
Please Wait Count: 0 Done	The number of the addressed members is displayed as a result.

For further details ☞ see AM-MODBUS(-W) operating instructions.

6.2.3 Load Paramterset

Information
Befopr a parameter set can be loaded into the terminal, this must be saved in the AM-MODBUS(-W) (☞ menu group "Start" / "SAVE").

Load Parameterset	Open menu with the **P** key and close it again with the top left key ◄.
PIN input **0000**	PIN input. In the download only parameters for the entered authorisation are considered (☞ operating manual AM-MODBUS). • **PIN 0010**: Opening service menu (Controller Setup, IO Setup, Motor Setup), for programmed access level <2. • **PIN 1234**: Opening user menu (Setting) for programmed access level <1. • **PIN 3698**: Assumption of the communication parameters (Address, Com Baudrate, Com. Mode).
Interface	Select used interface:
RS-485	For members with integrated communication module AM-MODBUS (RS-485).
Wireless	For members with integrated communication module AM-MODBUS-W (wireless).
Select device **247**	Select the address of the desired member with the ▼ + ▲ keys and confirm with the **P** key.
RF Network Key **9999**	**Wireless** Only for communication wireless: Select radio control key with the ▼ + ▲ keys and confirm with the **P** key.
Parameterset Files	

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Empty directory!	Display as long as no parameter set is saved in the member's AM-MODBUS(-W) yet.
ECBLUEX.CSV TEST01.CSV TEST02.CSV	Select desired parameter set with the ▼ + ▲ keys and confirm with the **P** key.
Parameterset	
File: TEST01.CSV Start Download **P**	**Press the P** key to start download.
Download OK!	Exit menu with the top left key ◄.

6.2.4 Device Check

The networked members can be tested with this function (as of version 9.00).

Device Check	Open menu with the **P** key and close it again with the top left key ◄.
Interface	Select used interface:
RS-485	For members with integrated communication module AM-MODBUS (RS-485).
Wireless	For members with integrated communication module AM-MODBUS-W (wireless).
Device Count 006	Enter the number of devices (max. 64) with the ▼ + ▲ keys and confirm with the **P** key. If the automatic addressing was performed first, the number of detected devices is taken over.
RF Network Key 9999	**Wireless** Only for communication wireless: Select radio control key with the ▼ + ▲ keys and confirm with the **P** key.
Device Check Start P	Start the test procedure with **P**.
Device Check 1: ECblue 11.05 √ 2: ECblue 9.05 √ 3: ECblue 11.05 √ 4: ECblue 11.05 ! 5: ECblue 11.05 √ 6: ECblue 11.05 √	Every device from address 1 to the number "Device Count" is queried (product code, version, error status). • Devices that reply are displayed with product name and version. • The device has an error if an exclamation mark is displayed. • Everything is OK if a checkmark is displayed!

Show Details	
Device Check	
1: ECblue 11.05 √	
2: ECblue 9.05 √	
3: ECblue 11.05 √	Every member can be selected and marked with the ▼ + ▲ keys, the exact
4: ECblue 11.05 !	reason for the error is displayed by "Show Details" after pressing the ◄ key.
5: ECblue 11.05 √	OK appears if there is no error!
6: ECblue 11.05 √	
Show Details	
Device Check	
1: Timeout !	
2: Timeout !	
3: Timeout !	
4: Timeout !	If the devices are not available, "Timeout" appears after 500 ms in this
5: Timeout !	process.
6: Timeout !	
Show Details	

6.3   AM-PEMIUM App's

6.3.1   Configuration Online

Configuration online	Open menu with **P**-key.
Interface	Select type of interface with the ▼ + ▲ keys and confirm with the **P** key.
RS-485	Programming of devices with integrated universal control module AM-PRE-MIUM (RS-485).
Wireless	Programming of devices with integrated universal control module AM-PRE-MIUM-W (wireless).

Establish connection to member

Select device	Setting for the device address
247	The device address is factory set to the highest available MODBUS address: 247 • Confirm the factory set address "247" with the **P** key for the first connection. • For members with changed addresses, set these from 001 to 246 with the ▼ + ▲ keys and confirm with the **P** key to make the connection.

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RF Network Key	Radio control key only for wireless communication
9999	• Confirm the factory set radio key "9999" for the first connection. • For members with a changed radio key, set this with the ▼ + ▲ keys and confirm with the **P** key to make the connection.
PREMIUM-247	Example of correctly set address: 247
[display: 0 rpm Speed]	☺ Successful connection!
PREMIUM-246	Example of incorrectly set address: 246
[display]	No connection! Settings are not possible! Cause: wrong address, no connection via wire and/or radio

6.4 AXG Mode

Operation of Ziehl-Abegg devices with RS-485 MODBUS interface **without** built in Add-on module AM-MODBUS(-W) or AM-PREMIUM(-W)!
Alternatively to the use of an external terminal type AXG-1A(E).

AXG Mode	Open menu with **P**-key.
Select device	
247	The device address is factory set to the highest available MODBUS address: 247 • Confirm the factory set address "247" with the **P** key for the first connection. • Set changed addresses from 001 to 246 with the ▼ + ▲ keys and confirm with the **P** key to make the connection.

For further details about the operation ☞, see the operating instructions of the connected device.

6.5 USB Filetransfer, only AM-MODBUS(-W)

USB Filetransfer	Open menu with **P**-key.
Filetransfer	
USB Filetransfer Connection Memory: 1018 MB	Filetransfer terminal ↔ PC via USB.

- The parameter sets saved in the terminal can be accessed by a PC via the USB interface.
- 5- pole "Mini-B" connection on the terminal (same connection as for the charger). The necessary connecting cable is not included!
- After activating the function "USB file transfer" with the **P** key, the "Windows Explorer" is opened automatically (if not, open Windows Explorer manually).
- Under Storage media the CSV folder is displayed.
- The CSV folder contains the tables with the parameter sets saved in the terminal.
  Example:
  – ECBLUEX.CSV
  – TEST01.CSV
  – TEST02.CSV
- These can be copied to the PC for backup and administration.
- A parameter set which already exists on the PC can be copied back into the terminal's CSV folder if necessary.
- With the "Load parameter set" function it is possible to transfer these settings to other devices.

Save the parameter sets in the terminal.
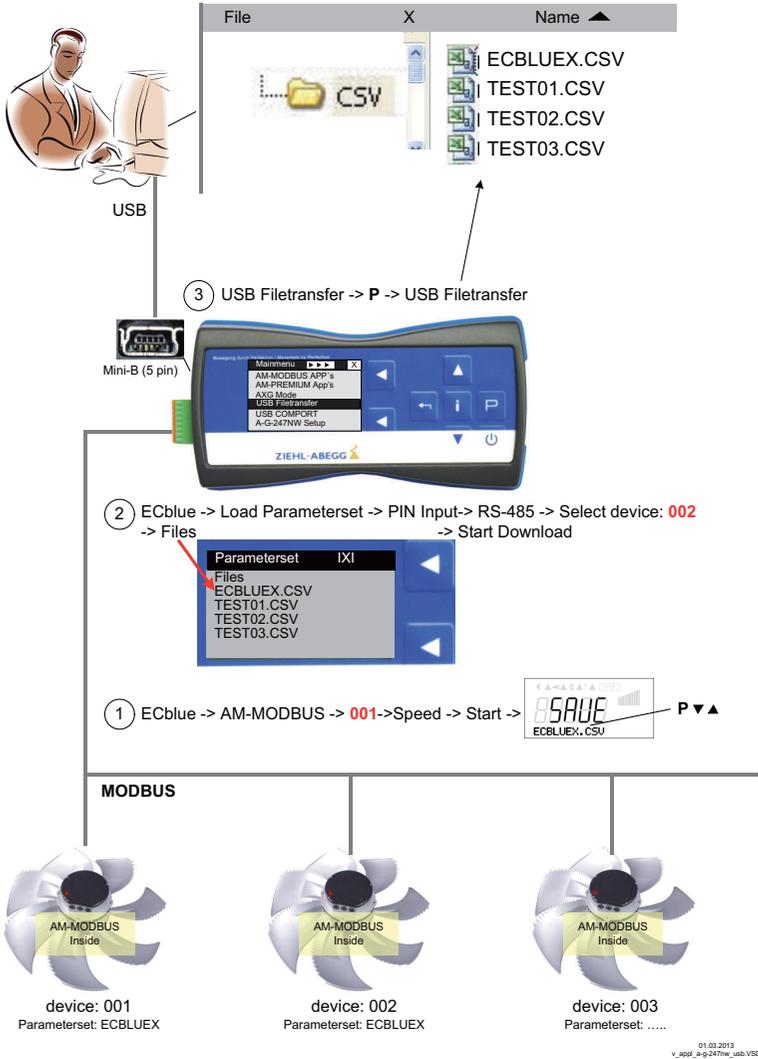☞ Operating Instructions AM-MODBUS(-W) -> Menu group "Start" -> Menu "SAVE".

⚠ **Attention!**
This function serves to save parameter sets and transfer them to other members.
Only change values in the CSV file is you have exact knowledge of the function!

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Example: Parameter set transferred from ECblue 001 to ECblue 002

File	X	Name ▲
		ECBLUEX.CSV
		TEST01.CSV
		TEST02.CSV
		TEST03.CSV

CSV

USB

③ USB Filetransfer -> **P** -> USB Filetransfer

Mini-B (5 pin)

Mainmenu ►►► X
AM-MODBUS APP´s
AM-PREMIUM App´s
AXG Mode
USB Filetransfer
USB COMPORT
A-G-247NW Setup

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② ECblue -> Load Parameterset -> PIN Input-> RS-485 -> Select device: **002**
   -> Files   -> Start Download

Parameterset   IXI
Files
ECBLUEX.CSV
TEST01.CSV
TEST02.CSV
TEST03.CSV

① ECblue -> AM-MODBUS -> **001**->Speed -> Start ->   5AVE   **P ▼▲**
                                                      ECBLUEX.CSV

MODBUS

device: 001
Parameterset: ECBLUEX

device: 002
Parameterset: ECBLUEX

device: 003
Parameterset: …..

AM-MODBUS
Inside

AM-MODBUS
Inside

AM-MODBUS
Inside

01.03.2013
v_appl_a-g-247nw_usb.VSD

1   *Name parameter set of ECblue 001 and save in the terminal:*
    ECblue -> AM-MODBUS -> 001 -> Speed -> Start -> SAVE
2   *Load Parameterset to ECblue 002 :*
    ECblue -> Load Parameterset -> PIN Input -> RS-485 -> Select device -> Files -> Start Down-
    load
3   *Access via PC to saved parameter sets in the terminal:*
    USB file transfer -> P -> file transfer

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6.6 USB COMPORT

USB COMPORT	Open menu with **P**-key.
Interface	Select type of interface with the ▼ + ▲ keys and confirm with the **P** key.
RS-485	Interface converter USB ↔ RS-485
Wireless	Interface converter USB ↔ wireless
USB COMPORT USB VIirtual COMPORT Connecting	• Make the connection to the USB interface on the PC. • Follow the further instructions on the screen until installation is complete.

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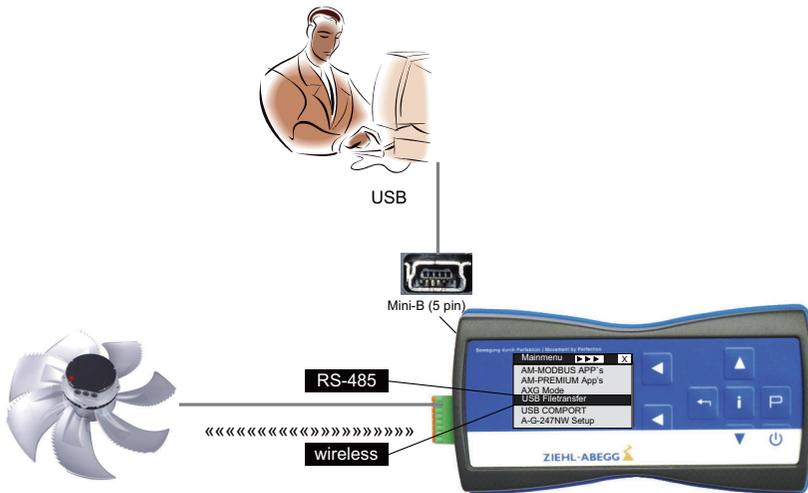
6.7 A-G-247 Setup

A-G-247NW Setup	Open menu with the **P** key and close it again with the top left key ◄.

A-G-247NW Setup Start	**P ↓** ← ↑	
	- - - - - PIN input	**PIN 9095** Restore factory setting = delivery status
	▼ ▲	
	Language GB	**Language** Menu language by the factory set to English. In this menu different national languages can be selected (D = German, GB = English).
	▼ ▲	
	1.05 A-G-247NW	**Device name** Display of device name and software version

▼ ▲

A-G-247NW Setup Display	**P ↓** ← ↑	
	0 Light at Battery	Lighting intensity in battery operation Setting range: 0 - 10 0 = without background lighting 10 = max. lighting intensity
	▼ ▲	
	0 Contrast	Contrast of Display Setting range: -2...+2 -2 = minimal contrast +2 = maximal contrast
	▼ ▲	

▼ ▲

A-G-247NW Setup COMM Setup	**P ↓** ← ↑	
	19200 RS-485 Baudrate	Setting range: 4800 / 9600 / 19200 / 38400
	▼ ▲	
	8EI RS-485 Mode	Setting range: 8E1 / 8N1
	▼ ▲	

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	0 RF channel	Setting range: 0 - 15

7 Technical data

Hand held terminal

Type	A-G-247NW
Part.-No.	380090
Voltage supply	5 V DC
Current consumption charge	1200 mA
LC-Display	Graphic display 128 x 64 pixels, LED lighting white
Housing	Cover ABS, bottom part ABS, seal TPE
Protection class	IP20 according EN 60529
Dimensions(W x H x D)	159.4 x 33.5 x 77.9 mm
Weight	0.42 kg
Permissible ambient temperature	0...40 °C
Permissible rel. humidity	85 % no condensation
Interference emission	according EN 61000-6-3 (domestic household applications)*
Interference immunity	according 61000-6-2 (industrial applications)*

*   *Only in connection with the plug power pack supplied by Ziehl-Abegg*

Plug power supply unit

Type	SYS1421-0605-W2E
Part.-No.	00161410
Output voltage	5 V DC
Output current	1200 mA
Secondary plug	Mini USB - type B
Housing	Cover ABS, bottom part ABS, seal TPE
Protection class	IP20 according EN 60529
Dimensions(W x H x D)	64 x 24 x 78 mm
Weight	0.085 kg
Permissible ambient temperature	0...40 °C
Permissible rel. humidity	85 % no condensation

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7.1 Manufacturer reference $C\epsilon$

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 AG**
> **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**

7.2 Service information

If you have any technical questions while commissioning or regarding malfunctions, please contact our V-STE support department for control systems - ventilation technology.

Our worldwide contacts are available in our subsidiaries for deliveries outside of Germany. ☞ 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 tickets for this. It is provided to you after you have consulted our support department.

In addition, you can download it from our homepage. Download - Ventilation Technology - Topic: Control Engineering - Document type: General documents.

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