

**INTELLIGENT
DRIVES &
CONTROLS
FOR SHUTTERS
AND AWNINGS**



INSTALLATION & OPERATING INSTRUCTIONS

Instructions and notes for installation and operation

3T-MOTORS® Shutter motors with obstacle detection and electronic limit switches

Motor type 3T45-E
(For shafts from 60 mm)

3T45-10E
3T45-20E
3T45-30E
3T45-40E

Attention:

It is important for the safety of persons
to follow these instructions.
Keep these instructions for future reference.



3T-MOTORS® Shutter motors with obstacle detection and electronic limit switches

! Safety instructions	Page 3
i Function overview	Page 4
Scope of delivery / Function overview	Page 4
Technical data	Page 4
! Installation notes	Page 5
✘ Installation instructions	Page 6 – 9
Installation shutter motor	Page 6 – 9
• Installation situation	Page 6
• 1) Prepare power connection	Page 6
• 2) Remove shutter shaft	Page 6
• 3) Prepare motor for installation	Page 7
• 4) Mount bearings	Page 7
• 5) Mount motor with shaft unit	Page 7 – 8
• 6) Shutter motor wiring	Page 8
• 7) Setting the end positions	Page 9
✘ Troubleshooting	Page 10
What to do when ...	Page 10
Position of the anti-lift devices	Page 10
§ EU Declaration of Conformity	Page 11



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! SAFETY INSTRUCTIONS

Please read these important safety instructions before commissioning!

Incorrect installation can cause serious personal injury and damage to property.

The warranty claim expires in case of non-observance of this user information with all contained notes and regulations.

In case of non-observance of these instructions, the manufacturer or supplier shall not be liable for any personal injury or property damage incurred.



This symbol indicates danger due to electrical energy.
Danger to persons and objects may arise if the associated information is not observed!

GENERAL SAFETY INSTRUCTIONS

- Danger to life from electric shock when working on electrical equipment.
- The electrical connection, installation and commissioning of the receiver may only be carried out by qualified personnel.
- The timer may only be installed and connected in a de-energized state.
- The relevant regulations and guidelines must be followed without fail, to avoid damage to persons and objects.
- Observe safety instructions according to EN 60 335-2-97: The power supply cable of the drives must be laid internally.
- Installation according to DIN 18073: The roller shutter box cover must be easily accessible and removable.
- Installation according to EN 60335: Only switches / pushbuttons / switching devices with a minimum contact opening of 3 mm may be used. Furthermore the up and down direction must be interlocked against each other.
- When installing in damp rooms, observe regulations (VDE 0100, part 701 and 702).
- These drives can be connected in parallel without an isolating relay or central control.
In this case, the max. output power of the command transmitter (timer or otherwise) must be observed.
- Do not use defective devices: Never use defective equipment.
Periodically inspect the equipment for imbalance and signs of wear or damage to cables and suspension springs.
Do not use equipment if repair or rework is necessary.
There is a risk of personal injury and property damage due to electric shock or short circuit.
- Retain the instructions for future reference.



This symbol indicates information about general danger.
Non-observance can mean danger to persons and objects!

IMPROPER USE

- Persons are to be instructed with the correct operation of the tubular motor.
- The roller shutter movement must be monitored in order not to endanger persons.
- Do not allow children to play with motor controls.
- Store the handheld transmitter in such a way that unintentional operation is prevented (e.g. by children playing).
- The device can be used by children aged 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge, if they have been given supervision and instruction concerning use of the appliance in a safe way and are aware of the hazards involved.
- Children are not allowed to play with the equipment.
- If the power supply cord of this device is damaged, it must be replaced by the manufacturer or its customer service or a similarly qualified person to prevent hazards.



This symbol indicates important information that can ensure safe and proper use of the device.

PROPER USE

- Use tubular motors only for automating shutters.
- Only use original components and original accessories from the manufacturer.
- The mains connection cable of the drives must be laid internally in the empty conduit up to the junction box.
The local electrical regulations must be observed.
- For the electrical connection of the tubular motors, a 230 V / 50 Hz power connection with fuse must be available at the installation site.

i FUNCTION OVERVIEW

📦 SCOPE OF DELIVERY – MOTOR TYPE 3T45-E

- 1 Motor
- 2 Limit switch adapter
- 3 Shaft adapter
- 4 Connection cable 2.5 meters
- 5 Universal bearing & cotter pin
- 6 Manual

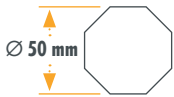


i FUNCTION OVERVIEW – MOTOR TYPE 3T45-E

APPLICATION Motorized shutters



SUITABLE FOR 8-sided shafts from 50 mm



- 1 Simple and fast adjustment of the end positions
- 2 The end positions are automatically checked and rechecked
- 3 Obstacle detection when lowering the shutter
- 4 Frost detection with frozen roller shutter curtain

Technical data

Motor type	3T45-10E	3T45-20E	3T45-30E	3T45-40E
Torque (Nm)	10 Nm	20 Nm	30 Nm	40 Nm
Traction power (kg)	18 kg	37 kg	56 kg	74 kg
Max. PVC shutter area (m ²)	4 m ²	8 m ²	12 m ²	16 m ²
Max. Aluminum shutter area (m ²)	3,5 m ²	7 m ²	11 m ²	14 m ²
Power (W)	120 W	190 W	240 W	240 W
Turn Speed (U/min)	17 U/min	17 U/min	17 U/min	17 U/min
Limit switch capacity (min)	3 min	3 min	3 min	3 min
Operating voltage (V AC)	230 V	230 V	230 V	230 V
L1 Total motor length (mm)	603 mm	639 mm	669 mm	669 mm
L2 Installation length (mm)	581 mm	617 mm	647 mm	647 mm
Connection line (m)	2,5 m	2,5 m	2,5 m	2,5 m
Max. Runtime (min)	4 min	4 min	4 min	4 min
Protection class	IP44	IP44	IP44	IP44
EAN	4260336113058	4260336113065	4260336113072	4260336113089

! INSTALLATION NOTES



Before installation, all non-essential electrical wiring must be removed, all mechanisms that are not necessary for motorized operation must be deactivated.

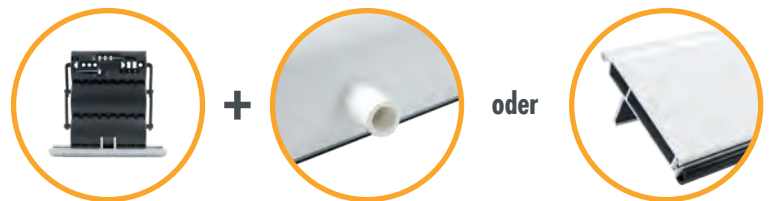
- Do not expose the tubular motor to crushing, impact, falling or contact with any liquids. Do not punch holes in the entire length of the tube (motor casing) or attach screws to it.



- Please use suitable suspension springs to fasten the roller shutter curtain to the roller shutter shaft. You will find suitable suspension springs in our store under mounting accessories.



- Automatic Modus (Plug&Play): Fixed shaft connectors and stoppers or angular end rails are required to operate the motor in automatic mode!



- Grinding marks of any kind on the motor casing will void the warranty.



- The inspection cover of the roller shutter box must be easily accessible and removable.

- The motor is designed for short-time operation (4 min). It has an internal thermal circuit breaker which interrupts the power supply in the event of overheating, e.g. as a result of continuous operation. The cooling phase is min. 10 min, the thermal switch resets automatically. Regular operation is only possible after the the motor has cooled down completely.

- For proper obstacle detection, we recommend not to choose the tractive power of the motor too strong:

PVC shutter area	ALU shutter area	Motor type
to 4m ²	to 3,5m ²	3T45-10E
from 4m ² to 8m ²	from 3,5m ² to 7m ²	3T45-20E
from 8m ² to 12m ²	from 7m ² to 11m ²	3T45-30E
from 12m ² to 16m ²	from 11m ² to 14m ²	3T45-40E

INSTALLATION INSTRUCTIONS



Please note:

- The motor can be installed on the right-hand side as well as on the left-hand side. If the direction of rotation is reversed, please exchange the wires for the up and down direction.
- The setting of the end positions is only possible in the installed state (motor in shutter shaft).
- Never place screws in the area of the tube motor, as they will damage the motor.
- **Engine damage caused by improper use or unprofessional installation, lead directly to loss of warranty.**

INSTALLATION SHUTTER MOTOR

Installation situation

- 1 Counter bearing*
- 2 Ball bearing*
- 3 Roller capsule*
- 4 Shutter shaft*
- 5 Suspension spring*
- 6 Shaft adapter
- 7 Tubular motor
- 8 Limit switch adapter
- 9 Engine mount
- 10 Shutter curtain*

* Accessories; not included



1 Prepare power connection:

- The mains connection cable of the drive must be laid internally in the empty conduit up to the junction box. The local electrical regulations must be observed.

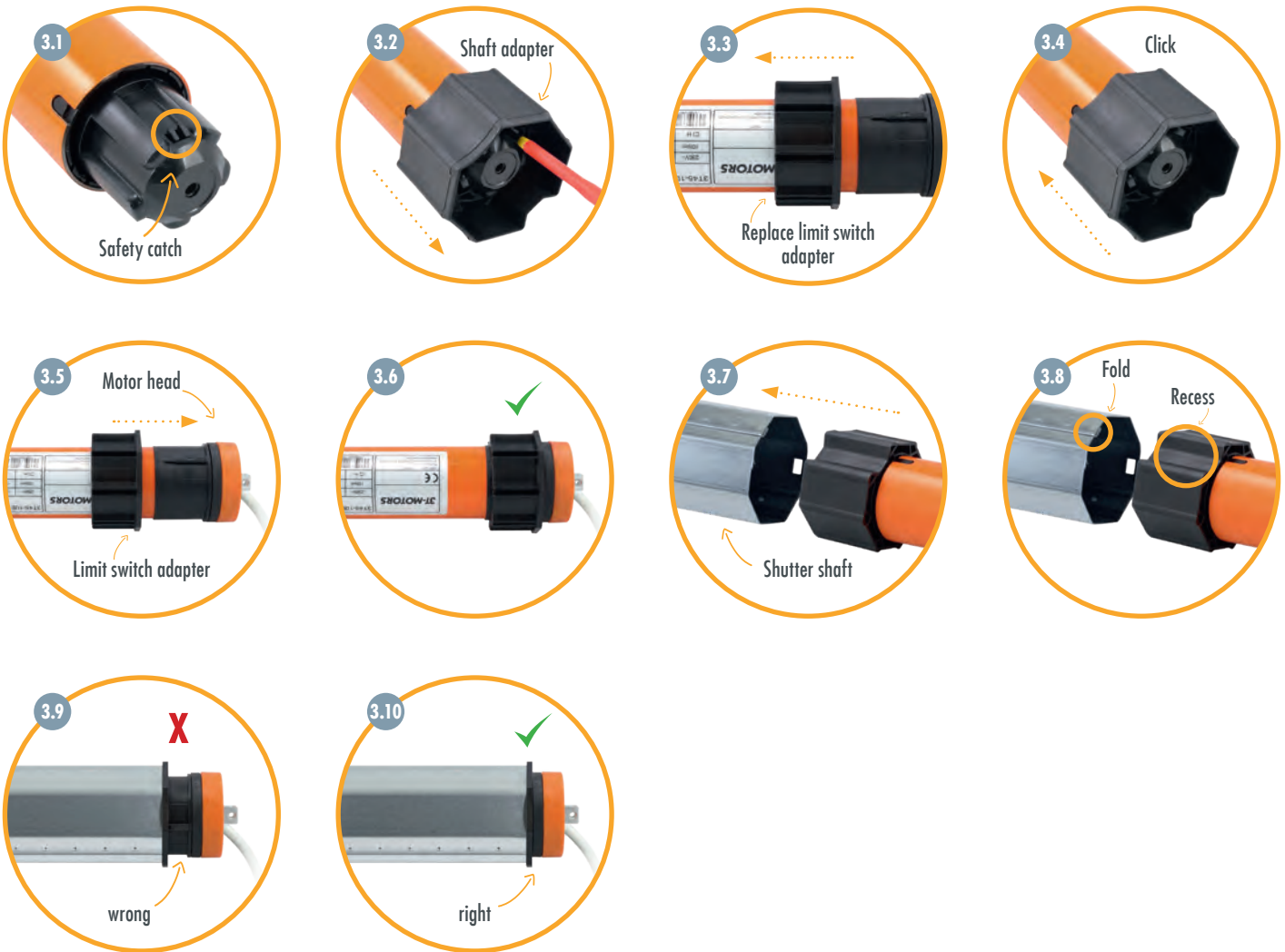
2 Remove shutter shaft:

- Lower the roller shutter.
- Open the cover of the roller shutter box and release the suspension springs from the roller shutter shaft.
- Lift roller shutter shaft incl. ball bearing out of the holder.

INSTALLATION INSTRUCTIONS

3 Prepare motor for installation:

- When changing the adapter set (SW50 or SW70): Press the safety catch with a screwdriver and pull off the shaft adapter at the same time. > fig. 3.1 / 3.2
Then replace limit switch adapter and put shaft adapter on adapter holder. > fig. 3.3 / 3.4
- Push limit switch adapter flush against motor head. > fig. 3.5 / 3.6
- Push the motor into the roller shutter shaft without using force (never knock it in). The fold of the shaft must lie over the recess in the shaft adapter. > fig. 3.7 / 3.8
- Make sure that the roller shutter shaft is flush with the limit switch adapter motor head. > fig. 3.9 / 3.10



4 Mount bearings:

- Remove old wall bearing on motor side (left or right installation possible).
- Mount motor bearing at this point.
- Make sure that the roller shutter motor with the shaft unit sits horizontally in the roller shutter box.

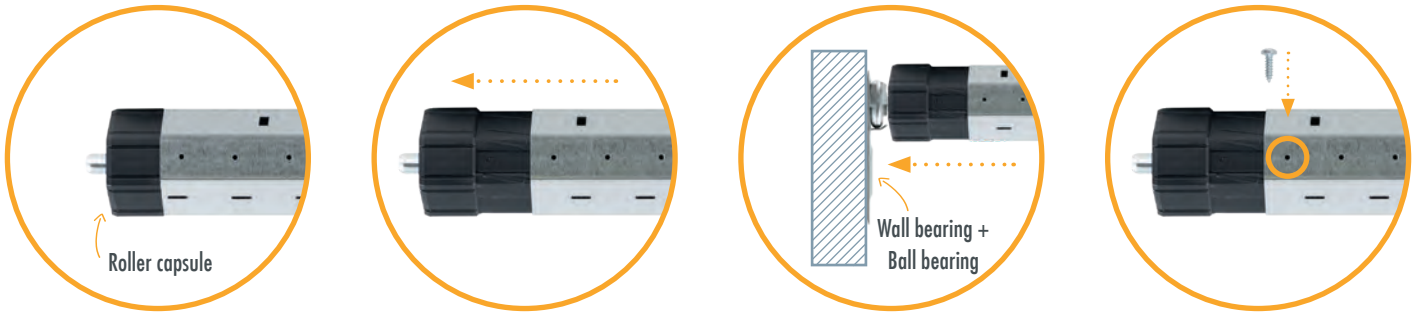


5 Mount motor with shaft unit:

- Insert the motor head (with the entire shaft unit) into the motor bearing and secure it with the supplied safety pin.

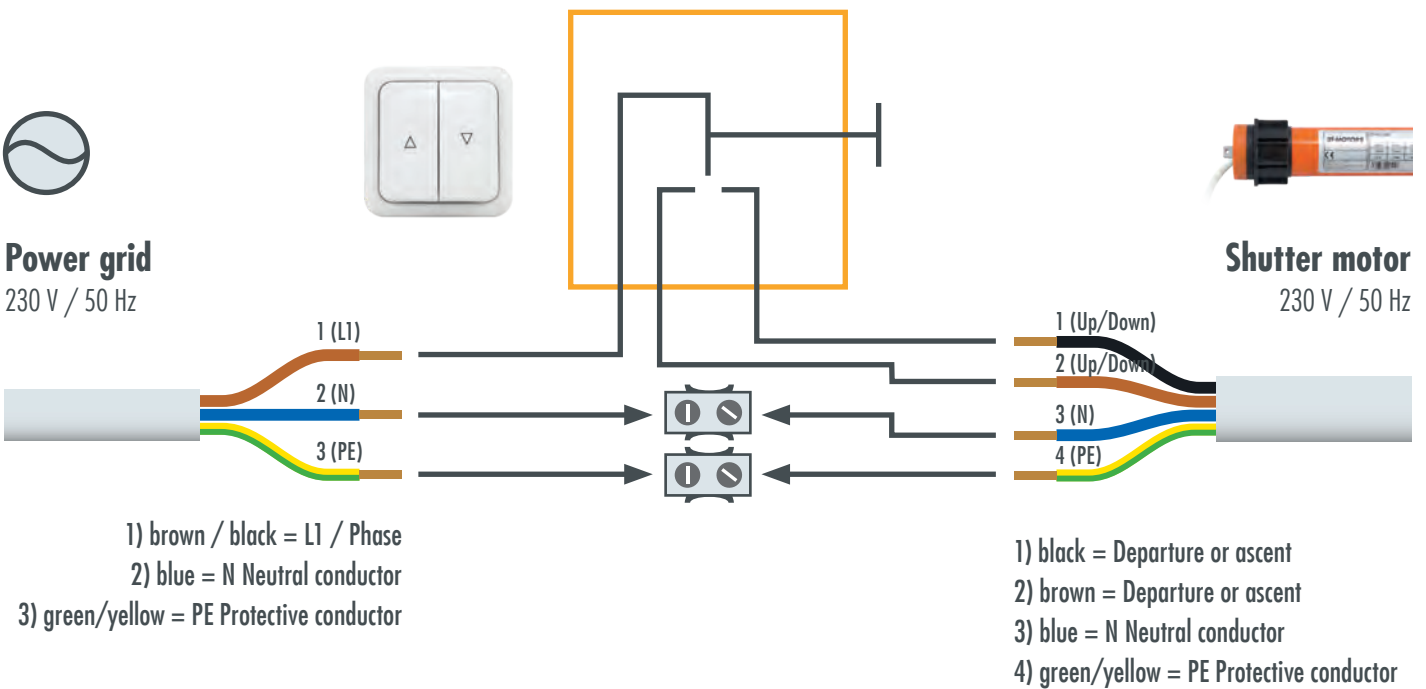
✂ INSTALLATION INSTRUCTIONS

- On the opposite side of the motor, push the roller capsule out of the roller shutter shaft until it fits into the ball bearing inserted in the wall bearing.
- Fix roller capsule to roller shutter shaft with self-tapping screw. Position the screw at a punched hole. This prevents the screw from slipping.

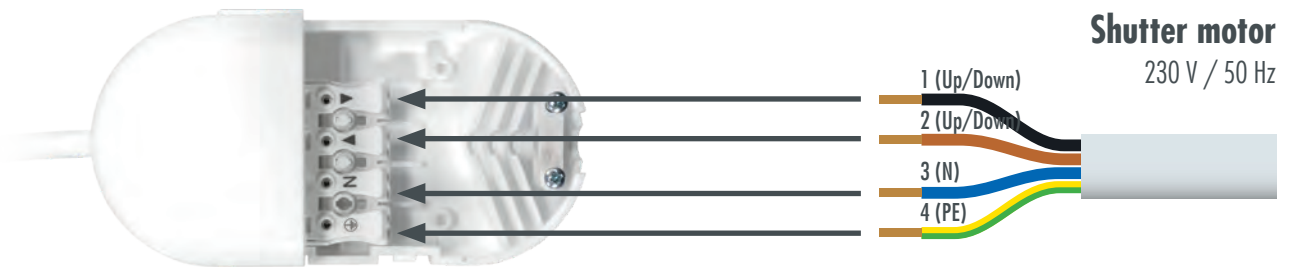


6 Shutter motor wiring:

- Connect the roller shutter motor and switch (or timer) to the mains.
- The electrical connection of the roller shutter motor and control unit may only be carried out by qualified personnel.
- If the drive should run in the opposite direction after installation, the motor's upstream and downstream leads (brown + black) must be turned.



Adjustment cable ESKS



The connection diagram of time switches differs from this circuit diagram! Please refer to the corresponding manual for the connection diagram.



If the end points are set using the ESKS adjustment cable, do not connect the switch or timer until after the end positions have been set (page 9)!

INSTALLATION INSTRUCTIONS

7 Setting the end positions:

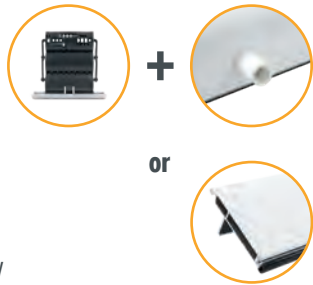


1. Check direction of rotation!

When you press the Up button, the roller shutter must move upwards! If this is not the case, exchange the black and brown wires.
Please program each motor individually!

Automatic mode:

Fixed shaft connectors and stoppers or angle end rail are absolutely necessary!



2. Initialization

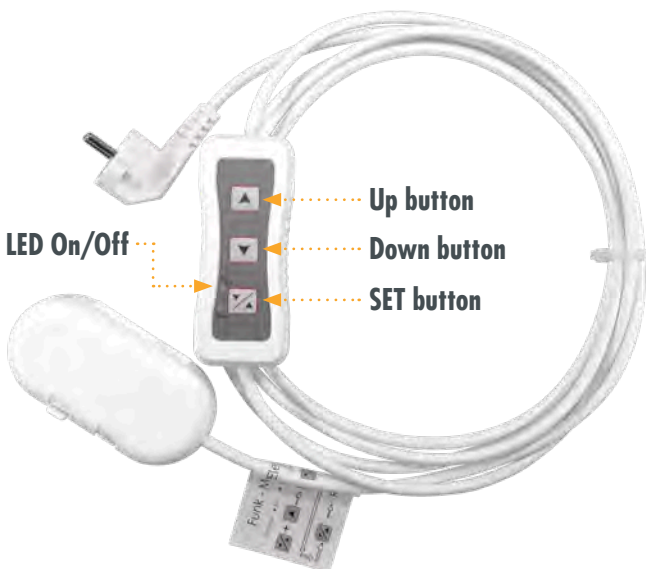
The engine is delivered from the factory in Automatic mode:

Allow the roller shutter to move up and down completely once.
> The motor detects the end positions and stops automatically.

Note:

After three further cycles (3x completely up and down), the roller shutter no longer moves against the end stops, but stops automatically beforehand. Every 60 cycles, the drive independently checks and corrects the end positions in fully automatic mode.

Function overview Adjustment cable ESKS:



Buttons & Function

Up button: Controls the motor upward

Down button: Controls the motor downward

SET button: Select operating mode, initialization, save end position

● LED On/Off lights up permanently: Mains operating mode

⚡ LED On/Off flashes: Programming mode Electronic motors

Manual mode:

Suspension springs and no stoppers.



2. Connecting the ESKS plug

> LED On/Off lights up permanently.

3. Press Down button + SET button simultaneously

> LED On/Off flashes: The ESKS is in the Programming mode for electronic motors.



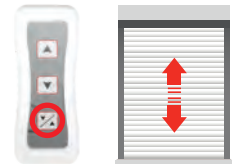
4. Initialization

Press the SET button until the shutter is has briefly moved up and down.



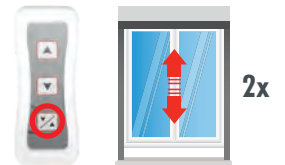
5. Setting the lower end position

Move the curtain to the desired lower end point. Press the SET button, until the curtain has moved up and down briefly.



6. Setting the upper end position

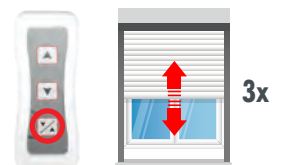
Move the curtain to the desired upper end point. Press the SET button until the curtain has moved up and down **2x** briefly.



Now the end positions are stored.

Reset to factory setting:

Press the SET key for 12 sec until the curtain moves up and down **3 times** briefly.



Now the drive is in the delivery state and can be reprogrammed!

✖ TROUBLESHOOTING

WHAT TO DO WHEN ...

... the engine is not running?

- Mains voltage is missing.
- Check correct connection of the control (switch or timer).
- Motor works only when installed in roller shutter shaft.

... the motor is running in the wrong direction?

- Swap the two wires for the direction of rotation (brown + black).

... the motor does not switch off at the set point?

- Check fit of limit switch adapter (must be flush with motor head and shutter shaft).
- Roller capsule is not fixed or roller shutter shaft is too short.

... the motor does not switch off at all?

- Automatic mode: The roller shutter has not been equipped with anti-lift devices and stoppers or angle end rail (page 9).
- Manual mode: The end points were not set correctly.
Reset motor to factory setting and program end points again with setting cable (page 9).

... the motor stops running after continuous operation?

- The thermal protection switch of the motor has tripped. After a cooling phase (min. 10 minutes), the motor is ready for operation again.

... the motor turns in only one direction?

- Check correct connection of the control (switch or timer).

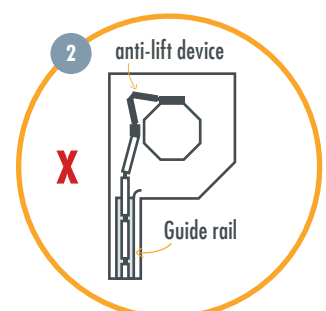
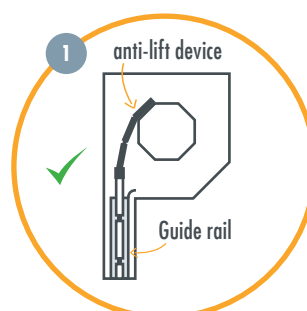
... the motor does not operate at the specified speed?

- Check roller shutter weight; if necessary, correct inclined installation of roller shutter shaft or eliminate mechanical friction in the roller shutter box or rail guide.

Position of the anti-lift devices or fixed shaft connectors

Preventing the closed motorized roller shutter from being pushed up only works when the individual slats of the roller shutter block each other:

- Roller shutter curtain is down (unrolled).
- Make sure that the last slat of the roller shutter is in the guide rail. This is followed by the anti-lift device, which is attached to the roller shutter shaft. > fig. 1
- There must be no slats in the roller shutter box or on the roller shutter shaft, because otherwise the force detection of the roller shutter motor will not function correctly and the anti-lift device cannot block the roller shutter completely. Any superfluous slats must therefore be removed. > fig. 2



EU Konformitätserklärung

Wir, die Firma

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Deutschland

erklären in alleiniger Verantwortung, dass das weiter unten genannte Produkt

Geräteart: Rohrmotor mit elektronischen Endschaltern

Modell Artikelnummer

3T45-10E	3T45-10E
3T45-20E	3T45-20E
3T45-30E	3T45-30E
3T45-40E	3T45-40E

die grundlegenden Anforderungen der aufgeführten EG/EU-Richtlinien erfüllt:

2014/35/EU	Niederspannungsrichtlinie
2014/30/EU	EMV-Richtlinie
2011/65/EU	RoHS-Richtlinie
2012/19/EU	WEEE-Richtlinie

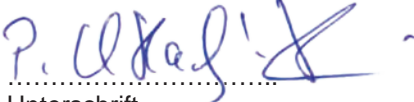
angewandte Standards und Verordnungen:

EN 60335-1:2012/A13:2017
EN 60335-2-97:2006/A12:2015
EN 55014-1:2017
EN 55014-2:2015
EN 61000-3-2:2014
EN 61000-3-3:2013

Bevollmächtigter zur Zusammenstellung der technischen Unterlagen:

Name, Position: Patrick El Hadj-Henni, Geschäftsführer

Wallertheim, 26.11.2019
.....
Datum


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Unterschrift

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make the
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