



EWELLIX

EWELLIX Control Unit

BCU

User Manual

We pioneer motion

SCHAEFFLER

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1 About the manual

1.1 Information in this user manual

This manual provides important information on how to work with the device safely and efficiently.

The manual is part of the device, must always be kept in the device's direct proximity and should be available for personnel to read at any time. All personnel working with the device must read and understand this manual before starting any work. Strict compliance with all specified safety notes and instructions is a basic requirement for safety at work.





Moreover, the accident prevention guidelines and general safety regulations applicable at the place of use of the device must also be complied with.

1.2 Symbols

Safety precautions are identified by symbols and signal words as shown. The signal words indicate the severity of the hazard and the chance it could occur. Follow these safety precautions and act cautiously in order to avoid accidents, personal injury and damage to property.

The warning and hazard symbols are defined in accordance with ANSI Z535.6-2011.





1.1 Warning and hazard symbols

Signs and descriptions	
 DANGER	In case of non-compliance, death or serious injury will occur.
 WARNING	In case of non-compliance, death or serious injury may occur.
 CAUTION	In case of non-compliance, minor or slight injury may occur.
 NOTICE	In case of non-compliance, damage or malfunctions in the product or the adjacent construction may occur.

1.3 Signs

The warning, prohibition, and mandatory signs are defined in accordance with DIN EN ISO 7010 or DIN 4844-2.

1.2 Warning, prohibition, and mandatory signs

Signs and descriptions	
	General warning
	Electrical voltage warning
	Observe the manual
	General mandatory sign

1.4 Legal notices

The information in this manual reflects the status at the time of publication.

Unauthorized modifications to or improper use of the product are not permitted. Schaeffler accepts no liability in these cases.

1.5 Validity

The instructions in this manual apply to the EWELLIX BCU control unit with the following identification:

- manufacturer: Schaeffler
- product designation: control unit
- type designation: BCU5, BCU8
- year of manufacture: from 2015
- CE marking: according to technical documentation

1.6 Images

The images in this manual may be schematic representations and may differ from the delivered device.

2 General safety regulations

This section provides an overview of all essential safety aspects for optimum personal protection as well as safe and trouble-free operation. Failure to observe this manual and the safety instructions contained herein may result in significant hazards and potentially lead to serious injury or death.

The safety program from Schaeffler details authorized users and the responsibility of individual users. The product was designed and built in accordance with the latest technical standards and accepted safety regulations. EU conformity is documented within the technical documentation.

2.1 Intended use

The product has been developed and designed for its intended use. If the product is used for a purpose other than that described, the manufacturer cannot be held liable for any resulting damage.

The device is permitted to control the following components:

- maximum of 3 actuators for pressure or tension-stressed strokes

2.1.1 User groups

To ensure safety, we specify requirements for the users of the device that must be adhered to under all circumstances. Only persons who meet these requirements are authorized to use the device.

We define user groups as all persons who operate, commission, further process, or pass on the device for further processing. Since the requirements of these user groups vary considerably depending on their role, we distinguish between the following user groups:

3 User groups

User group	Requirements
operating authority	The operating authority is the contractual partner of the executor or the reseller. The operating authority may be subject to legal conditions when acquiring the product. The operating authority ensures that the user is instructed on the authorized use of the product.
Executing party	The executing party is the contractual partner of the reseller or the manufacturer. They install the product in a system. They are authorized by the manufacturer of the device to use the product in accordance with the regulations and with the necessary technical expertise.
Technician	The technician has the professional technical training to implement the device according to its authorized use. They are familiar with the general safety regulations.
Reseller	The reseller passes the device on.
Operator	We define any other person who uses the device as an operator. The operator must have read the general safety instructions before using the device. In addition, they must be instructed in normal operation by the operating authority.

2.1.2 Operating modes

The device is intended exclusively for intermittent operation.

2.1.3 Areas of responsibility

Different user groups have differing areas of responsibility.

Operating authority

The operating authority is responsible for the following tasks:

- Ensuring that only authorized and trained individuals work with the product.
- Determining which authorized persons are allowed to use the product.
- Instructing user groups.
- Complying with all relevant legal framework conditions and regulations.
- Protecting persons.

Processor

The processor is responsible for the following tasks:

- Creating and handing over a CE-compliant user manual for the system in which the product is installed.
- Observing safety regulations in accordance with this user manual.

Reseller

The reseller is responsible for the following tasks:

- Handing over the user manual and product to the processor.
- Handing over a CE-compliant user manual for the system in which the product is installed to the operating authority.

Technician

The technician is responsible for the following:

- Observing manufacturer specifications and setting up interfaces to other devices safely.
- Installing and using the product in accordance with its intended use.
- Installing optional modules and connecting cables.

Operator

The operator is responsible for the following:

- Making sure that no one is put at risk when the product is in operation.
- Operating the product under normal operating conditions.
- Responding promptly and appropriately to malfunctions.

2.1.4 Hazard areas

We distinguish between 2 hazard areas, which must be observed depending on the user group and persons involved.

4 Hazard areas

Danger zone	Requirements
Persons	The danger zone includes not only the actual users but also third parties (other personnel, visitors, patients, etc.). In the event of damage, liability rests with the operator.
Device	The danger zone is the responsibility of the Executors and Technicians user group and includes the control unit and all attached elements.

2.2 Unintended use

The device is suitable for indoor use only and must not be exposed to weather conditions, strong UV radiation, or corrosive or explosive atmospheric media.

2.3 Hazards

This section lists the residual risks determined by the risk assessment.

The manufacturer has constructively, and with protective measures, minimized the effects of existing hazards. Pay attention to the residual hazards and potential countermeasures described in the following sections, in addition to the warnings.

Danger to life caused by electric current

Touching conductive parts poses an immediate danger to life. Damage to insulation or individual components may pose a danger to life. Therefore, observe the following:

- In an emergency, the device must be disconnected from the power supply.
- Applications in which the device is installed must have an emergency stop switch or be isolated from the mains supply on all conductors.
- Prevent the device from being exposed to water jets.
- If the insulation is damaged, immediately switch off the power supply and have the parts repaired.
- Work on the electrical system may only be carried out by electrically skilled persons.
- Before performing any work on the electrical system, disconnect the machine from the power supply.
- Before maintenance, cleaning, or repair work, disconnect the power supply and secure it against reconnection.
- Do not bypass or disable fuses. When replacing fuses, ensure the correct current rating is used.
- Keep moisture away from conductive parts to prevent short circuits.

Risk of injury from moving components

Rotating or linearly moving components can cause severe injury. Therefore, observe the following:

- Do not work on moving components.
- Keep your entire body, hands, and arms away from moving components.

Risk of injury due to crushing

When colliding with solid objects, the force exerted can cause injuries.

- Make sure that there are no persons present in the danger zone during operation.
- Ensure that no objects or persons come into contact with the push or protection tube on the front and rear attachment.

Risk of injury from pinching

If the actuator runs into fixed objects, the driving force may cause personal injury.

- If the actuator is left unattended, ensure that the full stroke length is free of obstacles and that no persons are located in the stroke area.
- Alternatively, all cables can be disconnected from the mains power supply.

Risk of injury due to damaged housing

Injury due to cracks and related openings in the housing of the device or its accessories.

- If the housing is damaged due to cracks, breakage or heavy wear, stop using the device and follow the disassembly instructions.

Risk of injury and property damage due to incorrect operation

Incorrect operation can endanger persons and objects in the danger zone of the system.

- Secure the device against unintended operation.
- Before pressing any button on the operating device, make sure that you have selected the correct one.

2.4 Manufacturer's declaration of EMC compliance



IEC 60601-1-2 Medical electrical equipment, Part 1-2: General requirements for safety including essential performance – Collateral standard: Electromagnetic disturbances – Requirements and tests

Professional health care facilities


Physicians' offices, dental practices, clinics, nursing facilities, outpatient surgical centers, freestanding birthing centers, multiple treatment facilities, hospitals (emergency rooms, patient rooms, intensive care, surgery rooms, except in the vicinity of HF surgical equipment, MRI systems outside a room shielded against RF signals, or an ME system for magnetic resonance imaging)

Essential performance characteristics

Control of electromagnetic actuators

-  Do not install the device adjacent to or stacked with other equipment. If installation adjacent to or stacking with other equipment is necessary, observe the device to ensure normal operation in the application.
-  The use of accessories, transducers, and cables other than those specified or supplied by the manufacturer of the device may result in increased electromagnetic emissions or reduced electromagnetic immunity and may cause the device to operate incorrectly.

RF communications equipment

-  Portable RF communications equipment, including peripherals such as antenna cables and external antennas, must be operated with a minimum distance of 30 cm from all parts of the ME equipment. Failure to maintain this distance may impair the performance of the device.

2.4.1 Technical description

Requirements applicable to all ME equipment and systems for compliance with the individual standards for electromagnetic emissions and immunity.

3 Scope of delivery

The scope of delivery comprises:

- 1 control unit
- Protective cover
- Mains cable
- 2 sealing stoppers ZDV-160307-0008, pre-assembled in factory
- User manual

3.1 Check for damage during transit

1. Check the product immediately upon delivery for any damage during transit.
2. Do not accept delivery, or only accept it with reservation, if transport damage is found.
3. Record the extent of damage on the transport documents or the carrier's delivery note.
4. Report any damage during transit promptly as a complaint to the carrier.



Report any damage as soon as it is discovered. Claims for damages can only be made within the applicable claim period stipulated by the transport company.

3.2 Check for defects

1. Check the product immediately upon delivery for any visible defects.
2. Check the product for completeness immediately upon delivery.
3. Report any defects promptly to the distributor of the product.
4. Do not put damaged products into operation.

4 Product description

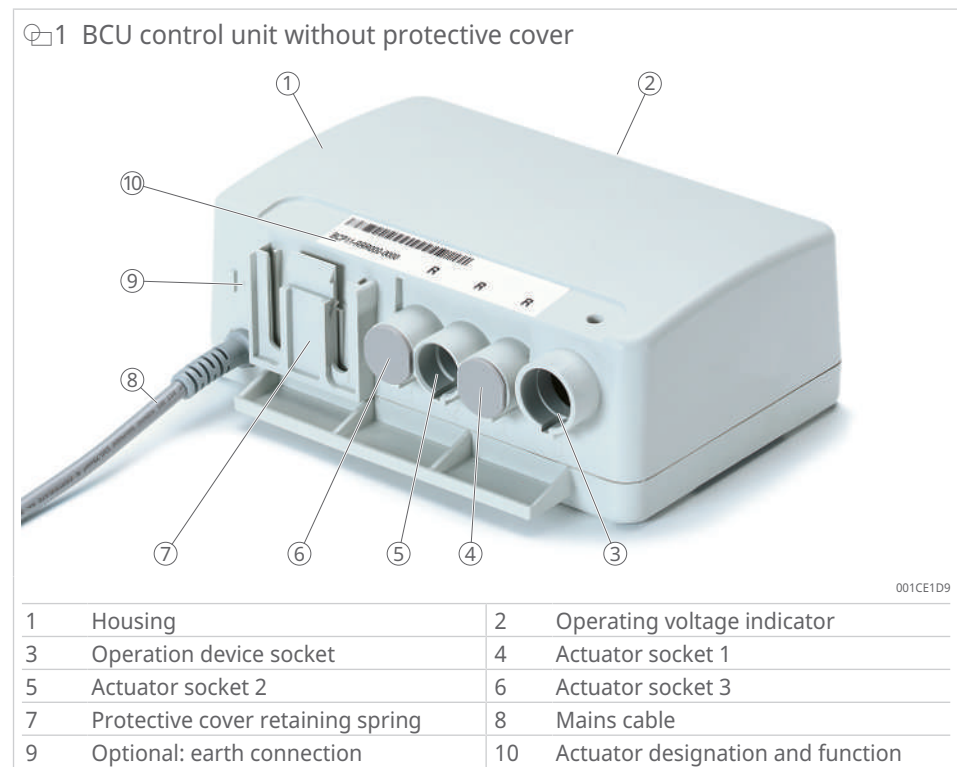
This section is intended for all users of the product and describes its structure and function.

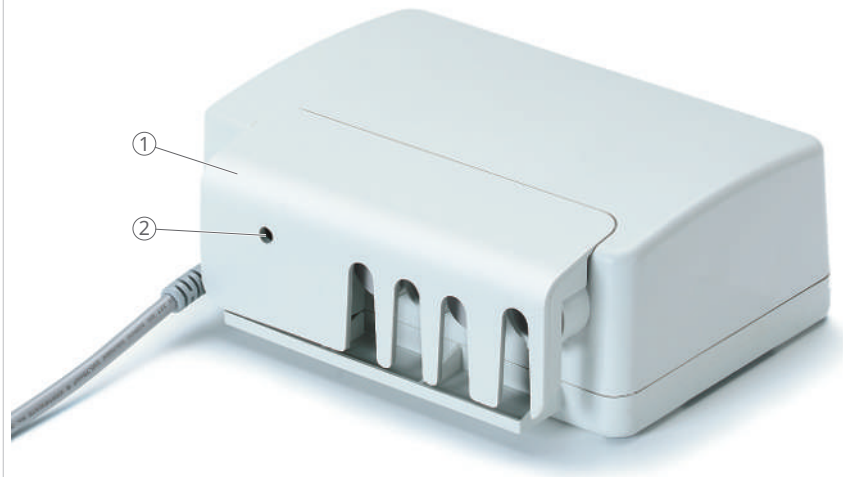
The product description explains the functions of the control unit, the operating devices, and the options.

The functions, connector layouts, and options of the control unit are configured at the factory according to the type designation and cannot be changed later.

4.1 Control unit

The operation of the control unit is based on controlling a maximum of 3 connected actuators. Functions available in the control program are activated via a manual switch or other operating devices. The control unit is configured by the manufacturer. Equip the control unit with an operating device and at least 1 actuator.


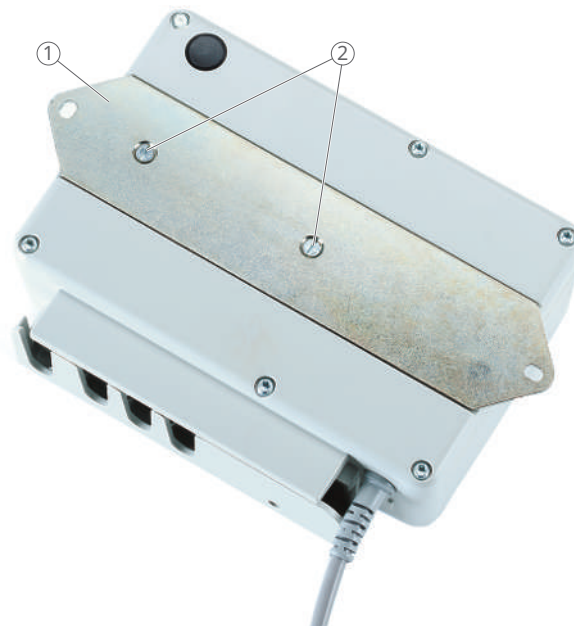


 2 BCU control unit with protective cover


001CE209

1 Protective cover

2 Hole for removing the protective cover

 3 BCU control unit, bottom view


001CE239

1 System bracket

2 M5 screws

Overcurrent cut off

The software with integrated overcurrent cut-off switches off the control unit in the event of overload and protects the connected actuators. Suitable shutdown values for connected actuators are parameterized at the factory.

Operating voltage indicator

The operating voltage indicator shows whether the product is being supplied with power.

Protective cover

The protective cover protects the connectors from being pulled out accidentally.

4.2 Options

Refer to the type designation options on the type plate.

Earth connection: 3-wire mains supply cable with grounding screw on the housing, protection class I

4.3 Accessories

In addition to the manual switch, further operating devices are available as accessories upon request from the manufacturer or reseller.

Manual switch

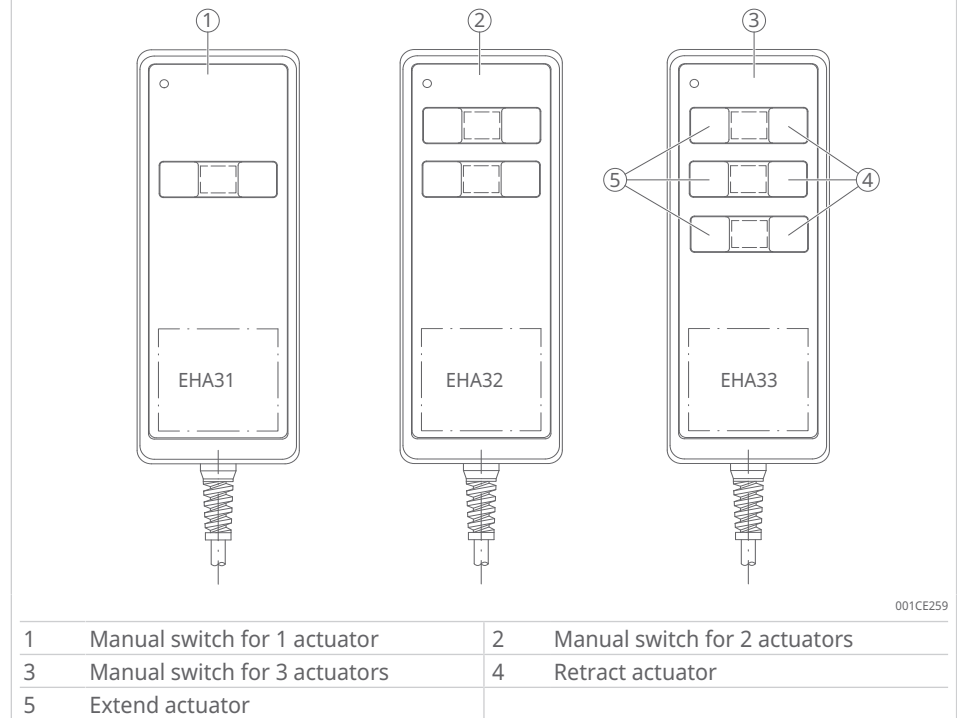
- ✓ The manual switch is designed for 1, 2, or 3 actuators. Use the appropriate manual switch for all user functions processed by the control unit.
- 1. Control the actuator directly using the manual switch.
- 2. To retract the actuator, press the right button (arrow pointing downward).
 - › The actuator retracts.
- 3. To extend the actuator, press the left button (arrow pointing upward).
 - › The actuator extends.

System bracket

Secure the control unit using the system bracket if the underside of the control unit is not accessible during assembly (part no. ZBE-315 416).

4.4 Operating devices

4 Manual switch in standard configuration



5 Transport and storage

NOTICE**Damage due to improper transport**

Improper transport may cause significant property damage.

- Proceed with care when unloading the packaged goods, upon delivery and during transport to the destination.
- Observe the symbols and instructions on the packaging.
- Do not remove the actuator from the packaging until immediately before installation.
- Observe the storage conditions for return transport to the manufacturer; see the *Safety regulations, transport, and storage* section.

5.1 Transport

Observe the safety regulations for transport.

Upon delivery, check the product for cracks in the housing. Report any transport damage immediately in writing to the carrier and the manufacturer.

1. Do not destroy the packaging and only remove it shortly before assembly.
2. Keep the packaging in case the product needs to be returned to the manufacturer ► 16 | 5.3.

If the packaging is to be disposed of:

3. Dispose of packaging material in an environmentally responsible manner.
4. Observe local disposal regulations.

5.2 Storage

Observe the safety regulations for the storage.

1. Store the product in its original packaging.
2. Observe the ambient conditions for the storage location.

5.3 Return to the manufacturer

Proceed as follows for return transport:

1. Dismantle the device if necessary.
2. Pack the device in its original packaging.
3. Observe the safety instructions for transport and storage.
4. Send to the manufacturer. The address is provided on the back of this operating manual.

6 Assembly

6.1 Installation site

Careful preparation is part of efficient installation and startup. This includes selecting the installation site and providing a power source.

Observe the technical data according to the operating conditions.

Install the device in a location that meets the ambient conditions.

See also

 Technical data [▶ 27]

6.2 Performing the installation

Performing the installation and alignment

Observe the following points when installing and aligning the control unit:

- ✓ Applications with built-in control units must provide an emergency-stop button or a disconnection device from the main supply on all poles.
- 1. Keep the power plug accessible at all times.
- 2. Route the mains cable in such a way that it cannot be crushed by the actuator's stroke movement.
- 3. Route the connecting cables to the actuators so that they cannot be crushed.

Checking the interfaces

The nominal values can be found in the technical data.

- ✓ Connectors are freely accessible.
- ✓ Cables are routed securely and concealed.
- 4. Connect the operating device
- 5. Connect the actuator
- 6. Install the protective cover
- 7. Observe the information on the type plate.
- 8. For protection class I: connect the ground wire
- 9. Connect the mains cable to the sockets

Connecting the operating device

- 10. Carefully connect the HD15 connector of the operating device to the corresponding connection socket of the control unit in the correct position.
- 11. Observe additional instructions for accessories.

Connecting the actuator

- ✓ The actuator used must be approved by the manufacturer for the control unit.
- 12. If in doubt, obtain approval for the actuator from Customer Service.
- 13. Insert the actuator connector into the assigned connection socket of the control unit.
- 14. For protection class IPX4: close all unused connection sockets with sealing stoppers.
- 15. Ensure that the letter on the actuator cable matches the letter on the label.
 - » The actuator is correctly connected to the control unit.
 - » The cable assignment is clear.

Installing the protective cover

- ✓ All connections are established.
- ✓ Cables are routed securely and concealed.
- 16. Install the protective cover on the control unit until the protective cover fastening engages.

The protective cover can only be installed if the connectors are correctly installed. The protective cover can only be removed with a tool.

Connect the ground wire

- ✓ Unit with protection class I.
- 17. Fasten the cable shoe to the earth connection using the nut of the ground wire screw.
- 18. Do not overtighten nuts to avoid damage to the housing and to ensure IPX4 protection.
- 19. Check the connection regularly.

Installation

WARNING



Electric shock due to damaged power plug or damaged mains cable

Risk of serious injury if a damaged power plug or mains cable is touched while the control unit is in operation. The control unit is supplied with AC 120 V or AC 230 V.

- Switch off the circuit fuse. Do not remove defective power plugs from the socket until the fuse has been switched off.
- Regularly check the mains cable for damage.

- 20. Connect the control unit only to a power supply with protective earth.

Screw mounting

- ✓ The underside of the control unit is accessible
- 21. Fasten the control unit to the underside using screws.
- ✓ The underside of the control unit is not accessible
- 22. Use the system bracket as an accessory.
- 23. Do not screw the M5 screws deeper than 10 mm to avoid damaging the control unit.
- 24. Secure the control unit from the top side using screws or bolts.

7 Commissioning

Authorized personnel

- Assembly and commissioning may only be carried out by qualified technical personnel.
- Work on the electrical system may only be carried out by trained, electrically skilled persons.

7.1 Initial commissioning

Before commissioning, check the following points on the installation:

- operating device connected
- actuator connected
- unused connectors closed with sealing stoppers
- protective cover attached
- energy supply ensured
- mains cable connected
- free access to the power plug ensured
- operating voltage indicator illuminated

Commissioning

- ✓ Installation successfully checked
- Press the actuation button on the operating device.

8 Operation

Performed by operator and operating authority.

This section contains all necessary information for the safe and trouble-free operation of the control unit during normal operation. During normal operation, the control unit analyzes signals from the operating device in order to activate the stroke movement with the corresponding actuator.

Preconditions for operation:

- The control unit controls 1 to 3 actuators.
- The protective cover is closed.
- The power supply is ensured and the operating voltage indicator is illuminated.

WARNING



Electric shock due to damaged power plug or damaged mains cable

Risk of serious injury if a damaged power plug or mains cable is touched while the control unit is in operation. The control unit is supplied with AC 120 V or AC 230 V.

- Switch off the circuit fuse. Do not remove defective power plugs from the socket until the fuse has been switched off.
- Regularly check the mains cable for damage.

Switching on the control unit

- ✓ The operating requirements have been met.
1. Use the operating device.
 2. Establish the connection to the actuator with DC 24 V safety low voltage.

Switching the control unit off

3. Pull the power plug of the control unit out of the power outlet.

9 Troubleshooting

The following section describes possible causes for malfunctions and the actions required to restore functionality.

If a malfunction cannot be rectified with the measures described, contact Schaeffler Service.

Authorized personnel

- Performed by a technician authorized by the manufacturer

Safety instructions

DANGER



Risk of serious or fatal injuries from live components and moving parts

Serious or fatal injuries may be caused by contact with live components and by unexpected actuator movements.

- Switch off the power supply and secure it against unintentional reconnection before performing any work on the system.

DANGER



Risk of fatal injury from unauthorized reconnection of the power supply

Risk of fatal injury to persons in the hazard area due to moving parts or electric shock if the power supply is switched on without authorization during work on the system and causes the system to restart.

- Before starting work, switch off the system and secure it against reconnection.

Procedure in the event of malfunctions

In principle:

1. In the event of malfunctions that could pose a direct danger to persons or property: Switch off the actuator or the control system immediately and secure it against being switched back on.
2. Determine cause of malfunction.
3. Depending on the type of malfunction: Have the malfunction rectified by qualified personnel.
4. Inform the persons responsible on site about the malfunction.

5 Malfunction

Malfunction	Possible cause	Remedy
Actuator no longer moves	No supply voltage or incorrect supply voltage	<ul style="list-style-type: none"> ▶ Check the operating voltage on the type plate of the control unit ▶ Check the mains voltage of the socket
Actuator no longer moves	Missing connector contact, operating voltage indicator does not illuminate	<ul style="list-style-type: none"> ▶ Check the power plug of the control unit ▶ Insert the power plug into the mains socket ▶ Check the supply voltage and replace the fuse if necessary ▶ Check the plug of the operating device (HD15) and insert if necessary ▶ Check the plug of the actuator (DIN 8) and insert if necessary
Actuator no longer moves	Control unit overheated, operating voltage indicator does not illuminate	<ul style="list-style-type: none"> ▶ Remove the power plug of the control unit from the mains socket ▶ Wait 30 min ▶ Insert the power plug into the mains socket » In case of overheating, contact Customer Service
Actuator no longer moves	Actuator defective	<ul style="list-style-type: none"> ▶ Perform troubleshooting in accordance with the actuator user manual » If defective: replace the actuator and contact Customer Service
Actuator no longer moves	Service life exceeded	<ul style="list-style-type: none"> ▶ Check whether the control unit is over 10 years old or has performed more than 100000 switching operations » If exceeded: replace the control unit and contact Customer Service
Control unit is not responding correctly or fails to perform any function	Incorrect parameter set in the control unit for the actuator	<ul style="list-style-type: none"> ▶ Check the type plate of the BCU control unit and BCP parameter set ▶ Check the type plate of the linear unit ▶ Contact the manufacturer

10 Shutting down

If the device is no longer used regularly, take it out of operation.

When removing the device from service, perform the following steps in the specified order:

1. Disconnect the device from the power supply. Remove the power plug from the socket to disconnect the power supply.
2. Remove the protective cover. Using a pin or a thin screwdriver, press the retaining spring through the opening in the protective cover.
3. Remove the 8-pin DIN connector of the actuator from the control unit.
 - » The control unit can now be removed.

11 Maintenance

The devices are maintenance-free for the duration of their service life. The connecting cable and housing must be checked for wear at regular intervals.

Authorized personnel

Performed by technician and processor

11.1 Cleaning

Clean after use in order to avoid the accretion of residues. The protection classes of the devices and components are listed in the technical data and apply only in assembled status.

NOTICE



Damage due to improper cleaning

Improper cleaning of the device can result in damage to the device.

- ▶ Do not use aggressive cleaning agents. Wash water, including chemical additives, must be pH-neutral.
 - ▶ Only use cleaning agents specified by the manufacturer.
 - ▶ Do not use steam cleaners or high-pressure cleaners.
 - ▶ Other cleaning agents or cleaning devices may only be used with the manufacturer's approval.
 - ▶ Ensure that no liquids are allowed to penetrate the connections.
- ▶ Clean the devices manually using a damp cloth and water. Add some isopropyl alcohol to the washing water, if necessary.

12 Disassembling

Observe all safety regulations.

Authorized personnel

- Disassembly may only be carried out qualified technical personnel.
- Work on the electrical system may only be carried out by trained, electrically skilled persons.

Safety instructions

DANGER



Risk of serious or fatal injuries from live components and moving parts

Serious or fatal injuries may be caused by contact with live components and by unexpected actuator movements.

- Switch off the power supply and secure it against unintentional reconnection before performing any work on the system.

WARNING



Risk of severe injury from improper disassembly

Stored residual energy, sharp-edged components, pins, and corners on individual parts or on the required tools can cause severe injuries if disassembly is performed improperly.

- Ensure sufficient space for disassembly before starting work.
- Exercise caution when working with exposed, sharp-edged components.
- Ensure that the disassembly area is clean and tidy. Avoid loosely stacked components or parts and tools lying on the floor which may pose a hazard.
- Disassemble components properly in accordance with applicable local regulations.
- Secure components to prevent them from falling or tipping over.
- Contact Schaeffler with any questions or concerns.

12

Disassembling the device

- ✓ Switch off the device before disassembly.
- ✓ Disconnect all plug connections.
- Loosen and remove the fastening screws.
- » The device can then be prepared for transport, storage, or disposal.

13 Disposal

Observe the local regulations for disposal.

A description of the dismantling and the requirements for the transport can be found in the corresponding sections.

14 Technical data

Additional information:



LA 1 | EWELLIX Lifting and Actuating Systems |
<https://www.schaeffler.de/std/222A>

For further information, contact Schaeffler.

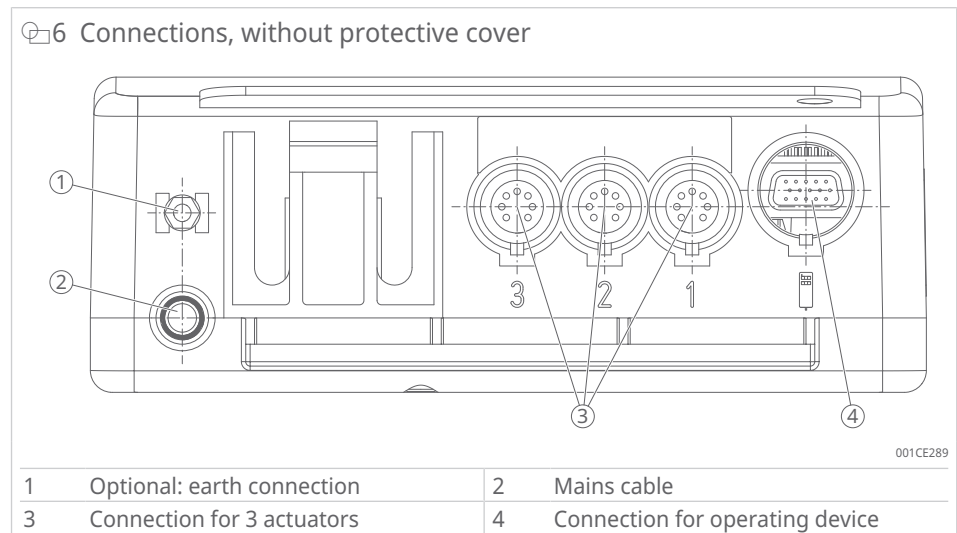
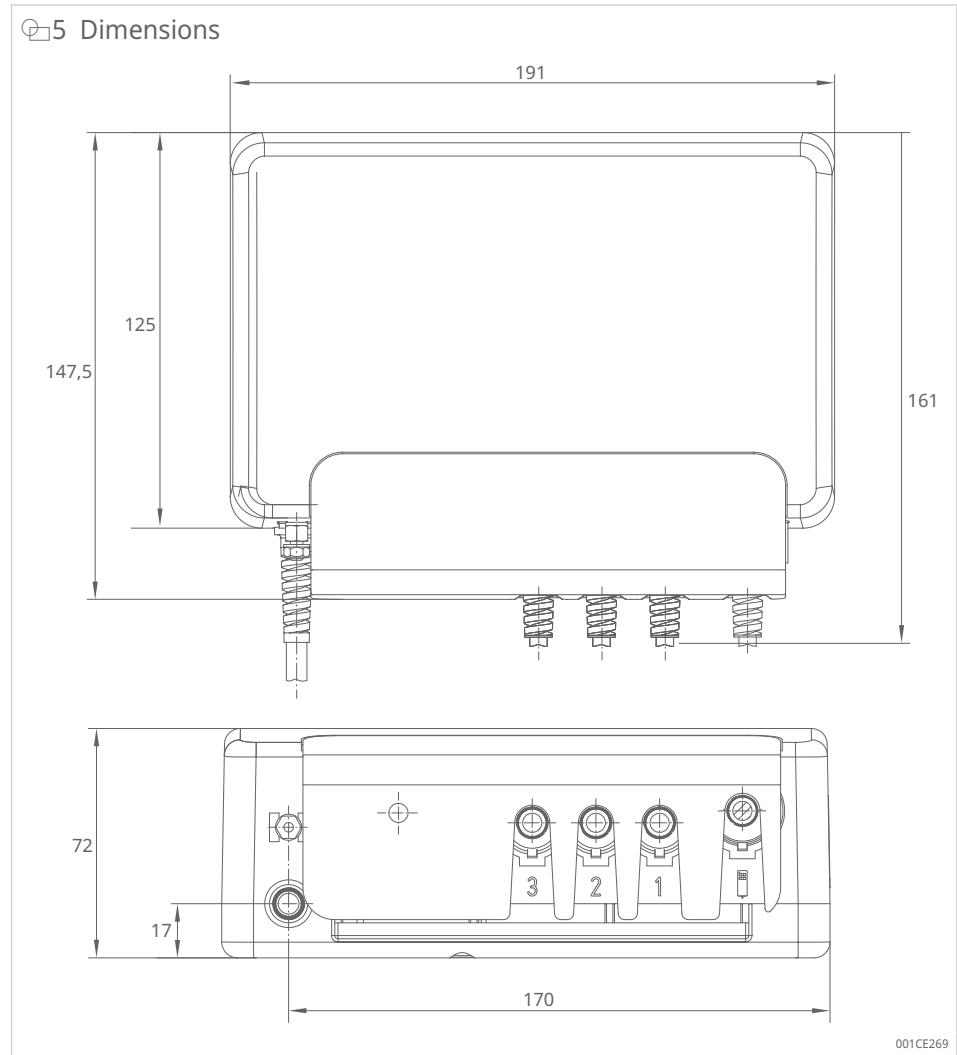
Advantages:

- compact 3-channel control unit
- single-fault safety
- overload protection and overtemperature protection
- approved for medical applications
- easy to clean
- low standby current

6 Technical data

Feature	Unit	BCU5	BCU8
Actuator connection sockets (DIN 8)	–	3	3
Operation device sockets (HD15)	–	1	1
Single-fault safety	–	Yes	Yes
Encoder signal processing	–	No	No
Input voltage	V AC	120	230
Frequency	Hz	60	50
Input current, max.	A	2.5	1.3
Power consumption in standby	W	1.2	1.5
Output voltage	V DC	24	24
Output current	A	7	7
Duty cycle: intermittent	min	ON: 1 min / OFF: 9 min	ON: 1 min / OFF: 9 min
Duty cycle: short time	min	2	2
Ambient temperature during operation	°C	0 ... +40	0 ... +40
Humidity	%	5 ... 85	5 ... 85
Protection code (IP)	–	IPX4	IPX4
Approvals	–	IEC 60601-1	IEC 60601-1
Mass	kg	2.3	2.3

Dimensional drawings



7 Suitable linear actuators, lifting columns, and operating devices

Product		Control unit		
		BCU5	BCU8	
Linear actuator	CARE33A	✓	✓	
	RU20, RU21, RU22	✓	✓	
	MAX10, MAX30	✓	✓	
	ECOMAG	✓	✓	
Lifting column	THG10	✓	✓	
	TLG10	✓	✓	
	TLT10	✓	✓	
	TFG10	✓	✓	
	CPMT1	✓	✓	
	TXG10	✓	✓	
Operating device	M	EHA3	✓	✓
	F	STJ	✓	✓
	T	STE	✓	✓

M Hand switch

F Foot switch

T Desk switch

✓ suitable

- not suitable

14.1 Ambient conditions

14

Transport and storage

The product may only be transported and stored in its original packaging under the following ambient conditions:

- dry and dust-free environment, not outdoors
- protected from sunlight and UV radiation
- chemically non-aggressive environment
- no mechanical shocks
- Temperature: 0 °C to +40 °C
- Humidity: 5 % to 85 %

If the packaging contains additional storage instructions that go beyond the requirements listed here, these instructions must also be observed.

Operation

The product may only be operated under the following ambient conditions:

- indoor use only
- temperature from 0 °C to +40 °C
- humidity 5 % to 85 %, non-condensing
- Install in a location where the actuator is not exposed to strong UV radiation or corrosive or explosive air media.

15 Replacement parts and accessories

15.1 Replacement parts

Spare parts not included in the scope of delivery.

8 Replacement parts

Component		Order number
Sealing stopper	For unused actuator connection socket	ZDV-160307-0008

15.2 Accessories

9 Accessories

Designation	Order number	Design	Length
			m
Handswitch cable, straight	ZKA-160627-2500	15 × AWG30	2.5
Motor cable, straight, DIN	ZKA-160606-2650	2 × AWG18	2.65
System bracket	ZBE-315416	-	-

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