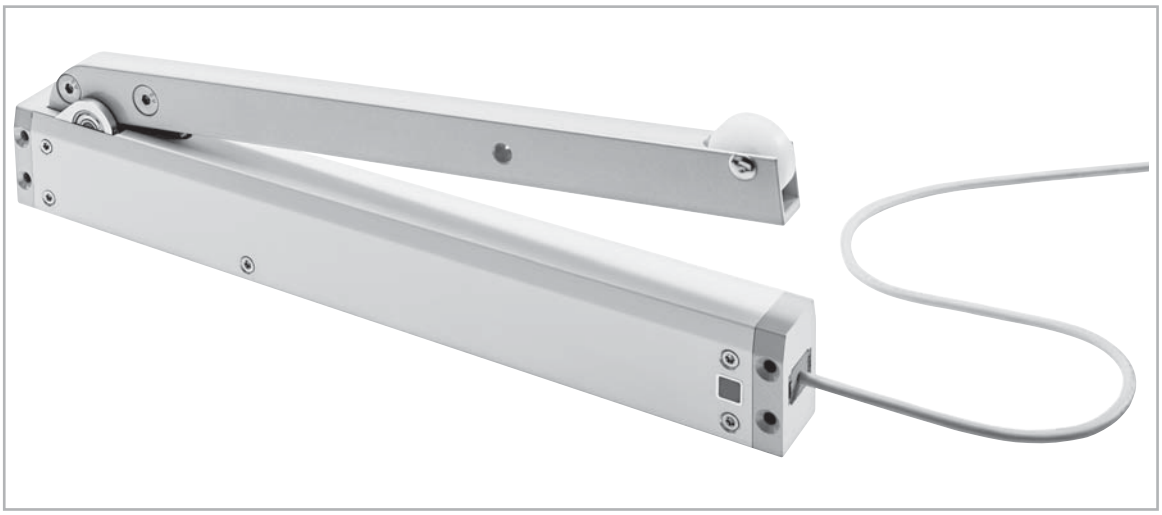
aumüller

Assembly and Commissioning Instructions

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

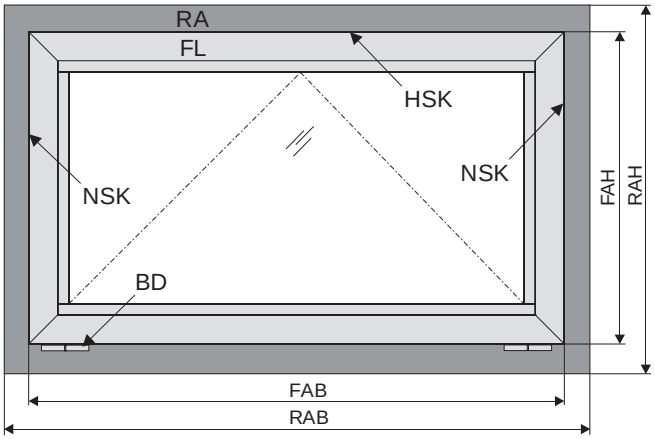


FTA600 R / FTA600 DF / FTA600 GF - FOLDING ARM DRIVES CE

01		Abbreviations Target Groups Warning and Safety Symbols Intended Use Safety Instructions	3 - 8
02		Data sheet FTA600 R S12 24V DC Data sheet FTA600 DF S12 24V DC Data sheet FTA600 GF S12 24V DC Explanations on the product label	9 - 11
03		Areas of Application and Casement Sizes	12
04	INSTALLATION STEP 1: INSTALLATION STEP 2:	Inspection before the installation Installation prerequisite and Installation preparation	13 - 14
05	INSTALLATION STEP 3: INSTALLATION STEP 4A: INSTALLATION STEP 4B: INSTALLATION STEP 4C: INSTALLATION STEP 4D:	Drill holes according to mounting variants FTA600 R - Opposite hinge side mounting - outward opening door FTA600 R - Hinge-side mounting - inward opening door FTA600 DF - Hinge-side mounting - inward opening side-hung window FTA600 GF - Opposite hinge side mounting - outw. open. side-hung window	15 - 21
06	INSTALLATION STEP 5: INSTALLATION STEP 6: INSTALLATION STEP 6: INSTALLATION STEP 8:	Cable routing Electric Connection Supply lines of drives to the control unit Safety check and Test run	22 - 26
07		Help in case of Malfunctions, Repairs and Maintenance Maintenance and Modification	27
08		Removal and Disposal Liability Warranty and After-Sales Service Certificates	28 - 31

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!

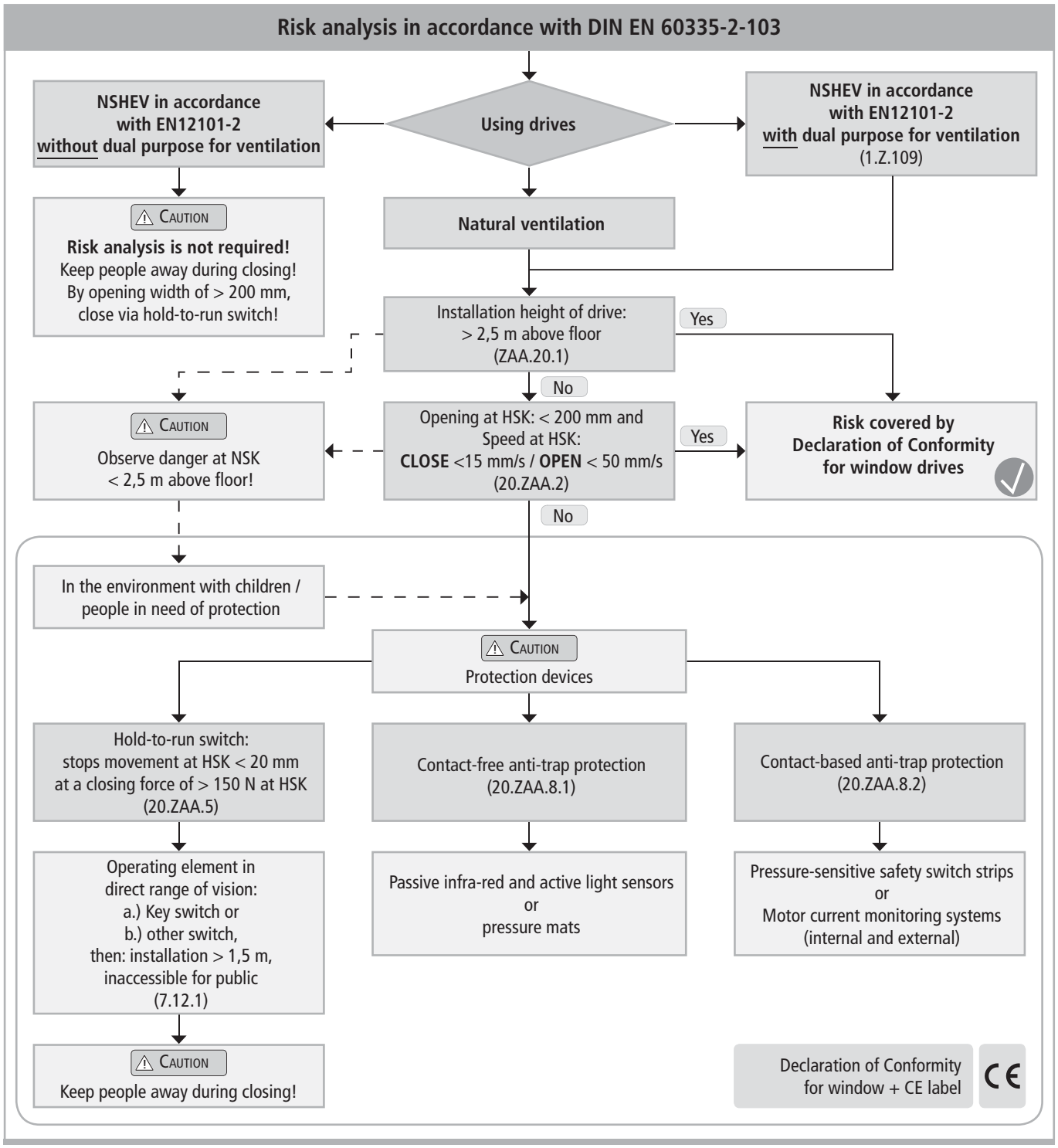
We as manufacturers are well aware of our duties and responsibilities regarding the development, manufacturing and placing of safe window drives on the market and consistently implement them. Ultimately, however, we have no direct influence on the usage of our drives. Therefore, as a precaution, we point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

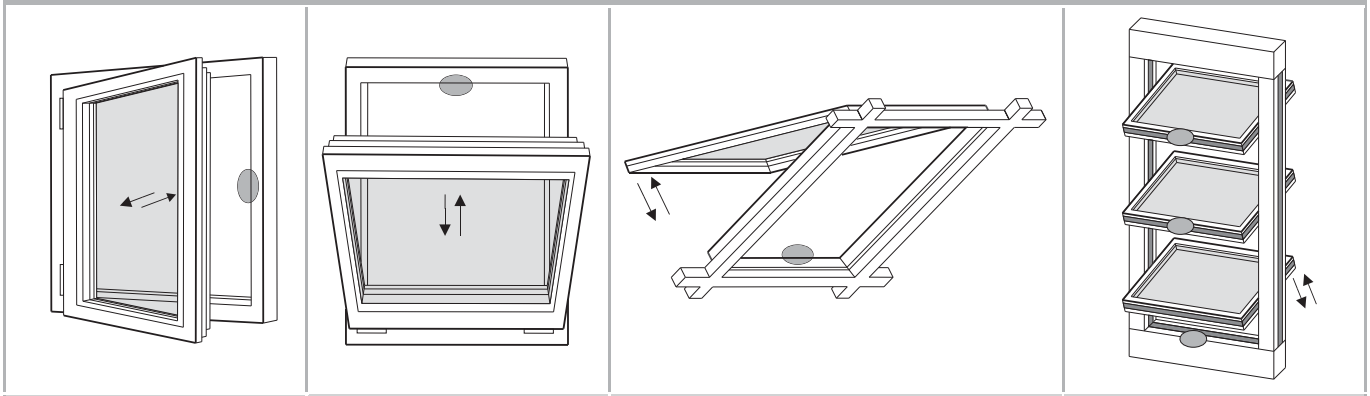
Mounting material

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



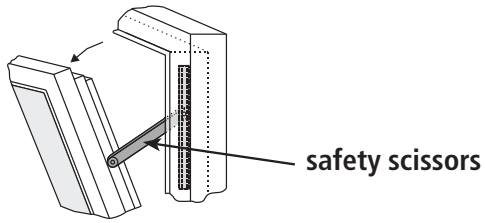
Side-hung	Bottom-hung	Roof windows / skyskylight domes	Louvre windows

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.

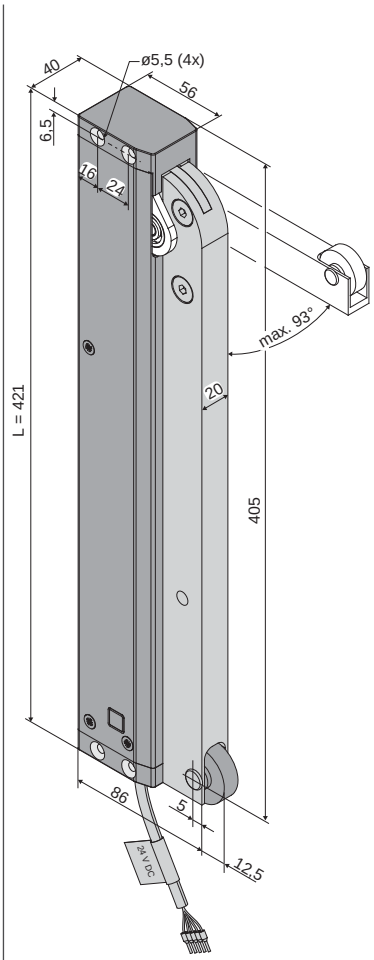
Declaration of Conformity
The drive is manufactured and inspected in accordance with European guidelines. The respective Declaration of Conformity is on hand.
In case the operation of the drive differs from the intended use, a risk evaluation for the complete power-operated window system shall be performed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

DATA SHEET FTA600 R S12 24V DC

- Application: natural ventilation, SHEV
- Mainly for opening of doors as air intlets
- Internal Intelligent Control Electronics S12
- Programmable contact for door opener
- Unified plug solution for all **AUMÜLLER** chain drives and **AUMÜLLER** folding arm drives

Options

- Programmable special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with locking drives (S3 / S12)
- Various customised programmings on request



TECHNICAL DATA

U_N	Rated voltage	24V DC (± 20 %), max. 2 Vpp
I_N	Rated current	1,0 A
I_A	Cut-off current	1,4 A
P_N	Rated power	24 W
ED	Duty cycle	30 % (ON: 3 min./OFF: 7 min.)
	Protection rating	IP 32
	Ambient temperature range	-5 °C ... +75 °C
M_A	Torque OPEN	215 Nm (600 N)
M_Z	Torque CLOSE	215 Nm (600 N)
F_H	Pullout force	no connection to the moving parts (roll)
	Lever arm	aluminium (RAL9006) with plastic roll
	Connecting cable with plug	non-halogen, grey 5 x 0,5 mm², ~ 3 m
t	Running time (0° - 90°)	45 s (2,0°/s) 45 s (2,0°/s)
s	Window-opening angel	0° – 93° (± 5 %)
L	Length	421 mm
	Potential free contact	max. 24V DC / 0,5A programmable
	Sound pressure level A	≤ 70 dB (A)

ORDER DATA

s [DEG]	L [mm]	Version	Finish	PU / pcs.	Part.-No.
0° – 93°	421	FTA600 R S12 24V	E6/C-0	1	**524144**

ACCESSORIES

	PU / pcs.	Part.-No.
K88 Frame bracket FTA600 R	1	**524156**

OPTIONS

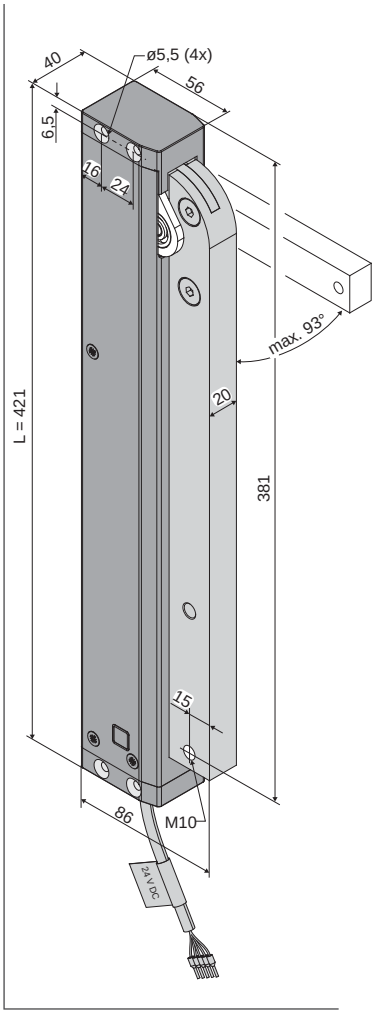
Special model	PU / pcs.	Part.-No.
Drive housing painted/powder coated in other RAL colours		
Specify at order stage:		**516030 + 516004**
Microprocessor programming S12		
Electronic stroke reduction 24V S12	1	**524190**
Programming drives 24V / 230V S12	1	**524180**
Optional accessories	PU / pcs.	**Part.-No.**
Configuration module for synchronised multi-drive systems	1	**524177**

DATA SHEET FTA600 DF S12 24V DC

- Application: natural ventilation, SHEV, ferralux®-NSHEV
- Mainly for opening and closing of side-hung inward opening windows
- Internal Intelligent Control Electronics S12
- Programmable contact for door opener
- Unified plug solution for all **AUMÜLLER** chain drives and **AUMÜLLER** folding arm drives

Options

- Programmable special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with locking drives (S3 / S12)
- Various customised programmings on request



TECHNICAL DATA

U_N	Rated voltage	24V DC (± 20 %), max. 2 Vpp
I_N	Rated current	1,0 A
I_A	Cut-off current	1,4 A
P_N	Rated power	20 W
ED	Duty cycle	30 % (ON: 3 min./OFF: 7 min.)
	Protection rating	IP 32
	Ambient temperature range	-5 °C ... +75 °C
M_A	Torque OPEN	215 Nm (600 N)
M_Z	Torque CLOSE	215 Nm (600 N)
F_H	Pullout force	3000 N (fastening depended)
	Lever arm	aluminium (RAL9006)
	Connecting cable with plug	non-halogen, grey 5 x 0,5 mm², ~ 3 m
t	Running time (0° - 90°)	45 s (2,0°/s) 45 s (2,0°/s)
s	Window-opening angel	0° – 93° (± 5 %)
L	Length	421 mm
	Potential free contact	max. 24V DC / 0,5A programmable
	Sound pressure level A	≤ 70 dB (A)

ORDER DATA

s [DEG]	L [mm]	Version	Finish	PU / pcs.	Part.-No.
0° – 93°	421	FTA600 DF S12 24V	E6/C-0	1	**524145**

ACCESSORIES	PU / pcs.	Part.-No.
K103 Frame bracket FTA600 DF	1	**524172**

OPTIONS

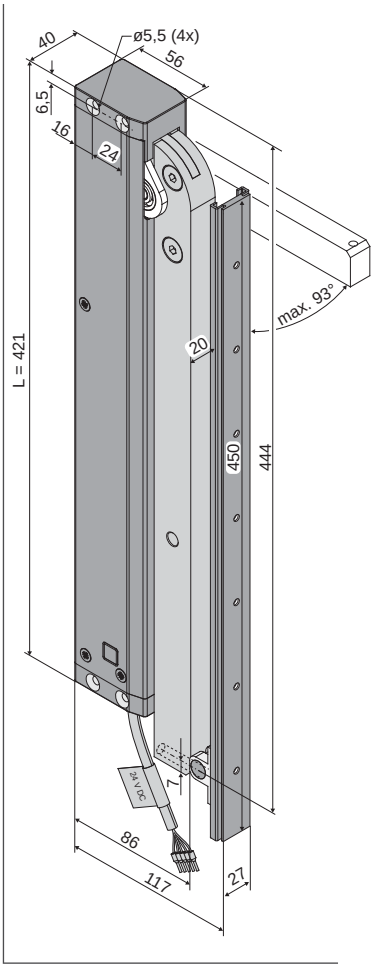
Special model	PU / pcs.	Part.-No.
Drive housing painted/powder coated in other RAL colours		
Specify at order stage:		**516030 + 516004**
Microprocessor programming S12		
Electronic stroke reduction 24V S12	1	**524190**
Programming drives 24V / 230V S12	1	**524180**
Optional accessories	PU / pcs.	Part.-No.
Configuration module for synchronised multi-drive systems	1	**524177**

DATA SHEET FTA600 GF S12 24V DC

- Application: natural ventilation, SHEV, ferralux®-NSHEV
- Mainly for opening and closing of side-hung outward opening windows
- Internal Intelligent Control Electronics S12
- Programmable contact for door opener
- Unified plug solution for all **AUMÜLLER** chain drives and **AUMÜLLER** folding arm drives

Options

- Programmable special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with locking drives (S3 / S12)
- Various customised programmings on request



TECHNICAL DATA

U_N	Rated voltage	24V DC (± 20 %), max. 2 Vpp
I_N	Rated current	1,0 A
I_A	Cut-off current	1,4 A
P_N	Rated power	20 W
ED	Duty cycle	30 % (ON: 3 min./OFF: 7 min.)
	Protection rating	IP 32
	Ambient temperature range	-5 °C ... +75 °C
M_A	Torque OPEN	215 Nm (600 N)
M_Z	Torque CLOSE	215 Nm (600 N)
F_H	Pullout force	3000 N (fastening depended)
	Lever arm	aluminium (RAL9006)
	Connecting cable with plug	non-halogen, grey 5 x 0,5 mm², ~ 3 m
t	Running time (0° - 90°)	45 s (2,0°/s) 45 s (2,0°/s)
s	Window-opening angel	0° – 93° (± 5 %)
L	Length	455 mm
	Potential free contact	max. 24V DC / 0,5A programmable
	Sound pressure level A	≤ 70 dB (A)

ORDER DATA

s [DEG]	L [mm]	Version	Finish	PU / pcs.	Part.-No.
0° – 93°	455	FTA600 GF S12 24V	E6/C-0	1	**524146**

ACCESSORIES	PU / pcs.	Part.-No.
K104 Frame bracket FTA600 GF	1	**524173**

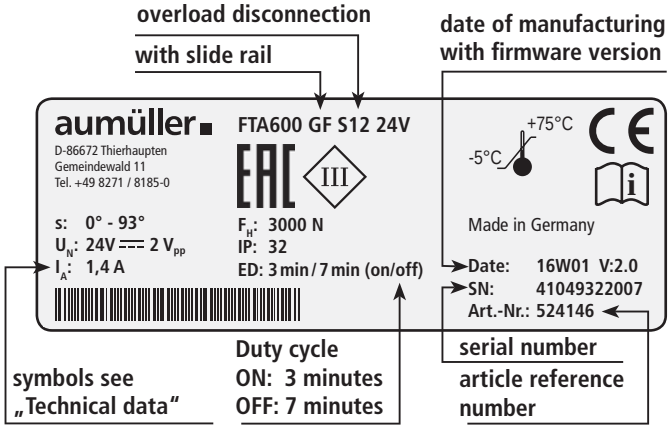
EXPLANATIONS ON THE PRODUCT LABEL

The product label provides information about:

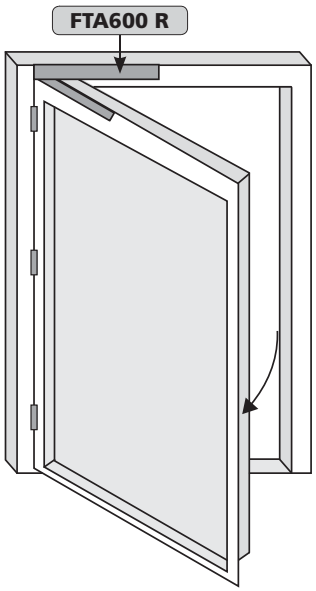
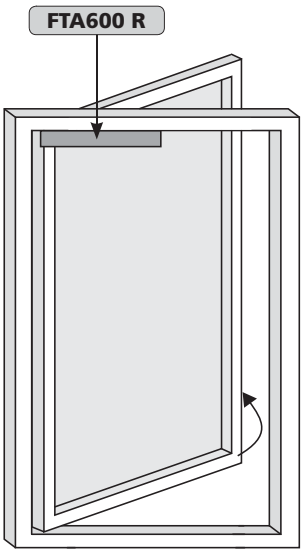
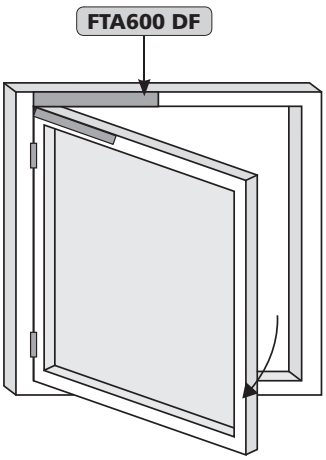
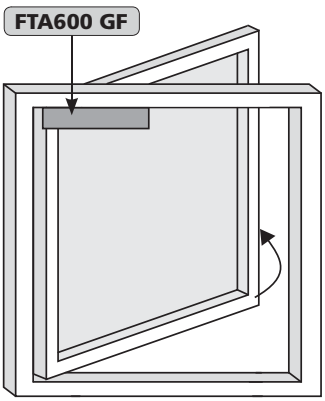
- manufacturer,
- article reference number and name,
- technical caracteristics,
- date of manufacturing with firmware version,
- serial number.

NOTE Never install and operate damaged products.

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



AREAS OF APPLICATION AND CASEMENT SIZES

Areas of Application and Casement Sizes			
Door - inward opening Hinge-side mounting at the upper side closing edge	**Door - outward opening** Opposite hinge side mounting at the upper side closing edge	**Roof window - inward opening** Hinge-side mounting at the side closing edges	**Roof window - outward opening** Opposite hinge side mounting at the side closing edges
			
Space on the frame: above min. 56 / max. 106 mm	**Space** on the frame: above min. 40 mm	**Space** on the frame: above min. 48 mm	**Space** on the frame: min. 60 mm on the casement: min. 40 mm
door width: < 1200 mm door height: < 2000 mm total weight: < 100 kg	door width: < 1200 mm door height: < 2000 mm total weight: < 100 kg	casement width: < 1200 mm casement height: < 1500 mm/solo casement height: < 2500 mm/tandem	casement width: < 1200 mm casement height: < 1500 mm/solo casement height: < 2500 mm/tandem
with **K88** frame bracket FTA600 R	without casement bracket	with **K103** frame bracket FTA600 DF	with **K104** frame bracket FTA600 GF

INSTALLATION STEP 1: INSPECTION BEFORE THE INSTALLATION

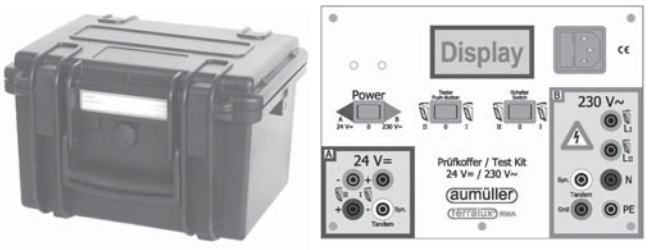
⚠ WARNING Important instructions for a safe installation. Observe all instructions, wrong installation may result in serious injury!

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:

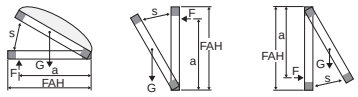
$$\mathbf{G}\ \text{(Casement weight) [kg]} = \mathbf{FAB} [\text{m}] * \mathbf{FAH} [\text{m}] * \mathbf{Glass\ thickness} [\text{mm}] * \underset{\text{glass-density}}{\mathbf{2,5}} * \underset{\text{frame share}}{\mathbf{1,1}}$$

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

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

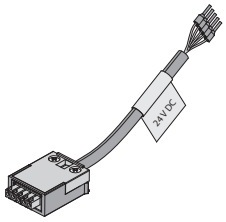
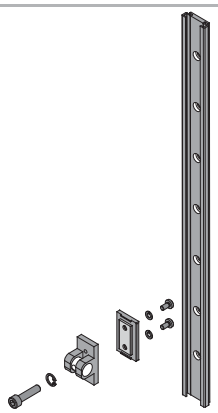
$$\mathbf{F}\ [\text{N}] = \frac{\mathbf{5,4} * \mathbf{G}\ [\text{kg}] * \mathbf{FAH}\ [\text{m}]}{\mathbf{a}\ [\text{m}]}\quad \textbf{Roof}$$

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 folding arm drives	
	Assembly and Commissioning Instructions
	**AUMÜLLER-Click plug solution**
	Warning sign sticker „Risk of entrapment" (1x)
	**Only at: FTA600 GF** 1x Slide rail 450 mm 1x Slide 40 x 20 1x Connector 40 x 20 x 20 mm 1x Bolt ø12 x 20 mm 1x Screw M6 x 25 1x Circlip DIN 472 2x Screw M4 x 8 2x Lock washer DIN 127

INSTALLATION STEP 3: DRILL HOLES ACCORDING TO MOUNTING VARIANTS

- Determine fastenings.
- Produce drill holes with appropriate cross-section. For the mounting dimensions please refer to the following hole layout drawings or project-specific documents and drawings.
- Secure fasteners against loosening; e.g. by applying removable thread-locking compound such as "Loctite".

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

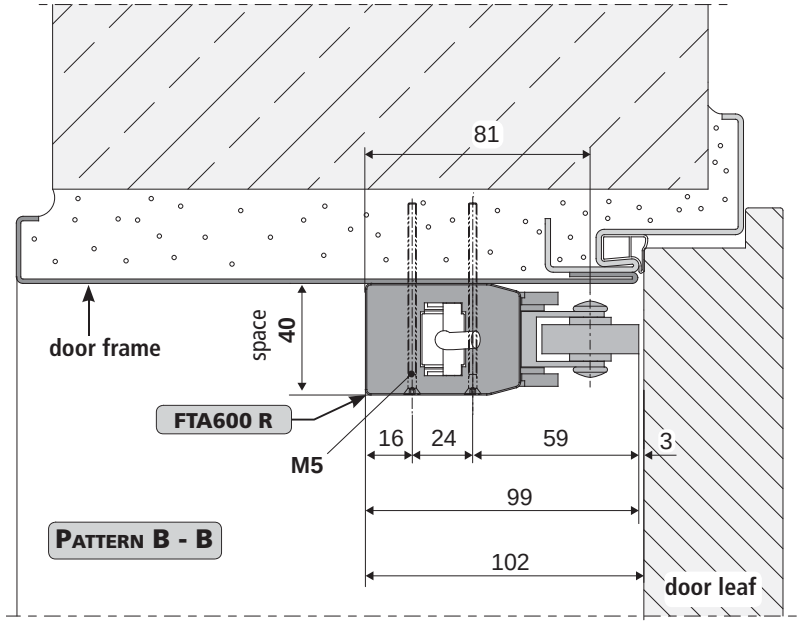
INSTALLATION STEP 4A: FTA600 R - OPPOSITE HINGE SIDE MOUNTING - OUTWARD OPENING DOOR

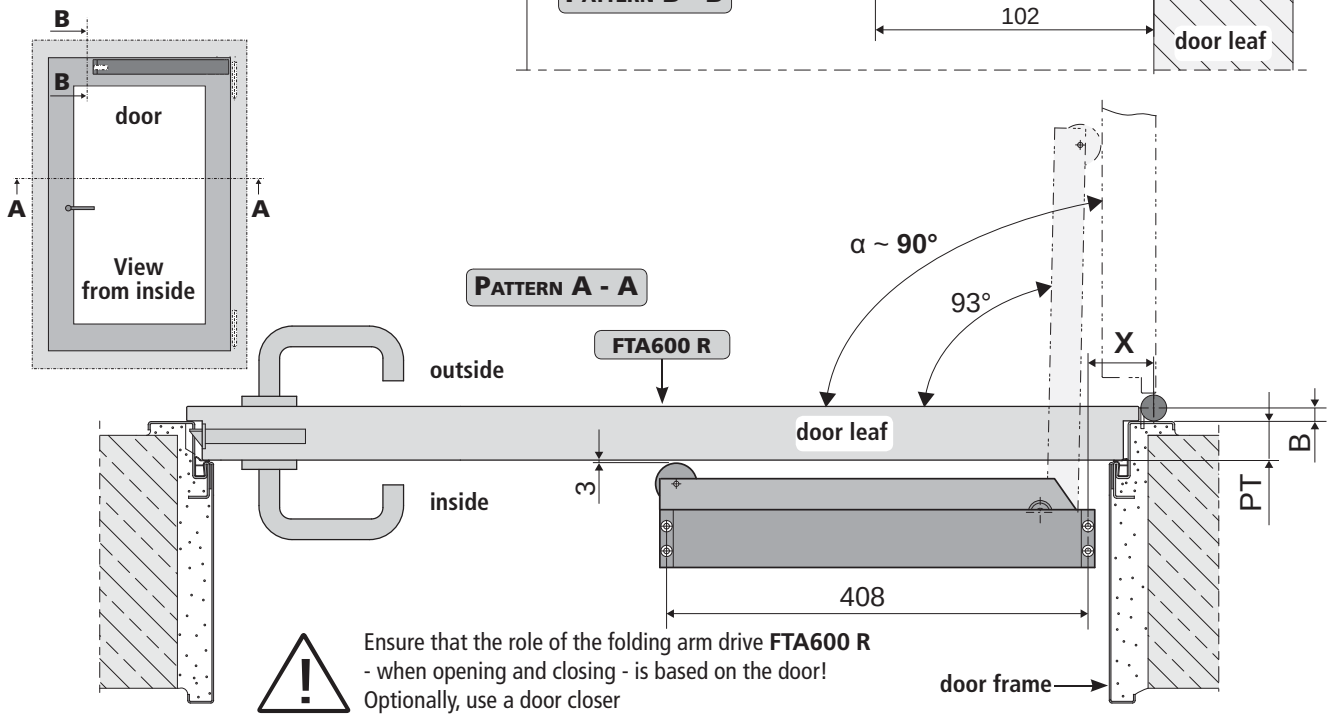
- Fasten folding arm drive **FTA600 R** with screws **(M5)** on the door frame.

Make sure they are parallel to door frame.

Measure depending on the opening angle „α ~90°", profile depth „PT" and door hinge dimension „B"

Opening angel „α" ~ 90°	„X"	„B"	„PT"
	80 mm	22 mm	40 mm
	90 mm	22 mm	50 mm
	100 mm	22 mm	60 mm
	105 mm	22 mm	65 mm
	110 mm	22 mm	70 mm
	115 mm	22 mm	75 mm
	120 mm	22 mm	80 mm
	90 mm	36 mm	40 mm
	100 mm	36 mm	50 mm
	105 mm	36 mm	60 mm
	110 mm	36 mm	65 mm
	115 mm	36 mm	70 mm
	120 mm	36 mm	75 mm
	125 mm	36 mm	80 mm





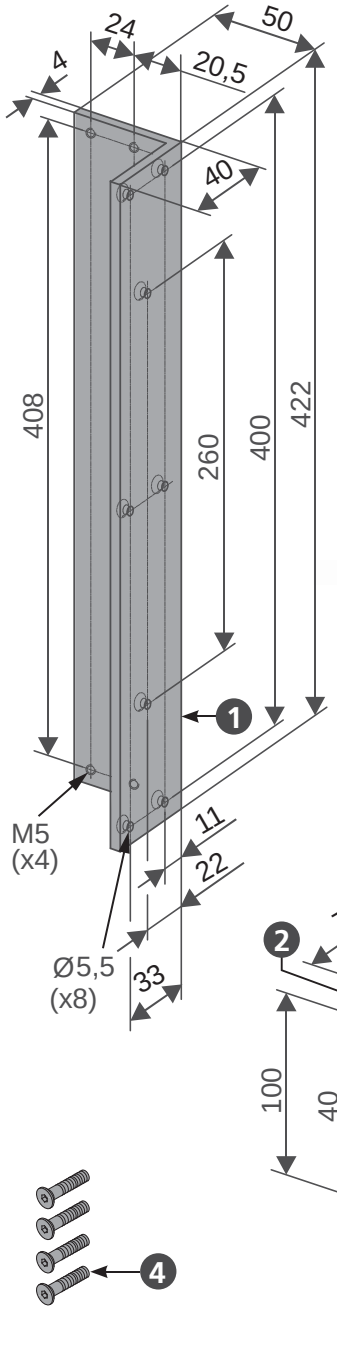
Ensure that the role of the folding arm drive **FTA600 R** - when opening and closing - is based on the door!
Optionally, use a door closer

INSTALLATION STEP 4B: FTA600 R - HINGE-SIDE MOUNTING - INWARD OPENING DOOR

- Screw the angle ❶ of frame bracket **K88** at the door frame (**M5**).
- Fasten folding arm drive **FTA600 R** on the angle ❶ - with the screws ❹.

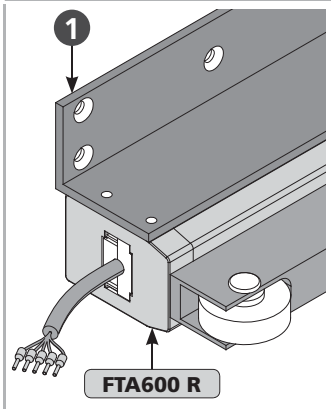
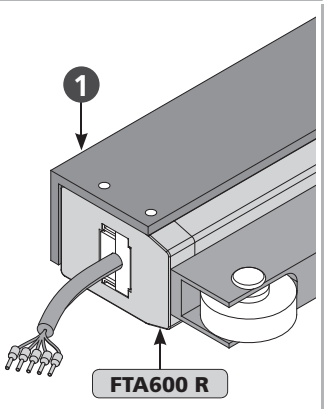
Make sure they are parallel to door frame.

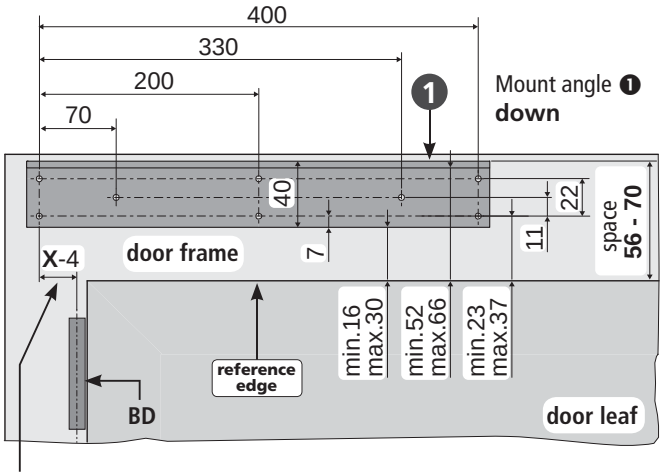
K88 frame bracket FTA600 R



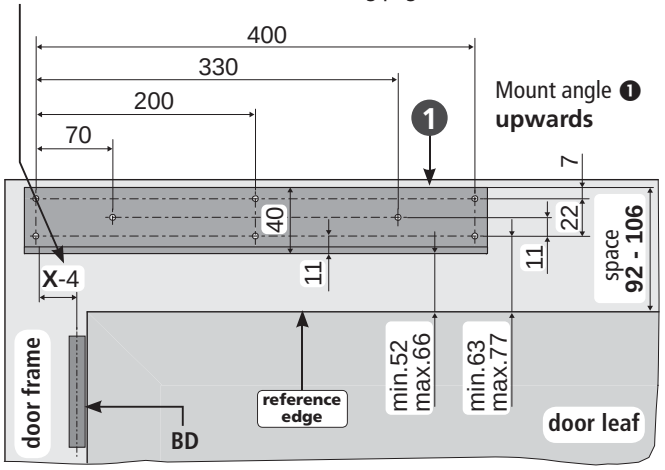
❶	1x Angle, L = 422 50 x 40 x 4
❷	1x Angle, L = 100 50 x 75 x 5 with slots
❸	1x Angle, L = 100 50 x 75 x 5
❹	4x Screw M5 x 45
❺	3x Screw M5 x 12
❻	3x Lock washer DIN 6797

- for inward and outward opening doors
- on the hinge-side (frame NSK)
- opposite the hinge-side (frame NSK)

Mount angle ❶ upwards	Mount angle ❶ down
	
Space at the frame: **92 - 106 mm**	**Space** at the frame: **56 - 70 mm**

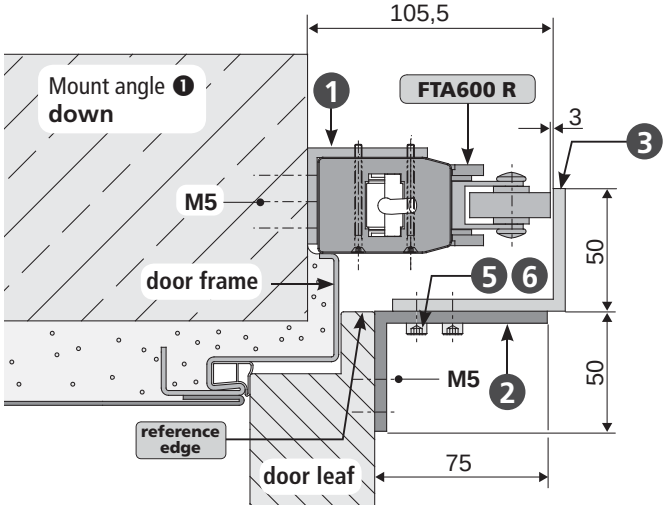


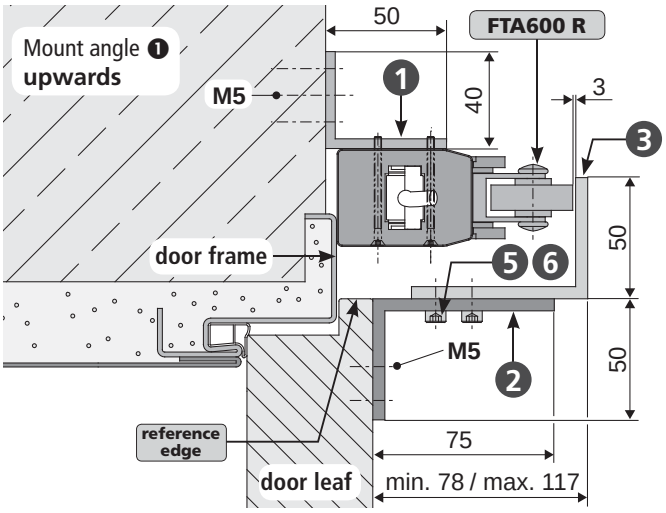
Measure "**X**": See table on the following page



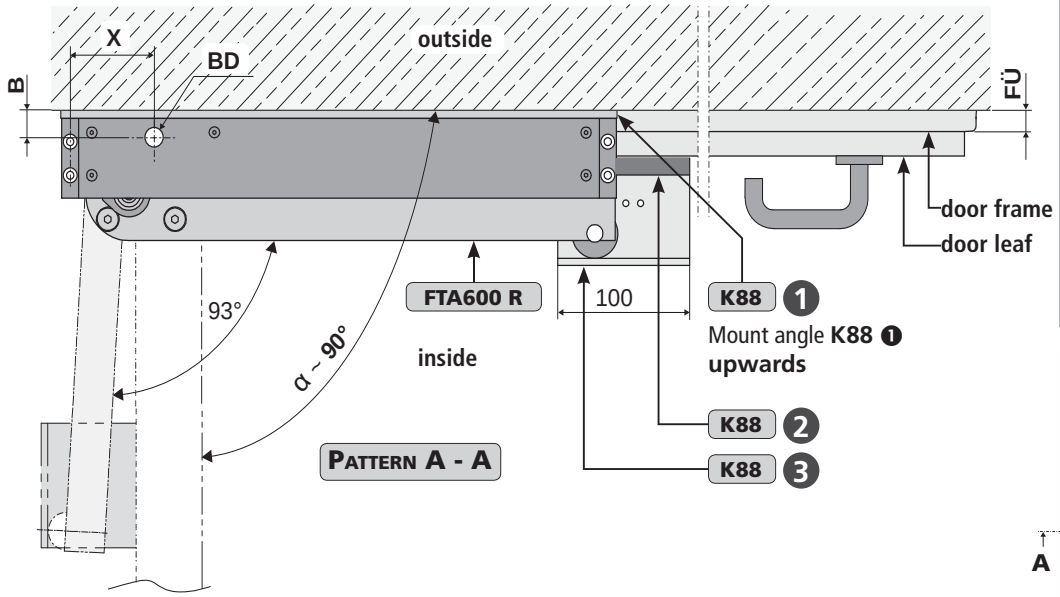
- Screw the angle ❷ of frame bracket **K88** at the door leaf (**M5**).
- Fasten and adjust the angle ❸ - with screws ❺ and lock washers ❻.

Ensure that the role of the folding arm drive **FTA600 R** - when opening and closing - is based on the angle ❸ **K88**!

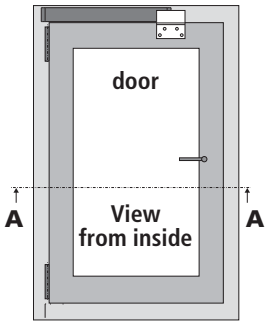




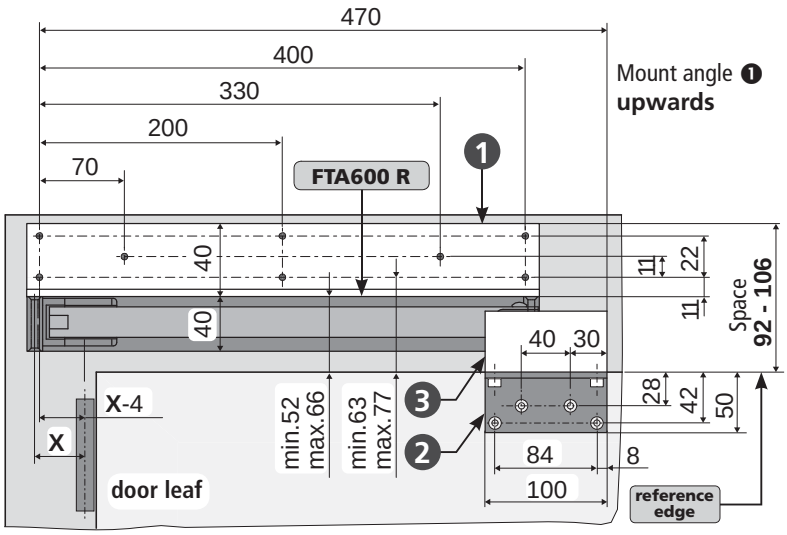
Measure depending on the opening angle „α ~90°“, window overlap „FÜ“ and door hinge dimension „B“



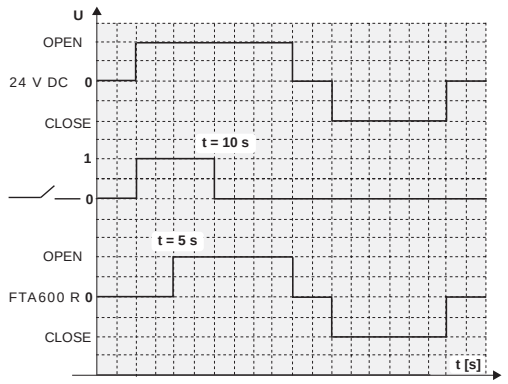
„X“	„B“	„FÜ“
60 mm	13 mm	0 mm
55 mm	22 mm	0 mm
45 mm	36 mm	0 mm
70 mm	13 mm	10 mm
60 mm	22 mm	10 mm
45 mm	36 mm	10 mm
Opening angel „α“ ~ 90°		



Ensure that the role of the folding arm drive **FTA600 R** - when opening and closing - is based on the angle ❸ **K88**!



Flow diagram FTA600 R



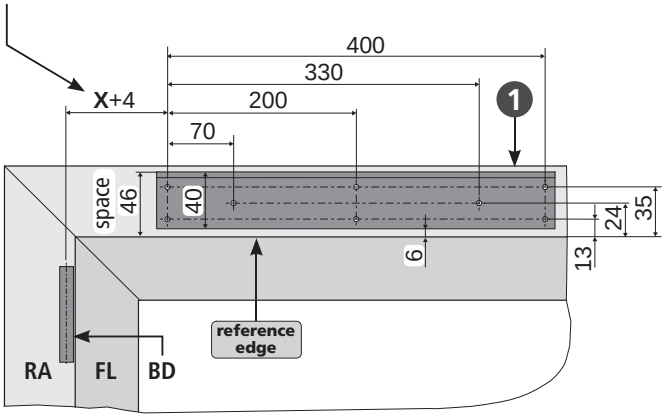
After application of the voltage, the door lock contact is activated for 10 seconds. With a delay of about 5 seconds, the drive arm of the folding arm drives **FTA600 R** starts moving and opens to an angle of max. 93°.
During the **closing operation**, the door lock contact is not activated.

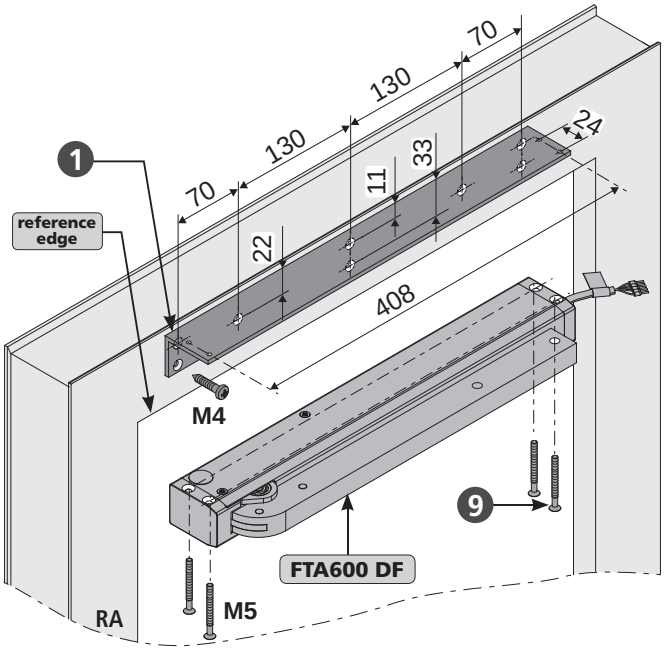
INSTALLATION STEP 4C: FTA600 DF - HINGE-SIDE - INWARD OPENING SIDE-HING WINDOW

- Screw the angle ❶ of frame bracket **K103** at the frame (**M5**).
- Fasten folding arm drive **FTA600 DF** on the angle ❶ - with the screws ❾.

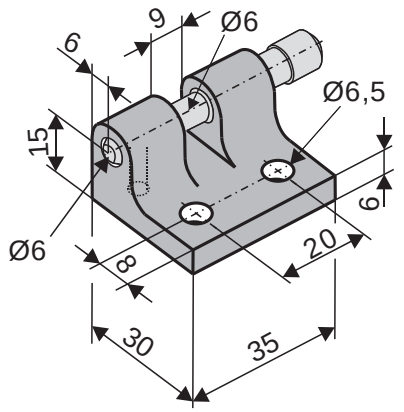
Make sure they are parallel to casement edge.

Measure "**X**": See table on the following page

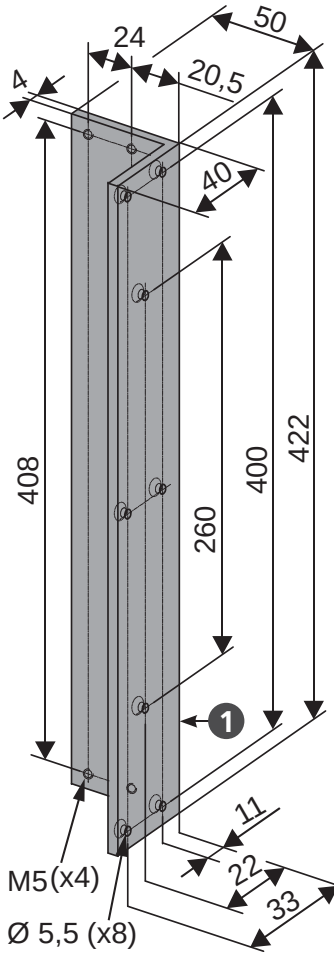


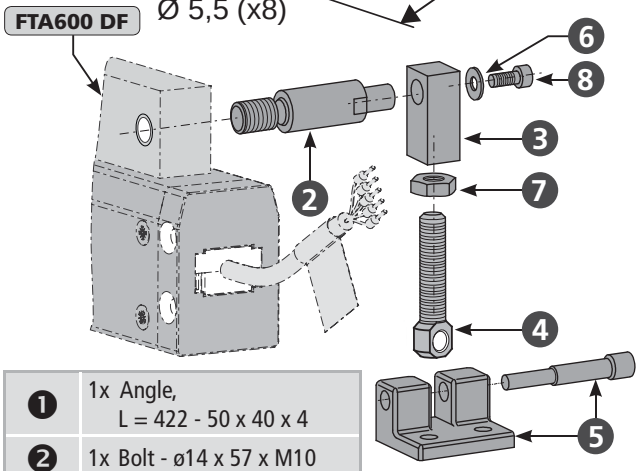


Hole layout for F1 casement bracket

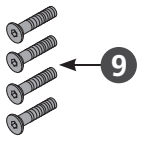


K103 frame bracket FTA600 DF



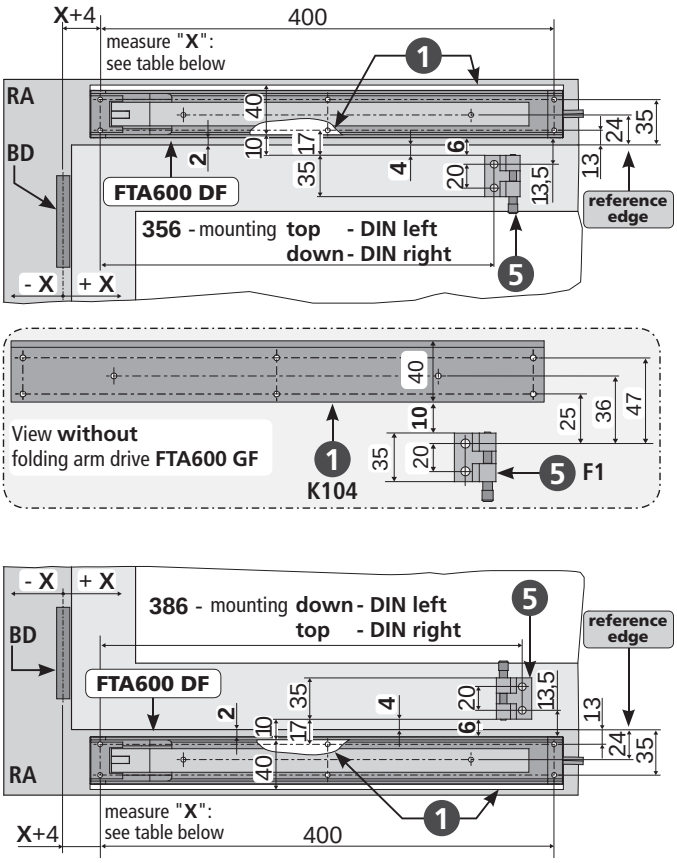


❶	1x Angle, L = 422 - 50 x 40 x 4
❷	1x Bolt - ø14 x 57 x M10
❸	1x Lever arm - 14 x 12 x 30
❹	1x Eyebolt M8
❺	1x Casement bracket **F1**
❻	1x Washer DIN 9021
❼	1x Nut M8
❽	1x Screw M4 x 40
❾	4x Screw M5 x 45



- for inward opening windows
- on the hinge-side (frame NSK)

■ Screw the casement bracket **F1** ❺ of frame bracket **K103** at the frame (**M6**).

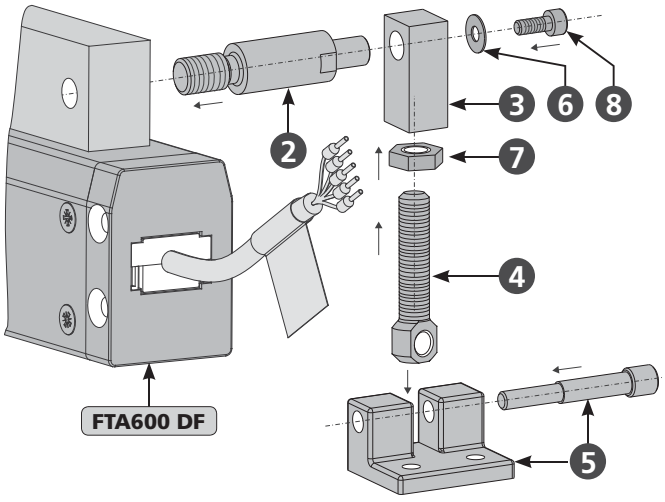


■ Using the screw ❽ and washer ❻ - fasten bolt ❷ and lever arm ❸ on the folding arm drive **FTA600 DF**.

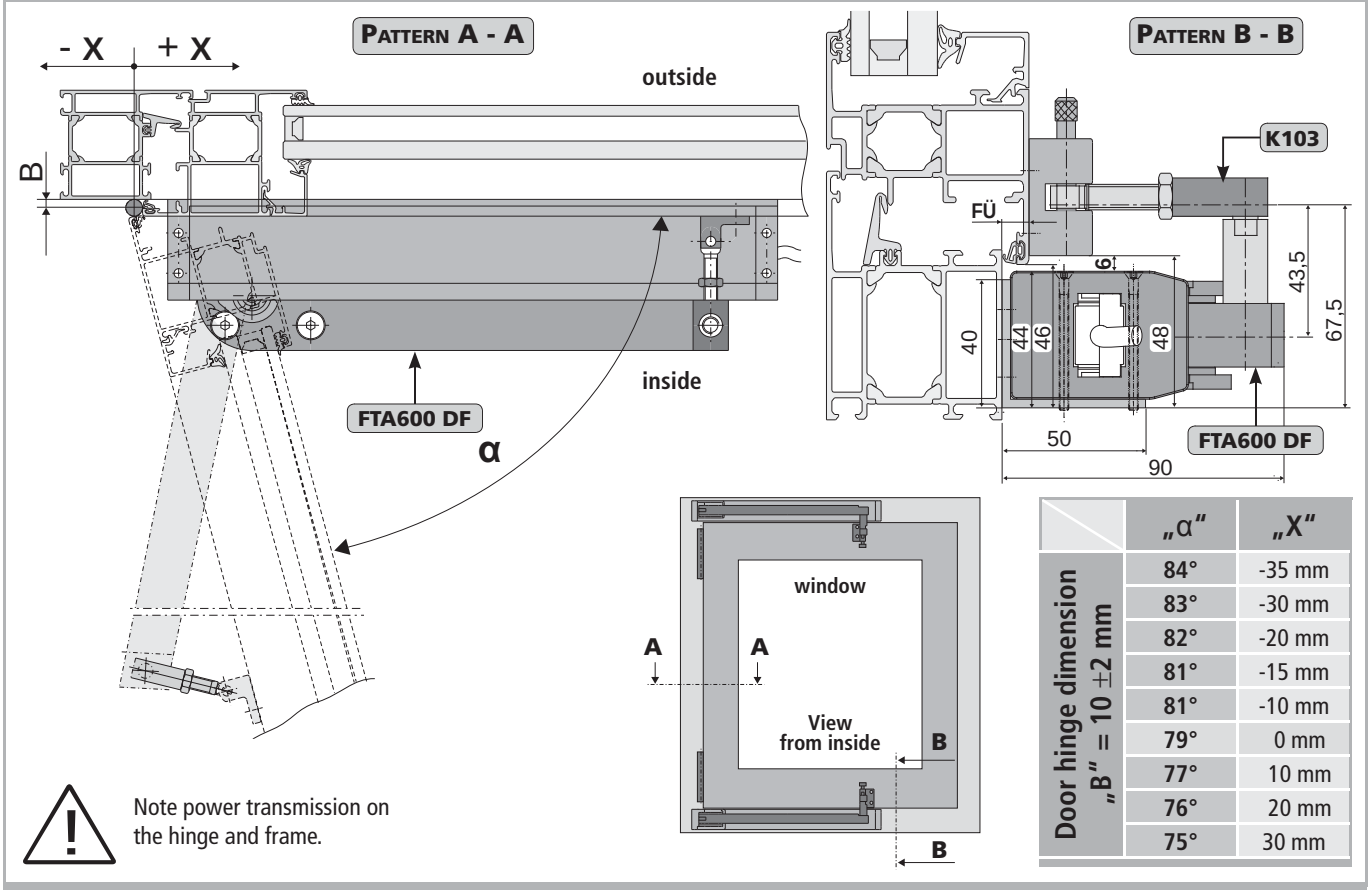
■ Turn the nut ❼ on the eyebolt ❹.

■ Using the eyebolt ❹ and connect the casement bracket **F1** ❺ with the lever arm ❸.

■ Adjust the eyebolt ❹ - depending of the window overlap (**FÜ**).



Opening angel „α“ as a function of the door hinge dimension „B“



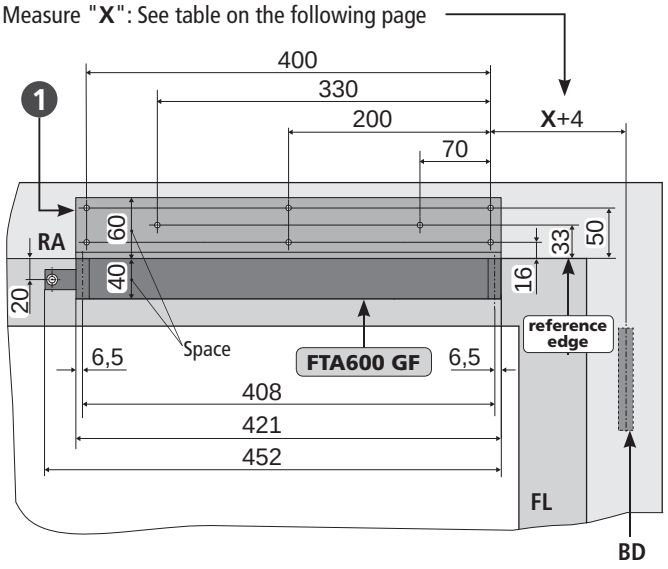
Note power transmission on the hinge and frame.

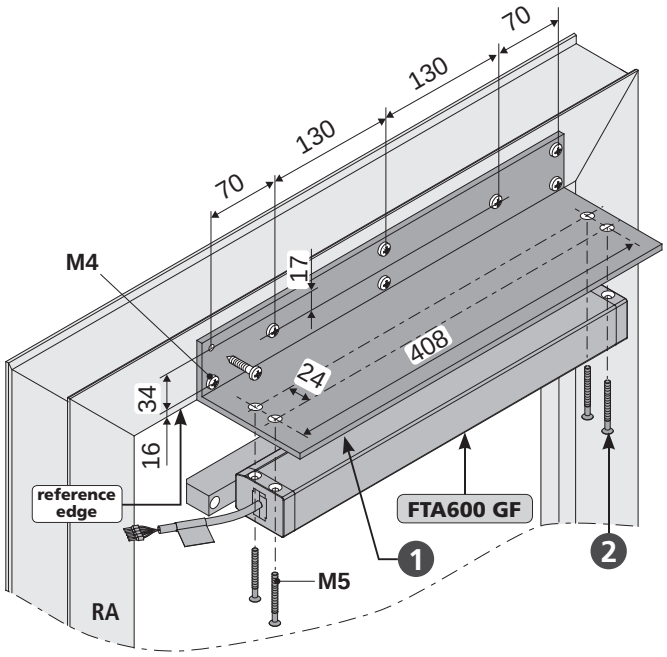
Door hinge dimension „B" = 10 ±2 mm	„α"	„X"
	84°	-35 mm
	83°	-30 mm
	82°	-20 mm
	81°	-15 mm
	81°	-10 mm
	79°	0 mm
	77°	10 mm
	76°	20 mm
	75°	30 mm

INSTALLATION STEP 4D: FTA600 GF - OPPOSITE HINGE SIDE MOUNTING - OUTWARD OPENING SIDE-HUNG WINDOW

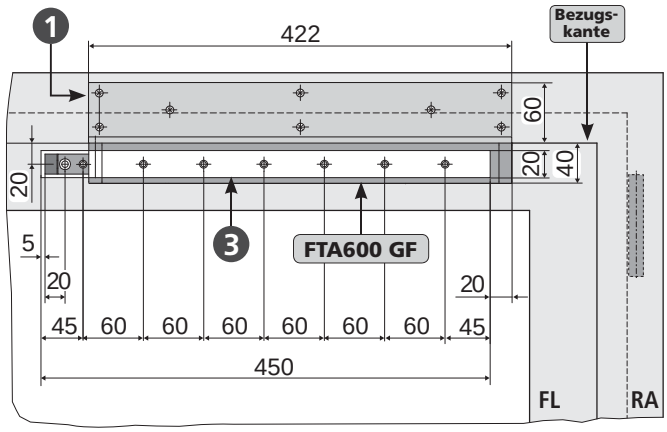
- Screw the angle ❶ of frame bracket **K104** at the frame (**M5**).
- Fasten folding arm drive **FTA600 GF** on the angle ❶ - with the screws ❷.

Make sure they are parallel to casement edge.

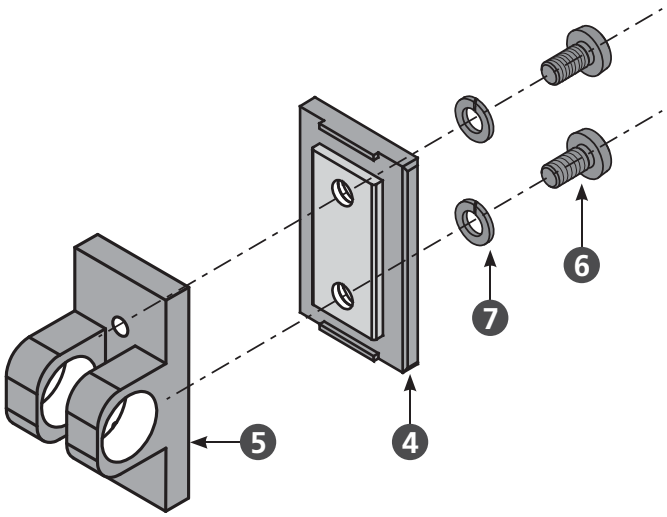




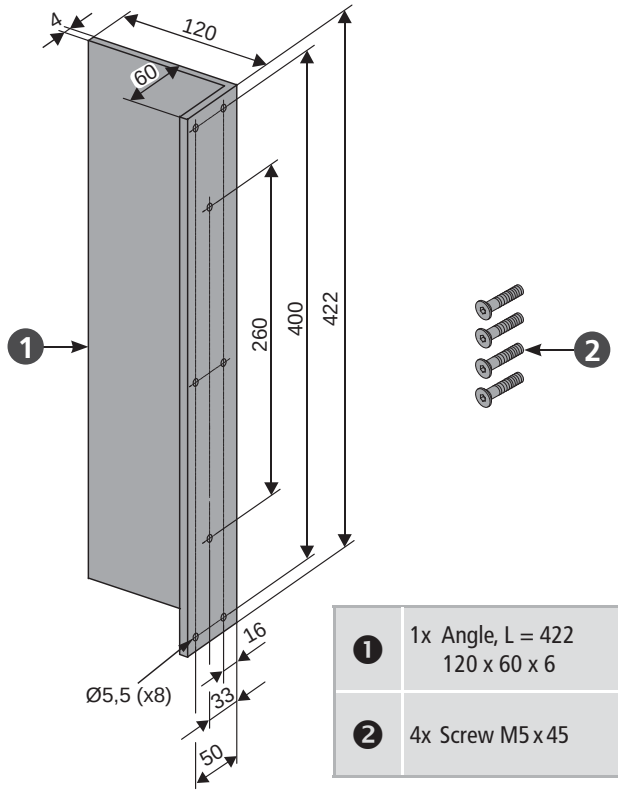
- Fit slide rail ❸ with screws (**M5**) at the casement.



- Using the screws ❻ and lock washers ❼ and mount the slide ❹ on the connector ❺.



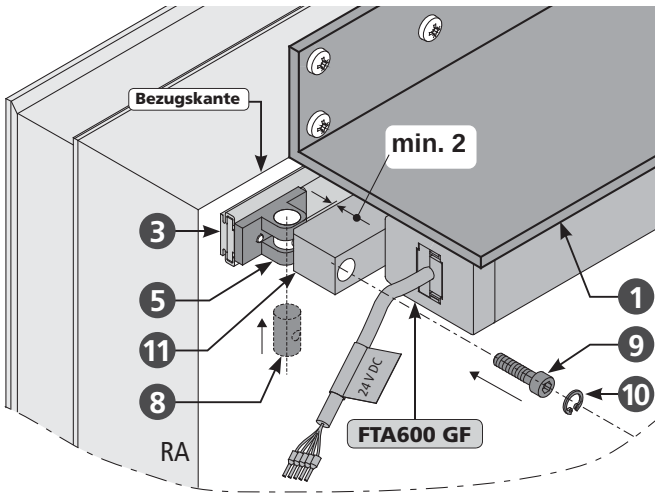
K104 frame bracket FTA600 GF



❶	1x Angle, L = 422 120 x 60 x 6
❷	4x Screw M5 x 45

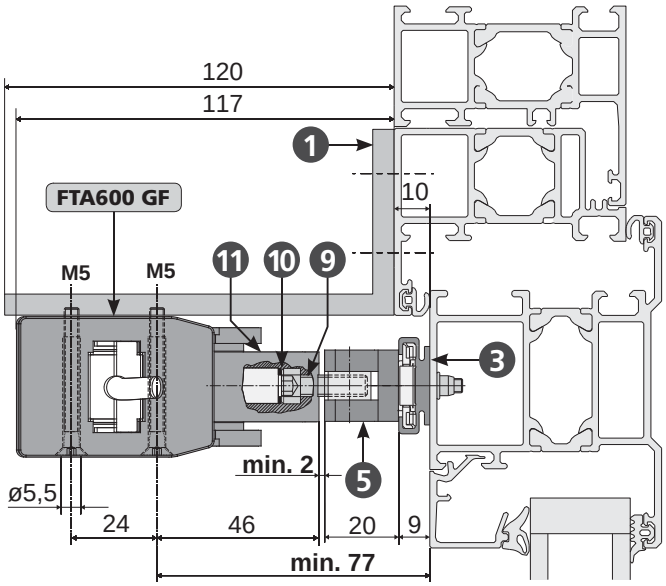
- for outward opening windows
- opposite the hinge-side (frame NSK)

- Push bolt ❽ in the connector ❺.
- Insert this module ❹ ❺ ❻ ❼ ❽ in slide rail ❸.
- Using the screw ❾ - and mount the drive arm ⓫ of the folding arm drive **FTA600 GF** - on the bolt ❽. Keeping a distance of 2 mm.
- Screw ❾ must be secured with "Loctite".

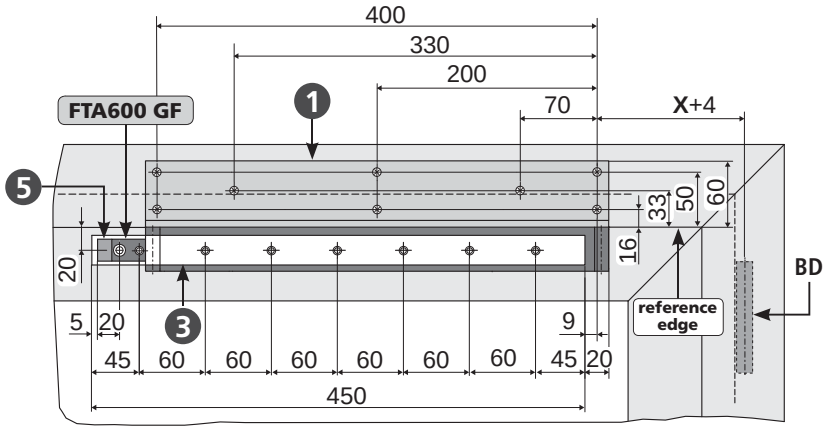


- Insert the circlip ❿ - for stabilization - in the drill hole.

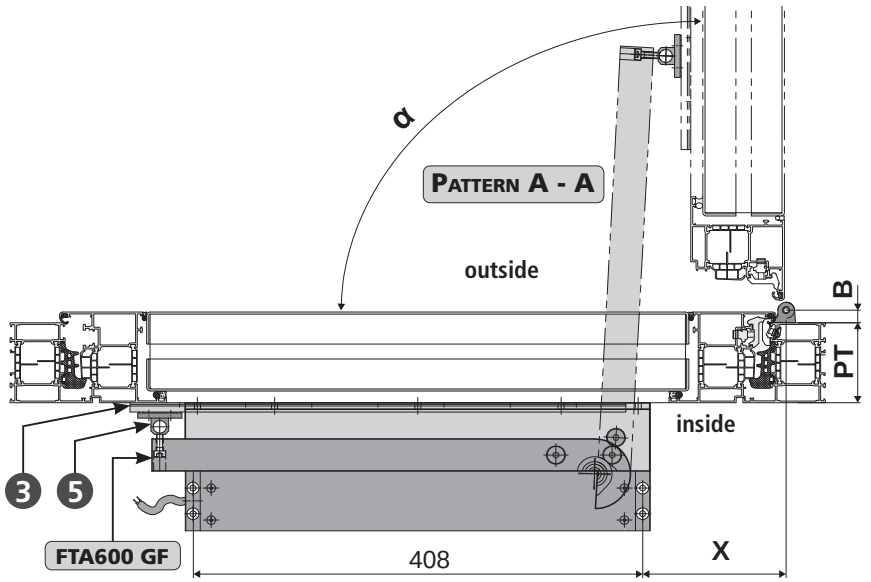
Keeping a distance of 2 mm - between drive arm ⓫ und connector ❺.

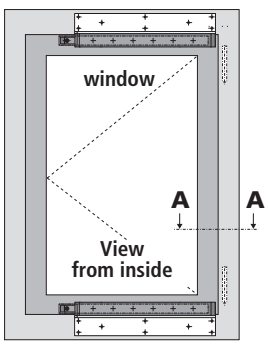


Opening angel „α“ depending on the profile depth „PT“ and door hinge dimension „B“



Door hinge dimension „B“	„α“	„PT“	„X“
0 bis 10 mm	90°	65 mm	115 mm
	90°	75 mm	125 mm
10 bis 22 mm	90°	65 mm	125 mm
	90°	75 mm	135 mm

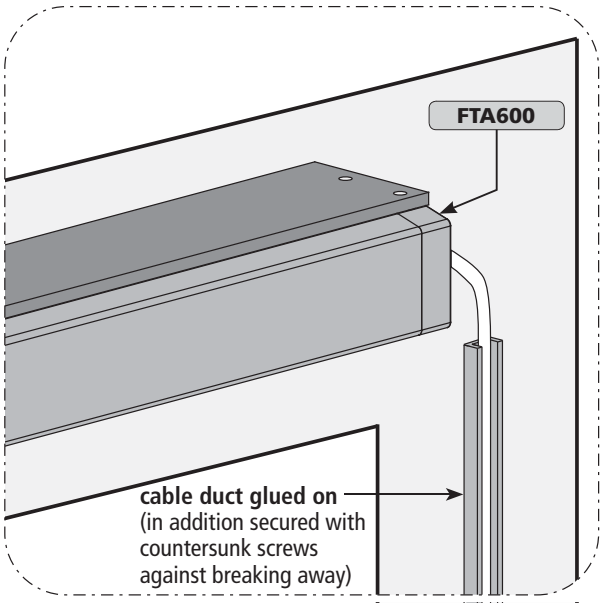




INSTALLATION STEP 5: CABLE ROUTING ON THE CASEMENT OR FRAME

Cable routing on or in the casement

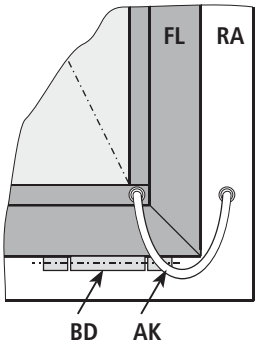
Cable on the casement



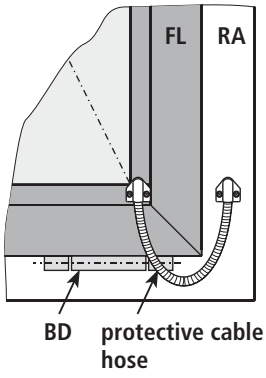
Connection cable routing on the casement:
- Cable must be protected against damage (shearing-off, kinking, splitting), i.e. by using bushings.

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

Cable crossover without protective cable hose



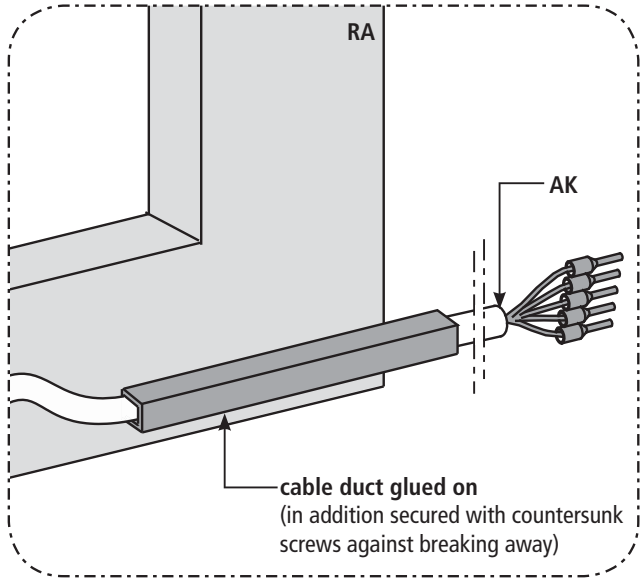
Cable crossover with protective cable hose



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

Cable on the frame



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

INSTALLATION STEP 6: 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)"**.

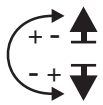
Wire colour coding	
Colour	**DIN IEC 757**
black	BK
white	WH
brown	BN
blue	BU
green / yellow	GN / YE
green	GN
violet	VT
grey	GY

Direction of travel

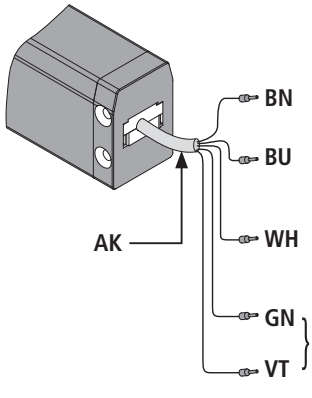
OPEN ▲

CLOSE ▼

polarity reversal



Connection assignment (not for drives with door opener)

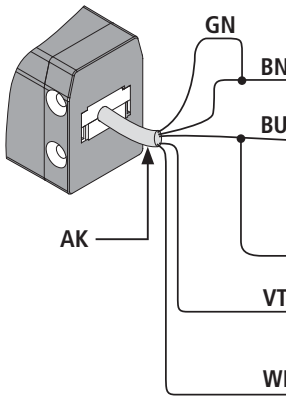


	▲	▼
BN	+	-
BU	-	+

WH is used for communication (in systems with synchronized multi-drive operation)

Standard **CLOSE** / Optional **OPEN**: contact max. 24 V, 500 mA (min. 10mA)
not for drives with door opener

Connection for drives with door opener (FTA600 R)



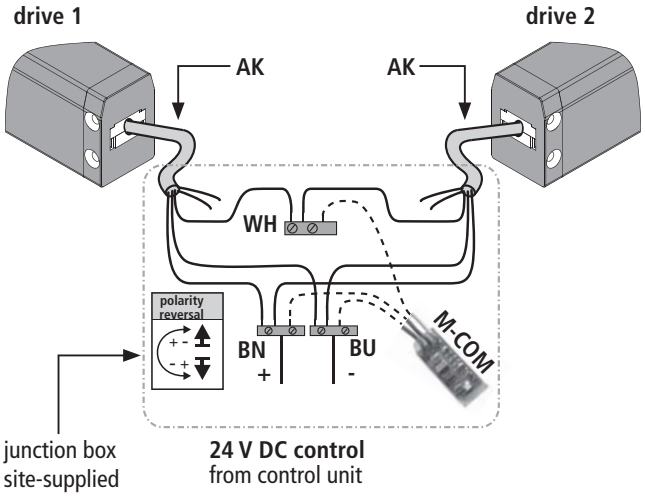
	▲	▼
BN	+	-
BU	-	+

door opener 24 V DC contact max. 40 V, 500 mA

WH is used for communication (in systems with synchronized multi-drive operation)

Multi-drive operation with M-COM

WH connection.
Drives do not work, if not connected.



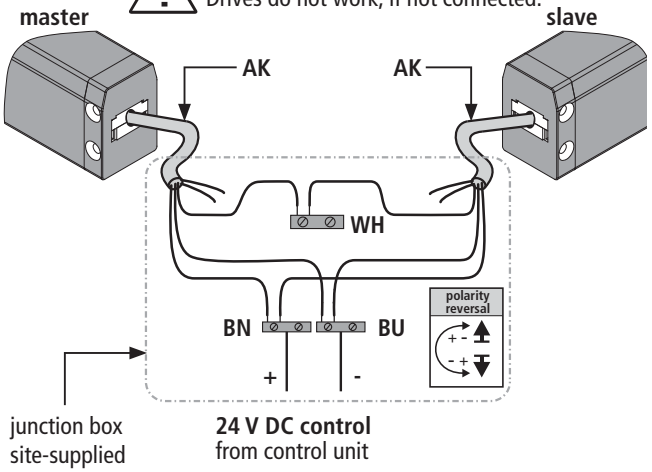
junction box site-supplied

24 V DC control from control unit

WH	is used for communication, with synchronized multi-drive operation.
Optional:	1 to 4 drives and max. 2 locking drives are possible.

Multi-drive operation with master and slave

WH connection.
Drives do not work, if not connected.



junction box site-supplied

24 V DC control from control unit

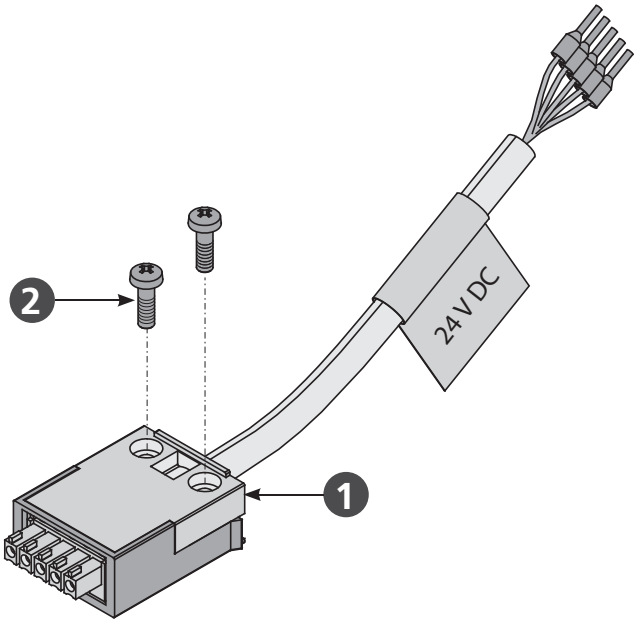
The programming of the drives in multi-drive occurs at factory or on site with UniPC

WH	is used for communication, with synchronized multi-drive operation.
Optional:	1 to 4 drives and max. 2 locking drives are possible.

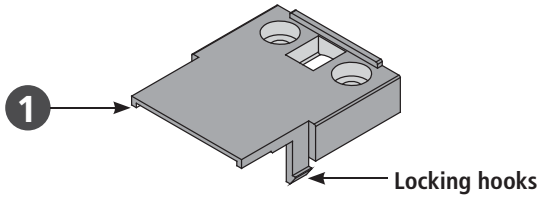
AUMÜLLER-Click plug solution - SITE-SUPPLIED CUSTOMISED CONSTRUCTION

The **AUMÜLLER-Click plug solution** enabling the use of site-supplied cable. It simplifies assembly and the electrical connection of the drives.

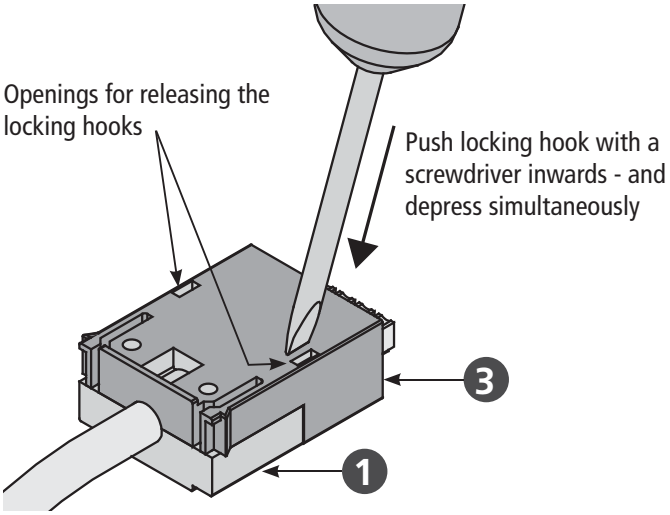
■ Loosen the screws ❷ and remove the housing cover ❶.

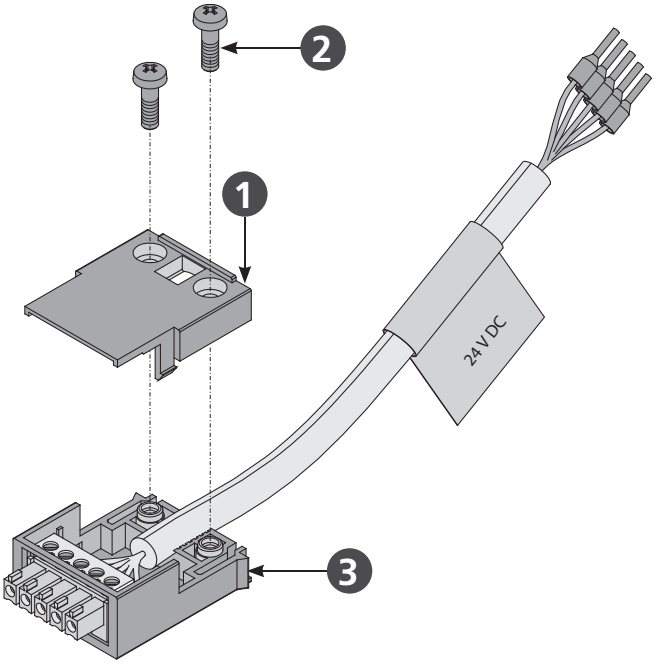


NOTE Locking hooks - at the housing cover ❶ - prevent withdrawal of the plug under tensile load.



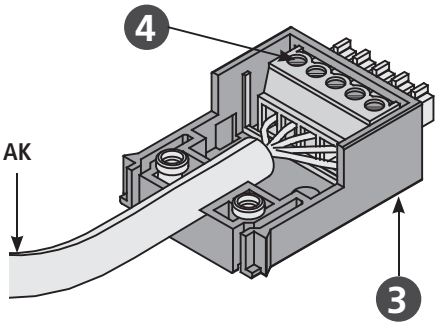
■ On the underside of the plug housing ❸ are two openings for releasing the locking hooks.
Push locking hook with a screwdriver inwards - and depress simultaneously.





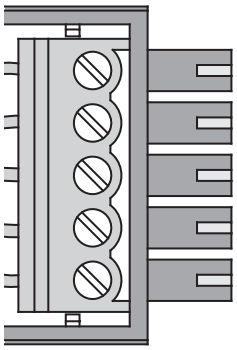
■ Replace cable set - provided by the customer in place of connecting cable.
■ Moung the housing cover ❶ with the both screws ❷.

NOTE Five terminals ❹ to 1,5 mm².
The performances (especially the fire behavior) of locally provided cables, must be checked on own responsability on compliance with the application-specific local regulations!



Connection assignment

Function	Colour	DIN IEC 757
OPEN / CLOSE	blue	BU
OPEN / CLOSE	brown	BN
Data	white	WH
Rel: NO	violet	VT
Rel: NO	green	GN



M-COM (Main control unit)

Order number:	**524177**
Application:	Configuration module for the automatic configuration and monitoring of max. 4 opening and 2 locking drives type S12 / S3 in multi-drive systems.
Rated voltage:	24V DC +/- 20%, (max. 2 Vss)
Current consumption:	<12 mA
Drive type:	S12
Protection class:	IP30 rubber jacket
Ambient temperature:	0 °C ... + 70 °C
Dimensions:	45 x 17 x 6 mm
Connecting wires:	3 wires 0,5 mm² x 50 mm

Feature / Equipment:
printed circuit board with connecting wires for integration in site-supplied junction box.

UniPC with configuration interface

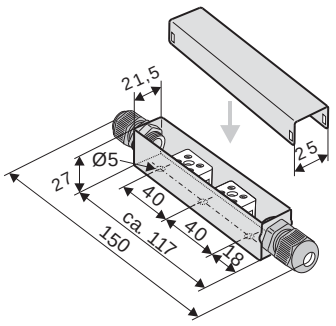
Order number:	**524178**
Application:	Hard- and software for configuration of drives supplied by **AUMÜLLER** GmbH
Rated voltage:	24V DC +/-20%
Parameterizable drives:	24V DC type MP, S3, S12, S12 V.2 230V AC type S12, S12 V.2
Scope of delivery:	software UniPC (Downloadlink*), Interface "ParInt", USB 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).



AUMÜLLER-Click plug solution

Order number:	**501250 - 1 m cable length** - 24 V DC **501258 - 2 m cable length** - 24 V DC **501251 - 3 m cable length** - 24 V DC **501252 - 5 m cable length** - 24 V DC **501253 - 10 m cable length** - 24 V DC
Application:	Unified plug solution for all **AUMÜLLER** chain drives and **AUMÜLLER** folding arm drives
Rated voltage:	24V DC (± 20 %), max. 2 Vpp
Connecting cable:	non-halogen, grey 5 x 0,5 mm²
Terminal:	to 1,5 mm² - 5 pieces

- Flexible cable length
- Connect multiple drives in series connection
- Torsion-plug
- Locking hooks prevent withdrawal of the plug under tensile load
- Strain relief according DIN EN 60335-1 by screwing the housing halves

INSTALLATION STEP 7:
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 = 1,42mm² -> **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 8:
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
Drive does not start	• Duration of mains power supply too short	• Adjust supply voltage as specified in the technical documentation
	• Drive run direction not correct	• Check drive cables change polarity
	• Connecting cable not connected	• Check all connection cables
	• Power supply / Control Unit voltage incorrect, too high or too low (see data sheet)	• Check power supply unit and replace if necessary
	• No mains supply to power supply unit / Control Unit (no voltage)	• Connect power supply
	• Drive has shut down on overload	• First move drive in CLOSE direction
Drive doesn't start after having been in operation several times	• Operating time has been exceeded, drive has been overheated	• Wait until drive has cooled down and start again
	• See possible solutions above associated with „Drive doesn't start"	• See possible solutions associated with: "Drive doesn't start"
Drive doesn't close	• Safety mechanism has been triggered	• Release safety area for operation and briefly move the drive in OPEN direction
	• See possible solutions above associated with „Drive doesn't start"	• See possible solutions associated with: "Drive doesn't start"
Drive travels uncontrolled in open and close direction	• Residual ripple of power supply / control unit too hight	• Adjust drive voltage to the required value of drive. (values see data sheet of drive)
	• Fault in power supply unit / Control Unit	• Check output voltage of power supply unit or Control Unit
Door release contact does not switch	• Contakt defect	• Sending drive for repair • Check voltage and current consumption of the door opener
	• Faulty programming	• Check programming with UniPC

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:* **Klapphebelantriebe für Fenster** | *Folding-arm drives for windows*
Produktbaureihe | *Product series:* **FTA 600 R S12 - 24V**
FTA 600 DR S12 - 24V
FTA 600 GF S12 - 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!

Zertifikat Certificate

VdS Schadenverhütung
bescheinigt die Anwendung eines

VdS

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

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.

Zertifizierungsgrundlagen:

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

Köln, den 10.10.2014

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

Reinermann — *Geschäftsführer*

ppa. Urban — *Leiter der Zertifizierungsstelle*

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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