



COMBICOM ACCESSORIES

INSTRUCTIONS FOR USE | INSTALLATION BLUETOOTH-ADAPTER

Translation of the original manual Document 20260008 EN 01



Preface

The hardware and software described in this document are products of KEB. The information contained in this document is valid at the time of publishing. KEB reserves the right to update this document in response to misprints, mistakes or technical changes.

Signal words and symbols

Certain procedures within this document can cause safety hazards during the installation or operation of the device. Refer to the safety warnings in this document when performing these procedures. Safety signs are also located on the device where applicable. A safety warning is marked by one of the following warning signs:

| A DANGER | Dangerous situation, which will cause death or serious injury iif this safe- ty warning is ignored. |
|--------------------|--|
| | |
| A WARNING | Dangerous situation, which may cause death or serious injury if this safety warning is ignored. |
| | |
| | Dangerous situation, which may cause minor injury if this safety warning is ignored. |
| | |
| NOTICE | Situation, which can cause damage to property if this safety warning is ignored. |
| <u>RESTRICTION</u> | |

Used when the following statements depend on certain conditions or are only valid for certain ranges of values.



Used for informational messages or recommended procedures.

More symbols

- / Enumerations are marked with dots or indents.
- => Cross reference to another chapter or another page.



Note to further documentation. *www.keb.de/service/downloads*



Laws and guidelines

KEB Automation KG confirms with the EC declaration of conformity and the CE mark on the device nameplate that it complies with the essential safety requirements. The EC declaration of conformity can be downloaded on demand via our website.

Warranty and liability

The warranty and liability on design, material or workmanship for the acquired device is given in the general sales conditions.



Here you will find our general sales conditions. www.keb.de/terms-and-conditions



Further agreements or specifications require a written confirmation.

Support

Although multiple applications are referenced, not every case has been taking into account. If you require further information or if problems occur which are not referenced in the documentation, you can request the necessary information via the local KEB agency.

The use of our units in the target products is outside of our control and therefore lies exclusively in the area of responsibility of the customer.

The information contained in the technical documentation, as well as any user-specific advice in spoken and written and through tests, are made to best of our knowledge and information about the intended use. However, they are regarded as being only informal and changes are expressly reserved, in particular due to technical changes. This also applies to any violation of industrial property rights of a third-party. Selection of our units in view of their suitability for the intended use must be done generally by the user.

Tests can only be done within the intended end use of the product (application) by the customer. They must be repeated, even if only parts of hardware, software or the unit adjustment are modified.

Copyright

The customer may use the instructions for use as well as further documents or parts from it for internal purposes. Copyrights are with KEB and remain valid in its entirety.

This KEB product or parts thereof may contain third-party software, including free and/ or open source software. If applicable, the license terms of this software are contained in the instructions for use. The instructions for use are already available to you, can be downloaded free of charge from the KEB website or can be requested from the respective KEB contact person.

Other wordmarks or/and logos are trademarks ([™]) or registered trademarks ([®]) of their respective owners.



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1 Basic Safety Instructions

The Bluetooth-Adapter has been developed and built in accordance with the state of the art and recognised safety regulations. Nevertheless, the function of the machine may cause danger to life and limb of the user or third parties or damage to the machine and other property.

NOTICE



Safety rules and hazards.

- The safety instructions listed in this manual apply in addition to the basic safety instructions for the drive controller !
- ► These can be found in the corresponding instructions for use.
- ► All instructions for use are available in the download area of *www.keb.de*.

Read the safety instructions carefully before using the adapter. Observe all warnings and instructions on the device and in the instructions for use.

- In case of malfunctions, disconnect the adapter from the power source.
- The adapter is supplied via the serial interface at which it is operated.
- In the event of a defect, have the adapter checked by qualified personnel before putting it back into operation.
- · Modifications to the adapter will void the manufacturer's responsibility.
- Clean the adapter only with a dry cloth.
- If you move the adapter from a cold to a warm environment, moisture may condense inside the adapter. In this case, wait about one hour before putting the adapter back into operation.

1.1 Target group

This manual is intended for use by qualified electricians only. Qualified electricians as defined in this manual must have the following qualifications:

- Knowledge and understanding of safety instructions.
- Skills for installation and assembly.
- Start-up and operation of the product.
- Understanding of the function in the used machine.
- Recognition of dangers and risks of electrical drive technology.
- Knowledge of DIN IEC 60364.
- Knowledge of EN 60664-1.
- Knowledge of national safety regulations (e.g. DGUV Regulation 3).

1.2 Intended use

The Bluetooth-Adapter is connected to the serial interface of a KEB drive controller and serves to transmit data from this interface via a Bluetooth Low Energy connection to a corresponding remote station. It is intended exclusively for this purpose and may only be used for this purpose. This also includes observing all the information in these instructions for use, especially the safety instructions. Any other use is considered improper and can lead to property damage or personal injury. It also means the immediate loss of the warranty. The manufacturer accepts no liability for damage caused by improper use.

1.3 Disposal

The packaging of the adapter consists exclusively of recyclable materials. Please return them to the "dual system" sorted accordingly. At the end of its service life, the adapter must not be disposed of with normal household waste. It must be taken to a collection point for the recycling of electrical and electronic equipment.

The "dustbin" symbol on the packaging indicates that the materials are recyclable according to their labelling. By reusing, recycling or otherwise recovering old appliances, you are making an important contribution to protecting our environment. Make sure that electronic waste does not end up in household waste, but is disposed of properly.

KES

2 Product Description

The Bluetooth-Adapter is used to connect KEB drive controllers or operators with DIN 66019 interface via Bluetooth connection using the COMBIVIS mobile app or the KEB Elevator app.

The Bluetooth-Adapter is not a standard Bluetooth-Adapter. It can be used exclusively for the communication with KEB devices with the interface specified above. The adapter must be plugged directly onto the interface.

2.1 Intended use

The KEB Bluetooth-Adapter is exclusively for operation with KEB drive controllers or operators. The operation of other electrical consumers is prohibited and can lead to the destruction of the devices.

The used semiconductors and components of KEB Automation KG are developed and dimensioned for the use in industrial products. If the product is used in machines, which work under exceptional conditions or if essential functions, life-supporting measures or an extraordinary safety step must be fulfilled, the necessary reliability and security must be ensured by the machine builder.

Operating our products outside the limits specified in the technical data will result in the loss of any claims for damages.

2.2 Factory setting

The adapter is delivered with the following settings (factory settings):

| Settings | Values |
|-----------------------------|---------------------------------|
| Connection interval | 8 ms |
| Slave latency | 0 |
| Advertising interval | 20 ms |
| Baud rate (bps) | 38400 |
| Data bit | 8 |
| Parity | No |
| Stop bit | 1 |
| Hardware flow control | No |
| Command mode via "COMMAND:" | Yes |
| Operating mode | Peripheral |
| Device name | KEB BLE XXXXXX (LAP BT address) |
| Transmission power | -2 dmb |
| Table 1: Factory settings | |

2.3 Nameplate





KEB

3 Hardware

3.1 Overview Bluetooth-Adapter



3.2 Technical data

| Application | Description |
|---------------------------------|--|
| Bluetooth | Frequency / max. transmission power: Bluetooth 2402-2480MHz – 8dBm/6.3mW Empfangsempfindlichkeit -87dBm |
| Connections | D-Sub-9 (male) RS485 standard |
| Voltage supply | Via serial interface |
| Dimensions | 25x35x88mm (HxBxL) |
| Driver software | FTDI (FT232R) serial USB driver at: (https://www.ftdichip.com/Drivers/VCP.htm) No Bluetooth driver software required |
| Max. data rate | 115 kbps |
| Ambient conditions | Operating temperature: -20 °C75 °C Storage temperature: -30 °C85 °C |
| Climatic category (EN60721-3-3) | 3K3 |
| Potential isolation | Internal potential isolation |
| Weight in kg | 0.3 |
| Table 2: Technical data | |

HARDWARE

3.3 Terminal assignment

| Pin | Designation | => KEB control board | Properties | Specification | |
|------------------------------|-----------------------|----------------------------|---|---|--|
| 1 | FLASH-TERMINAL | In | Programming mode (not for customers) | Reserved (not wired) | |
| 2 | TxD | Out | Transmission signal | Not wired | |
| 3 | RxD | In | Receive signal | Not wired | |
| 4 | RxD-A | In | Receive signal negative | RS485 half and | |
| 5 | RxD-B | In | Receive signal positive | full duplex | |
| 6 | 5V_DIAG_TERMI- NAL | Power | Voltage supply | @ F5 Lift opera- tor/S6/F6 control board: 5 V ±20 % | |
| 7 | 0V_TERMINAL | Power | Reference potential RS232 [RS485] Reference potential Voltage supply | Reference poten- tial | |
| 8 | TxD-A | Out | Transmission signal negative | RS485 half and | |
| 9 | TxD-B | Out | Transmission signal positive | full duplex | |
| Table 3: Terminal assignment | | | | | |

The adapter is supplied with power via the serial interface. Input voltage 5...12V (16V max).

3.4 Start-up

The Bluetooth-Adapter is visible to the user via the apps and can be paired with them. After Bluetooth pairing has been carried out with the pairing code shown on the Bluetooth-Adapter, the Bluetooth-Adapter is ready for operation.

After successful connection to the KEB drive controller, the user can access the following functions, among others:

- COMBIVIS mobile app supports the KEB drive controllers COMBIVERT S6 and COMBIVERT F6
- KEB Elevator App supports the KEB drive controllers COMBIVERT F5 with Lift Operator
- Dashboard for monitoring of current status values of the drive
- View of the parameter list and parameter values
- Creating and sending backups of the parameter list
- Contact to the KEB Service



3.5 Status LED

| State | LED |
|----------------------------------|--|
| Advertising mode (connectable) | Permanently red |
| Connected (not released) | Flashes blue every 300 ms |
| Connected (release just given) | Flashes green every 300 ms (for 5 seconds) |
| Connected (released) | Permanently green |
| Data transmission (RX/TX active) | Flashes yellow every 300 ms |
| Table 4: Status LED | |

4 Software

4.1 COMBIVIS mobile App

Drive controllers perform complex tasks in machines and systems. The scope of functions is constantly growing and requires user-friendly interfaces to be able to manage them. In addition to the PC tool COMBIVIS 6, a simple and convenient operation of KEB drive controllers COMBIVERT F6 und S6 can be carried out via the App COMBIVIS mobile. The KEB app enables wireless communication via a smartphone or tablet.

This means that the status information of the drive can be read out easily via a user-friendly interface in order to use it for process monitoring and error diagnosis. The display and setting of parameters as well as the back-up and restoring of data is also done via App. For quick support by the worldwide KEB service, the contact details of the local contact person can be found via a menu item. COMBIVIS mobile is available free of charge for iOS and Android.

Available on Google Play Store and Apple App Store.



COMBIVIS mobile app in the Google Play Store https://play.google.com/store/apps/details?id=de.keb. combivismobile&hl=en





COMBIVIS mobile App in the Apple App Store https://apps.apple.com/app/combivis-mobile/id1399585561



4.1.1 Functions and features of the COMBIVIS mobile App

- The App supports the drive controllers of the COMBIVERT F6 and S6 series.
- Simple connection via WLAN and Bluetooth ¹⁾
- Diagnosis: Clear dashboard for monitoring current status values of the drive, list of occurred errors, status of the I/Os, operating history
- View of the parameter list and parameter values
- Writing of parameters
- Creating a parameter favorites list
- Creating and sending backups of the parameter list
- Downloading backups to the drive controller
- Offline scope function
- Link to KEB homepage for easy search of product information, technical data, catalogues
- Contact details for the worldwide KEB service (telephone and e-mail)
- ¹⁾ The Bluetooth-Adapter described in this manual is required for the Bluetooth connection.



4.1.2 Applications of the COMBIVIS mobile App

Ambient conditions:

- Industrial environment, production, machinery
- Lift applications/elevator shaft with own KEB Elevator App for COMBIVERT F5
 drive controller

4.1.3 Connection setup

The adapter is displayed in the COMBIVIS mobile App if it is not connected to another mobile device. To use the adapter in the App, a key is required, which can be found on the housing. The connection setup is automated in the App and the user is prompted to enter the key in the correct place if necessary. Internally, the procedure is as follows:

The connection setup from the Bluetooth-Adapter to the COMBIVIS mobile App works via the "Just Works" method. This means that no key is required by the Bluetooth system. There is no Bluetooth bonding. Encryption that goes beyond the normal mechanisms of Bluetooth is not necessary.

After Bluetooth pairing is performed, the adapter expects writing of a defined write-only GATT characteristic with a key value. The value can be found on the housing of the adapter. The key is numeric and 6 characters long.

Until the correct key has been written, all other GATT Write Requests are answered with an error and otherwise ignored. If the correct key is not written within 30 seconds, the adapter terminates the Bluetooth connection.

After the correct key has been written, the adapter is ready for normal use. Further write requests on the key characteristic are ignored. This shifts the entry of the key from the operating system to the App.

The adapter does not store any coupling info, the KEB App stores the key for the adapter (no BLE bonding). Data transmission is not encrypted at Bluetooth level.

4.1.4 Application examples of the COMBIVIS mobile App

| KEB Automation KG | | | | | |
|--|----|--|--|--|--|
| KEB Automation KG | F6 | | | | |
| service@keb.de Support +49 5263 401-456 Repairs +49 5263 401-536 | | | | | |
| Your location is United States. | | | | | |
| Not correct? Use GPS to locate. | | | | | |
| Germany | | | | | |
| Barntrup 66 1 tesal | | | | | |
| Dashboard Parameter Files Mo | re | | | | |
| Figure 3: Contact details servi | се | | | | |
| Carrier 🗢 7:51 AM 🛋 | | | | | |
| | | | | | |
| KEB COMBIVERT F6 | | | | | |
| Software VersionF6P V 2.7.0.xConfigID9287 | | | | | |
| Connected via WiFi | | | | | |
| IP Address 192.168.188.100 Port 8000 | | | | | |
| | | | | | |

| arrier 🗢 7:52 AM Dashboard | ₹6 | Carrier 🗢 7:52 AM |
|-------------------------------|---------|--|
| Data Faults I/O History | * | Data Faults I/O History |
| Inverter State | | 44: ERROR invalid power unit data |
| Operating mode | | 44: ERROR invalid power unit data |
| 2: velocity mode | | 44: ERROR invalid power unit data |
| | | 44: ERROR invalid power unit data 1/1/1970 00:00:00 |
| Speed | 0 1/min | 44: ERROR invalid power unit data |
| | | 44: ERROR invalid power unit data |
| Position | 0 | 44: ERROR invalid power unit data |
| | | 44: ERROR invalid power unit data |
| Current | 0 A | 44: ERROR invalid power unit data |
| | | 64: ERROR power unit type changed |
| | | 44: ERROR invalid power unit data |
| | | 64: EDDOD nowar unit type changed |
| Dashboard Parameter Files | ••• | Dashboard Parameter Files More |

| Carrier 🗢 | 7:52 AM | Carrier 🗢 7:52 AM | |
|---------------------------------------|-----------------|---|--------------------|
| Dashboard | 6 | Dashboard | € F6 |
| Data Faults | I/O History ★ | Data Faults I/O History | * |
| Digital Inputs | | Delete | Done |
| I1 | I2 | ru10 act apparent ourrent | |
| I3 | 14 | | |
| 15 | I6 | ru01 exception state 44: ERROR invalid power unit data | ⊘ |
| 17 | 18 | ru02 warning bits 16: dOH | ○ = |
| | IB | ru03 warning state | o ≡ |
| IC | ID | ru04 supply unit state | 0 = |
| STO-1 | STO-2 | 5: phase failure | • _ |
| Digital Outputs | | 0.0000 1/min | $\mathbf{O} =$ |
| 01 | 02 | ru06 ramp out display 0.0000 1/min | ○ = |
| OA | 🔘 ОВ | | |
| oc | Relay | | |
| Analog | | | |
| $\bigcirc \bigcirc \bigcirc \bigcirc$ | | Save Parameterlist | |
| | | | |
| Dashboard Param | eter Files More | Dashboard Parameter Files | e e e More |
| Figure 7: Da | ashboard: I/O | Figure 8: Dashboard: Fave | ourites |

| Carrier 🗢 7:52 AM Parameter Groups | Carrier 🗢 7:52 AM Parameter Groups |
|------------------------------------|---|
| Q Text, Address Cancel | Q Text, Address Cancel |
| ru run parameters | ru ← |
| ru run parameters B | ru controlword 0: empty controlword |
| de device info | de modes of operation 2: velocity mode |
| st status info | st velocity shift factor |
| dr drive parameters | dr |
| vi velocity modo | position source 0: channel A |
| | speed control source co05 0: channel A |
| ds drive specific control paras | ds system inversion |
| CO control parameters | CO non volatile memory state co07 0: data not stored |
| ps position control parameters | ps reset options O: no options |
| do digital output parameter | do reset ctrl 0: reset inactive |
| fb fieldbus parameters | fb position interpolator co10 4: B-Spline, 4 points avg + actual value |
| Dashboard Parameter Files More | Dashboard Parameter Files More |
| Figure 9: Parameter menu | Figure 10: Parameter group |

| arrier 奈 | 7:5 | 52 AM | | Carrier 🗢 | 7:5 | 52 AM | |
|--------------------------|------|--------------------------|---|--------------------------|-------|--------------------------|--------|
| controlword | | | + | controlword | | | |
| 0: empty cont | olwo | rd | | 0: empty cont | rolwo | rd | |
| | | | | | | 1 | |
| switch on | 0 | enable voltage | 0 | | | | |
| no quick stop | 0 | enable operation | 0 | v | Vrite | value | |
| op. mode spec. 4 | 0 | op. mode spec. 5 | 0 | | | | |
| op. mode spec. 6 | 0 | fault reset | 0 | switch on | 0 | enable voltage | |
| halt | 0 | op. mode spec. 9 | 0 | no quick stop | 0 | enable operation | |
| reserved | 0 | manufacturer spec. 11 | 0 | op. mode spec. 4 | 0 | op. mode spec. 5 | |
| manufacturer spec. 12 | 0 | manufacturer spec. 13 | 0 | op. mode spec. 6 | 0 | fault reset | |
| manufacturer spec. 14 | 0 | brake ctrl 15 | 0 | halt | 0 | op. mode spec. 9 | |
| | | | | reserved | 0 | manufacturer spec. 11 | |
| | | | | manufacturer | ~ | manufacturer | |
| Edit mode | | | | Edit mode | | | |
| oure 11 [.] Pa | arar | neter selecter | 1 | Figure 12 [.] P | arar | neter "Edit mo | - ר |



| Carrier 奈 Files | 7:54 AM | F 6 | Carrier 🗢 Files | 7:54 AM | F6 |
|---|--|---------------------|--|---|-------------------------|
| Parameterlists | Offline Scope | FTP | Parameterlists | Offline Scope | FTP |
| | Create Backup | | | Create Backup | |
| 15. Time: (Parameter: (| 6 % 357 / 2 00:01 ds17 bp filter coeff. | 283 | Backup fo | Dr F6P V 2.7.0.2 F6P V 2.7.0.x 9287 | x × |
| Backup f | for F6P V 2.7.0.x | × | File name Creation time Description: 24112021 | Backup for F6 24/11/2021 07 | P V 2.7.0.x.d :54:12 |
| Device ConfigID File name Creation tim Description: | F6P V 2.7.0.x 9287 Backup for F6P 24/11/2021 07:5 | V 2.7.0.x.d 4:12 | | | |
| 24112021 | - | . | Ba | ckup for F6P V 2.7.0.x. Download | dw5 |
| Backup f | for F6P | + | Do | ownload as a rec | cipe |
| Dashboard | Parameter Files | • • • More | Dastibuaru | Cancel | Mute |
| Figure 15: | Create Back | up 2/2 | Figure 16: | Download B | Backup |

KEB







4.2 KEB Elevator App

Available on Google Play Store and Apple App Store.



KEB Elevator App in the Google Play Store https://play.google.com/store/apps/details?id=com.kebamerica.elevator_app&hl=en&gl=US





KEB Elevator App in the Apple App Store https://apps.apple.com/au/app/keb-elevator/id1479590944?I=en



5 Certification

5.1 CE-Marking

CE marked Bluetooth-Adapters are have been developed and manufactured in compliance with the regulations of the European directives *RED:* 2014/53/EU and *Hazardous Substances:* 2011/65/EU (incl. 2015/863/EU).



5.2 Declaration of Conformity

Declaration of Conformity to the RED Directive.

| EU DE | CLARATION OF | | 3 |
|-----------------------------------|--|---|------|
| Document N | lo. / month.year: ce_ca_R | ED-58060-BT-adaptor-a_en.docx / 12.2 | 021 |
| Manufacturer: | KEB Automation Südstraße 38 32683 BARNTRL Germany | KG P | |
| Product type: | Part no. | 0058060-0060 | |
| The above give | en product is in accordance wit | n the following directives of the European U | nion |
| Number: Text: | RED : 2014 / 53 / EU Directive on the availability on the | e market of Radio Equipment. | |
| Number: Text: | Hazardous Substances: 2011 / Directive on the approximation of restriction of the use of certain ha equipment. | 65 / EC (incl. 2015 / 863 / EU) the laws of the Member States relating on the zardous substances in electrical and electronic | |
| Responsible: | KEB Automation KG Südstraße 38 32683 BARNTRUP | | |
| Place, date | Barntrup, 13 December 2021 | | |
| Issued by: i. A. W. Hovesta | AD where the contract of the c | W. Wiele / Technical Manager | |
| This declaration any assurance | n certifies the conformity with the of quality. | ne named directives, but does not contain | |
| I he safety instr | ructions, described in the instru | ction manual are to be followed. | |
| | | | |

5.3 Grant of Equipment Authorization FCC

| ТСВ | | GRANT OF EQUIPMENT AUTHORIZATION | ТСВ |
|------------------------|---------------------------|--|------------------------------------|
| | | Certification | |
| | I | ssued Under the Authority of the | |
| | Fea | deral Communications Commission | |
| | | By: | |
| | | Bay Area Compliance Laboratory Corp. | Date of Grant: 11/24/2021 |
| | | Sunnyvale, CA 94089 | Application Dated: 11/24/2021 |
| KEB Automation | KG | | |
| Suedstrasse 38 | | | |
| Barntrup, 32683 | | | |
| Germany | | | |
| | | | |
| Attention: Winfrie | ed Hovestadt , Approva | al engineer | |
| | | | |
| | | NOT TRANSFERABLE | |
| | EQUIPMENT AUTHORIZ | ATION is hereby issued to the named GRANTE | E, and is |
| | Rules and Regulations lis | sted below. | |
| | | | |
| | FCC IDENTIFIER: | 2A2AG-KEB0060 | |
| | Name of Grantee | KEB Automation KG | |
| | Equipment Class: | Digital Transmission System | |
| | Notes: | Bluetooth-Adapter | Frequency Emission |
| Grant Notes | FCC Rule Parts | s Range (MHZ) Watts | <u>Tolerance</u> <u>Designator</u> |
| | 15C | 2402.0 - 2480.0 0.000973 | |
| | | E Province C | All and a second second |
| Output power listed is | s conducted. | as The NY | AVA |
| | | | A VA |
| | | | N N |
| | | | 55 12 |
| | | A HAVIA & | - 0 |
| | | · · · · · · · · · · · · · · · · · · · | = 0 |
| | | | SA |
| | | W & W B & | - 19 |
| | | A Commences of | E |
| | | MMISSV | 2 |
| | | 11104 | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
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| | | | |
| | | | |
| | | | |



5.4 RED certification



6 Revision History

| Version | Date | Description |
|---------|---------|---|
| 00 | 2021-03 | Recreation based on the manual of the USB serial converter 20094859 |
| 01 | 2022-01 | Series version |
| | | |

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