EWELLIX

EWELLIX Control Units

VCU

User Manual

We pioneer motion

SCHAEFFLER

Contents

1 About the manual

1.1 Information in this user manual

This manual contains important Information for the safe and efficient operation of the controller, also referred to as device.

The manual is an integral part of the device and must be kept in the immediate vicinity of the device and accessible to personnel at all times. Personnel must carefully read and understand this manual before starting any work. A basic requirement for safe working is compliance with all safety instructions and handling instructions specified in this manual.

In addition, the local accident prevention guidelines and general safety regulations applicable to the area of use of the device must also be observed.

Validity

The information in this manual applies to VCU controllers with the following identification:

- manufacturer: Schaeffler
- product name: VCU controller
- type designation VCUxx-xxxxxx-xxxx
- year of manufacture: from 2005
- CE marking: according to technical documentation

Authorized personnel

This manual is intended for technical personnel and authorized users who use the VCU controller in their products and work with it. The operating authority determines who is authorized as a user.

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 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 moderate 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.

2 Warning, prohibition, and mandatory signs

Signs and descriptions	
	General warning
	Electrical voltage warning
	Hot surface warning
	Flammable materials warning
	Observe the manual
	Wear safety shoes
	Wear eye protection
	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 Limitation of liability

All information and notes in this manual were compiled with due consideration given to applicable standards and regulations, the present state of technology and our years of knowledge and experience.

The manufacturer is not liable for any damage resulting from:

- disregarding this manual
- unintended use
- employment of untrained personnel
- unauthorized conversions
- technical changes
- manipulation or removal of the screws on the drive
- use of unapproved spare parts.

Where the device has been customized, the actual product delivered may be different from what is described in this manual. In this case, ask Schaeffler for any additional instructions or safety precautions relevant to these devices.

We reserve the right to make technical modifications to the device to improve usability.

1.6 Availability

A current version of these instructions is available at:
https://www.schaeffler.de/std/2233

Ensure that this manual is always complete and legible and is available to all persons engaged in transporting, fitting, dismantling, commissioning, operating, or maintaining the product.

Keep the manual in a safe place for immediate reference.

1.7 Images

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

2 General safety regulations

The general safety instructions are intended for users who operate and maintain the product.

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

The device is permitted to control the following components:

- a maximum of 5 actuators for strokes under pressure stressed stroke or tension stressed stroke

2.1.1 User groups

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

We refer to all persons who operate, commission, further process, or pass on the device for further processing as user groups. 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 processor 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.
Processor	The processor 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 ➤8|2.
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 regulations before using the device. In addition, they must be instructed in normal operation by the operating authority ➤8|2.

2.1.2 Types of operation

The device is intended exclusively for intermittent operation.

2.1.3 Areas of responsibility

The different user groups are associated with different 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.

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 tasks:

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

Any use other than the intended use, or any modification to the device without the manufacturer's written consent, is not permitted. Operation beyond the technical limits is also not permitted.

The technical operating limits can be found in the technical data and on the device's data plate ➤29|14 .

Any unauthorized use of the device can cause personal injury and property damage. The instructions in this user manual must be observed at all times.

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

The device may only operated with a closed cover.

2.3 Hazards

This section lists the residual risks identified through the risk assessment.

The manufacturer has minimized the effects of existing hazards through design and protective measures. Pay attention to the residual hazards and potential countermeasures described in the following sections.

Danger to life from electric current

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

- 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.
- Before maintenance, cleaning, or repair work, disconnect the power supply and secure it against reconnection.

Risk of injury and property damage due to incorrect operation

Incorrect operation can endanger persons and objects in the hazard area of the system.

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

3 Scope of delivery

The product consists of:

- 1 VCU control unit
- 1 safety cover
- DC design only: 1 connection cable
- 2 sealing stoppers (prefitted at the factory; item no. ZDV-160307-0008)
- 2 or 3 sealing stoppers (with optional connection for rechargeable battery) (prefitted at the factory; item no. ZDV-160308-0015)
- optional: 1 rechargeable battery for installation beneath the device
- 1 user manual

3.1 Check for transport damage

1. Check the product immediately upon delivery for any damage during transit.
2. Report any damage during transit promptly as a complaint to the carrier.

3.2 Check for defects

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

4 Product description

The VCU control unit is designed for up to 5 linear actuators.

The VCU control unit processes incoming electrical signals and forwards them to the linear actuators in order to trigger a specific function.

Depending on the design, the control unit is equipped with either an AC or a DC input.

The functions of the preconfigured control programs can be triggered via an external operating device.

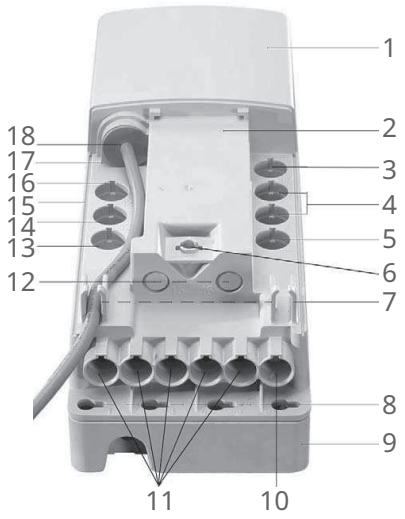
Designs

The designs can be identified from the type designation on the data plate. The VCU control unit can be equipped with a battery connection (➤12|⧉1, pos. 14) or with a preinstalled battery. The unused connection is factory-fitted with a sealing stopper.

The VCU control unit is available in protection class I. Designs with protection class I have a three-core ground wire with a ground terminal on the housing (➤12|⧉1, pos. 17).

The connection for the end switch is present on all designs of the VCU control unit. However, this option, in which the end switches perform various functions, must be configured at the factory by the manufacturer. The port is factory-fitted with a sealing stopper.

⧉1 Control unit VCU, DC design with battery, without cover



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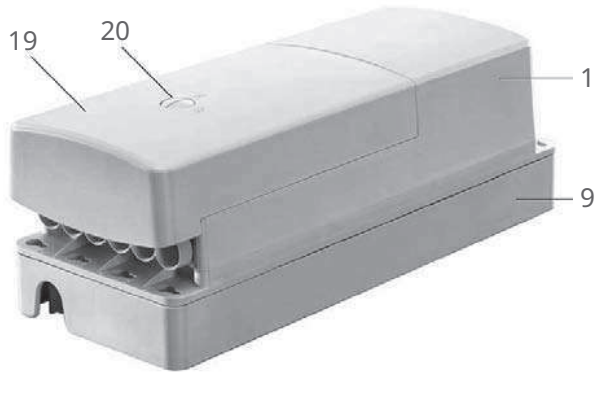
1	Housing	2	Space for software data plate
3	Not assigned (socket 10)	4	Connection for operating devices (sockets 8, 9)
5	Connection for 2 external end switches (socket 7)	6	Mounting for cover
7	Cable guides	8	Installation holes (4)
9	Battery	10	Not assigned (socket 6)
11	Connection for linear actuators or lifting columns (sockets 1 to 5)	12	Not assigned (sockets 15, 16)
13	Not assigned (socket 14)	14	Optional battery connection (socket 13)
15	Ready-for-operation indicator (not visible)	16	Not assigned (socket 12)
17	Ground screw (not visible)	18	Mains connection or connection for DC power source (socket 11)

2 Side view with battery and cover



1	Housing	9	Battery
19	Cover	20	Lock for over

Operating devices

The following operating devices are suitable for use with the VCU control unit:

- hand switch EHA3
- foot switch STJ
- desk switch STE

4.1 Functional principle

The functional description enables you to understand the tasks performed by the VCU control unit as well as its operating devices and available options.

Please note that the functions, connector pin assignments, and options available with the control unit are configured at the factory according to requirements and cannot be changed afterward.

The operating principle of the VCU control unit is based on the control of a maximum of 5 connected linear actuator units. The functions available in the control program are triggered via the hand switch or other operating devices. The VCU control unit is configured by the manufacturer.

The VCU control unit must be equipped with an operating device and at least one linear actuator unit. The DC design requires a DC power source.

The ready-for-operation indicator shows whether the device is supplied with power.

In the standard configuration, the VCU control unit is failsafe. In this configuration, the device monitors safety-relevant electronic system components and, if a fault occurs, switches to a safe state in which no movement can be performed until the fault has been corrected ➤24|9.

The maximum error tolerance period is 1 s.

If a connected linear actuator does not have an internal end switch or an internal thermoswitch, the system's fail-safety is reduced. Linear actuators without internal end switches are switched off in the event of over current. If a linear actuator does not have an internal thermoswitch and a fault occurs, the linear actuator may overheat and become damaged.

For DC design only: A smoothed power supply can be used as a DC power source. However, during operation and while the linear actuator is moving, it must be ensured that the permissible rated voltage for the actuators is not exceeded ➤29|14.

The cover protects the cable connections from being pulled out accidentally.

The VCU control unit features a lock function. When using a suitable operating device with corresponding function keys, it is possible to lock or enable individual functions of the control unit. The signal is forwarded to the control unit, and the lock function of the VCU control unit performs the lock or unlocking function. This ensures that no hazards arise from several operating devices being used at the same time. Locked functions are indicated by a yellow LED as required.

The software with integrated over-current cutoff switches off the VCU control unit in the event of overload and protects the connected linear actuators. The corresponding power-down values for the connected linear actuator must be parameterized by the manufacturer.

4.2 Accessories

Approved batteries are screw-mounted on the underside of the device. The device can only be operated with a battery if the appropriate design has been selected.

Further operating units are available in addition to the hand switch as accessories. The operating units trigger a function in the control unit. The function depends on the type of control unit (parameterization) and typically enables the actuator to retract or extend.

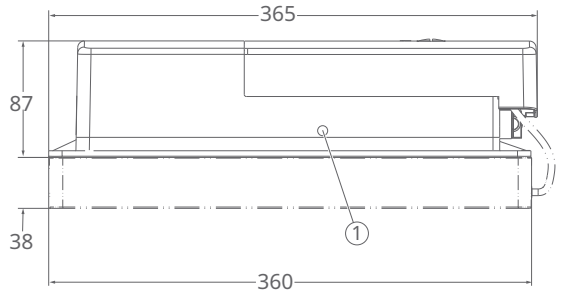
The operating units are not included in the scope of delivery and must be ordered separately. Only operating units approved for the device may be used.

Order the mains cable with the plug suitable for your country and with the protection class appropriate for your device. To maintain the protection class of the device, only original Magnetic mains cables marked “ZKA-160xxx-xxxx” may be used.

▦5 Accessories

Accessories	Plug	Designation	Order number
Mains cable, 2-pole	Euro	ZKA-160608-3500	0105726
Mains cable, 3-pole	Schuko	ZKA-160637-3500	0118821
Mains cable, 3-pole	SEV	ZKA-160638-3500	0118822
Mains cable, 3-pole	UL	ZKA-160639-3500	0105588
Mains cable, 3-pole	UK	ZKA-160609-3500	0105631
Mains cable, 3-pole	UL, medical grade	ZKA-160640-3500	0118823
Mains cable, 3-pole	Australia, China	ZKA-160661-3500	0129953
Battery, 2.7 Ah	-	ZKA-160208-0400	0118806
Adapter for 4.5 Ah battery	-	ZKA-160207-1000	0126155
External battery 4.5 Ah	-	ZBA-160209	0126154

3 Dimensional drawing



1	Ready-for-operation (LED)

6 Suitable controllers and operating devices

Control unit	Linear actuators					Lifting columns					Operating devices		
	CARE 33A	RU20, RU21, RU22	RU23, RU24, RU25	MAX10, MAX30	ECOMAG	THG10	TLG10	TLT10	TFG10	TXG10	EHA3	STJ	STE
VCU5	+	+	+	+	+	+	+	+	+	+	+	+	+
VCU8	+	+	+	+	+	+	+	+	+	+	+	+	+
VCU9	+	+	+	+	+	+	+	+	+	+	+	+	+

5 Transport and storage

Observe the safety regulations for transport.

Observe the safety regulations for storage.

The device is delivered packaged as a single unit in a cardboard box or on pallets.

Appoint a carrier to ship the VCU control unit.

Prepare the VCU control unit for transport as follows:

1. Dismantle the VCU control unit ➤27|12.
2. Carefully package the VCU control unit.

The weight, dimensions, and environmental requirements can be found in the technical data.

Ambient conditions during storage:

- temperature: +5 °C ... +40 °C
- humidity: 5 % ... 85 %

NOTICE

Risk of damage to batteries and rechargeable batteries

Rechargeable batteries can still discharge during storage and may be destroyed if fully discharged.

- Please ensure that the batteries are connected to the power supply periodically.
- During storage, the 2.7 Ah under-floor battery must be connected to the power supply for 12 h every 4 months.

6 Installation

DANGER

Damaged plugs or damaged mains cables

Danger to life from electric current

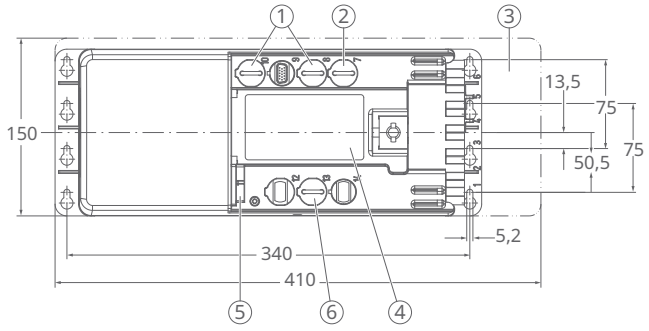
- Never touch a damaged mains plug or a damaged mains cable while the device is in operation, as it is supplied with 120/230 V AC.
- Ensure that the circuit breaker is switched off before removing a defective plug from the socket. Check the mains cable regularly for damage.

This chapter contains all information required for installing, connecting, and commissioning the VCU control unit.

When installing and orienting the VCU control unit, the following points must be observed:

- The mains plug of the connection cable must remain accessible at all times.
- The mains cables, DC cables, and battery cables must not be bent or crushed.
- The connection cables to the actuators must not be crushed or bent.
- Control unit VCU must be placed on a flat surface. If the housing is bent during installation, the IP protection rating is no longer ensured.
- Control unit VCU must be installed securely and prevented from coming loose as a result of shocks or vibrations.

4 Connecting diagram



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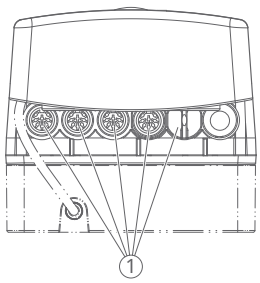
1	3 connections for operating devices HD15	2	Connection for end switches HD15
3	Additional free space for installation	4	Software data plate
5	Mains connection	6	Battery connection, D-Sub 9-pin (optional)

5 Connections with DIN 8 plug



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1	DIN-8 plug		

6.1 Connecting the operating units

1. Carefully connect the HD15 plug of the operating device in the correct position to the corresponding socket on the device.
2. Make sure that you have used the correct port.
3. Repeat steps 1 and 2 as required for an additional operating device.

If no external battery is used, the port must be fitted with the factory-supplied sealing stopper to ensure a degree of protection in accordance with IPX4. Please observe the special requirements for handling rechargeable batteries. Only batteries approved by the manufacturer may be used.

If no end switch is used, the port must be fitted with the factory-supplied sealing stopper to ensure a degree of protection in accordance with IPX4.

6.2 Connecting the actuators

Depending on the number of actuators operated with the VCU control unit, they must be connected as follows:

- 1 actuator: port 1
- 2 actuators: ports 1 and 2
- 3 actuators: ports 1 to 3
- 4 actuators: ports 1 to 4
- 5 actuators: ports 1 to 5

✓ Only actuators approved by the manufacturer may be connected. Contact Schaeffler to ensure that the actuator used with this control unit is approved.

1. Insert the actuator plug into the corresponding port of the VCU control unit.
2. Check that the letter on the label clip of the actuator matches the letter on the label of the corresponding port.

A degree of protection in accordance with IPX4 is only guaranteed if all unused ports are closed off with a sealing stopper.

6.3 Connecting the mains cable to the device

▸ Insert the mains cable (accessory) into the corresponding port of the device.

6.4 Connecting end switches

✓ The corresponding option must be configured at the factory.

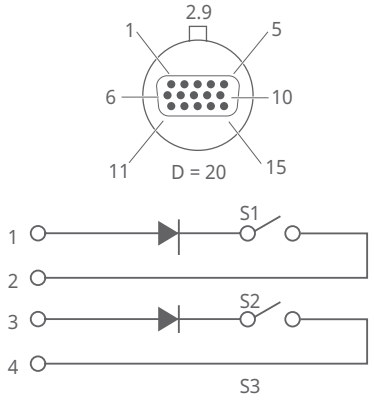
✓ To ensure safe operation, use force-opening contacts only.

✓ Normally open contacts are required to enable movement.

✓ A diode is required to monitor the line to the end switches (single fault safety). With appropriate parameterization, DC 24 V signals (e.g., from a PLC) can be processed by the device.

▸ Insert the plug of the linear actuator into the corresponding port of the device.

6 Connecting diagram for end switches



Function	Pin	Stranded wire color (ZKA-160627-2500)
DC 24 V (common)	1	White/yellow
	3	White/green
	5	Gray/pink
	7	Black
	9	Blue
Switch 1	2	Brown/green
Switch 2	4	Red/blue
NC	6	Purple
	8	Red
	10	Pink
	11	Gray
	12	Yellow
	14	Brown
DC 29 V ... DC 40 V , max. 50 mA	13	Green
GND	15	White

6.5 Connecting the battery

NOTICE

Deformed plug pins

Risk of property damage to the device. Deformed plug pins can cause a short circuit and damage the battery.

- Ensure that plugs are freely accessible.
- Ensure that all cables are secured and protected.

✓ The optional connection for a rechargeable battery must be available.

1. Under-floor battery: Screw the under-floor battery to the underside of the device.
2. Other approved battery packs: Fasten the batteries in the correct orientation at a suitable location.
3. Check the battery plug for damage.
4. Insert the battery plug into the corresponding port of the device.

6.6 Installing the cover

✓ All required connectors must be plugged in and all unused connections are closed off with sealing stoppers.

▸ Place the cover onto the rear of the device until the latch in the cover engages.

If the cover cannot be fitted correctly, the connectors may not be fully inserted. The cover can only be removed using a tool.

6.7 Connecting the ground wire

NOTICE

Risk of damage to the housing

The nut must not be tightened excessively, as this may damage the housing and compromise the degree of protection in accordance with IPX4.

▸ Observe a tightening torque of 1 to 2 Nm.

The ground wire must be securely connected and exhibit a sufficiently low transfer resistance. The connection must not come loose under any circumstances.

✓ For protection class I devices only.

▸ Connect the cable shoe to the ground point using the nut on the ground wire screw.

6.8 Installing the device

✓ The device must be screw-mounted on the application.

▸ Secure the device so that the required minimum of 4 fastening screws cannot loosen or slip through the screw holes.

6.9 Connecting the device to the power supply

1. For the AC design: Insert the mains plug into the socket.
2. For the DC design: Connect the stranded wires of the DC cable to a suitable power source. The DC power supply must be protected against short circuits and similar faults.

7 Commissioning

Before commissioning the device, carry out the installation check.

Verify the following before initial start-up:

- All steps in the Installation chapter have been carried out.
- The mains plug is freely accessible.
- The ready-for-operation indicator is illuminated.
- All unused ports are closed off with a sealing stopper.

Then carry out a comprehensive function test:

- Ensure that the plugs for the operating devices and the end switches are identical.
- Ensure that the plugs, operating devices, and end switches function correctly.

Commissioning the device:

▸ Press the corresponding button on the operating device.

8 Operation

DANGER

Damaged plugs or damaged mains cables

Danger to life from electric current

- Never touch a damaged mains plug or a damaged mains cable while the device is in operation, as it is supplied with 120/230 V AC.
- Ensure that the circuit breaker is switched off before removing a defective plug from the socket. Check the mains cable regularly for damage.

CAUTION

Incorrect operation

Risk of property damage and personal injury due to incorrect operation

- Ensure that the operating unit cannot be actuated unintentionally.

This chapter is aimed at users and operating authorities. It contains all information required for safe and trouble-free use of the device during normal operation.

In normal operation, the device analyzes signals from an operating device in order to trigger the pushing or lifting movements with the corresponding linear actuator.

Preconditions for operation

The device controls 1 to 5 linear actuators. The safety cover must be closed and the power supply ensured.

The optional battery enables operation without connection to the power supply.

The battery must be sufficiently charged for operation. The following table provides an overview:

7 Battery status in various operating modes with corresponding LED indication

Operating mode	LED indicator	Charge status
Control via mains power or DC power supply	Lights up green	Full
	Flashes green	Charging
Control via battery, no mains connection	Lights up green when a button on the operating unit is pressed.	Full
	Lights up orange and an acoustic signal sounds when a button on the operating unit is pressed.	Weak. One full stroke with one actuator is still possible (approx. 2 min)
	Flashes orange and an acoustic signal sounds when a button on the operating unit is pressed.	Very weak. Only movement in the counter-load direction is possible

Operation

Operation is performed using an operating device.

✓ The preconditions for operation must be met.

1. Press the corresponding button on the operating device to retract or extend the associated linear actuator.
2. If the movement does not stop as soon as the button is released, immediately press the button for the opposite direction to stop the movement.

The connection to the operating device (DC 5 V) and to the linear actuator (DC 24 V) is established via safety extra-low voltage.

Switching off the device

3. Remove the device's plug from the socket.

9 Troubleshooting

8 Troubleshooting

Error	Possible cause	Remedy
The linear actuator no longer moves.	No supply voltage, incorrect supply voltage, missing plug contact, or the supply indicator is not illuminated.	1. Check the operating voltage on the data plate and verify that the mains voltage of the socket corresponds to this value. 2. Check the device's mains plug and, if necessary, insert it into a mains socket. 3. Check the supply voltage and replace the fuse if necessary. 4. Check the HD15 plug of the operating device and, if necessary, insert it into the device ➤18|6.2. 5. Check the DIN 8 plug of the linear actuator and, if necessary, insert it into the device ➤18|6.2. 6. Ensure that the supply voltage and plug contacts are intact.
	The device has overheated or the operating indicator is not illuminated.	7. Remove the mains plug of the VCU control unit from the socket and wait approximately 30 min. 8. Reinsert the mains plug into the socket. 9. If the device has overheated, please report this to customer service.
	The linear actuator is defective	10. Troubleshoot the linear actuator. 11. Replace the linear actuator and inform customer service.
	Product service life exceeded.	12. Check whether the device is more than 10 years old or has performed more than 100000 switching cycles. If this is the case, contact the manufacturer.
	The linear actuator cannot be set in motion again using any of the above measures.	13. Contact the manufacturer immediately
The device works, but cannot be operated without connection to the mains supply.	The device is not designed for operation with rechargeable batteries.	14. Remove the cover. 15. Check whether port 13 is present ➤12|1. 16. Ensure that the device is suitable for battery operation.
	Operation without a mains connection is not possible with this device.	17. Contact the manufacturer immediately
	The battery is not connected correctly.	18. Check whether the battery cable is correctly inserted into port 13 ➤12|1. 19. If you are unsure: Remove the sealing ring to reduce the insertion force. Reattach the sealing ring after attempting to reinsert the battery cable. 20. Reconnect the cable.
	The battery is empty	21. Connect the control unit to the mains voltage. The operating LED is illuminated. › Operating device with LED indicator flashes green; the battery is charging. 22. Leave the control unit connected for at least 12 h until the LED lights up green continuously.
	The battery is defective	23. If the product service life has been exceeded, replace the battery. 24. Otherwise, contact customer service.
The device performs the wrong function or no function at all.	The parameter set of the device is not correct for the linear actuator.	25. Check the device's data plate and its configured parameters. 26. Check the data plate of the linear actuator. 27. Contact the manufacturer.

If a fault cannot be rectified using the measures described, contact Schaeffler Service.

Repairs may only be carried out by the manufacturer.

10 Maintenance

DANGER

Electric shock

Risk of serious injury or death due to improper maintenance

- Work on electrical systems may only be carried out by professional electricians.

DANGER

Unintentional restart

Risk of serious injury or death due to unauthorized persons reconnecting the power supply in the hazard area

- Before beginning any work, disconnect the product from the power supply.
- Secure the product against unintentional activation.

Maintenance work and repairs may only be carried out by qualified personnel.

Maintenance includes all activities required to keep the device in a functional condition. These activities include inspections, replacement of consumable materials, and cleaning.

The device (without battery) is maintenance-free for the duration of its service life.

1. Inspect the connection cable, controller, housing, and operating unit for damage on a regular basis. A damaged housing does not provide IP protection. Damaged cables may cause a short circuit.
2. Devices with battery: If the battery is weak, connect the device to the mains supply or a DC power source for 12 h. Complete discharge will destroy the batteries.
3. Devices with preinstalled under-floor battery: Connect the device to the mains supply or a DC power source for 12 h every 6 weeks.

Cleaning and disinfection

NOTICE

Risk of property damage due to water jets

Property damage

- Ensure that the device is not damaged by water jets. The device is protected against spray water in accordance with IPX4, but not against water jets. Do not expose the device to water jets.

Observe the following points during cleaning and disinfection:

- The wash water, including any added chemicals, must be pH-neutral.
- Acidic or alkaline wash water can destroy metallic and synthetic parts.
- Hand disinfection must be carried out using isopropyl alcohol only.

11 Decommissioning

This chapter is intended for technicians and persons involved in further processing. It contains all information required to decommission the device.

The device must be taken out of operation in the following sequence:

1. AC design: Remove the device's plug from the socket.
   DC design: Disconnect the DC cable from the DC power source.
2. Remove the cover by turning the locking button to the open position using a coin or a large screwdriver.
3. Remove the connectors of the components connected to the device.

12 Dismantling

DANGER

Live components

Serious injury or death from touching live electrical components

- Switch off the power supply before carrying out any work.

This chapter is intended for technicians and persons involved in further processing. It contains all information required to dismantle the device.

✓ Decommissioning is complete ➤26|11.

- Loosen and remove the fastening screws.

13 Disposal

Observe the local regulations for disposal.

Observe the disposal regulations for rechargeable batteries in particular.

Dismantling instructions and shipping requirements can be found in the corresponding sections.

14 Technical data

7 VCU controller

001D0383

Advantages:

- compact controller for 5 actuators
- single-fault safety
- overload protection and overtemperature protection
- approved for medical applications
- easy to clean
- low standby current

9 Technical data

Characteristic	Unit	VCU5	VCU8	VCU9
Linear actuator ports (DIN 8)	–	3 or 5	3 or 5	3 or 5
Operation device sockets (HD15)	–	2	2	2
Battery ports	–	1	1	1
End switch ports	–	2	2	2
Single-fault safety	–	Yes	Yes	Yes
Encoder processing	–	No	No	No
Input voltage	V AC	120	230	230
Frequency	Hz	60	50	50
Input current, max.	A	2.5 ... 6.5	1.3 ... 3.3	1.3 ... 3.3
Standby power	W	2.6 ... 3.9	2.6 ... 3.9	2.6 ... 3.9
Output voltage	V DC	24	24	24
Output current, max.	A	7 ... 18	7 ... 18	7 ... 18
Duty cycle: intermittent	min	ON: 1 min / OFF: 9 min	ON: 1 min / OFF: 9 min	ON: 1 min / OFF: 9 min
Duty cycle: short time	min	2	2	2
Ambient temperature	°C	+5 ... +40	+5 ... +40	+5 ... +40
Humidity	%	5 ... 85	5 ... 85	5 ... 85
Protection code (IP)	–	IPX4	IPX4	IPX4
Approvals	–	IEC 60601-1	IEC 60601-1	IEC 60601-1
Weight without battery	kg	2.4 ... 3.8	2.4 ... 3.8	2.4 ... 3.8
Weight with battery	kg	5.4 ... 8.8	5.4 ... 8.8	5.4 ... 8.8

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