



CU165

Installation Instructions

(Translation of the original installation instructions)

Foreword

Document revision history

Version	Date	Modification, change
1.0	05/2020	First release

Disclaimer and exclusion of liability

DewertOkin is not responsible for damage resulting from:

- failure to observe these instructions,
- changes made to this product which have not been approved by DewertOkin, or
- the use of replacement parts which have not been approved or manufactured by DewertOkin.

► We reserve the right to make unannounced technical changes in the course of our continual product improvement process!

Creation of a complete operating instruction manual for the entire end product

These instructions are only intended to be used by the end-product manufacturer. They should not be given to the operator of the end product. The factual information contained within may be used as a basis when creating the end-product manual.

The warning and danger notices are best suited for use in the end product's manual. However, it is not sufficient to simply follow these notices. You should also carry out an internal risk assessment for your end product. This can then be used as the basis for the safety notices in your manual.

These installation instructions do not contain all information required to safely operate the end product. They only describe the installation and operation of the product as partially completed machinery.

The instructions are intended for the technicians responsible for manufacturing an end product and not for the operators of the end product.

Usage in medical products

The CU165 is not a medical product. If used in a medical end product, you (the end manufacturer) are obliged to ensure compliance with EC directives and to ensure that other pertinent medical product regulations are maintained.

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1. General Information

1.1 About these installation instructions

In order to install the CONTROL UNIT CU165 (referred to here as the CU165) successfully and safely in the end product, these installation instructions must be observed. These instructions are not an operating manual for the end product.

These instructions will help you to minimize danger, repair costs and down times. They will also help you to increase the reliability and lifespan of the device.



CAUTION

The notices in these instructions must be followed! Following the guidelines during installation and connection procedures will help to minimize:

- the risk of accident and injury, and
- damage to the CU165 or the end product.

These installation instructions have been written with due care and attention. However, we cannot guarantee that the data, images and drawings are complete and correct nor do we accept any liability for the information contained therein, unless required by law.

1.2 Conventions used

Notices which do not relate to safety are indicated in these instructions with a symbol:

- ▶ Triangular notice symbol

Explanations of warning notices



CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices which are not related to personal injury but may result in damage to the product or surroundings.

2. Safety notices

2.1 Proper and intended usage

The CU165 should be used:

- as a control unit for suitable DewertOkin drive systems,
- for HOME applications (in beds, reclining chairs, etc.).



CAUTION

Risk of accident

The CU165 should only be used for the applications described above. Any other use is forbidden. Improper usage can lead to accidents or destruction of the unit. Such non-approved applications will lead immediately to the expiration of all guarantee and warranty claims on the part of the end-product manufacturer against the manufacturer.

2.1.1 Improper usage

Be sure to follow the notices below concerning improper usage. You should include them in your product manual in order to inform the users of your end product.

The CU165 must not be used:

- in any environment where combustible or explosive gases or vapours (e.g., anaesthesiology) may be present,
- in the proximity of open fires or other heat sources (such as furnaces, ovens or direct sunlight),
- as a power source for toys or games,
- in any application that will be cleaned with an automated washing system,
- in a moist environment, or
- outdoors.

The CU165 can be used by children of 8 years and older, persons with reduced physical, sensory or mental capabilities, or persons with lack of experience or knowledge when they are supervised or instructed concerning the safe use of the device and when they understand the resulting risks. Do not allow children to play with this device. The cleaning and user maintenance must not be carried out by children without supervision.

- ▶ You should only use spare parts which have been manufactured or approved by DewertOkin. Only these parts will guarantee a sufficient level of safety.

2.2 Selection and qualification of personnel

The CU165 should only be installed into the end product by someone who has completed training in electronic motor assembly or has equivalent qualifications.

You should only install this CU165 when you are qualified to do so. Otherwise, a properly qualified person should be found for this task.

2.2.1 Electrical safety



CAUTION

Electric shock

Be careful; there is a risk of electrical shock! Before installing, make sure that you disconnect the external DewertOkin power supply for the CU165 from the power outlet!

Do not open the CU165! You must properly dispose of malfunctioning or broken units.

2.3 Ratings plate

- ▶ The ratings plate shown is an example; the specifications for your CU165 may differ from this illustration.

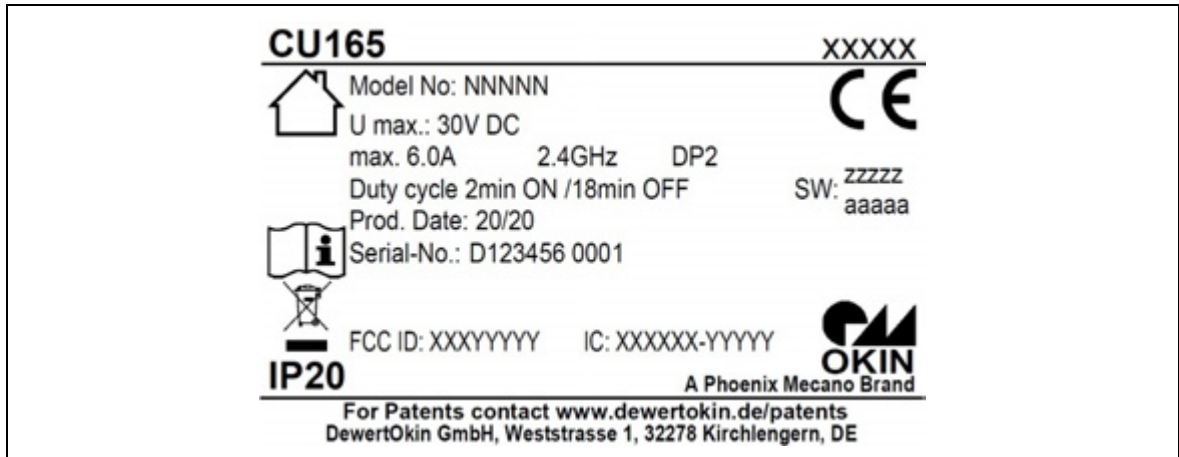






Figure 1 CU165 ratings plate example

CU165	Model name
xxxxx	Article number
Model No.	Model number
30V DC	Input voltage
Max. 6.0A	Current consumption
2.4GHz	Radio frequency
SW	Software versions
Duty cycle: 2 min ON / 18 min OFF	Intermittent operations: 2 minutes / 18 minutes
Prod. Date	Calendar week / year
Serial No.	Serial number
FCC ID	Federal Communications Commission ID
IC	Industry Canada identifier
IP20	Protection degree
	Use in dry rooms only!
	Conformity mark
	Always follow the instructions in the manual!
	Follow all special disposal instructions!

3. Possible combinations

The CU165 can be combined with multiple individual drives that have been approved by DewertOkin.

Systems can be customized by combining control units, drives and control keypads.

DewertOkin has separate system instruction manuals containing the additional information and instructions needed for these systems.

► Detailed information on combination possibilities can be requested directly from DewertOkin.

4. Description

The CU165 is a control unit and power supply for one or more DewertOkin drives. An external DewertOkin power supply unit is used to connect the CU165 to the mains power. The CU165 is equipped with an integrated radio receiver and *Bluetooth*[®] receiver.

4.1 Components

The housing of the CU165 has a connection for an external DewertOkin power supply, as well as connections for drives and various accessories (refer to Chapter 3, "Possible combinations").

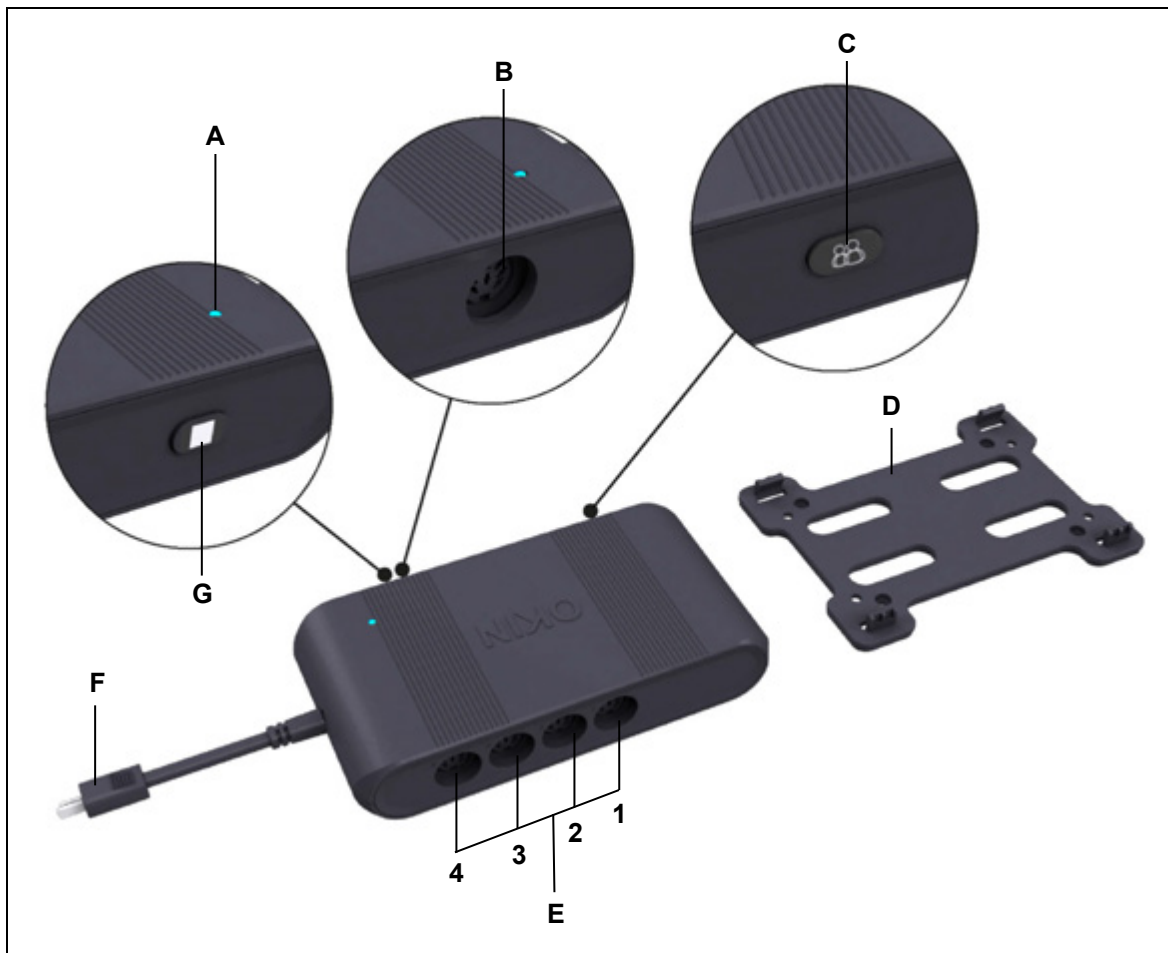


Figure 2 CU165

- | | |
|--|---|
| A Pairing LED | B Optional: Connection socket for handset |
| C Pairing button | D mounting plate |
| E Connection for drives (sockets 1 – 4) | F Connection cable for connecting to the POWER SUPPLY PD22 |
| G Reset button | |

5. Technical specifications

Input voltage	Max. 30 V DC
Current consumption at nominal operations	Max. 6 A (depending on version)
Mode of operations ¹	Intermittent duty 2 min./18 min.
Protection class	III
Radio frequency	2.4 GHz
Protection degree	IP20
Dimensions and weight	
Length x width x height	165 mm x 86 mm x 32 mm
Weight	Approx. 270 g
Ambient conditions for operation, storage and transport	
Transport / storage temperature	From -20 °C to +50 °C From -4 °F to +122 °F
Operating temperature	From +10 °C to +40 °C From +50 °F to +104 °F
Relative humidity	From 30% to 75%
Air pressure	From 800 hPa to 1060 hPa
Height	< 2000 m

¹) Mode of operation: intermittent duty 2 minutes/18 minutes. This means that after the unit is operated with its rated load for up to two minutes it must then be paused for 18 minutes. The system can malfunction if this pause is not observed!

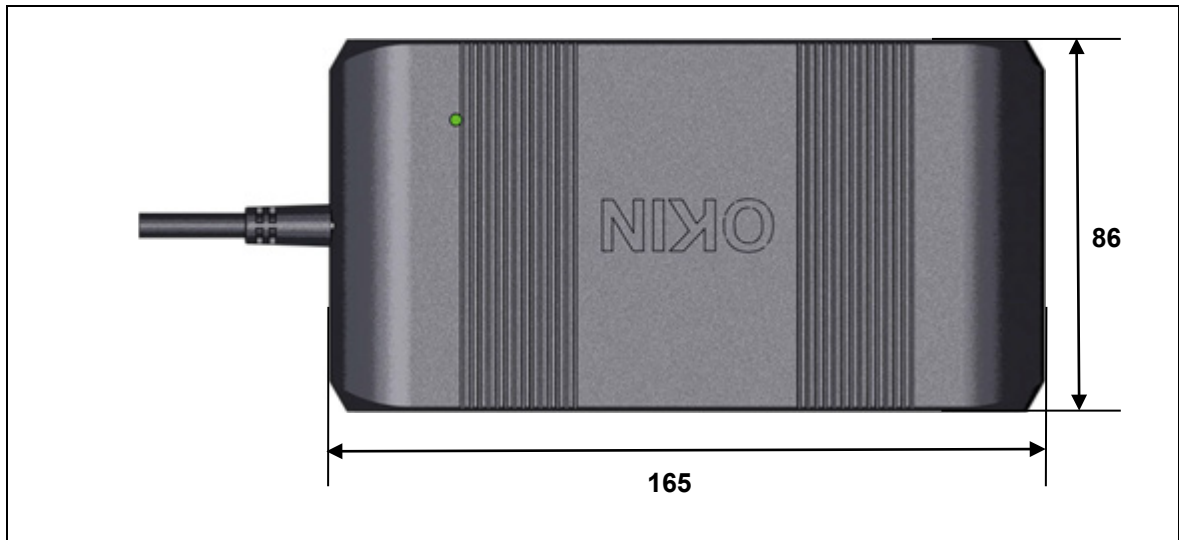


Figure 3 Dimensions of the CU165, top view (in mm)



Figure 4 Example illustration: Dimensions of the CU165, side view (in mm)

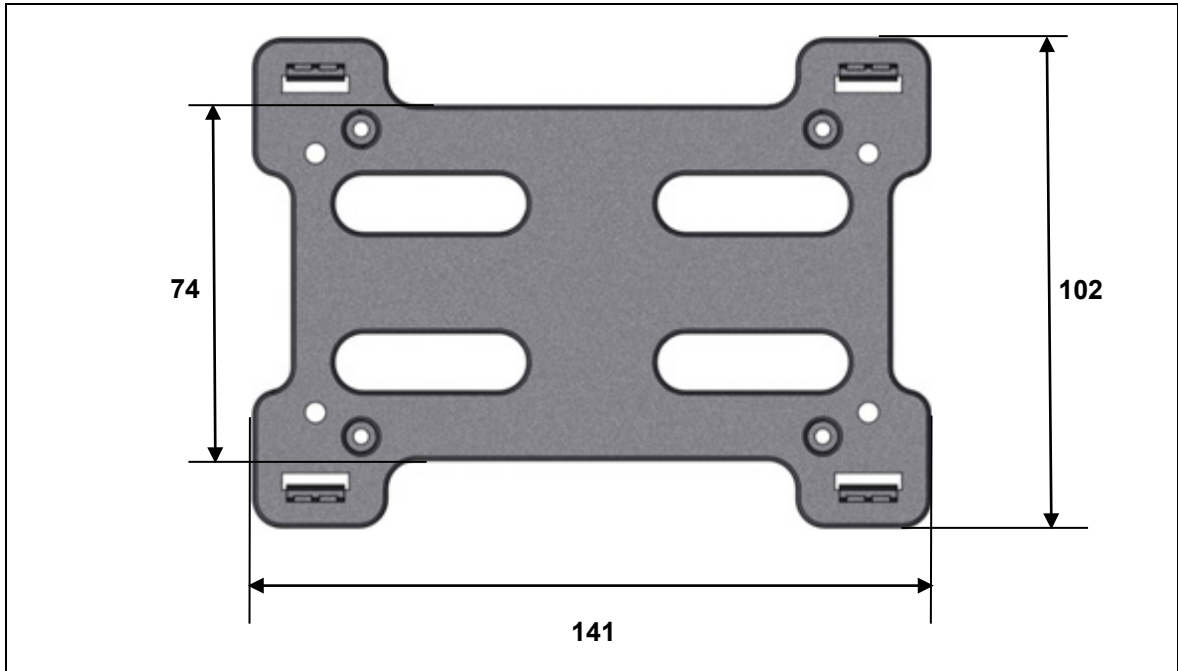


Figure 5 Dimensions of the mounting plate, top view (in mm)



Figure 6 Dimensions of the CU165, side view (in mm)

6. Installation

6.1 Safety notices to observe during installation

Basic safety rules must be followed in order to ensure that the end product can be continually operated in a safe manner. These rules must be observed while using the end product and while installing the CU165 in the end product.

6.1.1 Ensuring operational reliability during installation

The safety and reliability of the end product containing DewertOkin components can be ensured by using the proper construction methods as described below.

6.2 Installation procedure

Before installing and connecting the CU165, make sure that you are observing all of the safety notices found in the "Safety notices to observe during installation" section.

6.2.1 Installing the CU165 in the end product

The CU165 can be clipped into a mounting plate. The mounting plate is screwed onto the end product at 4 fastening points using suitable screws.

- ▶ The drilling dimensions for the mounting plate, as shown in Figure 7, only illustrate an example and are not necessarily authoritative for all applications.

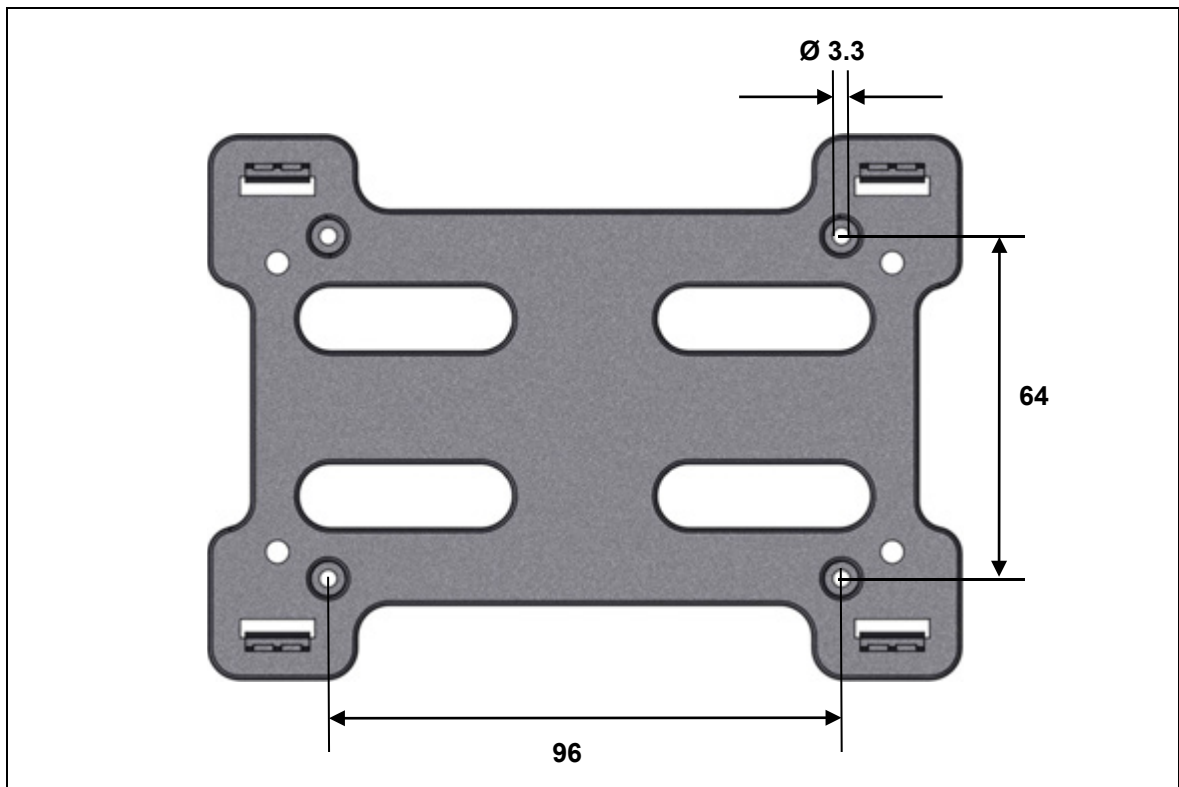


Figure 7 Drilling dimensions (example): Fastening points on the mounting plate (specifications in mm)

**CAUTION**

You should only connect and disconnect the cables when they are completely disconnected from any live current!

Pull out the power supply plug from the plug socket.

Screw the control unit onto the end product (as shown in Figure 8). Use the mounting holes shown in Figure 7 located on the control unit. Use screws meeting the requirements of DIN EN ISO 7049 with max. 2.9 mm diameter and of suitable length (5 mm plus the screw-in depth into the end product, screw head: 5.6 mm diameter).

Proceed with the installation as follows:

- 1 Mark the drill holes.
- 2 Pre-drill the four screw positions for the mounting plate in the end product.
- 3 Screw the mounting plate to the end product. It must lie flat. No mechanical forces (e.g. torsional forces, etc.) may act on it.
- 4 Insert the CU165 into the mounting plate until it clicks into place.

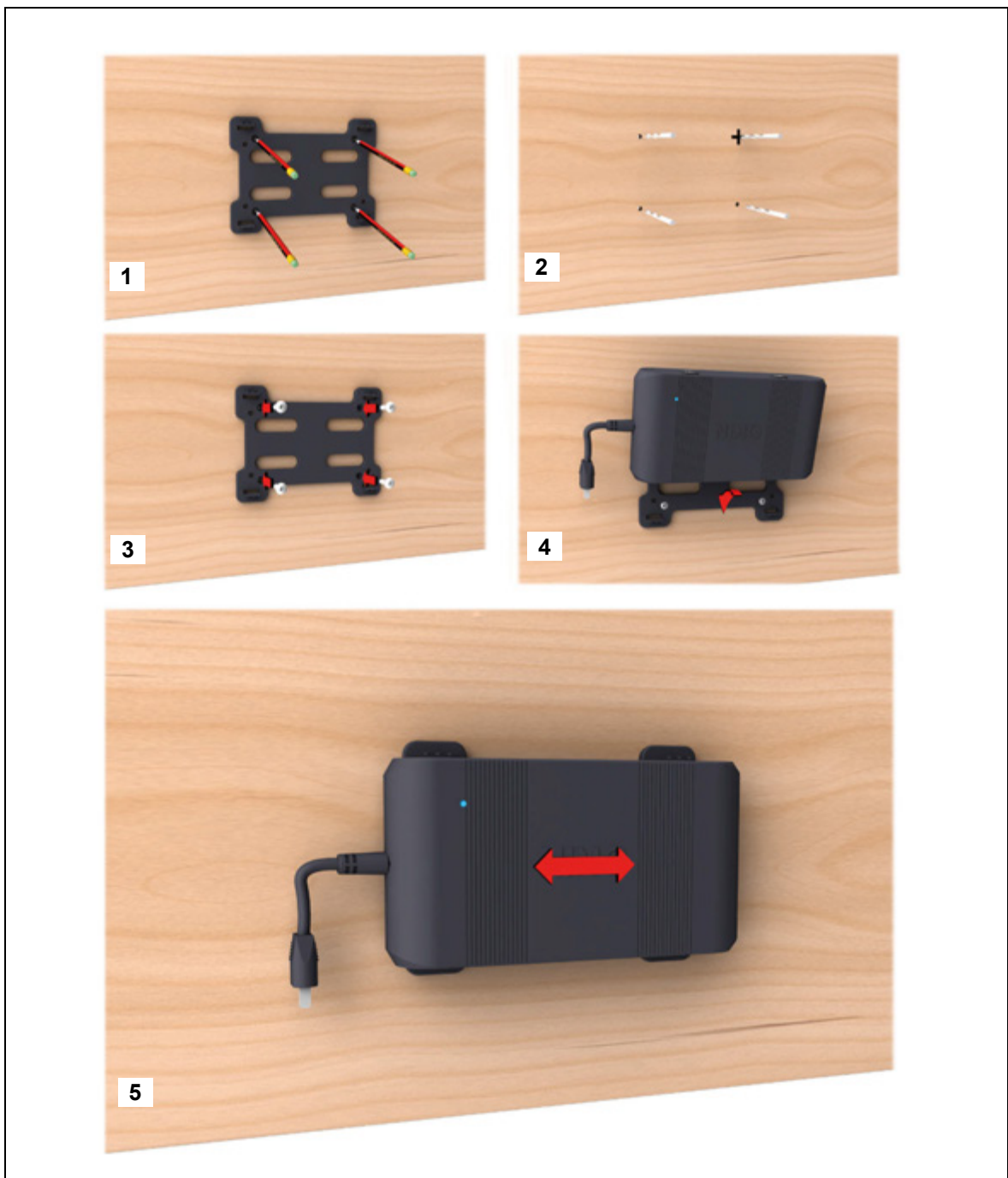


Figure 8 Mounting the mounting plate and attaching the CU165

6.2.2 Electrical connection



CAUTION

Electric shock

Electrical components should be connected or disconnected only when the power supply is unplugged.

Routing the electrical cables

When routing the cables, be sure that:

- the cables cannot get jammed,
- no mechanical load (such as pulling, pushing or bending) will be put on the cables, and
- the cables cannot be damaged in any way.

Fasten all cables (especially the connecting cables) to the end product using sufficient kink prevention methods. Be sure that the design of the end product prevents the connecting cables from coming into contact with the floor during transport.

6.2.3 Connecting to the POWER SUPPLY PD22

- 1 Connect the CU165 to the external DewertOkin POWER SUPPLY PD22, as shown in Figure 9.

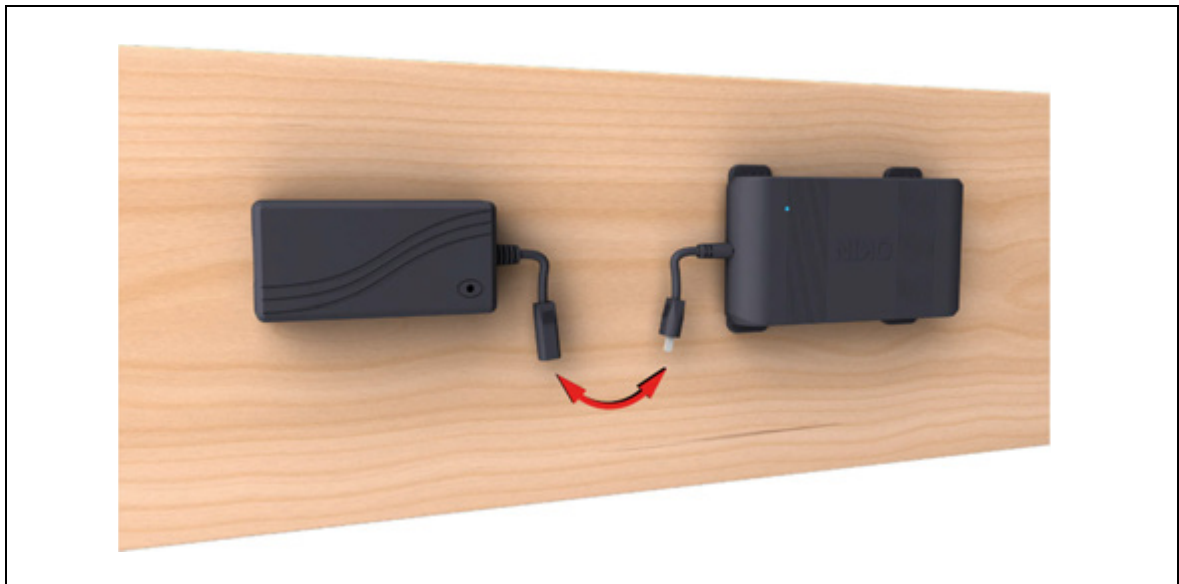


Figure 9 Example: Connecting the CU165 to the POWER SUPPLY PD22

7. Information about creating your Operating Manual

The factual information contained within may be used when you are creating the end-product manual. The installation instructions do not contain all information required for the safe operation of the end product. They only describe the assembly and operation of the CU165 as a partially assembled piece of machinery.

- ▶ When creating the operating instructions, remember that the installation instructions are intended for qualified specialists and are not for typical users of the end product.

7.1 General information


- ▶ You should only connect drives, vibration motors and accessories from DewertOkin to the CU165. Only DewertOkin components have been verified to work when combined together.

Power-on time / intermittent operations


The CU165 has been designed for intermittent operations. Intermittent operation is an operational mode where the drive must pause after a specified maximum period of operation (power-on time). This protects the drive from overheating. Extreme overheating can cause a malfunction.

- ▶ The ratings plate specifies the maximum power-on time and the required pause intervals.

Avoiding electrical risks

	CAUTION
Electric shock	
Make sure that no live (current-carrying) components and connections on the control unit can be touched.	

Avoiding electrical risks

	CAUTION
Risk of accident	
Please follow these operating instructions carefully. You could be injured by fire or electrical shock if you do not follow these assembly instructions.	

Emergency shut off of a connected drive or the CU165

In an emergency, disconnect the power supply unit's power plug in order to shut off the connected drive. The power plug to the power supply must always be accessible during operations so that it is possible to shut down the drive or CU165 at any time.

Avoiding cable damage

Be sure that your operating instructions inform the user about the possible cable risks.



CAUTION

Risk of accident

The cables (particularly the connecting cable) should not be run over. In order to prevent injuries or damage to the drive and CU165, no mechanical strain should be placed on the cables.

7.2 Programming (teach-in) for the RF hand-held remote control and app (*Bluetooth*[®])

The hand-held remote and app can be paired automatically (see chapter 7.2.1, page 20) or manually (see chapter 7.2.2, page 21).

To start using the RF hand-held remote control or *Bluetooth*[®] device, the remote link with the CU165 must first be established.

Requirement: To operate your system with a *Bluetooth*[®] device (e.g.: smartphone/tablet), download the "OKIN" app from the appropriate platform and install it on your device.

- ▶ Refer to the corresponding quick start guide to learn how to teach-in (program) your RF hand-held remote control.

7.2.1 Automatic configuration

- 1 Connect the CU165 to the power supply.
- 2 The CU165 remains in pairing mode for 120 seconds. The pairing mode is split as follows:
 - An RF hand-held remote can be paired in the first 60 seconds.
 - A *Bluetooth*[®] device can be paired in the second 60 seconds.
- 3 The pairing LED on the CU165 lights up during the teach-in phase of the RF hand-held remote.
- 4 **RF-TOUCH hand-held remote (example):** Press and hold the **button** in the battery compartment until the pairing LED flashes. The pairing phase is now finished. (Refer to the corresponding quick start guide to learn how to teach-in (program) another RF hand-held remote control.)
- 5 After the teach-in process for the RF hand-held remote is finished, the pairing LED for pairing the *Bluetooth*[®] device starts to flash.

- 6 The pairing LED switches off when the *Bluetooth*[®] pairing process has timed out or when the device has connected successfully.
 - If, during the RF remote's teach-in process, you press any button on an already paired hand-held remote, it switches to the *Bluetooth*[®] teach-in mode.
- 7 If the RF remote or a *Bluetooth*[®] device is discovered during the pairing phase, then pairing mode is automatically ended. The pairing LED is switched off.
 - ▶ If automatic configuration must be repeated:
 - Remove the plug from the power supply and wait 60 seconds.
 - Then insert the plug back into the power supply. You can then start the new pairing process.

NOTICE

Only start **one** system at a time. Never configure multiple systems simultaneously.

7.2.2 Manual configuration

Requirement: The system is already connected to the power supply.

- 1 Press the pairing button on the CU165 twice in quick succession (refer to page 11, Figure 2, and item **C**). The pairing LED lights up.
- 2 The CU165 remains in pairing mode for 120 seconds. The pairing mode is split as follows:
 - An RF hand-held remote can be paired in the first 60 seconds.
 - A *Bluetooth*[®] device can be paired in the second 60 seconds.
- 3 The pairing LED on the CU165 lights up during the pairing (teach-in) phase of the RF hand-held remote.
- 4 **Example RF-TOUCH hand-held remote:** Press and hold the **button** in the battery compartment until the pairing LED flashes. The pairing phase is now finished. (Refer to the corresponding quick start guide to learn how to teach-in (program) another RF hand-held remote control.)
- 5 After the teach-in process for the RF hand-held remote is finished, the pairing LED for pairing the *Bluetooth*[®] device starts to flash.
- 6 The pairing LED switches off when the *Bluetooth*[®] pairing process has timed out or when the device has connected successfully.
 - If, during the RF remote's teach-in process, you press any button on an already paired hand-held remote, it switches to the *Bluetooth*[®] teach-in mode.
- 7 If the RF remote or a *Bluetooth*[®] device is discovered during the pairing phase, then pairing mode is automatically ended. The pairing LED is switched off.

NOTICE

Only start **one** system at a time. Never configure multiple systems simultaneously.

7.2.3 Reset to the factory default settings

- 1 Press the pairing button four times in quick succession (refer to page 11, Figure 2, item **C**). The pairing LED lights up.
- 2 After approx. 5 seconds, the LED goes out automatically.
- 3 The RF hand-held remote is deactivated.

NOTICE

The *Bluetooth*® device must be removed separately from the list of paired devices in the *Bluetooth*® settings (on the tablet / smartphone).

8. Troubleshooting

8.1 CU165 / DewertOkin POWER SUPPLY

This chapter describes troubleshooting methods for fixing problems. If you experience an error that is not listed in this table, please contact your supplier.

- Only qualified specialists who have received electrician training should carry out troubleshooting and repairs.

Problem	Possible cause	Solution
The drive, accessory or control unit is not functioning.	There is no mains supply voltage.	Connect the mains power. Connect the connecting cable between the CU165 and the POWER SUPPLY PD22.
	The drive, accessory or control unit is defective.	Please contact your supplier or sales agent.
	Hand-held remote not paired.	Pair the hand-held remote.
	The hand-held remote batteries are empty.	Replace the batteries.
The drive is suddenly not capable of movement.	The overheating protection or system protection has been triggered.	Remove the overload (change or remove the load). Allow the system to rest for 20 to 30 minutes with the mains power unplugged. If this does not resolve the problem, contact your supplier or distributor.
	The unit's fuse may have been triggered.	Please contact your supplier or sales agent.
	The hand-held remote batteries are empty.	Replace the batteries.
	Radio interference	Try to re-establish the wireless connection.
	There is no mains supply voltage.	Connect the mains power.
	A cable has been disconnected (to the mains power, vibration motors, drives or accessory).	Check the cables and reinsert them, if required.

9. Maintenance

- ▶ You should only use spare parts which have been manufactured or approved by DewertOkin. Only these parts will guarantee a sufficient level of safety.

9.1 Maintenance

Type of check	Explanation	Time interval
Check the function and safety of the electrical system.	A qualified electrician should carry out this inspection. (Refer to the "Electrical connection" section in the "Installation" Chapter.)	Periodic inspections can be carried out at intervals based on the risk assessment which you conduct for your end product.
Look over the housing periodically for any signs of damage.	Check the housing for breaks or cracks.	At least every six months.
Look over the plug-in connections and electrical access points for signs of damage.	Check that all electrical cables and connections are firmly seated and correctly positioned.	At least every six months.
Look over the cables for any signs of damage.	Check the connecting cables for pinching or shearing. Also check the strain relief and kink protection mechanisms, in particular after any mechanical load.	At least every six months.

9.2 Cleaning and care

The CU165 was designed so that it would be easy to clean. Its smooth surfaces simplify the cleaning process.

- ▶ Clean the CU165 as needed using a dry cloth.

NOTICE

- Always disconnect the mains power plug from the POWER SUPPLY PD22 before you start to clean.
- Never clean the CU165 in an automated washing system or with a high-pressure cleaner. Do not allow fluids to penetrate it. Damage to the system could result.
- Do not use a cleanser that contains benzene, alcohol or similar solvents.
- Be sure that you do not damage the connecting cables during the cleaning.

10. Disposal

10.1 Packaging material

The packaging material should be sorted into recyclable components and then disposed of in accordance with the appropriate national environmental regulations (in Germany according to the recycling law KrWG from 01.06.2012; internationally according to the EU Directive 2008/98/EC (Waste Framework Directive WFD as of 12.12.2008)).

10.2 Components in the control unit

The CU165 consists of electronic components, cables and metal and plastic parts. You should observe all corresponding national and regional environmental regulations when disposing of it.

The disposal of the product is regulated in Germany by Elektro-G, internationally by the EU Directive 2012/19/EC (WEEE), or by any applicable national laws and regulations.



The CU165 should not be disposed of with normal household waste!

EG-Konformitätserklärung

(Ausführung 2,4GHz)

Nach Anhang VI der RED-Richtlinie 2014/53/EU

Nach Anhang VI der RoHS-Richtlinie 2011/65/EU
(inkl. Delegierte Richtlinie (EU) 2015/863)

Der Hersteller

EU Declaration of Conformity

(Version 2.4GHz)

In compliance with Appendix VI of the RED-Directive
2014/53/EU

In compliance with Appendix VI of the EU RoHS
Directive 2011/65/EU
(incl. Commission delegated Directive (EU) 2015/863)

The manufacturer:

DewertOkin GmbH
Weststraße 1
32278 Kirchlengern
Deutschland - Germany

erklärt hiermit, dass das Produkt

declares that the following product

CU165¹⁾

die Anforderungen folgender EG-Richtlinien erfüllt:

meets the requirements of the following EU directives:

**Richtlinie 2014/53 über die Harmonisierung der
Rechtsvorschriften der Mitgliedstaaten über die
Bereitstellung von Funkanlagen auf dem Markt**

RED Directive 2014/53/EU

**DELEGIERTE RICHTLINIE (EU) 2015/863 DER
KOMMISSION vom 31. März 2015 zur Änderung
von Anhang II der Richtlinie 2011/65/EU des Euro-
päischen Parlaments und des Rates hinsichtlich
der Liste der Stoffe, die Beschränkungen
unterliegen.**

**COMMISSION DELEGATED DIRECTIVE (EU)
2015/863 of 31 March 2015 amending Annex II to
Directive 2011/65/EU of the European Parliament
and of the Council as regards the list of
restricted substances.**

Angewendete Normen

Applied standards:

- EN 62368-1:2014/AC:2015
- EN 55014-1:2006/A1:2009/A2:2011
- EN 55014-2:1997/A1:2001/A2:2008
- EN 61000-3-2:2014
- EN 61000-3-3:2013
- EN 62233:2008
- EN 50663: 2017
- ETSI EN 300440 V2.1.2
- ETSI EN 300328 V2.1.1
- Draft ETSI EN 301489-1 V2.2.0
- Final Draft ETSI EN 301489-3 V2.1.1

Konstruktive Änderungen, die Auswirkungen auf die
in der Montageanleitung angegebenen technischen
Daten und den bestimmungsgemäßen Gebrauch
haben, das Produkt also wesentlich verändern,
machen diese Konformitätserklärung ungültig!

*This declaration of conformity is no longer valid if
constructional changes are made which significantly
change the drive system (i.e., which influence the
technical specifications found in the instructions or
the intended use)!*

Kirchlengern, Germany 12 May 2020



Dr.-Ing. Josef G. Groß
Geschäftsführer / Managing Director

¹⁾ mit DewertOkin Komponenten / with DewertOkin components

Zusatzinformationen

CONTROL UNIT CU165

- UL962
- CSA C22.2 No. 68-09

FCC Warning

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: Any changes or modifications not approved by the party responsible for compliance could void the user's authority to operate the equipment.

IC Warning

This device complies with Industry Canada RSS-210 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."

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.

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