aumüller

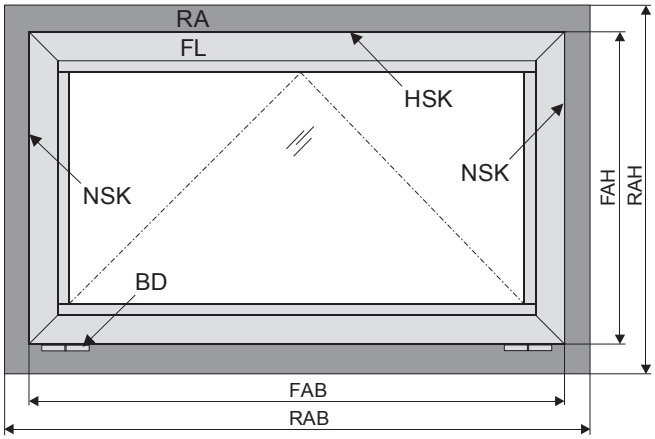
Assembly and Commissioning Instructions

according to Machinery Directive 2006/42/EC (annex VI)

OFV1 - LOCKING DRIVE FOR WINDOWS CE

ABBREVIATIONS

Index of abbreviations	
These abbreviations are used consistently throughout these assembly & operating instructions. Unless stated differently, all dimensions indicated in this document are in mm. General tolerances in accordance with DIN ISO 2768-m.	
A	drive
AK	connection cable / drive cable
AP	cover cap
BD	hinge
Fxxx	casement bracket
FAB	overall width of casement
FAH	overall height of casement
FG	casement weight
FL	casement
FÜ	casement overlap
HSK	main closing edge
Kxxx	frame bracket
L	construction lenghth of drive
MB	central hinge
NSK	side closing edge
RA	frame
RAB	overall width of frame
RAH	overall height of frame
SL	snow load
→	opening direction



TARGET GROUP

These instructions are intended for trained personnel and operators of systems for natural smoke ventilation (NRA / SHEV) (natural smoke exhaust system / smoke and heat exhaust system) and natural ventilation via windows, who are knowledgeable of operating modes as well as the remaining risks of the system.

WARNING AND SAFETY SYMBOLS IN THESE INSTRUCTIONS:

The symbols used in the instructions shall be strictly observed and have the following meaning:

⚠ DANGER — Failure to comply with the warning notes results in irreversible injuries or death.

⚠ WARNING — Failure to comply with the warning notes can result in irreversible injuries or death.

⚠ CAUTION — Failure to comply with the warning notes can result in minor or moderate (reversible) injuries.

NOTE — Failure to comply with the warning notes can lead to damage to property.

Caution / Warning
Danger due to electric current.

Caution / Warning
Risk of crushing and entrapment during device operation (is provided as a sticker with the drive).

Attention / Warning
Risk of damage to / destruction of drives and / or windows.

⚠ WARNING This device is not intended for use by persons (including children) with physical, sensory or mental limitations or lacking experience and / or knowledge, unless they are supervised by a person who is responsible for the safety or were instructed by him on the usage of this equipment. Children should be supervised to ensure that they are not playing with this device.
Cleaning and operator's maintenance may not be performed by children without supervision.

01

INTENDED USE

Area of application / Scope of application
This drive is intended for the electromotive opening and closing of windows in facade and roof areas.
The prime task of this product, in combination with a window and a suitable external control unit, **is to evacuate hot smoke and combustion gases in case of fire**, to safe human lives and protect material assets. Furthermore, combined with a suitable external control unit, the electromotive operated window ensures **fresh air supply for the natural ventilation** of the building.

NOTE

By attaching the drive to a movable element of the window a so-called "power-operated window" is created which, according to the Machinery Directive 2006 / 42 / EG, represents a machine.

Intended use according to the Declaration of Conformity
The drive is intended for stationary installation and electrical connection at the window as part of a building.

In accordance with the attached Declaration of Conformity the drive, in combination with an external Control Unit from AUMÜLLER, is released for its intended use at a power-operated window **without an additional on-site risk assessment** for the following use:

- Application for natural ventilation
  - with an installation height of the drive of at least 2,5 m above the floor, or
  - with an opening width at the HSK of the operated element of < 200 mm by a simultaneous speed of < 15 mm/s at the HSK in closing direction.
- Application as NSHEV (natural smoke and heat exhaust ventilators) for ventilation without dual function for ventilation in accordance with EN12101-2.

⚠ WARNING

Attention must be paid to possible hazards when used with tilting or rotating windows, whose secondary closing edges are located at less than 2,5 m installation height above the floor, under consideration of the Control Unit and usage!

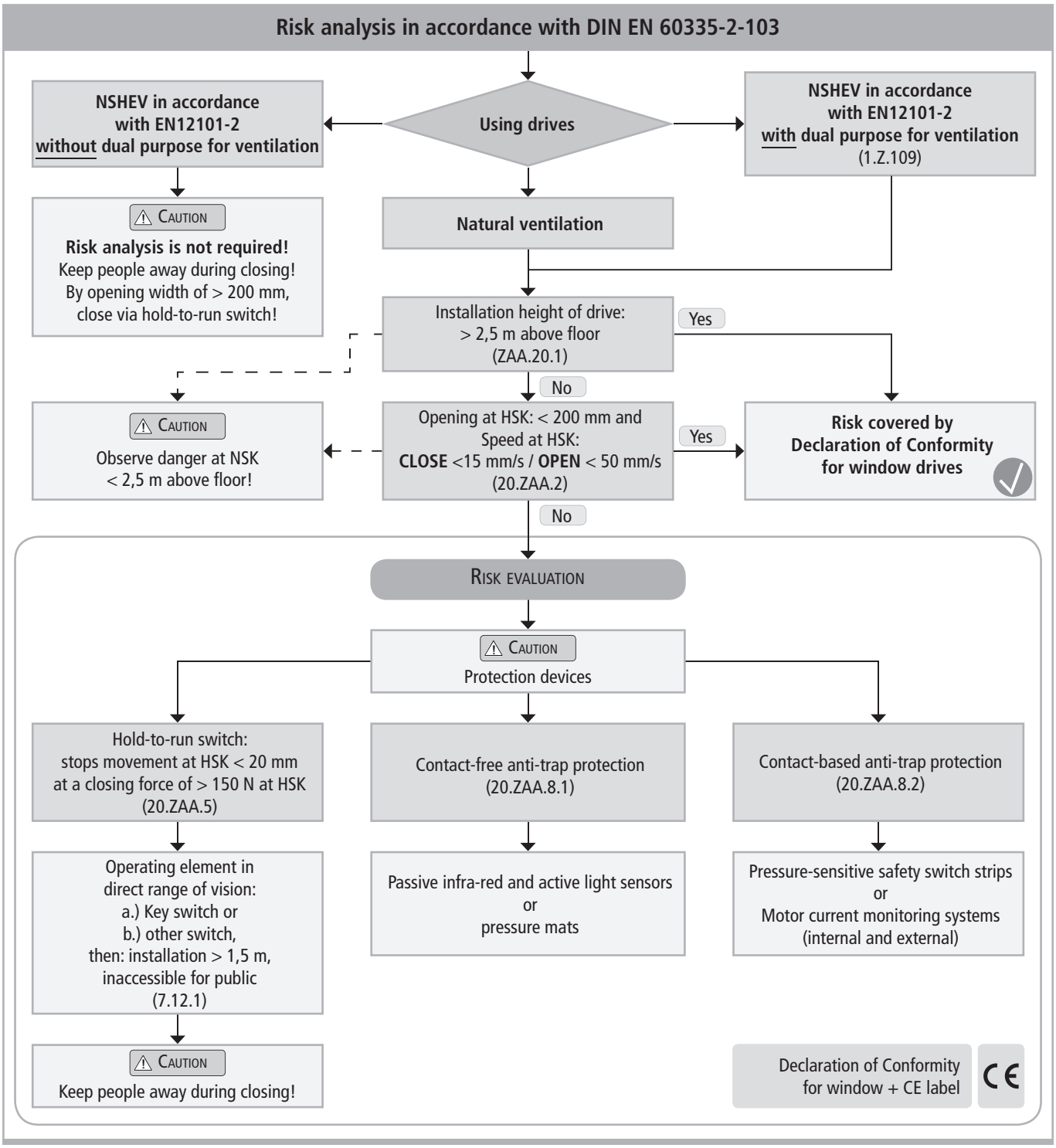
We as manufacturers are well aware of our duties and responsibilities regarding the development, manufacturing and placing of safe window drives on the market and consistently implement them. Ultimately, however, we have no direct influence on the usage of our drives. Therefore, as a precaution, we point out the following:

- The **constructor or his agent** (architect, specialist planner) **are obligated** by law **to evaluate the hazards to persons**, originating from the usage, installation position, opening parameters as well as the planned type of installation of the power operated window and the external Control Unit, already **in the planning phase and to establish necessary protective measures**.
- The **constructor / manufacturer** of the machine "power-operated window" **must implement** the planned **protective measures** at the installation site or, if not yet established, **determine them** by theire own responsibility and detect or **minimize possible remaining risks**.

The need for a risk assessment at the installation site due to the reasonably foreseeable misuse.
A risk assessment in accordance with the Machinery Directive 2006 / 42 / EG for the usage of the power-operated window **for natural ventilation is absolutely necessary** under the following conditions:

- the installation height of the drive is < 2,5 m above the floor **and**
- the opening width at the HSK > 200 mm, **or**
- the closing speed at the HSK is > 15 mm/s, **or**
- the opening speed at the HSK is > 50 mm/s, **or**
- the closing force at the HSK is > 150 N

The following flow chart can be applied, which also includes the protective measures in accordance with EN 60335-2-103/2016-05.



Casement data

Facade:	bottom-hung window, top-hung window, side-hung window.
Dach:	roof window / sky light.
Opening direction:	inward / outward opening.
Profile material:	aluminum, steel, plastic or wood.

NOTE

The casement measurements supplied are only for orientation purposes.
It is imperative that the **force-path diagram** of the drives are observed.

When inspecting the drives for conformity with on-site requirements the following items must be observed:

- total weight of casement (glass + frame),
- additional loads: snow load / wind load (suction / pressure),
- casement size (FAB x FAH),
- side ratio FAB / FAH,
- installation / inclination angle,
- required opening area (geometric / aerodynamic),
- crosswind influences,
- driving force and stroke,
- mounting site at the window frame and casement frame.

SAFETY INSTRUCTIONS

⚠ WARNING

It is important to follow these instructions for the safety of persons. These instructions shall be kept in a safe place for the entire service life of the products.

Risk of crushing and entrapment!
Window can close automatically!

The integrated load cut-off stops the drive during closing and opening when the drive is overloaded.
The compressive force is absolutely sufficient to crush fingers in case of carelessness.

Area of application

The drive shall only be used according to its intended use. For additional applications consult the manufacturer or his authorized dealer.

⚠ WARNING

Do not misuse the drive for other lifting operations! Do not allow children to play with this drive or its regulating and / or control units, including the remote control!

Always check whether the system complies with current regulations. Special attention must be paid to the opening width, the opening area, the opening time and the opening speed of the window, the temperature range of the drives / external devices and cables as well as the cross section of the connecting cables as function of the cable length and power consumption.

All devices must be permanently protected from dirt and moisture, if the drive is not explicitly suitable for use in wet areas (see technical data).

Installation

These instructions address expert and safety-conscious electricians and / or qualified personnel knowledgeable in electrical and mechanical drive installation.

NOTE

The safe operation, avoidance of injury to persons and damage to property, as well as risks, is only guaranteed by proper installation and setting according to these installation instructions.

All specifications for installation must be checked independently and, if necessary, adjusted at the installation site. The connection assignment, the electrical supply data (see machine plate) and performance limits (see technical data) as well as the mounting and installation instructions of the drive must be strictly observed and adhered to!

Never connect 24 V DC drives to 230 V AC mains voltage!
Danger to life!

Do not reach into the window rabbet or the operating element (chain or spindle) during installation and operation! Ensure that, based on the installation position and the opening movement of the casement, persons cannot be trapped between the driven part of the window and surrounding fixed components (e.g. wall).

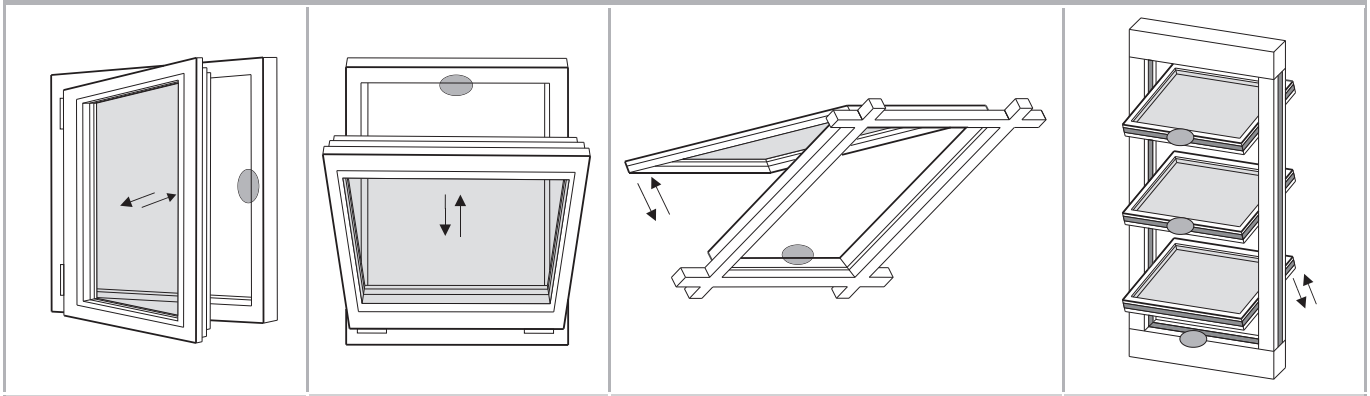
Mounting material

The required mounting material must be modified to fit the drive and occurring load and, if necessary, supplemented.

NOTE

Before installing the drive, check whether the casement is in good mechanical condition, the weight in balance and whether it opens and closes easily!

Danger spots by crush and shear points



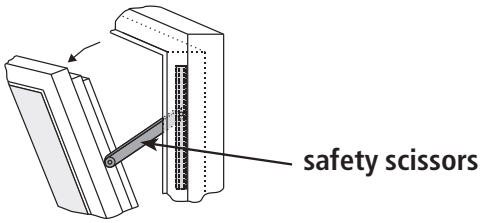
Side-hung	Bottom-hung	Roof windows / skyskylight domes	Louvre windows

Danger spots: crush and shear points according to DIN EN 60335-2-103

Crush and shear points
To avoid injuries, **crushing and shear points** between casement and frame must be secured **against entrapment up to an installation height of 2,5 meters above the floor** with appropriate measures. This can be achieved e.g. by using contact-based or contactless protective devices against entrapment, which stop the motion through contact or through interruption by a person. At a force higher than 150 N at the main closing edge the motion must stop within 20 mm. A warning symbol at the opening element must indicate this clearly.

Unintentional or independent opening or falling
Casements are to be hinged or secured such way that in case one of the mounting elements fails it will not crash / slam down or move in an uncontrolled manner by e.g. using double suspensions, safety scissors, casement stays.
Tilting windows shall be equipped with safety scissors or similar devices to avoid damages and risks of injury for persons through improper installation and operation. The safety scissors must be adjusted to the opening stroke of the drive (see technical data) to avoid blocking. The opening width of the safety scissors must be bigger than the drive stroke.

⚠ WARNING The movable casement must be secured against unintentional or independent opening as well as falling down.



Routing cables and electrical connection
Routing or installing electrical lines and connections may be performed only by approved specialist companies. Never operate drives, control units, operating elements and sensors at operating voltages and connections contrary to the specifications of the manufacturer.
All relevant instructions shall be observed for the installation, specifically:
- VDE 0100 Setting up high-voltage systems up to 1000 V
- VDE 0815 Wiring cables
- Specimen Guideline on Conduits German designation (MLAR).

All-pole disconnecting devices shall be installed in the permanent electrical installation or external Control Unit for the drive.
The mains supply lines 230 V / 400 V AC shall be protected separately!

⚠ WARNING Damaged mains supply lines of drives with plug connectors may only be replaced by the manufacturer or qualified service / maintenance personnel!
Power cables which are fixed to the drive casing cannot be replaced. If the cable is damaged the device must be scrapped!

The types of cable, cable lengths and cross-sections shall be selected in accordance with the manufacturer's technical data. If necessary, the cable types shall be coordinated with the competent local authorities and energy supply companies. Low-voltage lines (24 V DC) shall be routed separate from the high-voltage lines. Flexible cables may not be flush-mounted. Freely suspended cables shall be equipped with strain reliefs.

Cables must be laid such way that they cannot be sheared off, twisted or bent during operation. Drive cables laid into closed window profiles must be protected by insulating tubes with a sufficient temperature resistance. Through holes shall be equipped with cable sleeves!

Clamping points shall be checked for tightness of threaded connections and cable ends. Access to junction boxes, clamping points and external drive control systems shall be ensured for maintenance work.

Commissioning, operation and maintenance
After the installation and after each modification in the set up all functions shall be checked with a trial run. It shall be ensured that drive and casement are set correctly and that security systems, if available, are functioning properly. After the installation of the system is completed the end-user shall be introduced to all important operating steps. If necessary, he must be advised of all remaining risks / dangers.
The end-user shall be instructed in intended use of the drives and, if necessary, the safety instructions. The end-user shall be specifically instructed that no additional forces, except for the pressure and tension in the opening and closing direction of the casement, may be applied to the spindle, chain or lever of the drive.

NOTE Post warning signs!

During the proper assembly of drives with mounting elements at a window, and the connection to an external control unit, the interfaces resulting from mechanical and electrical performance characteristics of single elements shall be observed.

⚠ CAUTION Other persons must be kept away from the casement when a hold-to-run switch (pushbutton) is operated or when a window, which has been opened by a smoke and heat exhaust system, is closing!

⚠ CAUTION The operating element of hold-to-run switches must be installed within direct view from the window, but apart from moving elements. If the switch is not a key-operated switch it must be installed at a minimum height of 1,5 m and inaccessible to the public!

⚠ CAUTION Do not allow children to play with permanently mounted control devices and keep remote controls out of reach for children!

During cleaning, maintenance work and while exchanging parts the drive must be completely disconnected from the power supply and secured against unintentional reactivation.

⚠ WARNING Do not use drive or casement when repair or re-setting work has to be performed!

Replacement parts, fasteners and controls
The drive shall only be operated with control devices from the same manufacturer. There is no liability, warranty or customer service if third-party parts are used. Exclusively original replacement parts of the manufacturer shall be used for mounting elements or expansions.

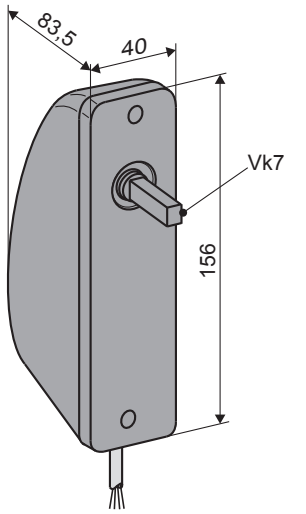
Ambient conditions
The product may not be subjected to impacts or falls, or to vibrations, moisture, aggressive vapors or other harmful environments, unless the manufacturer released it for one or more of these environmental conditions.

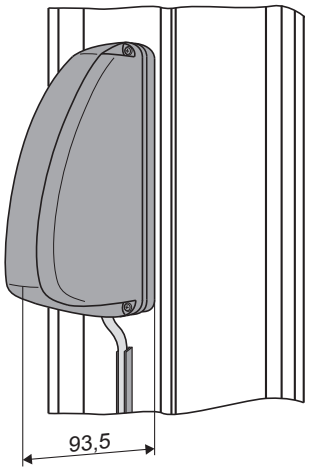
- **Operation:**
  Ambient temperature: -5 °C … +75°C
  Relative humidity: < 90% less 20°C;
  < 50% less 40°C;
  no formation of condensation
- **Transport / Storage:**
  Storage temperature: -5°C … +40°C
  Relative humidity: < 60%

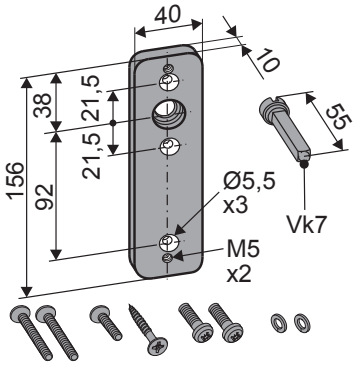
Accident prevention regulations and workmen's compensation insurance guidelines
For work on or in a building or building part the provisions and instructions of the respective accident prevention regulations (UVV and workmen's compensation insurance guidelines (BGR /ASR) shall be observed and adhered to.

Declaration of Conformity
The drive is manufactured and inspected in accordance with European guidelines. The respective Declaration of Conformity is on hand.
In case the operation of the drive differs from the intended use, a risk evaluation for the complete power-operated window system shall be performed and a Declaration of Conformity according Machinery Directive 2006 / 42 / EG issued.

DATA SHEET OFV1







- With internal load dependent cutt-off switch and sequence control for drives PL6 S1 / PL10 S1 as well as for drives type S2 / S3 / S12 (I max. 3A - drive current runs over OFV1 / undercurrent detection)
- Two adjustable rotation angles 90° / 180°
- Opening direction selectable: right / left turning
- Square shaft adapter 7x55 mm

ORDER DATA

U_N	Rated voltage	24V DC (± 20 %), max. 2 Vpp
I_N	Rated current	0,8 A
I_A	Cut-off current	1,1 A
I_O	Closed circuit current	< 28 mA (10 Nm)
I_D	Current of connected drives	S1: max. 0,9 A / S3, S12: max. 3,0 A
P_N	Rated power	19 W
ED	Duty cycle	30 % (ON: 3 min./OFF: 7 min.)
	Protection rating	IP 32
	Ambient temperature range	-5 °C ... +75 °C
M	Torque max.	10 Nm
F_H	Initial torque	22 Nm
	Rotating angle direction	yes (self-learning)
	Rotating angle	90 ° / 180° ((right / left)
t	Runtime	90° - 4,5 s; 180° - 9,0 s
	Connecting cable	non-halogen, grey 4 x 0,75 mm², ~ 3 m
	Housing	ABS, greywhite
	Dimensions (W x H x D)	40 x 156 x 83,5 mm

TECHNICAL DATA

Version	PU / pcs.	Part.-No.
OFV1	1	**513850**

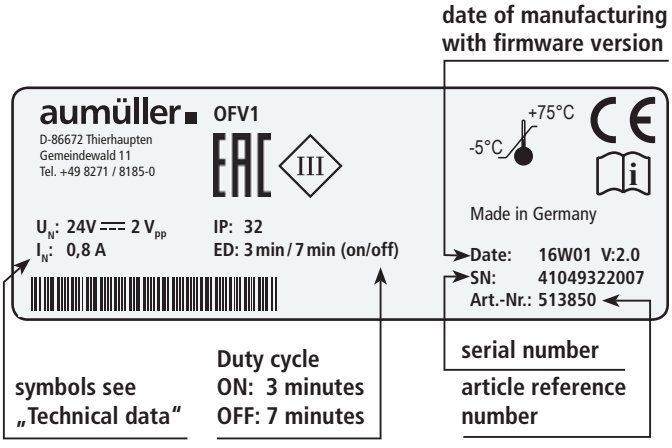
EXPLANATIONS ON THE PRODUCT LABEL

The product label provides information about:

- manufacturer,
- article reference number and name,
- technical caracteristics,
- date of manufacturing with firmware version,
- serial number.

NOTE Never install and operate damaged products.

In the event of any complaints, please indicate the product serial number (SN) (see product label).



DETERMINATION OF LOCKING POINTS

The number of locking points depends on:

- object-specific requirements
- processing guidelines and authorized ranges of application of the manufacturer
- EN 12102-2 NRWG (depending of profile group **A**, **B**, **C** and wind load classification **WL**)
- EN12207(8) Air permeability of joints
- EN 12210 Resistance to wind load
- EN 1627 Burglar resistance
- EN 14351-1 Window or door standard
- DIN 1055-4 Wind loads on buildings

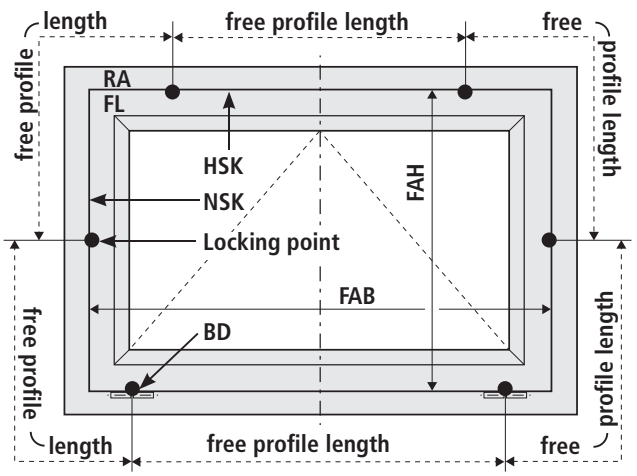
Only the worst case with secured values and application ranges must serve as a basis.

Locking points are centers / axes of the following components: casement hinges / stays (**BD**), sealing points of the locking system, application points of directly actuating drives (force transmission axes at 90° to the casement profile, with closed window).

Drives used in SHEV mounting devices such as: RWA 1000, RWA 1050, RWA 1100 are not included in the locking points.

Free profile lengths are effective distances between two locking points. Corner and edge distances shall be calculated as straight lines.

Free profile lengths between two locking points



		Free profile length for profil group: Profile groups allocated according I_x^4-values „A" 20-34 cm⁴	„B" 35-50 cm⁴	„C" 51-55 cm⁴
Static wind slipstream loads on the SHEV - according to EN 12101-2.	WL 1000	1450 mm	1650 mm	1950 mm
	WL 1500	1300 mm	1500 mm	1750 mm
	WL 2000	1120 mm	1280 mm	1460 mm
	WL 2500	950 mm	1050 mm	1160 mm
	WL 3000	820 mm	900 mm	990 mm

Values apply only for AUMÜLLER ferralux NRWG.

INSTALLATION STEP 1: INSPECTION BEFORE THE INSTALLATION

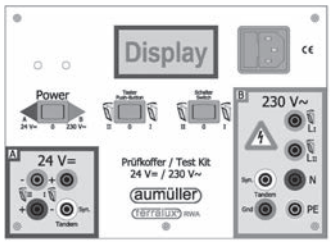
⚠ WARNING Important instructions for a safe installation. Observe all instructions, wrong installation may result in serious injury!

Storage of drives at the construction site
Protective measures against damages, dust, moisture or contamination shall be taken. Store drives intermediately only in dry and well ventilated rooms.

Inspection of drives before installation
Check drives and window before installation for good mechanical condition and completeness. The chains / spindles of the drives must be extendable or retractable easily. The casement must run smoothly and the weight must be in balance.

NOTE We recommend the use of our test kit for the inspection of drives with the rated voltage 24V= / 230V~ (see table below). Damaged products may not be operated under any circumstance.

Test kit for drives	
Order number:	**533981**
Application:	Test kit to check running direction and communication of drives 24V DC or 230V AC (including batteries)
Supply voltage:	230V AC
Drive types:	24V DC / 230V AC
Drive current:	max. 3 A
Display:	drive current, battery charge
Ambient temperature:	-5 °C ... + 75 °C
Plastic housing:	250 x 220 x 210 mm
Weight:	approx. 3,6 kg
Feature / equipment:	Control elements: 2 switches + 1 button



The test procedure of drives may only be performed on a non-slip and secured mat or a test fixture. During the test run the test element must not be interfered with. The test my only be conducted by or under the supervision of expert personnel.

For testing chain drives the chain must be extended and retracted at an angle of approx. 90°. The spindle tubes of spindle drives in round housing tubes must be secured against independent spinning before starting the test to avoid deviations in the position encoder.

Inspection of the intended use
The planned use of the drive must be checked for compliance with its intended use. If used otherwise the liability and warranty claim expires.

Predictable misuse
It is imperative that foreseeable misuse of drives is avoided! Here are a few examples:
- do not connect 24 V DC drives to a 230 V AC mains voltage,
- observe synchronous run and sequence control by drives with multiple interconnection,
- use drives only indoors,
- avoid additional force influences, e.g. transverse forces.

Testing mechanical requirements
Prior to the start of the installation check whether :
- the support surface and the profile static for the load transmission is sufficient,
- a support construction for the secure fastening of the drives is required,
- cold bridges (thermal separation) are avoidable at action points,
- there is sufficient space for the swivel movement of the drive.

If not, counter measures must be taken!

The support surface of the frame brackets or casement brackets must rest completely on the window or frame profile. There must be no tilting of the fastening elements during extension and retraction of the drives. A safe and solid fastening must be ensured at the window profile.

⚠ CAUTION It is imperative that the sufficiently mechanical stiffness of the fastener type as well as of the swivel range of the drive is observed.
If this is not guaranteed another type of fastening or another type of drive must be selected.

INSTALLATION STEP 2: INSTALLATION PREREQUISITE AND INSTALLATION PREPARATION

The following conditions must be fulfilled for the installation of the drives so they can be properly assembled with other parts and constructed to a complete machine at the window without impairing the safety and health of persons:

1. The design of the drive must fulfill the requirements.
2. The fastening accessories (casement brackets or frame brackets) must fit the window profile; the profile-dependent hole lay-out must be complied with.
3. The space required for the installation of the drive on the frame and casement profile must be sufficient.
4. The window must be in perfect mechanical condition before the installation. It should open and close easily.
5. The fastening material for the installation of the drive must fit the window material (see table).

Wood windows	wood screws: i.e. DIN 96, DIN 7996, DIN 571 with head-type: round head with slot, round head with cross, hex head,special type	
steel, stainless steel, aluminum windows	self-tapping screws, thread screws, sheet-metal screws i.e. ISO 4762, ISO 4017, ISO 7049 , ISO 7085, DIN 7500 with head-type: cylinder head with hex socket, internal serration (Torx), Phillips head or external hex head blind rivet nut	
plastic windows	screws for plastic i.e. DIN 95606, DIN 95607, ISO 7049, ISO 7085, DIN 7500 with head-type: round head with cross, external hex head, Torx	Recommendation: if possible, screw through two cavity webs

Tools required

- Marker,
- Grains,
- Hammer,
- Knife,
- Screwdriver (cross, Torx),
- Hexagonal wrench,
- Torque wrench,
- Power drill,
- Threadlock adhesive,
- possibly a tool for blind rivet nuts.

Check window data on site

- Measure FAB and FAH.
- Check / calculate weight of casement.
  If unknown, it can be determined approximately with the following formula:

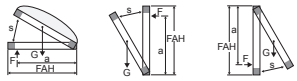
G (Casement weight) [kg] = **FAB** [m] * **FAH** [m] * **Glass thickness** [mm] * **2,5** glass-density * **1,1** frame share

- Check / calculate the required drive force and compare with drive data . If unknown, it can be determined approximately with the following formula:

F [N] = **Facade** $\frac{\mathbf{5,4} * \mathbf{G}\ [kg] * \mathbf{s}\ [m]}{\mathbf{a}\ [m]}$

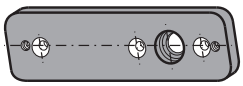
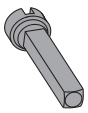
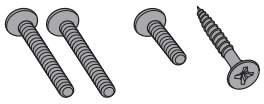
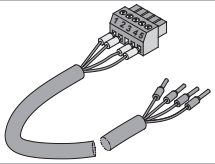
F [N] = **Roof** $\frac{\mathbf{5,4} * \mathbf{G}\ [kg] * \mathbf{FAH}\ [m]}{\mathbf{a}\ [m]}$

a = Distance of action point to hinges
F = Drive force
s = Stroke



Scope of delivery:

Prior to assembly, check items quantity in the delivery for completeness.

Accessories for locking drive	
	Assembly and Commissioning Instructions
	1x Adapter plate
	1x Square: Vk 7 x 55
	2x Countersunk screw M 5 x 40 1x Countersunk screw M 5 x 16 1x Spax countersunk screw 4,5 x 30
	2x Head screw M 5 x 16 2x Spring rings
	1x Cable fastener
	1x Connecting cable with plug
	1x Warning sign sticker „Risk of entrapment"

INSTALLATION STEP 3: ASSEMBLY OPENING DRIVE

- Mount opening drive (see separate „Assembly and Commissioning Instructions" for each window-drive).
- Make the connection for the control voltage to the opening drive (see chapter: „ELECTRIC CONNECTION").
- Unhook the opening drive spindle / opening drive chain from the window casement, so that the casements can be manually moved.

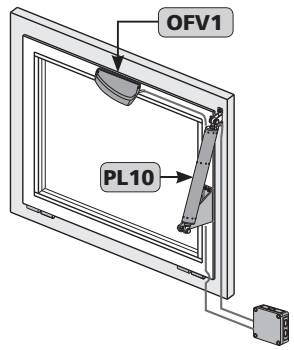
OFV1

With internal load dependent cutt-off switch and sequence control for drives PL6 S1 / PL10 S1 (SHEV) as well as for drives type S2 / S3 / S12
(I max. 3A - drive current runs over OFV1 / undercurrent detection)

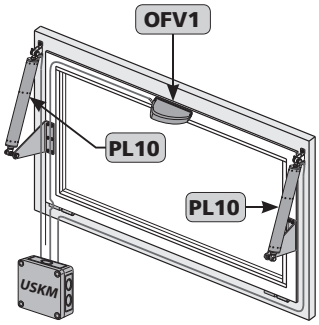
Application examples

SHEV 1000 - inward opening window

solo



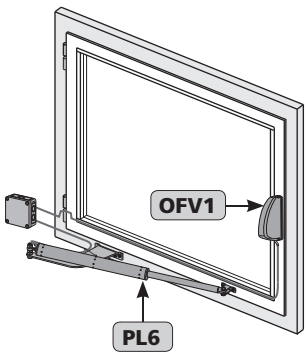
tandem



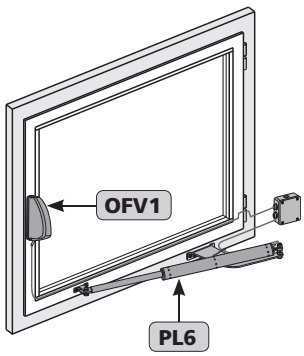
View on **bottom-hung**

SHEV 1050 solo - inward opening window

casement DIN left



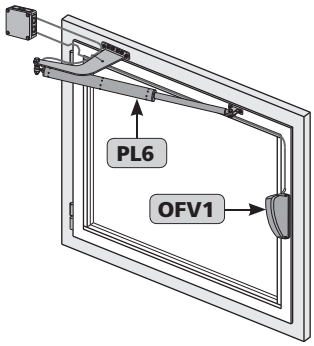
casement DIN right



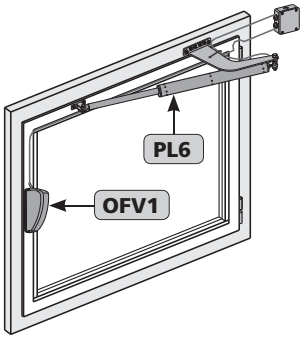
View on **side-hung**

SHEV 1050 solo - inward opening window

casement DIN left



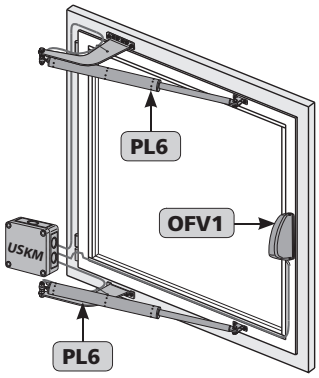
casement DIN right



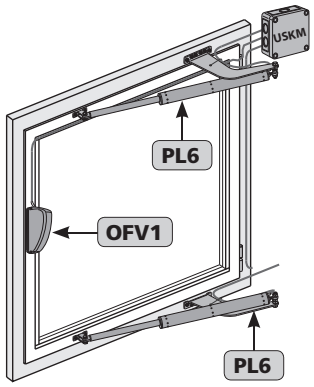
View on **side-hung**

SHEV 1050 tandem - inward opening window

casement DIN left



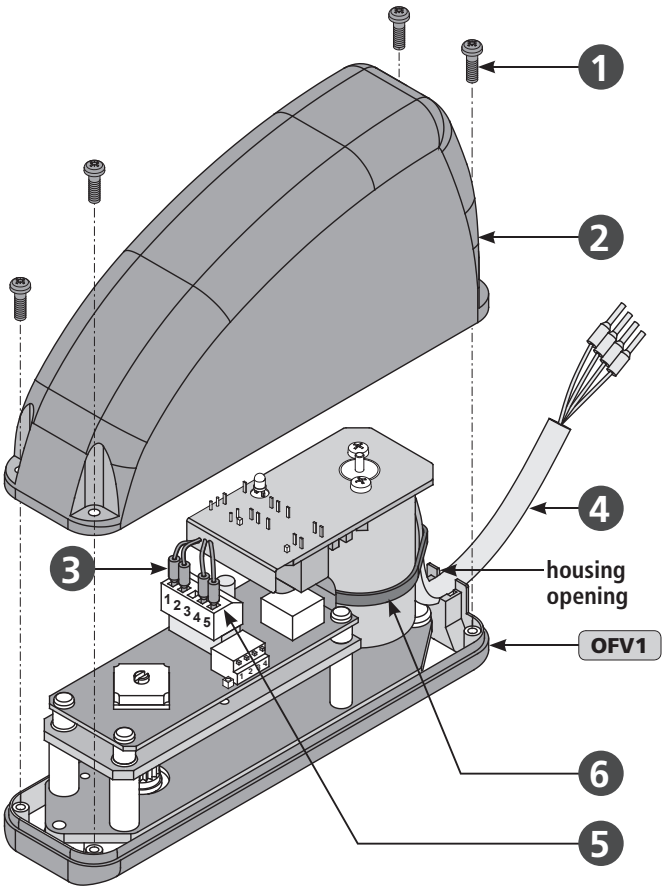
casement DIN right



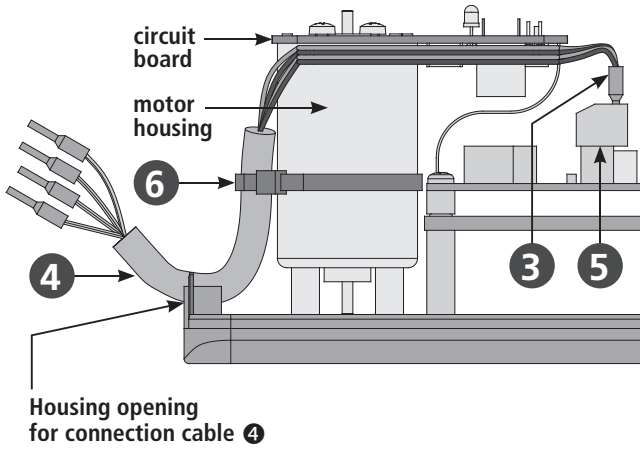
View on **side-hung**

INSTALLATION STEP 4: REMOVE THE HOUSING FROM OFV1 AND PLUG IN CONNECTION CABLE

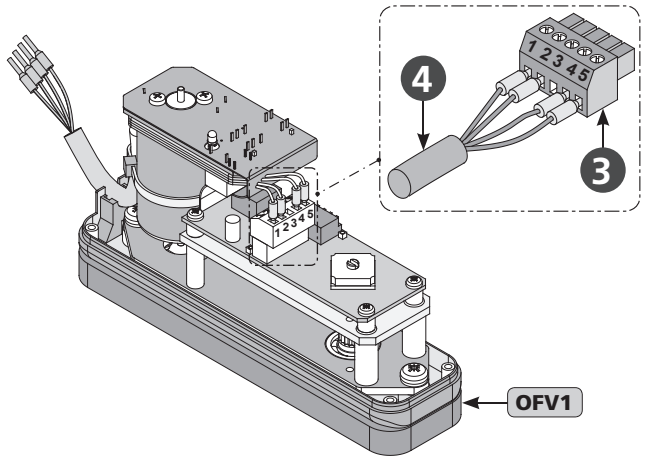
- Loosen the screws ❶ and remove the housing ❷ from the locking drive **OFV1**.
- Insert the lock-tight plug ❸ - from the connection cable ❹ - in the adapter bushing ❺.



- Lay the connection cable ❹ under the circuit board.
- Secure connection cables ❹ on motor housing with supplied cable fastener ❻.
- Cut off protruding end of cable fastener ❻.
- Lead connecting cable ❹ through the housing opening.



Connection assignment OFV1



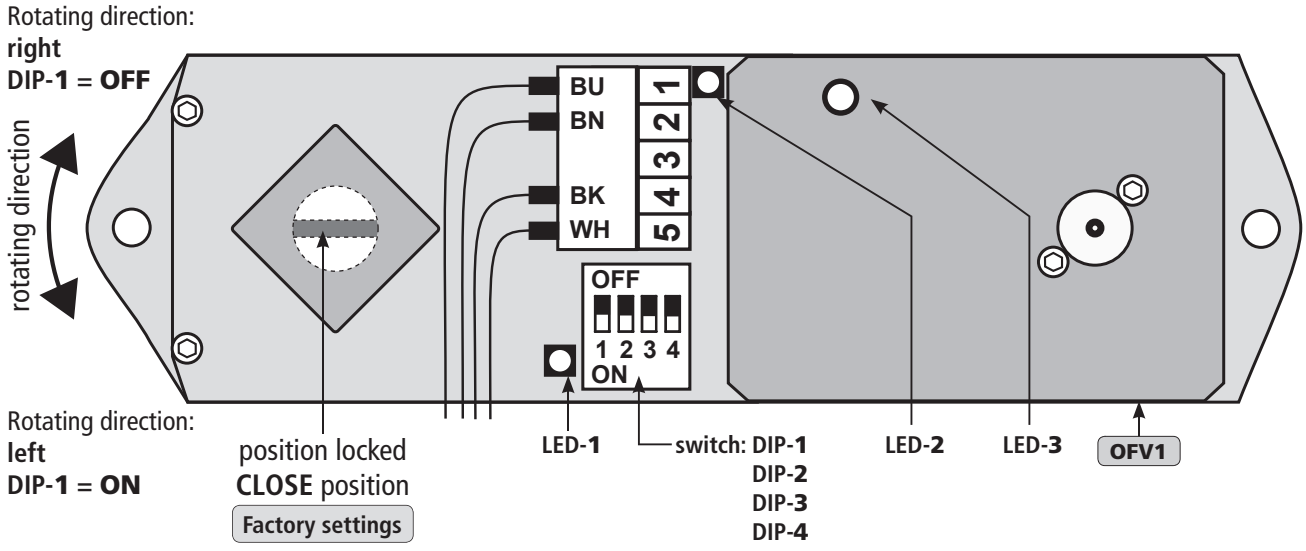
Terminal **1**	**BU** =	blue	feed line from control unit 24 V DC	
Terminal **2**	**BN** =	brown	feed line from control unit 24 V DC	
Terminal **4**	**BK** =	black	to the opening drive	Note the opening direction of the casement
Terminal **5**	**WH** =	white	to the opening drive	

INSTALLATION STEP 5: DIP SWITCH AND LED DISPLAY

■ Set the **DIP** switches, when the locking drive **OFV1** is not mounted.

Set the **DIP** switches in a **voltage-free** state.

DIP switch and LED display



NOTE In case of wrong direction of rotation, reverse polarity from the opening drive.

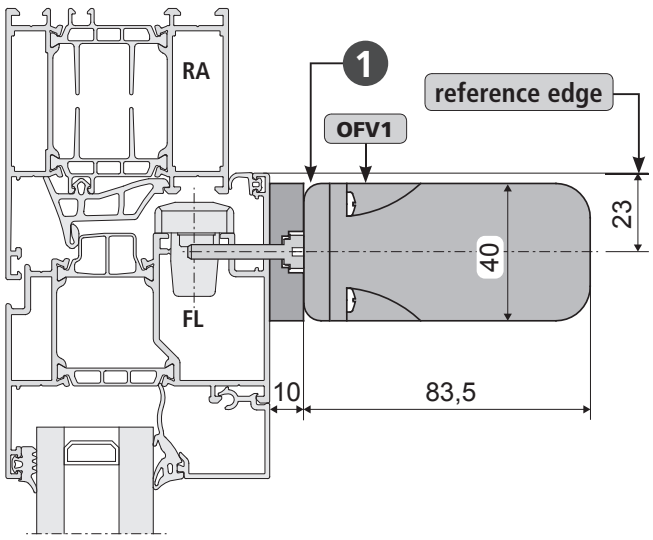
Terminal 1	BU =	blue	feed line from control unit 24 V DC	
Terminal 2	BN =	brown	feed line from control unit 24 V DC	
Terminal 4	BK =	black	to the opening drive	Note the opening direction of the casement
Terminal 5	WH =	white	to the opening drive	

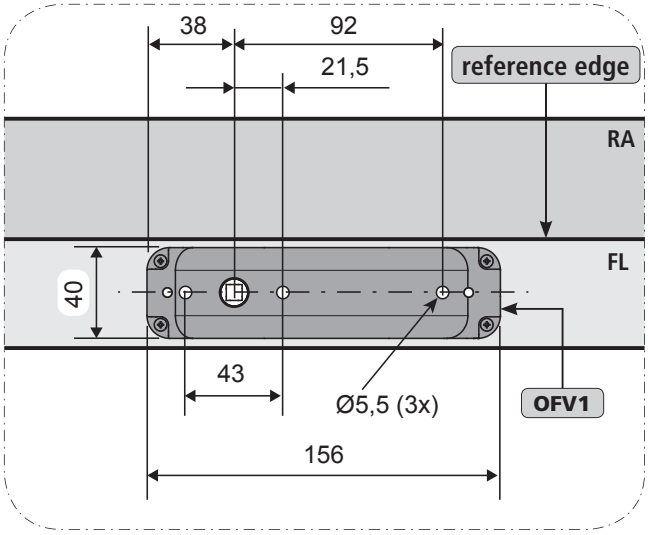
DIP switch			LED display		
DIP-1	**OFF**	rotating direction: right (casement DIN left)	**LED-1**	**OFF**	ready for operation
	ON	rotating direction: left (casement DIN right)		**green**	**OFV** in operation
				green: blinking	opening drive in operation
DIP-2	**OFF**	angle of rotation 180°		**red**	**OFV** fault
	ON	angle of rotation 90°		**red: blinking**	opening drive fault
				red/green: blinking	undervoltage (< 19V) at **OFV1** (Part.-No.: 513850)
DIP-3	**OFF**	opening drive with direct connection	**LED-2**	**OFF**	power supply: none
	ON	without opening drive or connection to USKM		**green**	power supply: in **CLOSE** direction
				red	power supply: in **OPEN** direction
DIP-4	**OFF**	drives with integrated disconnection (max. 3A)	**LED-3**	**OFF**	**OFV** non-operation
	ON	drive with **S1** = without disconnection (0,9A)		**green**	**OFV** left rotation
				red	**OFV** right rotation

INSTALLATION STEP 6: HOLE LAYOUT FOR OFV1

Application examples

Bottom-hung inward opening Casement assembly	Hole layout in the adapter plate ❶

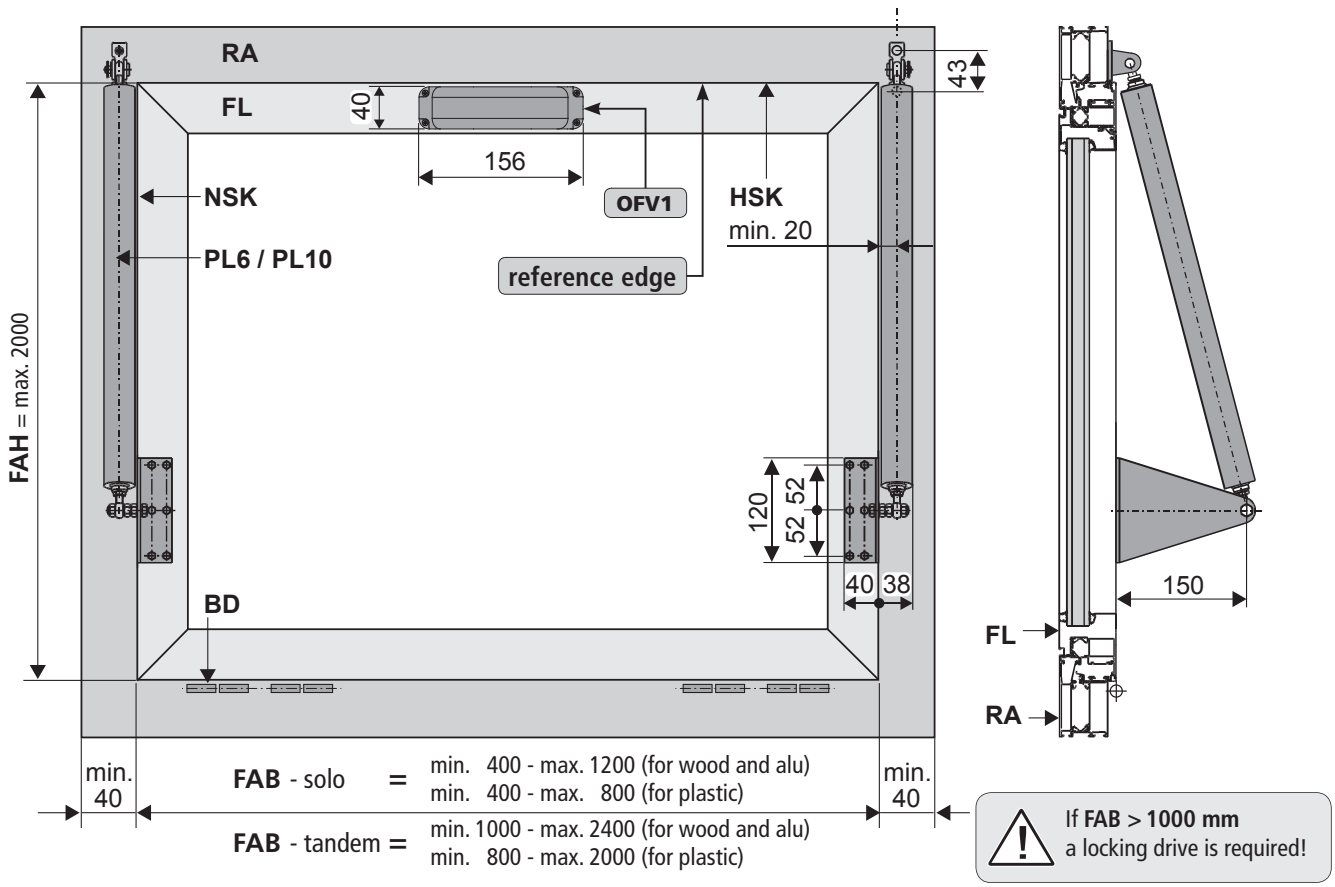




View on aluminium window

Casement assembly - inward opening window

Window versions	Bottom-hung - inward opening window Top-hung - inward opening window	Side-hung - inward opening window

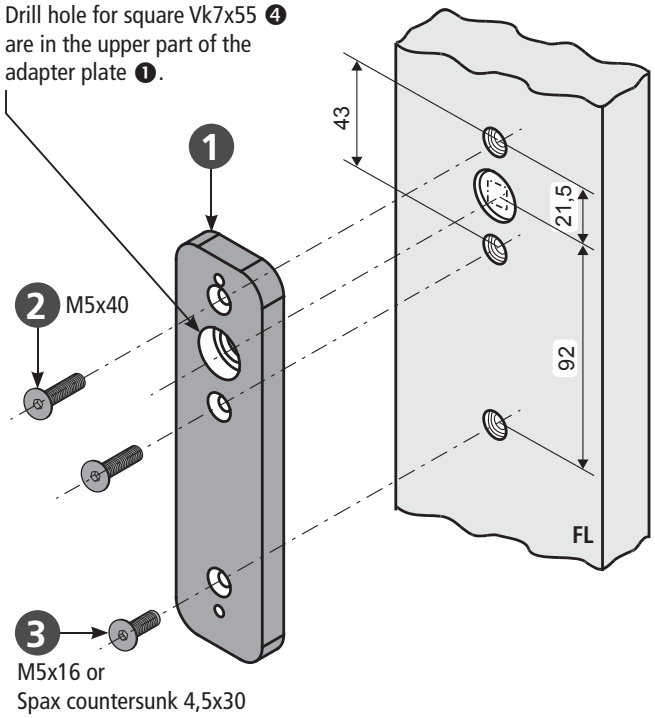


If **FAB > 1000 mm**
a locking drive is required!

Installation step 7: Assembly OFV1

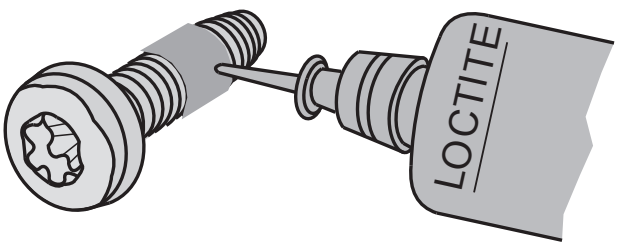
- Use the handle to manually close and lock the window.
- Unscrew handle.
- Use screws ❷ to attach adapter plate ❶ on window. Use existing boreholes of handle.
- Fasten the adapter plate ❶ with an additional suitable screw ❸. Drill appropriate hole.

Remodel the adapter plate ❶ so, that the square Vk7x55 ❹ is in the upper part of the adapter plate ❶.

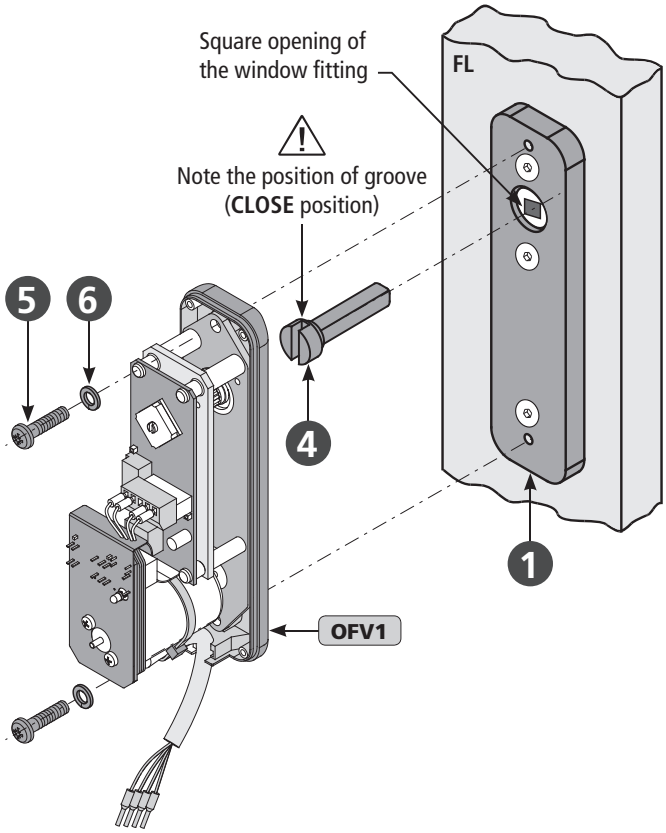


Carefully clear away drilling swarfs to prevent seals from being damaged.
Avoid surface scratches, for example by using masking tape.

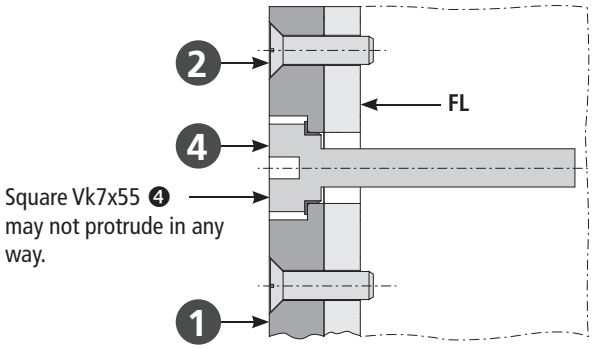
- Secure fasteners against loosening; e.g. by applying removable thread-locking compound such as "Loctite".



- Plug the square Vk7x55 ❹ in the square opening of the chamber gear (window fitting).
  Pay attention to the correct slot position (**CLOSE** position).
- If necessary shorten the square Vk7x55 ❹.



The head of the square Vk7x55 ❹ must be flush with the adapter plate ❶. It may not protrude in any way.



- Insert the locking drive **OFV1** into groove of square Vk7x55 ❹ and fasten it with two screws ❺ and spring rings ❻ on the adapter plate ❶.

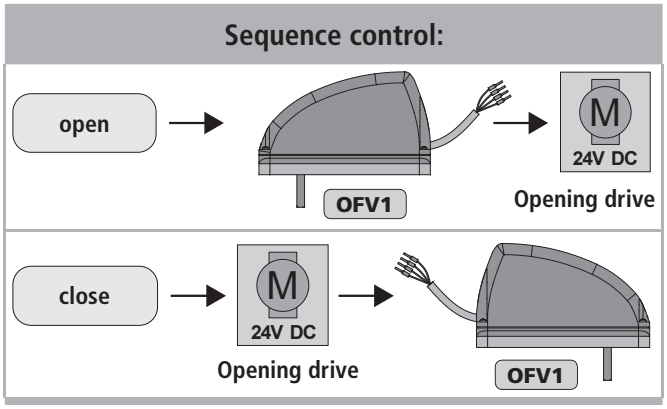
Install square Vk7x55 ❹ and locking drive **OFV1** in **CLOSED** position.

INSTALLATION STEP 8A: TEST RUN AND INSTALLATION

The opening drive and the not mounted locking drive **OFV1** must be tested **together**.

- The opening drive is unhinged.
- Make the connection for the control voltage to the locking drive **OFV1** (see chapter: „ELECTRIC CONNECTION - INSTALLATION STEP 11").

During **start-up** of locking drive **OFV1** the 24 V-control voltage may be switched on only with unhinged opening drive.



OPENING DRIVE S3 / S12

Locking drive OFV1 is mounted, opening drive (S3/S12) is unhinged

- **Switch on** the **control voltage** at locking the drive **OFV1** and at the **opening drive - S3/S12** - in **OPEN** direction for a **short** time.
- Switch the control voltage - from the locking drive **OFV1** and from the **opening drive - S3/S12** - in **CLOSE** direction.
  Now the **opening drive - S3/S12** moves in **CLOSE** position. The Locking drive **OFV1** waits up to 3 minutes, to learn **undercurrent detection**. Then the locking drive **OFV1** moves in **CLOSE** position too.
- Check the function of locking drive **OFV1** - by repeating **OPEN-/CLOSE**-movements for a few times.
- If necessary, correct the DIP switches (see chapter: „DIP SWITCHES AND LED DISPLAY").
- Move the locking drive **OFV1** and **opening drive - S3/S12** in **OPEN** direction.
- Ensure the easy movement of the casement.
- **Switch off** the **control voltage** from the locking drive **OFV1** and from the **opening drive - S3/S12**.
- Hinge **opening drive - S3/S12** on casement, without disconnecting opening drive from the locking drive **OFV1**.
- Make mechanical settings in accordance with „Assembly and Commissioning Instructions" of the drives.
- **Switch on** the **control voltage** at locking drive **OFV1** and at **opening drive - S3/S12** - in **CLOSE** direction.
- Check sequence control - with unhinged opening drive.
- Ensure the easy movement of casement.

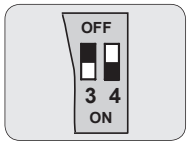
NOTE

When error occur a resetting (Reset) is possible. Disconnect the **opening drive - S3/S12**, then restart the installation process - as described above - without opening drive. After about three minutes, the locking drive **OFV1** is reset to the delivery settings.

OPENING DRIVE S1

Locking drive OFV1 is mounted, opening drive (S1) is unhinged

- Set the **DIP** switch **3** to **OFF** and **DIP**-switch **4** to **ON** when installing with **opening drive - S1**



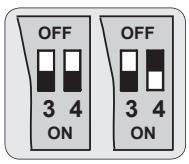
- Check function and sequence control - with unhinged opening drive.
- Hinge **opening drive - S1**.
- **Switch on** the **control voltage** at locking drive **OFV1** and at **opening drive - S1** - in **CLOSE** direction.
- Check sequence control again.
- Ensure the easy movement of the casement.

Never operate **opening drive - S1** without locking drive **OFV1** (Risk of damage or destruction of drives and / or windows).

OPENING DRIVE S1 and USKM

Locking drive OFV1 is mounted, opening drive (S1) is unhinged

- Set the **DIP** switch **3** to **ON** and **DIP**-switch **4** to **ON or OFF** when installing with **opening drive - S1** and **USKM**.

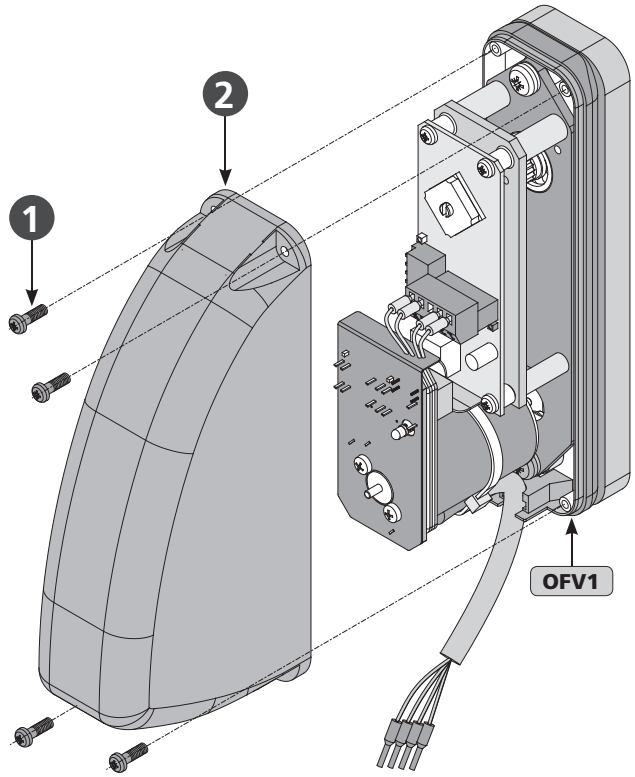


- Check function and sequence control - with unhinged opening drive.
- Hinge **opening drive - S1**.
- **Switch on** the **control voltage** at locking drive **OFV1** and at **opening drive - S1** - in **CLOSE** direction.
- Check sequence control again.
- Ensure the easy movement of the casement.

NOTE

Electric load disconnection and sequential control of locking drive **OFV1** is provided by the controll module **USKM**.

INSTALLATION STEP 9: MOUNT THE HOUSING ON THE OFV1



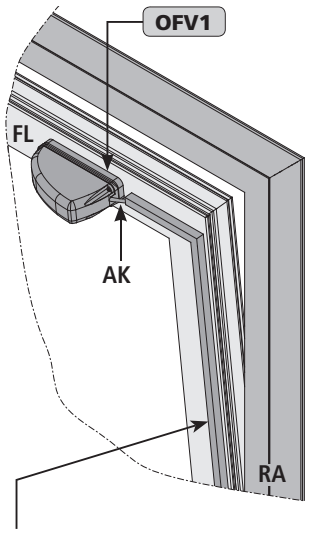
■ Using the screws ❶ and mount the housing ❷ on the locking drive **OFV1**.

Note cable routing!
(see chapter „CABLE ROUTING")
Check function! (see chapter „SAFETY CHECK AND PERFORMING TEST RUN").

INSTALLATION STEP 10: CABLE ROUTING

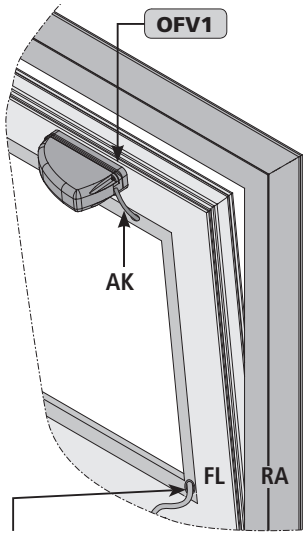
Cable routing on or in the casement

Cable on casement



Cable duct glued on
(in addition secured with countersunk screws against breaking away).

Cable in glazing bead

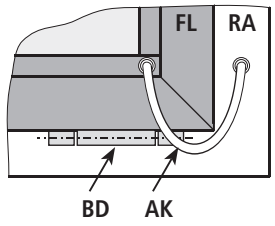


Drill hole in glazing bead
(cable bushing protects against damage to cable).

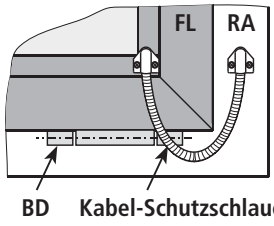
Connection cable routing on the casement:
- Cable must be protected against damage (shearing-off, kinking, splitting), i.e. by using bushings.

Upon removal of the glazing bead is the danger that the glass may fall.

Cable crossover without protective cable hose



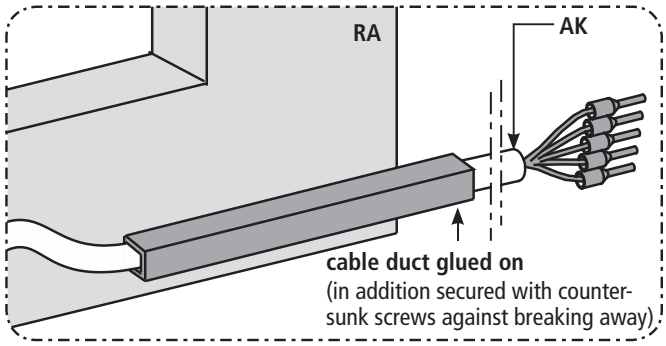
Cable crossover with protective cable hose



Connection cable routing on the hinge side:
- Make sure that during opening or closing procedure the cable will not be damaged by shearing-off, kinking, crushing.
- Protect cable feedthrough in profile e.g. by using cable bushings, cable transitions.

Cable routing on the frame

■ Route cable on the frame or mullion/transom.
Cable must be protected against damage (shearing-off, kinking, splitting).



INSTALLATION STEP 11: ELECTRIC CONNECTION

Make sure when establishing the connection that there is no voltage at the terminals!
Unused wires must be safely insulated!

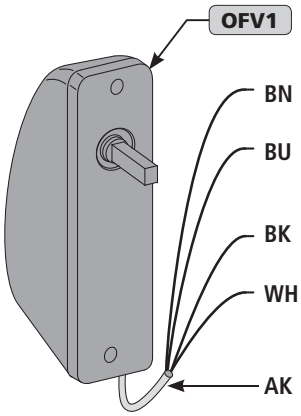
The running direction of the drive may be changed by interchanging (polarity reversal) the wires **„BN – (brown)"** - **„BU – (blue)"**.

Wire colour coding	
Colour	**DIN IEC 757**
white	WH
brown	BN
blue	BU
green	GN
violet	VT
grey	GY

Direction of travel
OPEN ↑
CLOSE ↓

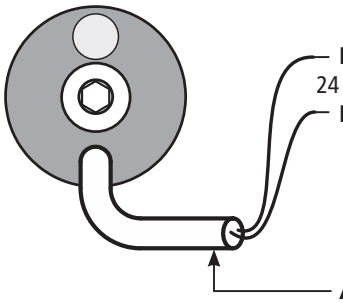
Polarity reversal
+ - ↑
- + ↓

Connection assignment from the locking drive



	↑	↓
BN	+	-
BU	-	+

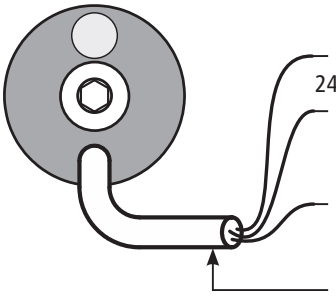
Connection assignment: opening drive S1



	↑	↓
BN	+	-
BU	-	+

S1 = without Internal cut-off switch

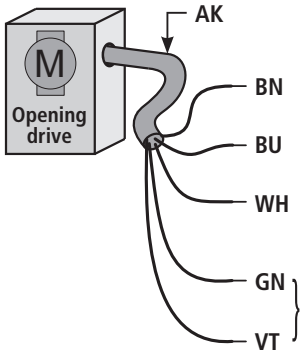
Connection assignment: opening drive S3



	↑	↓
BN	+	-
BU	-	+

S3 = Internal load dependend cut-off switch, post cycle resistant

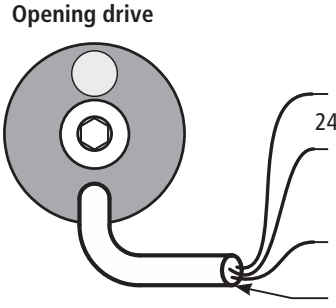
Connection assignment: opening drive S12



	↑	↓
BN	+	-
BU	-	+

WH is used for communication in systems with synchronized multi-drive operation.
Version Z:
contact max. 24 V, 500 mA (min. 10mA)
In drives KS4: standard „CLOSE"
optional „OPEN"

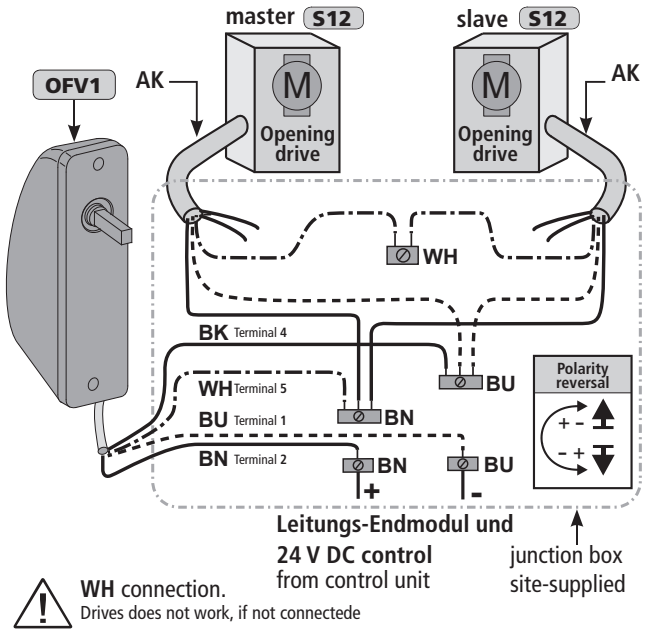
Connection assignment: opening drive S12



	↑	↓
BN	+	-
BU	-	+

S12 = Internal intelligent cut-off switch, programmable

Multi-drive operation: Opening drive (master /slave) and locking drive



WH connection.
Drives does not work, if not connectede

The programming of the drives in multi-drive occurs at factory or on site with UniPC	
WH	is used for communication in systems with synchronized multi-drive operation
Optional:	1 to 4 drives and max. 2 locking drives are possible.

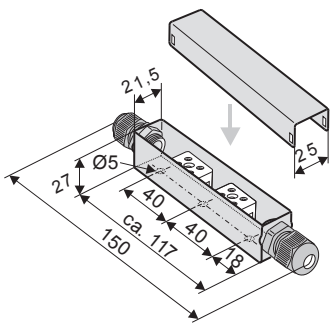
UniPC with configuration interface

Order number:	**524178**
Application:	Hard- and software for configuration of drives supplied by **AUMÜLLER** GmbH
Rated voltage:	24V DC +/-20%
Parameterizable drives:	24V DC type MP, S3, S12, S12 V.2 230V AC type S12, S12 V.2
Scope of delivery:	software UniPC (Downloadlink*), Interface "ParInt", USB cable, connection cable * http://www.aumueller-gmbh.de/Downloads
Features / Equipment:	Power supply 24V DC is not included in the scope of delivery! Any extended settings require a software licence.

Any reconfiguration of a drive is entirely at the user's own risk and responsibility.

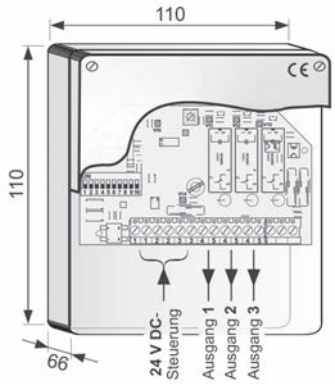
Cable junction box (for renewal)

Order number:	**513344**
Application:	to extend a drive cable
Rated voltage:	only for „safety extra low voltage" to max. 50V DC/AC
Material:	stainless steel (V2A)
Protection class:	IP 40
Dimensions:	25 x 27 x 150 mm
Equipment:	with cable gland (grey) including strain relief, with 2 loose ceramic terminals (bipolar).



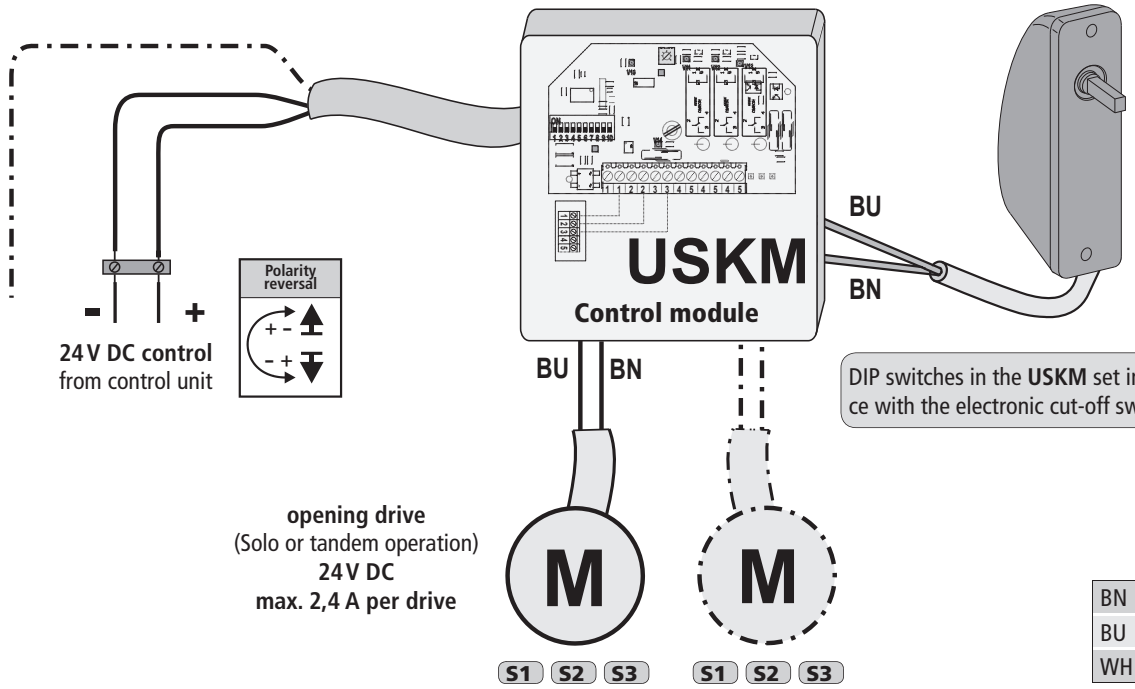
USKM

Order number:	**512140**
Application:	Control module with 3 outputs and individual settuble cut-off current, monitored motion run, delayed sequence control.
Rated voltage:	24V DC +/- 20 %, (max. 2 Vpp)
Close circiut current:	< 50 mA
Connections:	max. 3 drives; s < 300 mm
Rated current per drive:	max. 2,5 A
Drive type:	S1, S2, S3, S12, MP, FV1, OFV1
Protection rating:	IP 54
Ambient temperature range:	0 °C ... +70 °C
Surf. mount. plastic housing:	110 x 110 x 66 mm
Features / Equipment:	DIP switches for settings connection terminals: 2,5 mm²
Functions:	External electronic cut-off switch (max. 0,9 A), motion-monitoring up to 3 drives / locking drives, max. 2 sequential controls



ELECTRIC CONNECTION

Locking drive **OFV1** with **USKM**



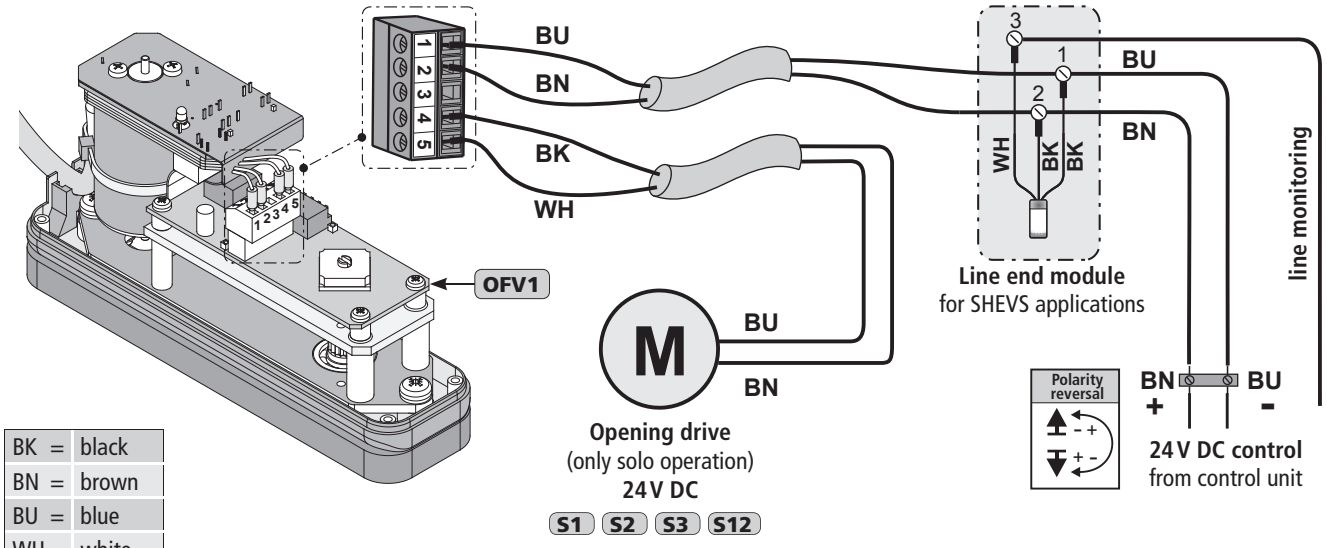
DIP switches in the **USKM** set in accordance with the electronic cut-off switch.

BN =	brown
BU =	blue
WH =	white

Version without sequential control module
Disconnection and sequential control for the locking drive **OFV1** is provided by the controll module **USKM**.

SHEVS applications require a line monitoring (line end module) to be connected upstream of the last or the only locking drive **OFV1**!

Solo operation - locking drive **OFV1**

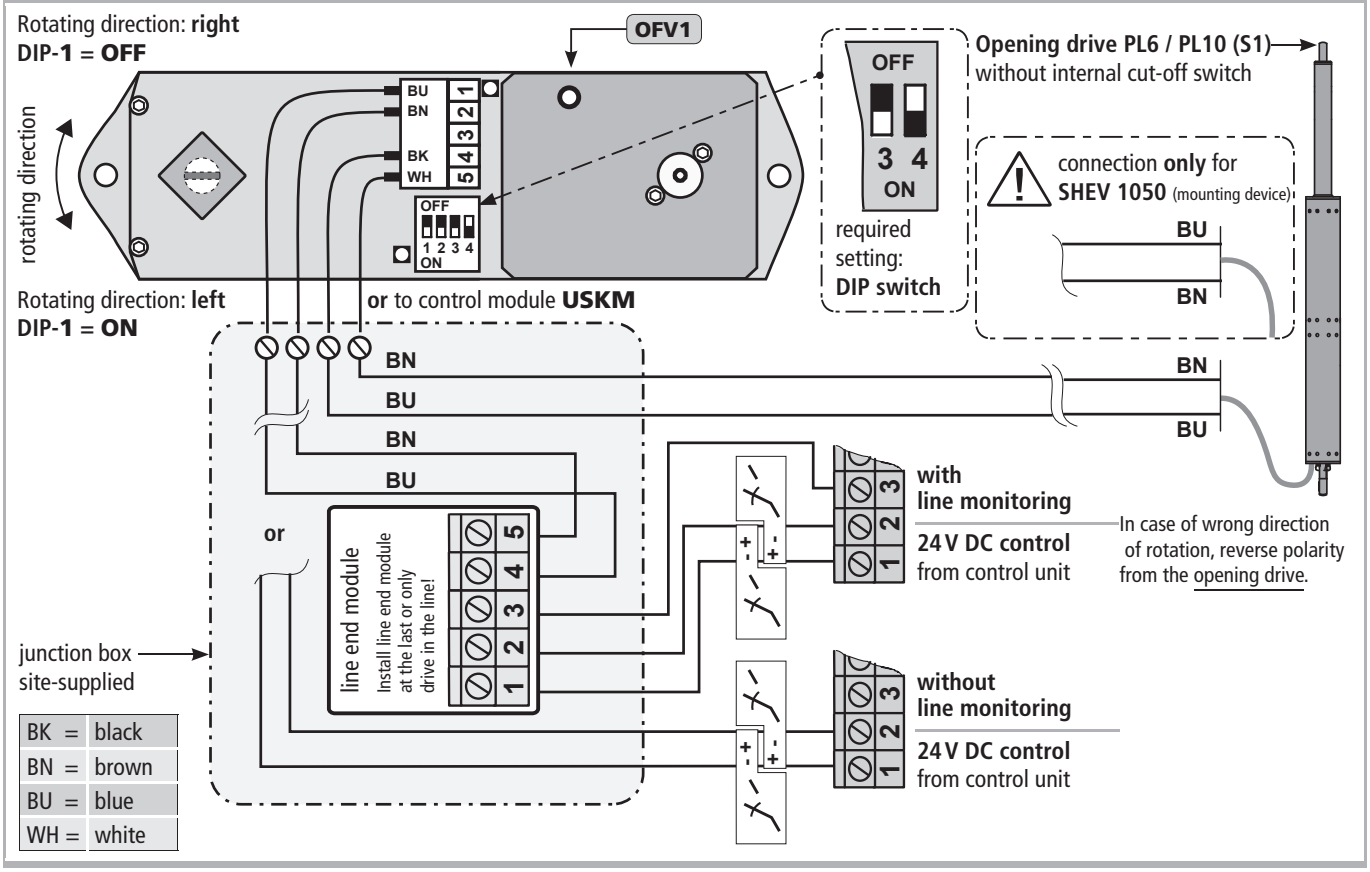


BK =	black
BN =	brown
BU =	blue
WH =	white

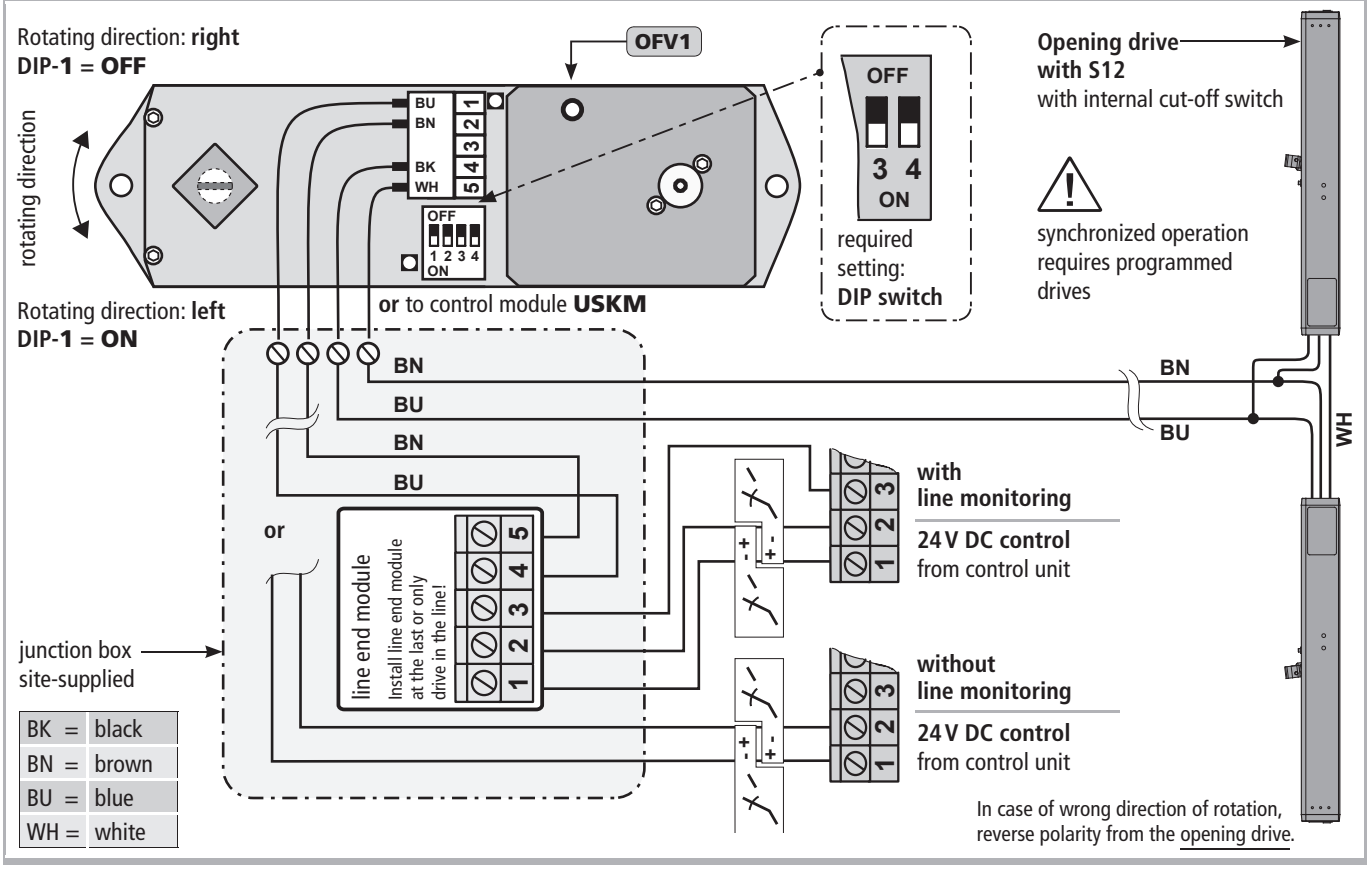
Version with sequential control module
By applying the 24V voltage supply on terminal **1**(-) and **2** (+) the locking mechanism **OFV1** the casement. After complete opening of the casement locking the opening drive on terminal **4** and **5** receives the command to move up (opening of the casement).

SHEVS applications require a line monitoring (line end module) to be connected upstream of the last or the only locking drive **OFV1**!

Locking drive **OFV1** and opening drive **without internal cut-off switch (S1)**



Locking drive **OFV1** and opening drive **with internal cut-off switch (S12)**



INSTRUCTIONS ON CONNECTION: MAX. LENGHT FROM THE LINES OF DRIVES TO THE CONTROL UNIT

Select the following values (see the tables below):

- number of the locking drives **OFV1**
- cut-off current of the opening drive
- measure the cable length of the locking drive **OFV1**

Be determined the **line cross-section** from the lines of drive to the control unit and the **cable length** of the locking drive **OFV1**.

NOTE To calculate can also be used the line calculation program. Details can be found on our website:
(www.aumueller-gmbh.de)

Max. lenght (m) from the lines of drives to the contol unit - ONE locking drive OFV1

Cut-off current of the opening drive	cable length (m) of the locking drive **OFV1**: 1,5 m				2,0 m				2,5 m				3,0 m				3,5 m				4,0 m			
0,8 A	90	150	240	360	88	147	235	352	86	143	230	344	84	140	224	336	82	137	219	328	80	133	214	320
1,2 A	58	97	155	232	56	93	149	224	54	90	144	216	52	87	139	208	50	83	133	200	48	80	128	192
1,6 A	42	70	112	168	40	67	107	160	38	63	101	152	36	60	96	144	34	57	91	136	32	53	85	128
2,4 A	26	43	96	104	24	40	64	96	22	37	59	88	20	33	53	80	18	30	48	72	16	27	43	64
3,0 A	20	33	52	78	18	29	47	70	16	26	42	62	14	23	36	54	12	19	31	46	10	16	26	38
	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0
	Line cross-section (mm^2) from the lines of drive to the control unit																							

Max. lenght (m) from the lines of drives to the contol unit - TWO locking drive OFV1

Cut-off current of the opening drives	cable length (m) of the locking drive **OFV1**: 1,5 m				2,0 m				2,5 m				3,0 m				3,5 m				4,0 m			
0,8 A	45	75	120	180	44	74	118	176	43	72	115	172	42	70	112	168	41	69	110	164	40	67	107	160
1,2 A	29	49	78	116	28	47	75	112	27	45	72	108	26	44	70	104	25	42	67	100	24	40	64	96
1,6 A	21	35	56	84	20	34	54	80	19	32	51	76	18	30	48	72	17	29	46	68	16	27	43	64
2,4 A	13	22	35	52	12	20	32	48	11	19	30	44	10	17	27	40	9	15	24	36	8	14	22	32
3,0 A	10	17	26	39	9	15	24	35	8	13	21	31	7	12	18	27	6	10	16	23	5	8	13	19
	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0
	Line cross-section (mm^2) from the lines of drive to the control unit																							

Max. lenght (m) from the lines of drives to the contol unit - THREE locking drive OFV1

Cut-off current of the opening drives	cable length (m) of the locking drive **OFV1**: 1,5 m				2,0 m				2,5 m				3,0 m				3,5 m				4,0 m			
0,8 A	30	50	80	120	29	49	78	117	29	48	77	115	28	47	75	112	27	46	73	109	27	44	71	107
1,2 A	19	32	52	77	19	31	50	75	18	30	48	72	17	29	46	69	17	28	44	67	16	27	43	64
1,6 A	14	23	37	56	13	22	36	53	13	21	34	51	12	20	32	48	11	19	30	45	11	18	28	43
2,4 A	9	14	23	35	8	13	21	32	7	12	20	29	7	11	18	27	6	10	16	24	5	9	14	21
3,0 A	7	11	17	26	6	10	16	23	5	9	14	21	5	8	12	18	4	6	10	15	3	5	9	13
	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0	1,5	2,5	4,0	6,0
	Line cross-section (mm^2) from the lines of drive to the control unit																							

INSTALLATION STEP 12:
SUPPLY LINES OF DRIVES TO THE CONTROL UNIT

Observe current regulations and guidelines e.g. DIN 4102-12 regarding the "Fire behavior of building materials-circuit integrity maintenance of electric cable systems" (E30, E60, E90) and the "Specimen Guideline on Conduits German designation - MLAR", and also prescribed constructional regulations!

RECOMMENDATION For safety reasons a cable of the next higher wire cross section should be selected.

Formula to calculate
the required wire cross-section of a supply line **24V**

$$A\ mm^2 = \frac{I_{A\ (total)} * L_{m\ (length\ supply\ line)} * 2}{2{,}0\ V_{(voltage\ drop)} * 56\ m / (\Omega * mm^2)}$$

Calculation example

Available data:
- cut-off current per drive (i. e. 2 x 4.0A) from data sheet
- length to be bridged from the last window to the control unit (i. e. 10 meters)

$$A = \frac{(2 * 4{,}0A) * 10m * 2}{2{,}0V * 56m / (\Omega * mm^2)}$$

$A = 1{,}42mm^2$ -> **1,5mm²** chosen

Laying and connecting the drive cable
- Avoid extreme temperature differences in the installation area (danger of condensation).
- Set clamping point close to window and ensure accessibility.
- Ensure expansion possibilities of the drive and the drive cable.
- Consider the cable length of drives.

INSTALLATION STEP 13:
SAFETY CHECK AND TEST RUN

Check the mounted system for its safety; perform test run and commissioning.

Safety test:
- Connect operating voltage.
- Check fastening (frame brackets, casement brackets) for firm fit or tightening.

Test run:
- Visual inspection of casement movements.
- Stop immediately by malfunction!
- Pay attention to collision with facade construction and correct installation, if required.

Risk evaluation:
Before operating a power-operated window to which window drives were mounted, which were sold by the manufacturer as incomplete machines according to installation declaration, the possible risk to ahazard of persons must be determined, evaluated and minimized by taking appropriate technical measures in accordance with the Machinery Directive. Separate documents for performing a risk assessment can be downloaded from the homepage of
Firm AUMÜLLER Aumatic GmbH
(**www.aumueller-gmbh.de**).

Operation of the power-operated window
When operating the power-operated window safety instructions must be observed, specifically those pertaining to commissioning, operation and maintenance.

HELP IN CASE OF MALFUNCTIONS, REPAIRS AND MAINTENANCE

Professional repair of a defect drive can only be performed at the manufacturer's factory or manufacturer-certified specialist company. Unauthorized opening or manipulation of the drive terminates warranty.

1. Exchange defect drives or have them repaired by the manufacturer.
2. In case of problems during installation or normal operation the following table might be useful:

Problem	Possible causes	Possible solutions
Locking drive does not start	• Duration of mains power supply too short	• Adjust supply voltage as specified in the technical documentation
	• Drive run direction from the opening drive is not correct	• Check drive cables change polarity
	• Connecting cable not connected	• Check all connection cables
	• DIP switch is wrong setting	• Setting the DIP switch properly
Opening drive does not operate correctly	• DIP switch is wrong setting	• Setting the DIP switch properly • If the locking drive is connected to an **USKM**, DIP switches **3** and **4** must be set to **ON**
Locking drive does not unlock in direction OPEN and/or does not lock in direction CLOSED	• DIP switch is wrong setting	• Setting the DIP switch properly
LED-1 red	• **OFV1** fault short circuit / cable break in the drive line or defect in the electronics	• Check the connection form the **OFV1** and check the **OFV1**
LED-1 red blinking	• opening drive fault **DIP 3 = OFF** opening drive is turned off due to voltage over-overload - caused by short circuit in the drive line or defect in the electronics **DIP 3 = ON** opening drive is shut off due to undervoltage - caused by cable break in the drive line or defective opening drive	• Check the connection from the opening drive and check the opening drive
LED-1 blinking red / green	• power supply is <19 V	• correct power supply
LED-2 OFF	• none power supply	• Check the connection

MAINTENANCE AND MODIFICATION

To ensure continuous function and safety of the drive periodic maintenance by a specialist company is required at least once a year (as mandated by law for smoke and heat exhaust systems). Operational readiness must be checked regularly. Frequent inspection of the system for imbalance and signs of wear or damages of cables and fastening elements must be performed.
During maintenance contaminations must be removed from the drive. Fastenings and clamping screws must be checked for tightness. Test runs during the opening and closing procedure of the devices must be performed.
The drive itself is maintenance-free. Defect devices may only be repaired in our factory. Only replacement parts of the manufacturer may be used. When the connection cable of this device is damaged it must be replaced by the manufacturer or his customer service or a similarly qualified person to avoid endangerment.
It is recommended to conclude a maintenance contract. A sample maintenance contract can be downloaded from the homepage of

Firm Aumüller Aumatic GmbH
(**www.aumueller-gmbh.de**).

While cleaning the windows, drives may not have direct contact with water or cleaning agents. Drives must be protected from dirt and dust during the construction phase or renovations.

Maintenance process

1. Open or extend power-operated casement completely.
2. Completely disconnect the system from the mains and secure it against automatic or manual activation.
3. Check windows and fittings for damages.
4. Check all mechanical fastenings (if required, observe information on torques in installation instructions).
5. Check electric drives for damages and contaminations.
6. Check connecting cables (drive cable) for:
   - tightness of the cable screw
   - functionality of the strain relief
   - damages
7. Check the mobility of hinges and fittings and re-adjust or apply lubricant, e.g. silicone spray (observe the instructions of the manufacturer of this window system).
8. Check peripheral seal, remove contaminations or replace.
9. Perform cleaning to maintain functionality (e.g. clean extending elements of the drive, such as chains or spindles by damp wiping them with acid or lye-free agents and drying them and, if required, lubricate them with cleansing oil e.g., Ballistol).
10. Turn on operating voltage.
11. Open and close the power-operated window via the operating voltage (functional test).
12. If available, check and re-adjust protection systems of the safe guard fixture.
13. Check the intactness of the CE label at the power-operated system (e.g. SHEV/Natural smoke and heat exhaust ventilators).
14. Check the intactness of warning instructions and labels at the respective drive.
15. Perform a risk assessment in accordance with Machinery Directive 2006 / 42 / EG, if required, e.g. after modifying the machine.

Demounting and disposal

The drives are demounted by reversing the steps, as for the installation. The adjustments are omitted.

1. Completely disconnect the system from the power supply before demounting a drive.
2. After demounting a drive the window must be secured against independent opening.

Dispose of parts according to the locally applicable legal provisions.

Liability

We reserve the right to change or discontinue products at any time without prior notice. Illustrations are subject to change. Although we take every care to ensure accuracy, we cannot accept liability for the content of this document.

Warranty and Customer service

In principal apply our:

„General Terms for the Supply of Products and Services of the Electrical Industry (ZVEI)".

The warranty corresponds with legal provisions and applies to the country in which the product has been acquired.
The warranty includes material and manufacturing defects incurred during normal use.

The warranty period for delivered material is twelve months.

Warranty and liability claims for personal injuries or material damages are excluded, if caused by one or more of the following:

- Improper use of the product.
- Improper installation, commissioning, operation, maintenance or repair of the product.
- Operating the product by defect and improper installed or not functioning safety and protection devices.
- Ignoring instructions and installation requirements in these instructions.
- Unauthorized constructional modifications at the product or accessories.
- Disaster situations due to effects of foreign bodies and Acts of God.
- Wear and tear.

Point of contact for possible warranty claims or for repair parts or accessories is the responsible branch office or the responsible person at

Firm Aumüller Aumatic GmbH.

Contact data are available at our homepage

(www.aumueller-gmbh.de)

KONFORMITÄTSERKLÄRUNG
DECLARATION OF CONFORMITY

Hersteller
Manufacturer

aumüller

Aumüller Aumatic GmbH
Gemeindewald 11
86672 Thierhaupten
Germany

Produktart | *Product type:*	**Verriegelungsantriebe für Fenster** | *Locking drives for windows*
Produktbaureihe | *Product series:*	**FV1 / FV3 / FV4 - 24V - 1x / 2x / 3x - R/L**
	FVB3 / FVB4 xx M-COM - 24V
	FVR3 / FVR4 xx M-COM - 24V
	FVM2 / FVM3 M-COM - 24V
	OFV1 / OFV1 M-COM - 24V
Ab Seriennummer | *From serial number:*	**XXXXXX-XX-XXX**
Ab Datum | *From date:* (Year-W-Week)	**16W10**

Wir bestätigen die Konformität des oben bezeichneten Produktes mit folgend gelisteten EU-Richtlinien sowie Normen:
We herewith confirm the conformity of the above mentioned product with EC Directives and the standards listed below:

KONFORMITÄT
CONFORMITY

Richtlinie über elektromagnetische Verträglichkeit 2014/30/EU
Directive relating to Electro-Magnetic Compatibility 2014/30/EU

Niederspannungsrichtlinie 2014/35/EU
Low Voltage Directive 2014/35/EU

HARMONISIERTE NORMEN
HARMONIZED STANDARDS

DIN EN 60335-2-102:2016-05
DIN EN 61000-6-1:2007-10
DIN EN 61000-6-2:2006-03
DIN EN 61000-6-3:2011-09
DIN EN 61000-6-4:2011-09

SONSTIGE TECHNISCHE NORMEN UND SPEZIFIKATIONEN
FURTHER TECHNICAL STANDARDS AND SPECIFICATIONS

DIN EN 12101-2:2003-09 (in ferralux® NRWG - 24 V DC)
Montageanweisung | *Installation instructions*

Thierhaupten, 01.03.2016

R. Meinzer

Geschäftsführer / Verantwortlich für die technische Dokumentation
Managing Director / Head of technical documentation

CE

Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten!
The safety instructions of the supplied product documentation are to be observed!

Certificate

Zertifikat

VdS Schadenverhütung
bescheinigt die Anwendung eines

Qualitätsmanagementsystems

für

aumüller

Aumüller Aumatic GmbH · Gemeindewald 11 · D-86672 Thierhaupten

Zertifikats-Nr.:	Anzahl der Seiten:	Gültig von:	Gültig bis:
S 814040	1	10.10.2014	09.10.2017

Geltungsbereich des Zertifikates:

Entwicklung, Herstellung und Vertrieb von Produkten und Systemen für Rauch- und Wärmeabzug, natürliche Gebäudelüftung, automatische Tür- und Toranlagen sowie damit verbundene Wartungs-, Dienst- und Serviceleistungen

Zertifizierungsgrundlagen:

DIN EN ISO 9001
Qualitätsmanagementsysteme
Anforderungen
Ausgabe Dezember 2008
Qualitätsmanagementhandbuch des Zertifikatsinhabers

Köln, den 10.10.2014

Reinermann
Geschäftsführer

ppa. Urban
Leiter der Zertifizierungsstelle

DAkkS
Deutsche Akkreditierungsstelle
D-ZM-11149-01-01

Das Zertifikat umfasst ausschließlich das Qualitätsmanagementsystem in dem angegebenen Geltungsbereich. Die gegenwärtige Gültigkeit kann unter www.vds.de verifiziert werden.

Das Zertifikat gibt keine Auskunft über die Zertifizierung von Qualitätsmanagementsystemen oder die VdS-Anerkennungen von Errichterfirmen, Wach- und Sicherheitsunternehmen, Produkten, Verfahren, o. ä. Hierfür sind gesonderte Nachweise erforderlich.

Das Zertifikat darf nur unverändert und mit sämtlichen Anlagen vervielfältigt werden. Während der Gültigkeit des Zertifikates muss das Qualitätsmanagementsystem der Organisation stets die Forderungen der Zertifizierungsgrundlagen erfüllen. Dies wird durch VdS Schadenverhütung regelmäßig begutachtet.

Jegliche Werbung mit dem Zertifikat muss den Inhalt korrekt wiedergeben und darf nicht auf wettbewerbsrechtswidrige Art und Weise erfolgen.

VdS Schadenverhütung GmbH
Zertifizierungsstelle
Amsterdamer Str. 174
D-50735 Köln

Ein Unternehmen des Gesamtverbandes der Deutschen Versicherungswirtschaft e.V. (GDV)

Akkreditiert als Zertifizierungsstelle für Qualitätsmanagementsysteme von der DAkkS - Deutsche Akkreditierungsstelle GmbH

Translation of the original instructions (German)

Once the assembly and commissioning has been completed, the installer of a machine „power-operated window and door" shall hand these instructions over to the end-user. The end-user shall store these instructions in a safe place for further reference and use, if required.

Important note:
We are aware of our responsibility, which is why we present life-supporting and value-preserving products with greatest possible conscientiousness. Although we make every effort to ensure that the data and information are as correct and up-to-date as possible, we still cannot guarantee that they are free from mistakes and errors.

Basically the General Terms and Conditions of Aumüller Automatic GmbH apply to all offers, supplies and services.

The publication of these assembly and commissioning instructions supersedes all previous editions.

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