BELIMO

Technical data sheet TF230

Spring-return actuator for adjusting dampers with safety functions (e.g. frost and smoke control, hygiene, etc.) in technical building installation

- **Damper size up to approx. 0.5 m²**
- **Nominal torque 2.5 Nm**
- **Nominal voltage AC 230 V**
- **Control open-close**

PROTECT ASSETS
FAIL-SAFE SOLUTIONS BY BELIMO

Technical data

Electrical data	Nominal voltage	AC 230 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 85 V ... 265 V
	Power consumption in operation	2.5 W
	Power consumption in rest position	1.5 W
	Power consumption for wire sizing	5 VA
	Connection supply / control	Cable 1 m, 2 x 0.75 mm²
Functional data	Torque motor	Min. 2.5 Nm
	Torque spring-return	Min. 2.5 Nm
	Direction of rotation motor	Can be selected by mounting L / R
	Direction of rotation spring-return	Can be selected by mounting L / R
	Angle of rotation	Max. 95°
	Running time motor	75 s / 90°
	Running time emergency control function	<25 s / 90°
	Sound power level motor max.	50 dB (A)
	Spindle driver	Universal spindle clamp 6...12 mm
	Position indication	Mechanical
	Service life	Min. 60,000 security settings
Safety	Protection class IEC/EN	II protective insulated
	Degree of protection IEC/EN	IP42
	EMC	CE in accordance with 2004/108/EC
	Low-voltage directive	CE in accordance with 2006/95/EC
	Certification IEC/EN	Certified to: IEC/EN 60730-1 and IEC/EN 60730-2-14
	Principle of operation	Type 1.AA
	Overvoltage category	III
	Control pollution degree	3
	Ambient temperature	-30°C ... 50°C
	Non-operating temperature	-40°C ... 80°C
	Ambient humidity	95% r.h., non-condensing
	Maintenance	Maintenance-free
Weight	Weight approx.	0.6 kg

Safety notes

- The actuator is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Caution: Power supply voltage!
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- The cable must not be removed from the device.
- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Product features

Principle of operation The actuator moves the damper to the operating position at the same time as tensioning the return spring. The damper is turned back to the safety position by spring energy when the supply voltage is interrupted.

Direct mounting Simple direct mounting on the damper spindle with a universal spindle clamp, supplied with a universal mounting bracket to prevent the actuator from rotating.

High functional reliability The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.

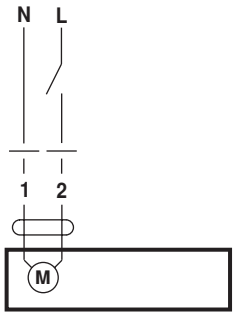
Electrical installation

Notes

- Caution: Power supply voltage!
- Parallel connection of other actuators possible. Observe the performance data.

Wiring diagrams

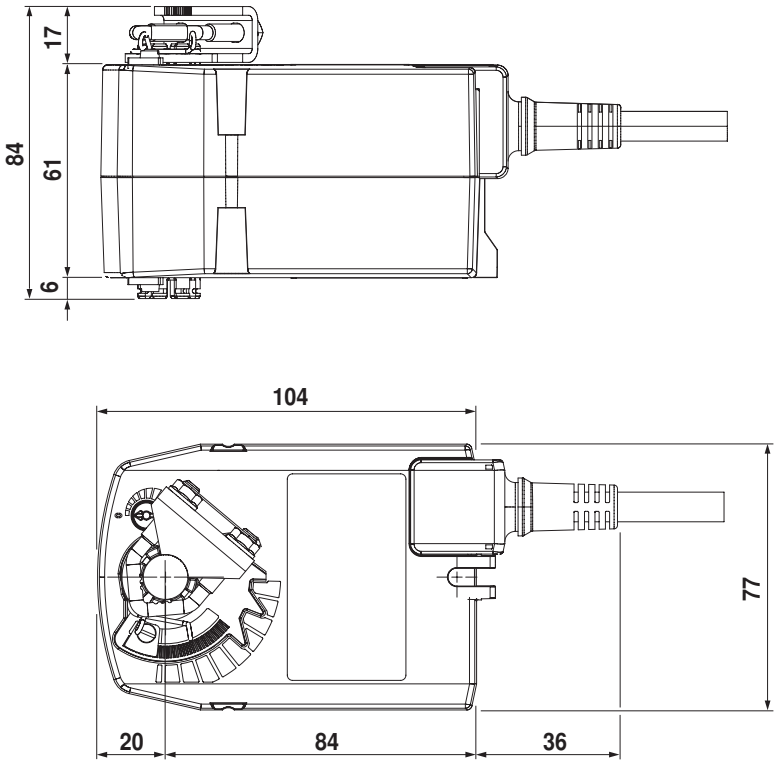
AC 230 V, open-close



Cable colours:
1 = blue
2 = brown

Dimensions [mm]

Dimensional drawings



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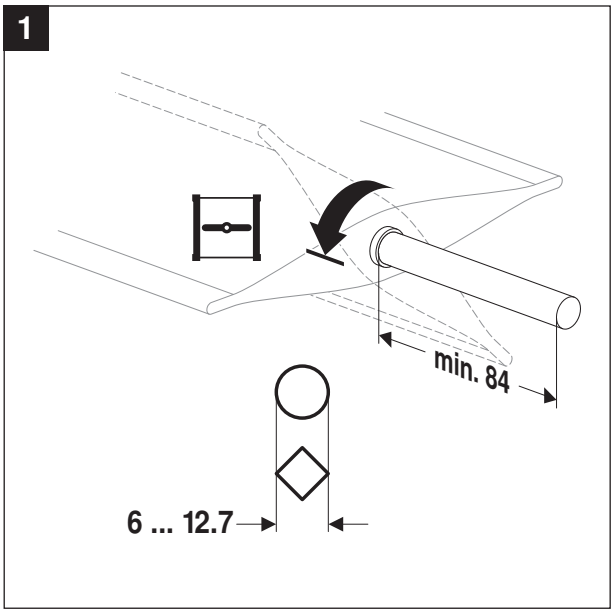

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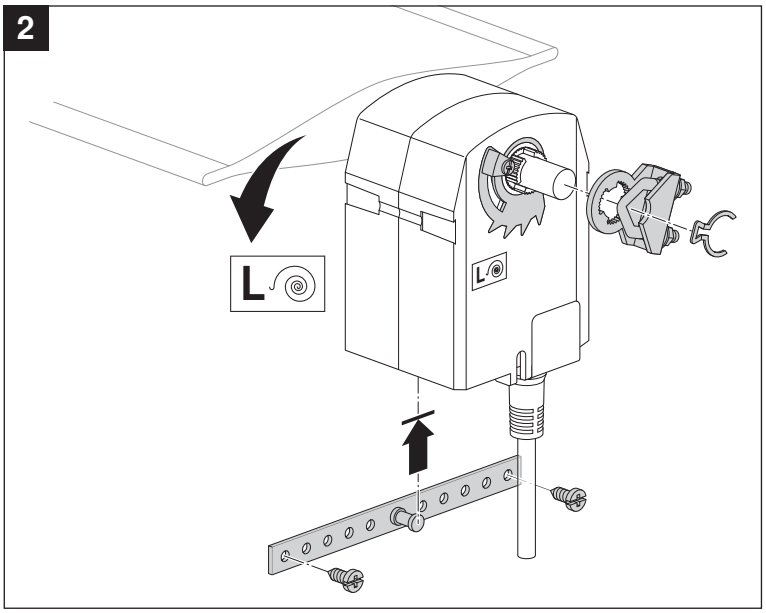

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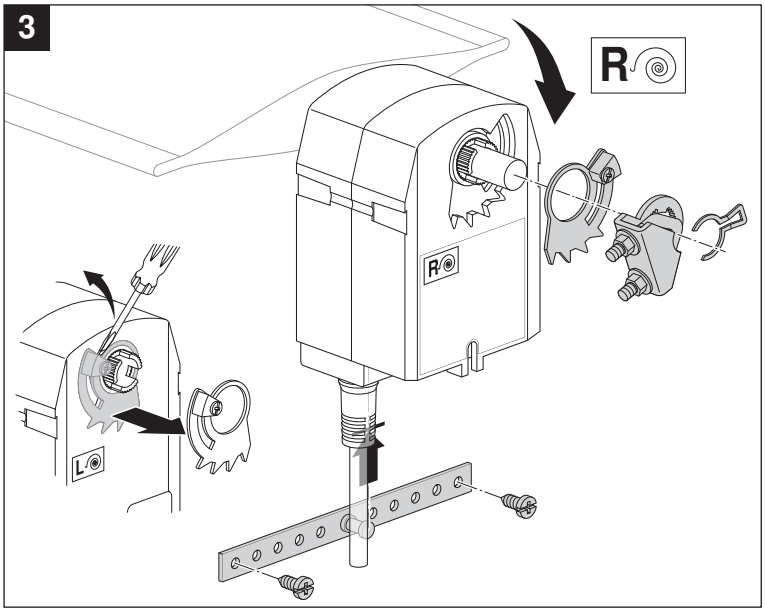

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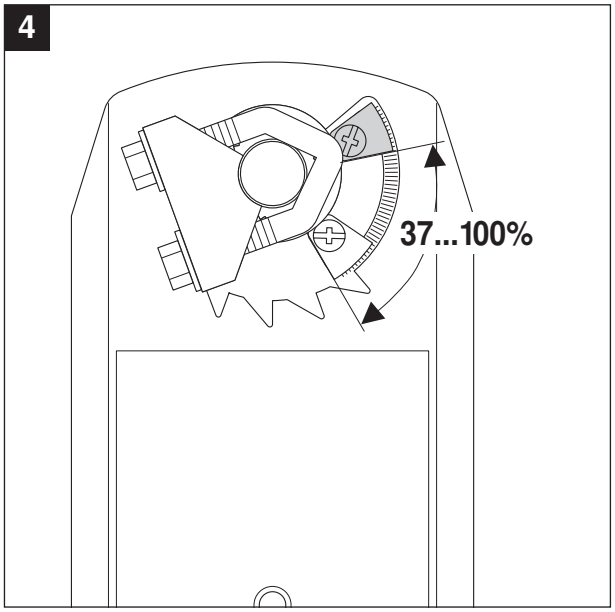
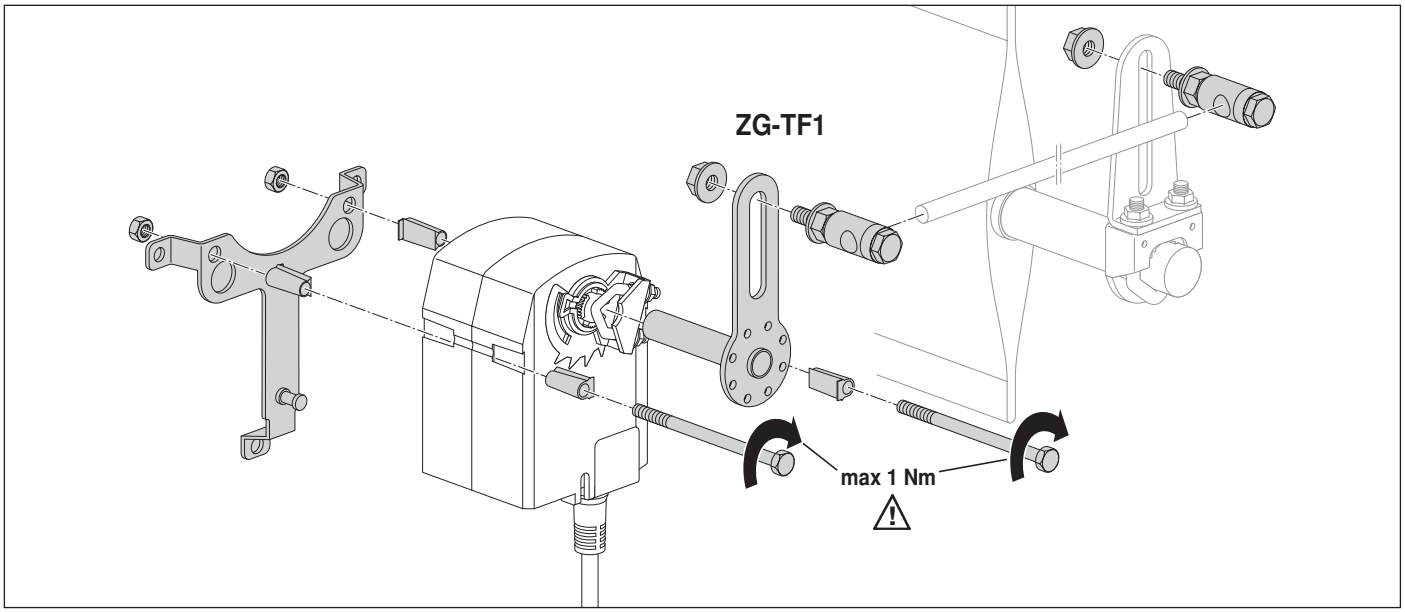
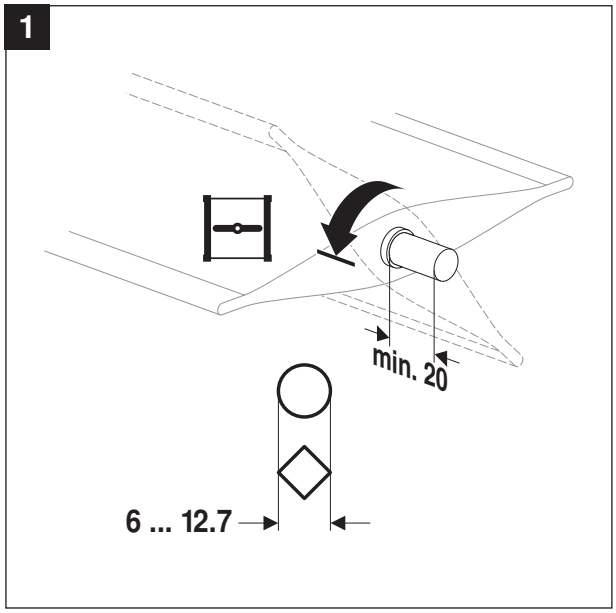
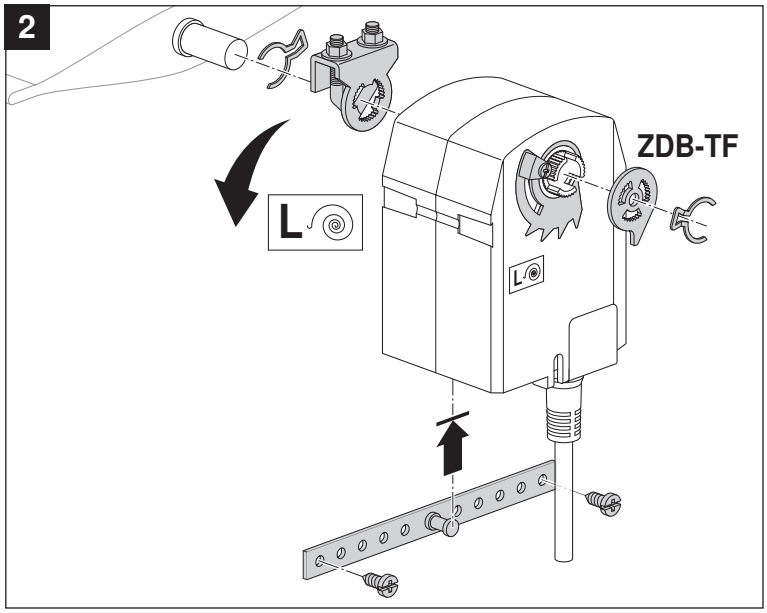
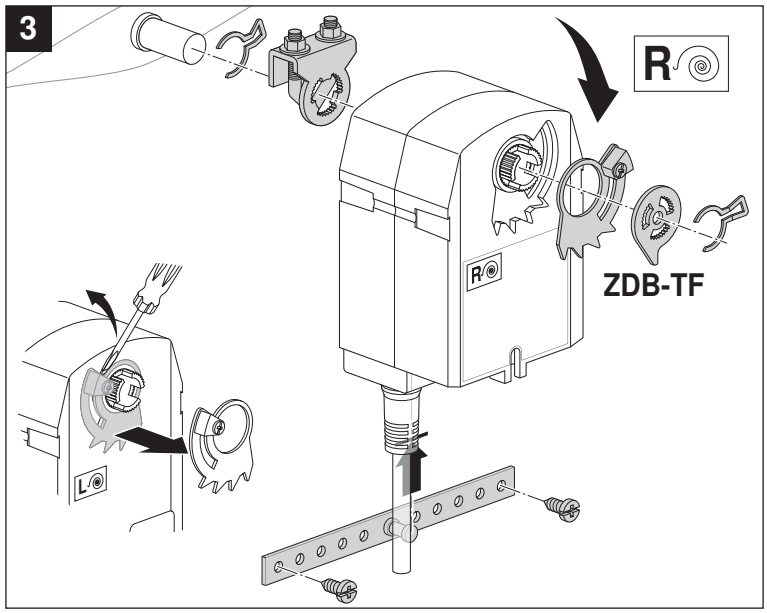


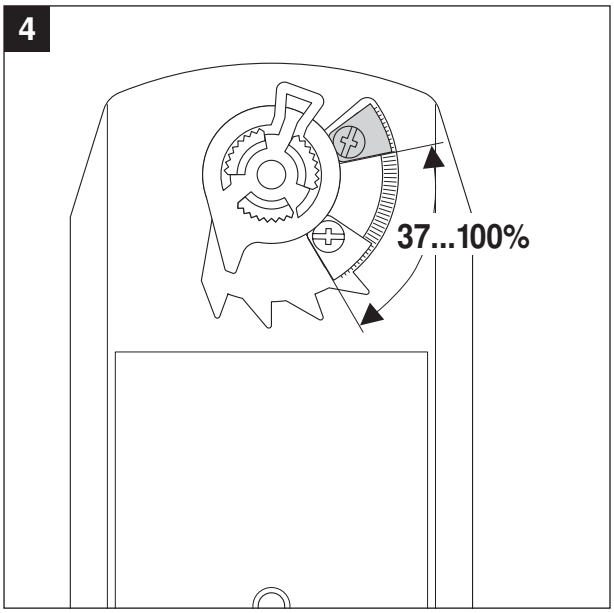


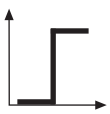
BELIMO



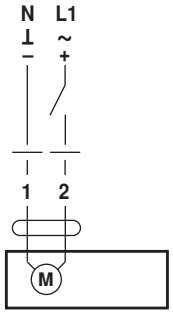




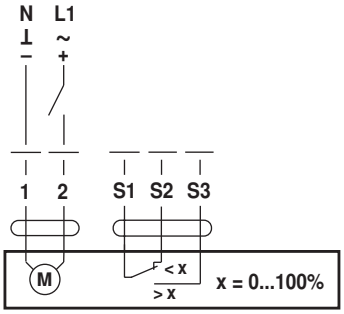




AC 230 V ⚠
AC 24 V / DC 24 V

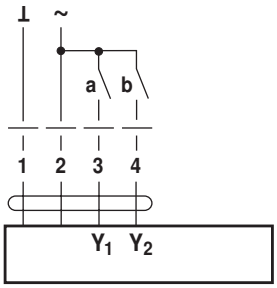


TF230 / TF24



TF230-S / TF24-S

AC 24 V



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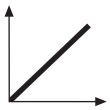
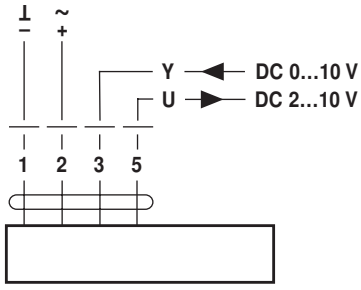


AC 24 V / DC 24 V



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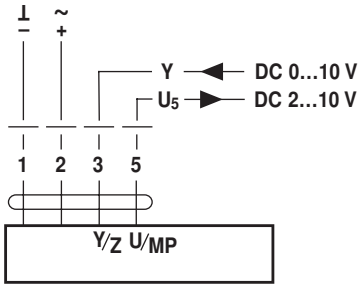


TF24-MFT

BELIMO

Technical data sheet TF24

Spring-return actuator for adjusting dampers with safety functions (e.g. frost and smoke control, hygiene, etc.) in technical building installation

- **Damper size up to approx. 0.5 m²**
- **Nominal torque 2.5 Nm**
- **Nominal voltage AC/DC 24 V**
- **Control open-close**

PROTECT ASSETS
FAIL-SAFE SOLUTIONS BY BELIMO

Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2 V ... 28.8 V / DC 21.6 V ... 28.8 V
	Power consumption in operation	2.5 W
	Power consumption in rest position	1.5 W
	Power consumption for wire sizing	5 VA
	Connection supply / control	Cable 1 m, 2 x 0.75 mm²
Functional data	Torque motor	Min. 2.5 Nm
	Torque spring-return	Min. 2.5 Nm
	Direction of rotation motor	Can be selected by mounting L / R
	Direction of rotation spring-return	Can be selected by mounting L / R
	Angle of rotation	Max. 95° adjustable 37 ... 100% with integrated mechanical limitation
	Running time motor	75 s / 90°
	Running time emergency control function	<25 s / 90°
	Sound power level motor max.	50 dB (A)
	Spindle driver	Universal spindle clamp 6...12 mm
	Position indication	Mechanical
	Service life	Min. 60,000 security settings
Safety	Protection class IEC/EN	III Safety extra-low voltage
	Degree of protection IEC/EN	IP42
	EMC	CE according to 2004/108/EC
	Certification IEC/EN	Certified to: IEC/EN 60730-1 and IEC/EN 60730-2-14
	Principle of operation	Type 1.AA
	Overvoltage category	III
	Control pollution degree	3
	Ambient temperature	-30°C ... 50°C
	Non-operating temperature	-40°C ... 80°C
	Ambient humidity	95% r.h., non-condensing
	Maintenance	Maintenance-free
Weight	Weight approx.	0.6 kg

Safety notes

- The spring-return actuator is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- The cable must not be removed from the device.
- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Product features

Principle of operation The actuator moves the damper to the operating position at the same time as tensioning the return spring. The damper is turned back to the safety position by spring energy when the supply voltage is interrupted.

Direct mounting Simple direct mounting on the damper spindle with a universal spindle clamp, supplied with a universal mounting bracket to prevent the actuator from rotating.

High functional reliability The actuator is overload protected and automatically stops when the end stop is reached.

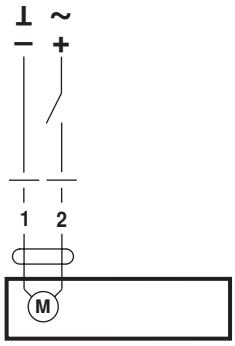
Electrical installation

Notes

- Connection via safety isolating transformer.
- Parallel connection of other actuators possible. Observe the performance data.

Wiring diagrams

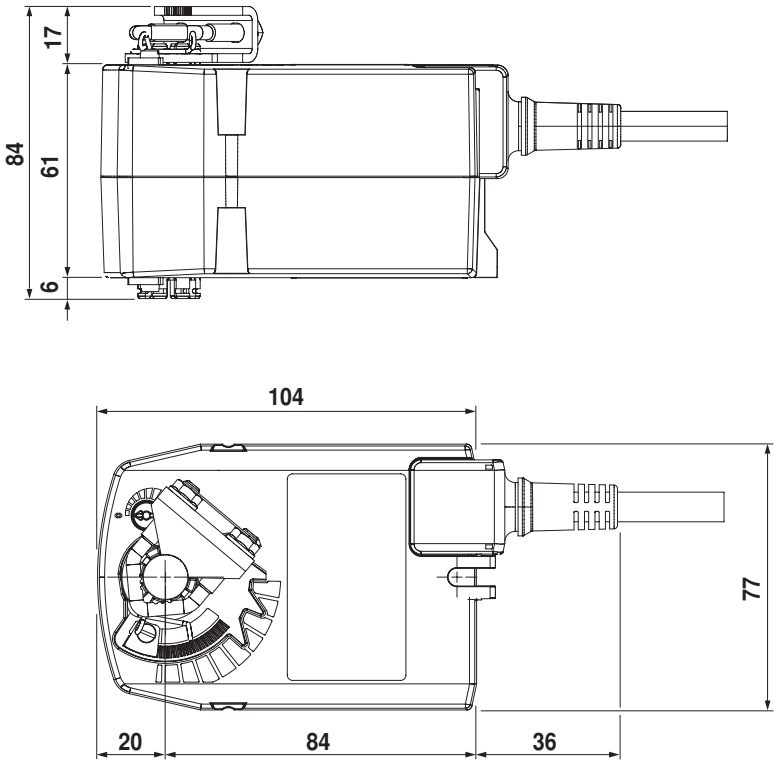
AC/DC 24 V, open-close



Cable colours:
1 = red
2 = black

Dimensions [mm]

Dimensional drawings



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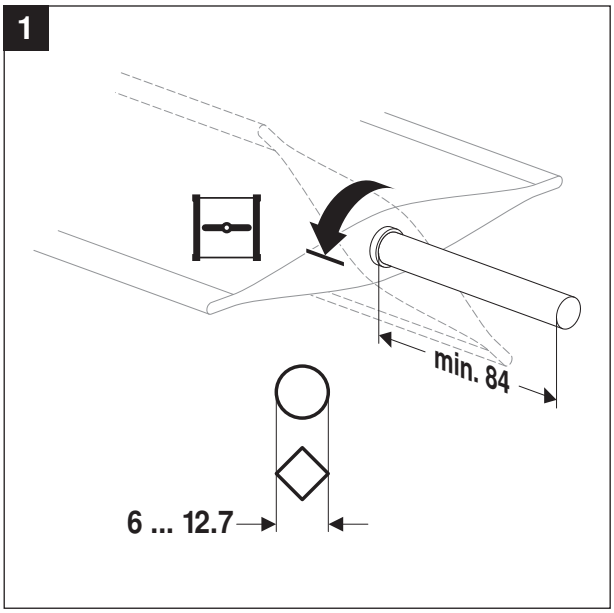

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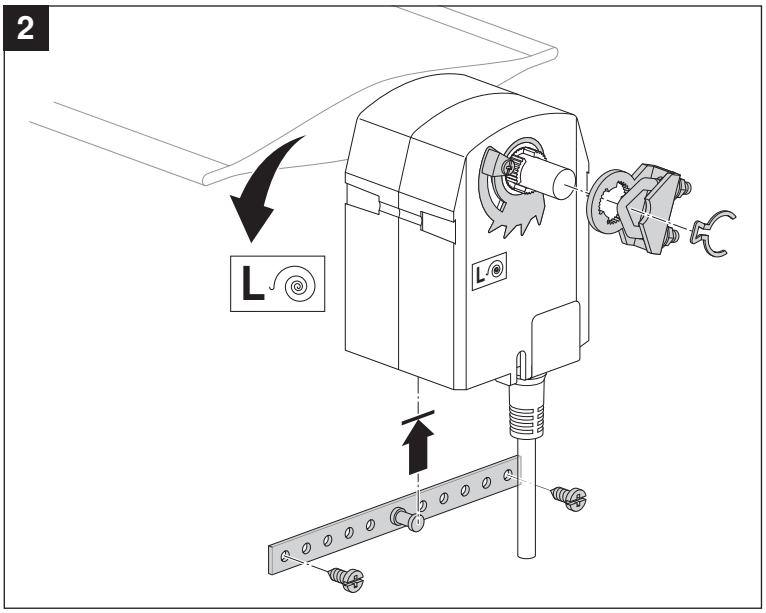

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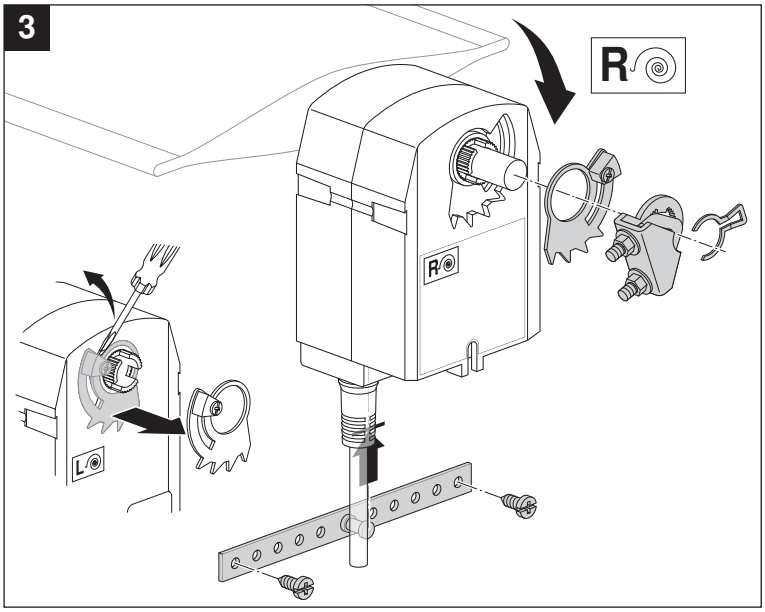

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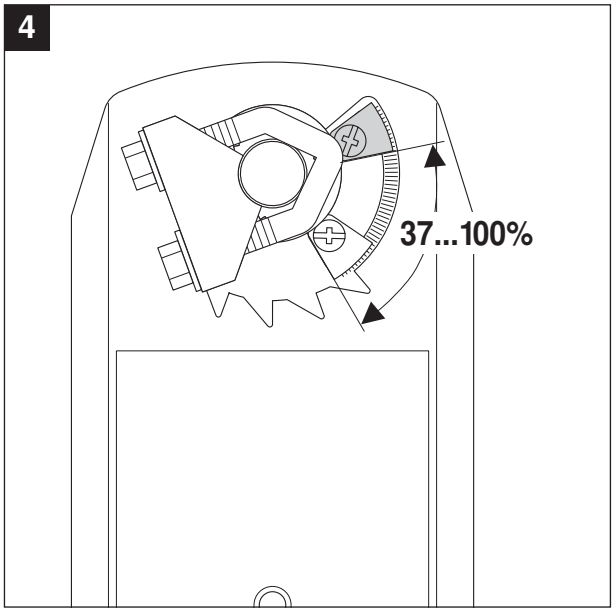

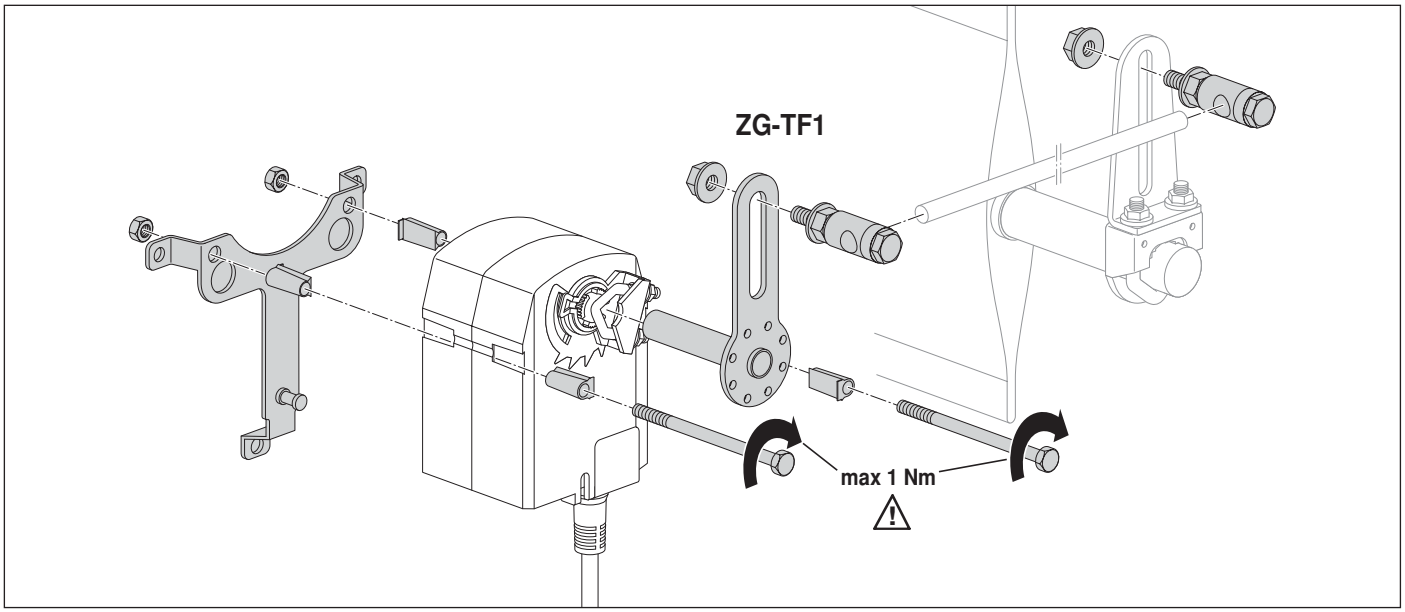

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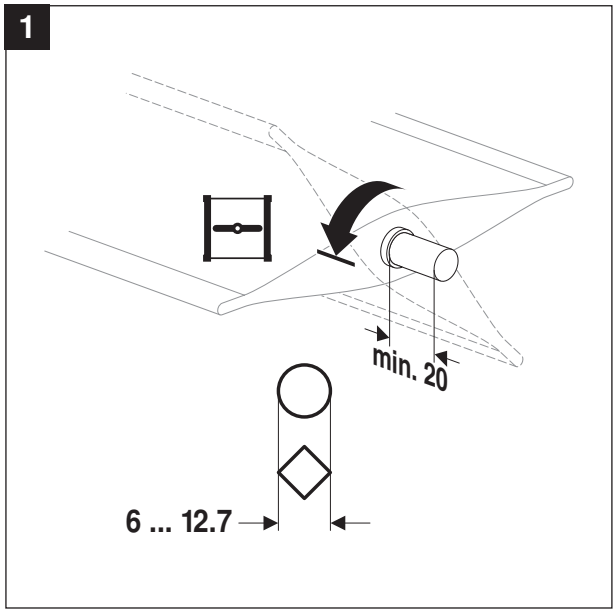
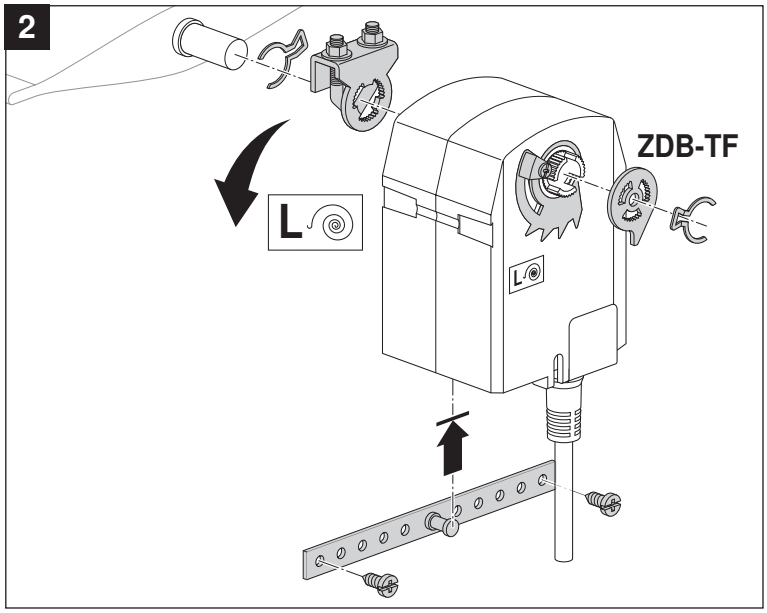
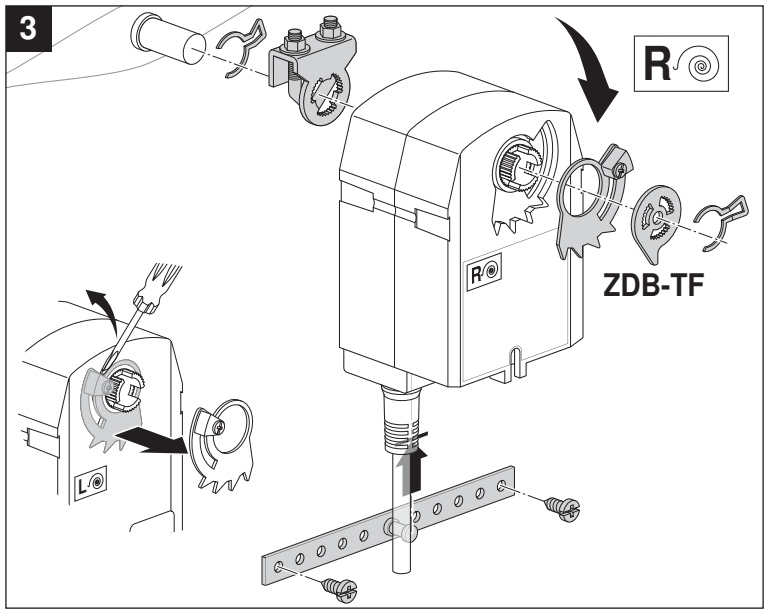
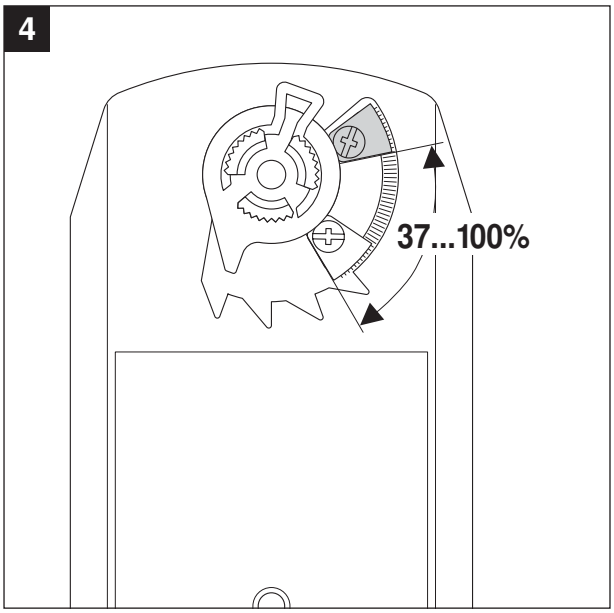
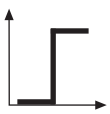


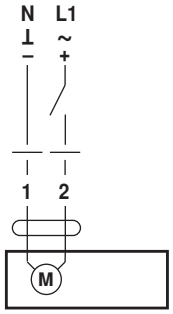




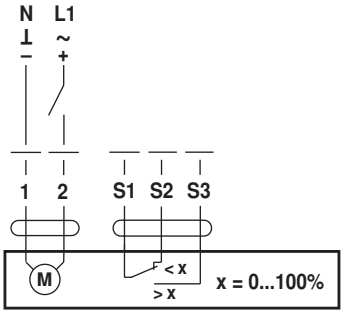




AC 230 V ⚠
AC 24 V / DC 24 V

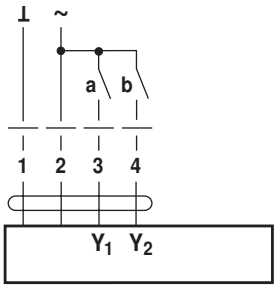


TF230 / TF24



TF230-S / TF24-S

AC 24 V



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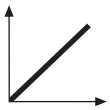
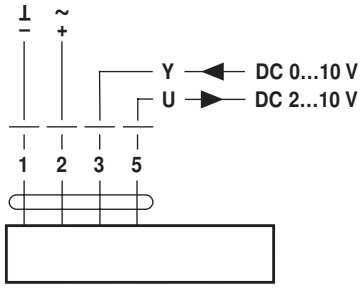


AC 24 V / DC 24 V



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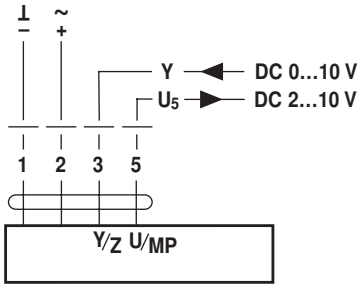
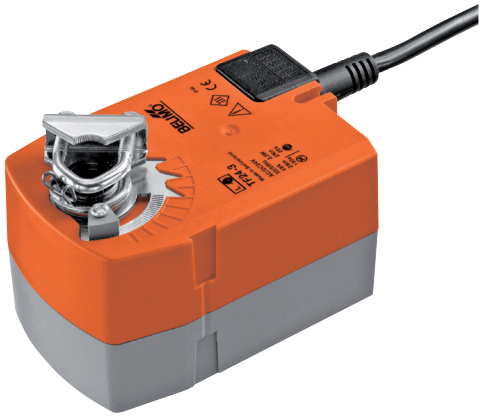


TF24-MFT

Technical data sheet TF24-3

Spring-return actuator for adjusting dampers with safety functions (e.g. frost and smoke control, hygiene, etc.) in technical building installation

- **Damper size up to approx. 0.5 m²**
- **Nominal torque 2.5 Nm**
- **Nominal voltage AC 24V**
- **3-point control**



PROTECT ASSETS
FAIL-SAFE SOLUTIONS BY BELIMO

Technical data

Electrical data	Nominal voltage	AC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2 V ... 28.8 V
	Power consumption in operation	2.5 W
	Power consumption in rest position	1 W
	Power consumption for wire sizing	4 VA
	Connection supply / control	Cable 1 m, 4 x 0.75 mm²
Functional data	Torque motor	Min. 2.5 Nm
	Torque spring-return	Min. 2.5 Nm
	Direction of rotation motor	As an option with switch R / L
	Direction of rotation spring-return	Can be selected by mounting L / R
	Angle of rotation	Max. 95° adjustable 37 ... 100% with integrated mechanical limitation
	Running time motor	150 s / 90°
	Running time emergency control function	<25 s / 90°
	Sound power level motor max.	35 dB (A)
	Spindle driver	Universal spindle clamp 6...12 mm
	Position indication	Mechanical
	Service life	Min. 60,000 security settings.
Safety	Protection class IEC/EN	III Safety extra-low voltage
	Degree of protection IEC/EN	IP42
	EMC	CE according to 2004/108/EC
	Certification IEC/EN	Certified to: IEC/EN 60730-1 and IEC/EN 60730-2-14
	Principle of operation	Type 1.AA
	Control pollution degree	3
	Ambient temperature	-30°C ... 50°C
	Non-operating temperature	-40°C ... 80°C
	Ambient humidity	95% r.h., non-condensing
	Maintenance	Maintenance-free
Weight	Weight approx.	0.6 kg

Safety notes

- The spring-return actuator is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- The cable must not be removed from the device.
- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Product features

Principle of operation The actuator is activated with a 3-point signal. The actuator moves the damper to the operating position at the same time as tensioning the return spring. The damper is turned back to the emergency position by spring energy when the supply voltage is interrupted.

Direct mounting Simple direct mounting on the damper spindle with a universal spindle clamp, supplied with a universal mounting bracket to prevent the actuator from rotating.

High functional reliability The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.

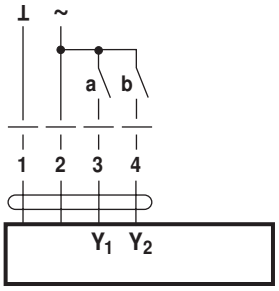
Electrical installation

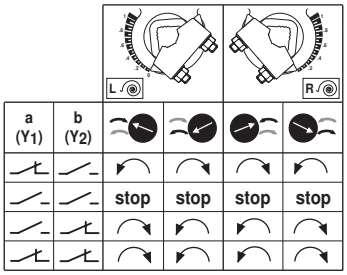
Notes

- Connection via safety isolating transformer.
- Parallel connection of other actuators possible. Observe the performance data.

Wiring diagrams

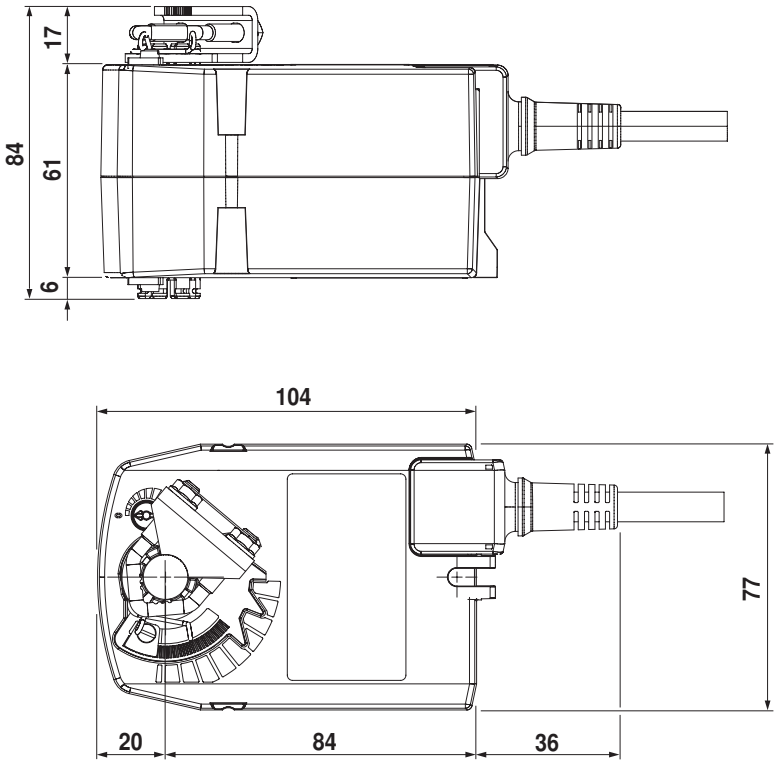
AC 24 V, 3-point





Dimensions [mm]

Dimensional drawings



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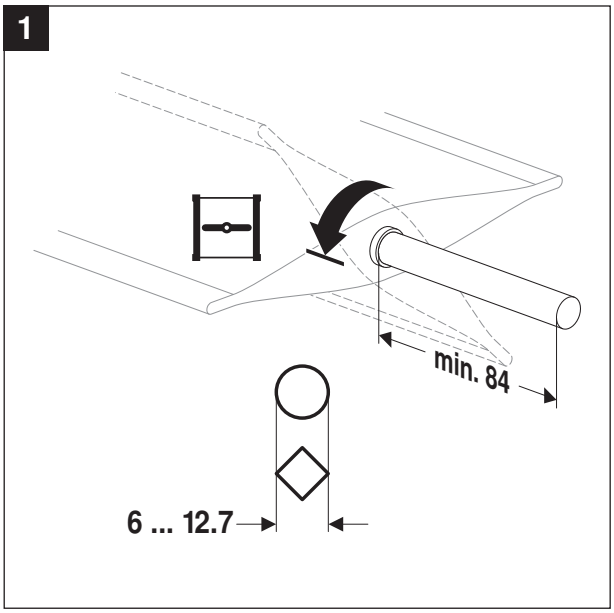

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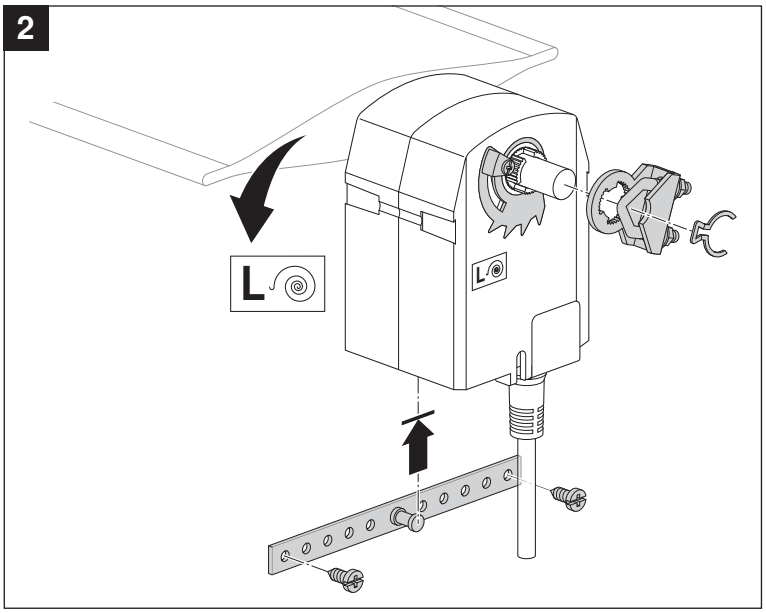

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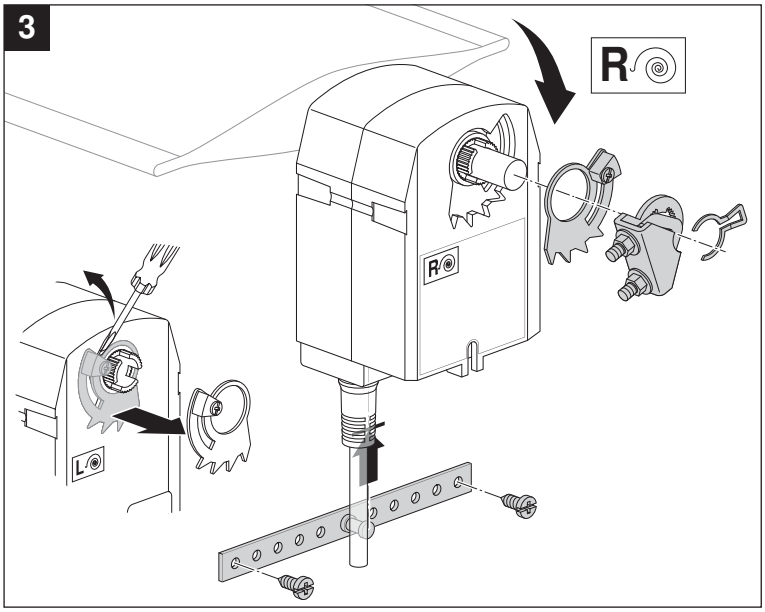

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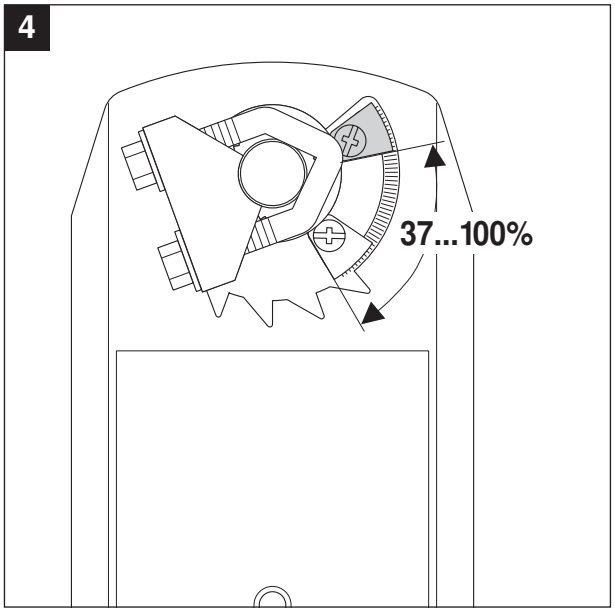

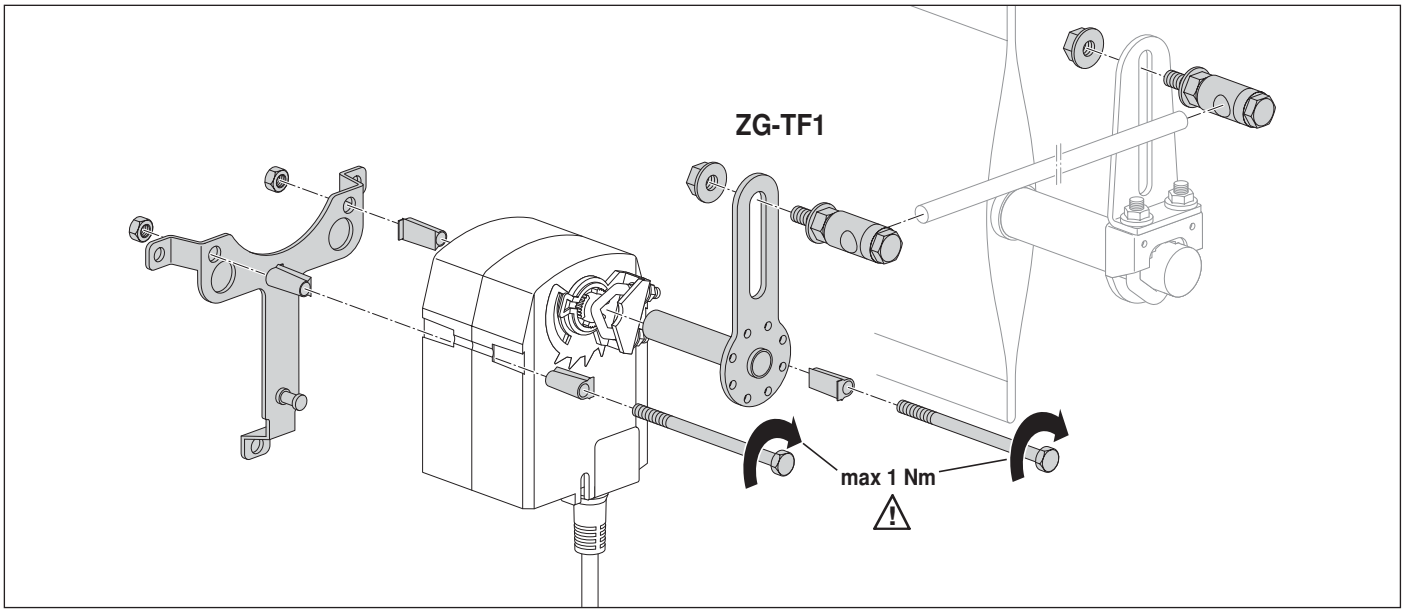

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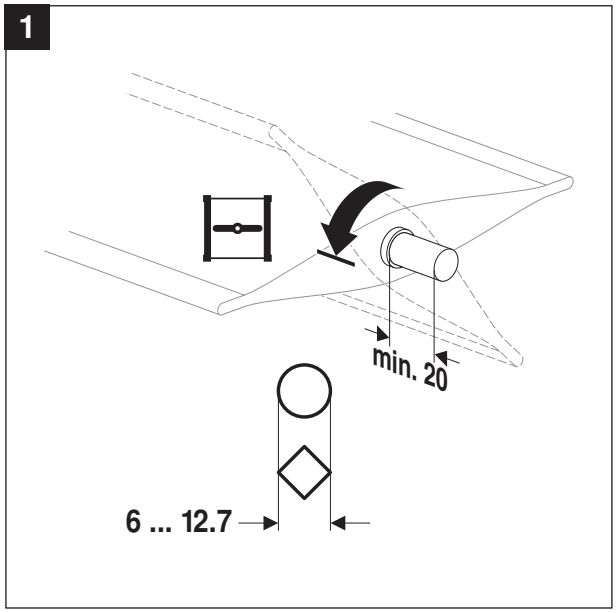
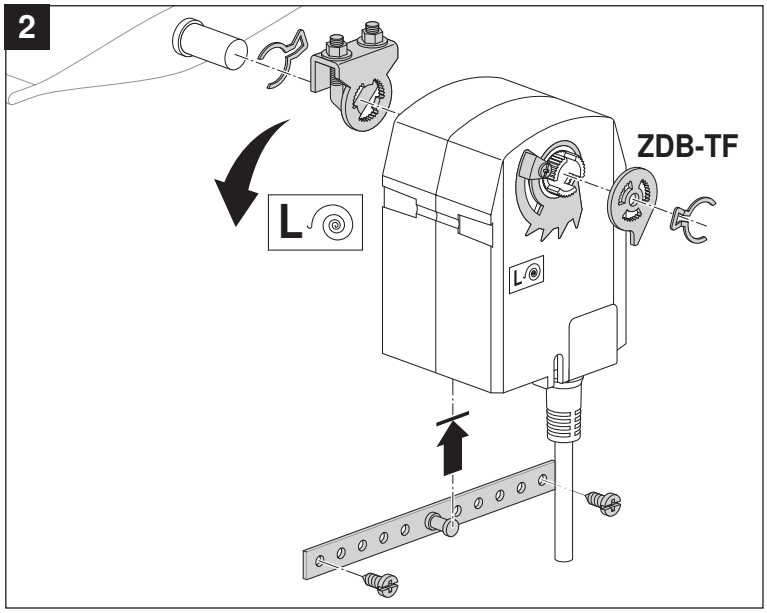
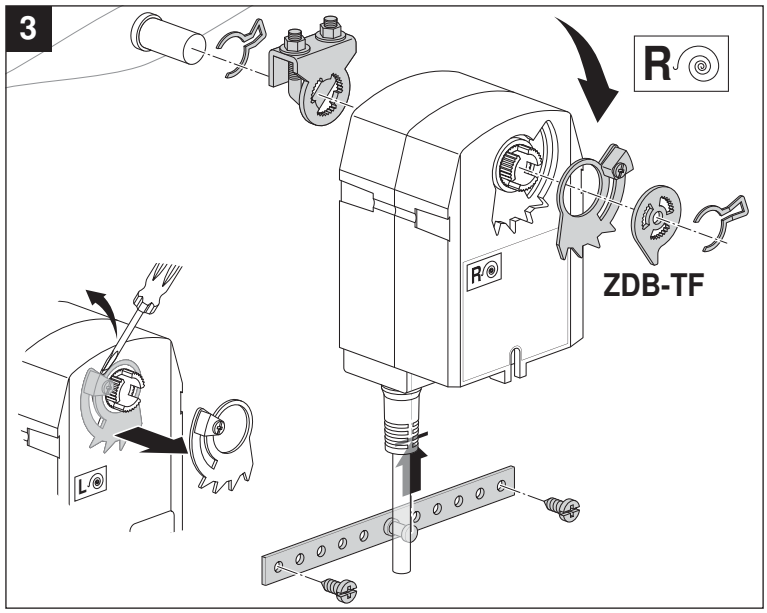
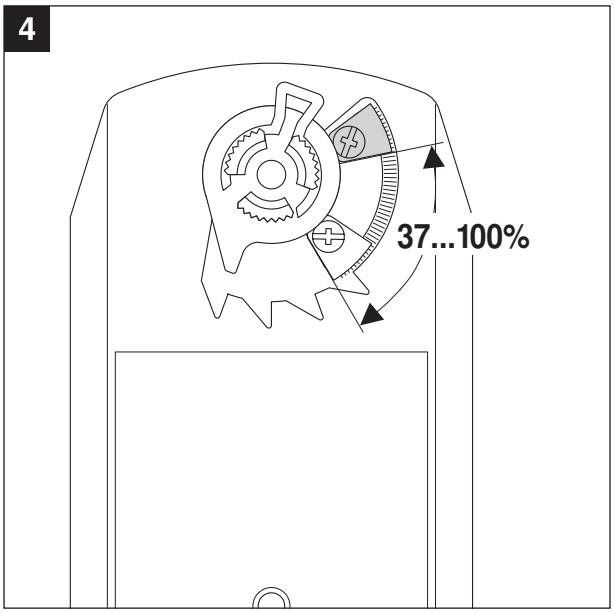
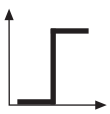


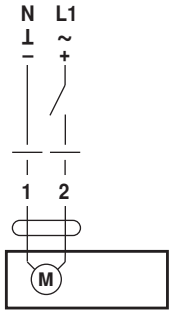




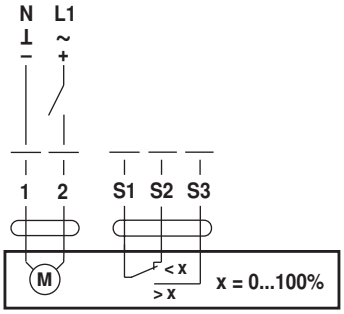




AC 230 V ⚠
AC 24 V / DC 24 V

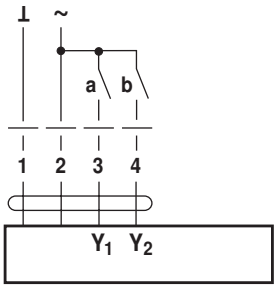


TF230 / TF24

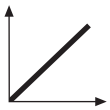


TF230-S / TF24-S

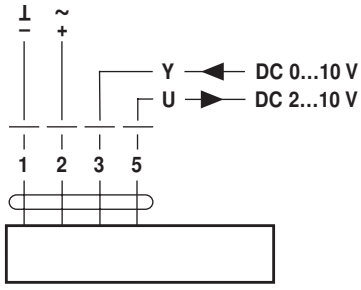
AC 24 V



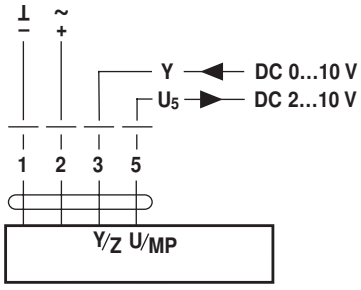
TF24-3



AC 24 V / DC 24 V



TF24-SR



TF24-MFT

BELIMO

Technical data sheet TF24-S

Spring-return actuator for adjusting dampers with safety functions (e.g. frost and smoke control, hygiene, etc.) in technical building installation

- **Damper size up to approx. 0.5 m²**
- **Nominal torque 2.5 Nm**
- **Nominal voltage AC/DC 24 V**
- **Control open-close**

With integrated auxiliary switch

PROTECT ASSETS
FAIL-SAFE SOLUTIONS BY BELIMO

Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2 V ... 28.8 V / DC 21.6 V ... 28.8 V
	Power consumption in operation	2.5 W
	Power consumption in rest position	1.5 W
	Power consumption for wire sizing	5 VA
	Auxiliary switch	1 x SPDT, 0...100%
	Switching capacity auxiliary switch	1 mA ... 3 (0.5) A, AC 250 V (II protective insulated)
	Connection supply / control	Cable 1 m, 2 x 0.75 mm²
	Connection auxiliary switch	Cable 1 m, 3 x 0.75 mm²
Functional data	Torque motor	Min. 2.5 Nm
	Torque spring-return	Min. 2.5 Nm
	Direction of rotation motor	Can be selected by mounting L / R
	Direction of rotation spring-return	Can be selected by mounting L / R
	Angle of rotation	Max. 95° adjustable 37 ... 100% with integrated mechanical limitation
	Running time motor	75 s / 90°
	Running time emergency control function	<25 s / 90°
	Sound power level motor max.	50 dB (A)
	Spindle driver	Universal spindle clamp 6...12 mm
	Position indication	Mechanical
	Service life	Min. 60,000 security settings
Safety	Protection class IEC/EN	III Safety extra-low voltage
	Degree of protection IEC/EN	IP42
	EMC	CE according to 2004/108/EC
	Low-voltage directive	CE according to 73/23/EEC
	Certification IEC/EN	Certified to: IEC/EN 60730-1 and IEC/EN 60730-2-14
	Principle of operation	Type 1.AA.B
	Control pollution degree	3
	Ambient temperature	-30°C ... 50°C
	Non-operating temperature	-40°C ... 80°C
	Ambient humidity	95% r.h., non-condensing
	Maintenance	Maintenance-free
Weight	Weight approx.	0.65 kg

Safety notes

- The spring-return actuator is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- The cable must not be removed from the device.

Safety notes

- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Product features

Principle of operation The actuator moves the damper to the operating position at the same time as tensioning the return spring. The damper is turned back to the safety position by spring energy when the supply voltage is interrupted.

Direct mounting Simple direct mounting on the damper spindle with a universal spindle clamp, supplied with a universal mounting bracket to prevent the actuator from rotating.

High functional reliability The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.

Flexible signalization Flexible signalization with adjustable auxiliary switch (0 ... 100%).

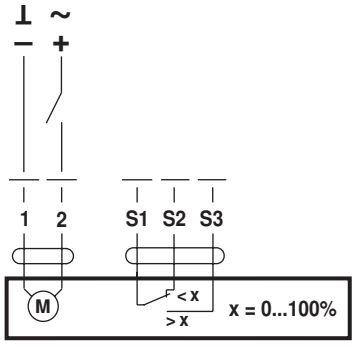
Electrical installation

Notes

- Connection via safety isolating transformer.
- Parallel connection of other actuators possible. Observe the performance data.

Wiring diagrams

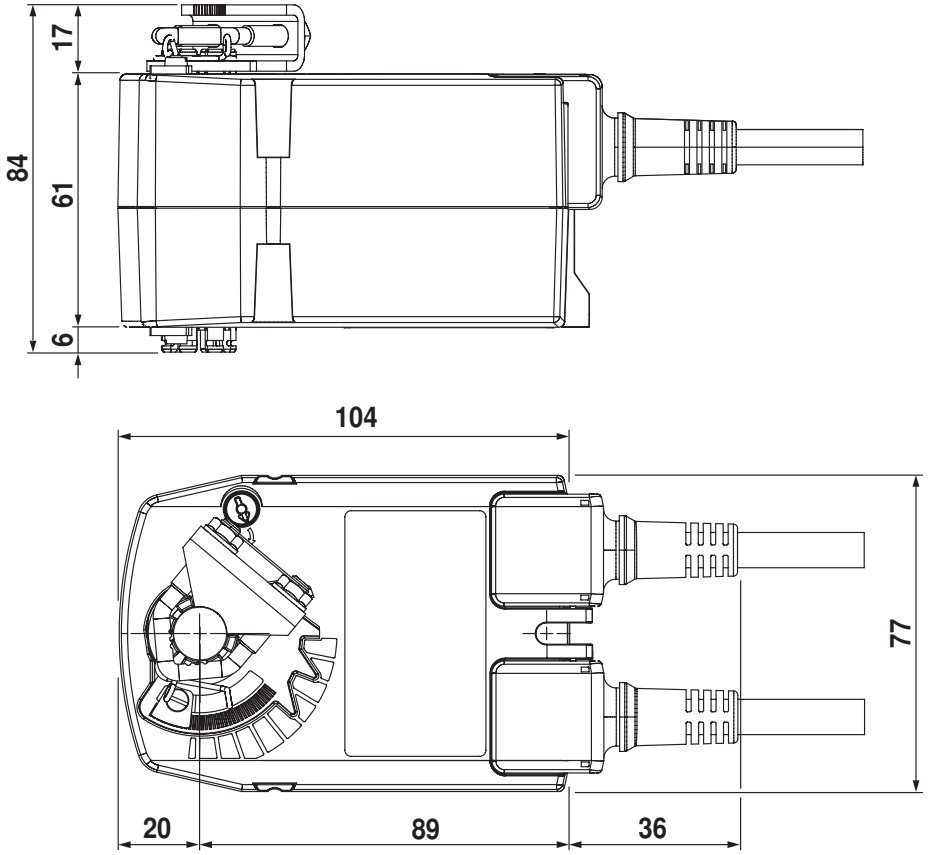
AC/DC 24 V, open/close



Cable colours:
1 = black
2 = red
S1 = violet
S2 = red
S3 = white

Dimensions [mm]

Dimensional drawings



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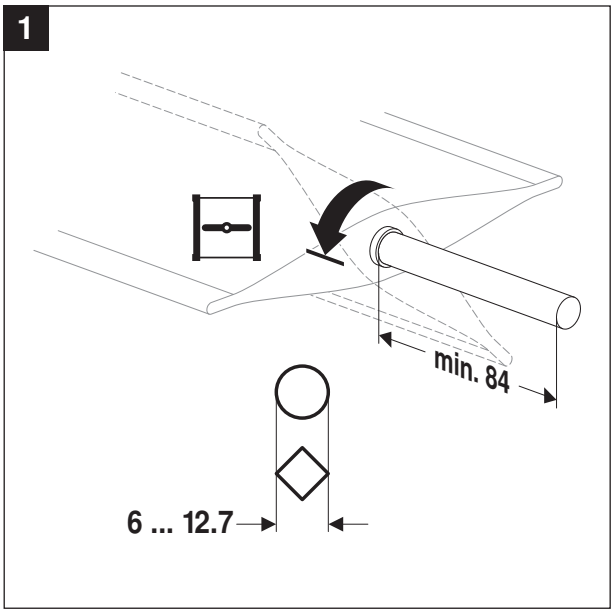

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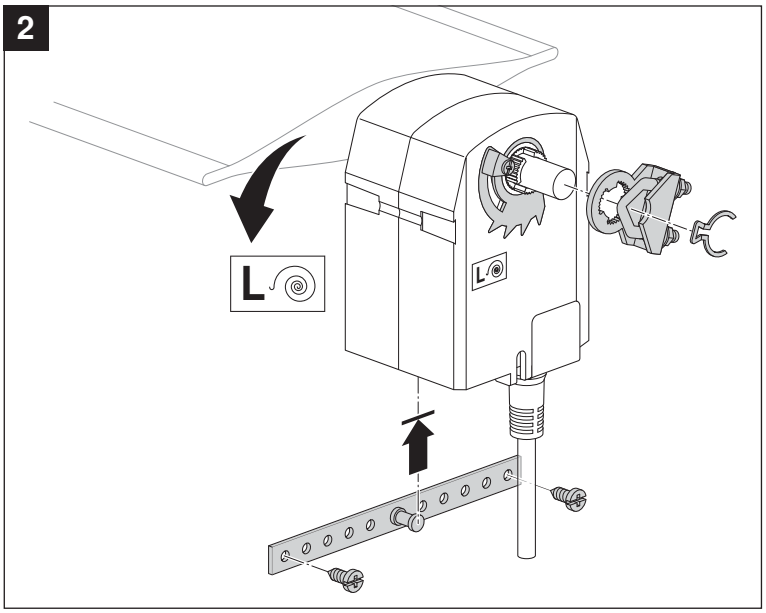

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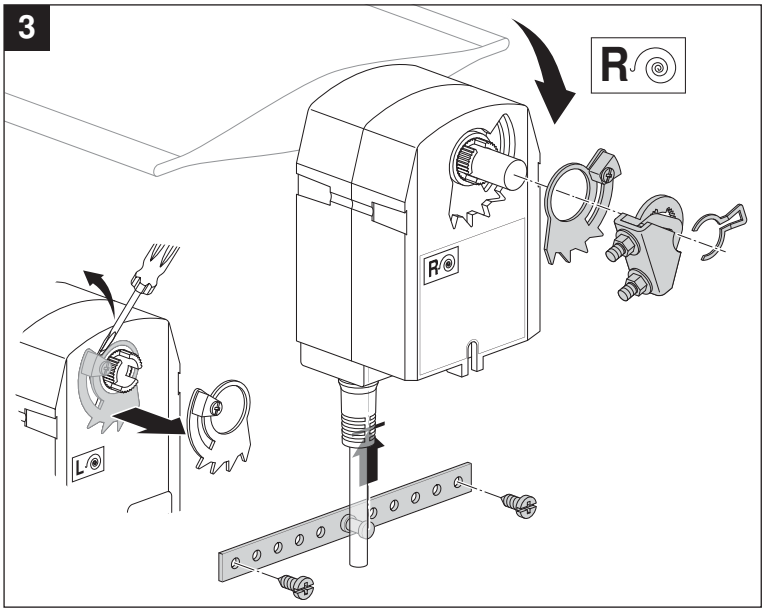

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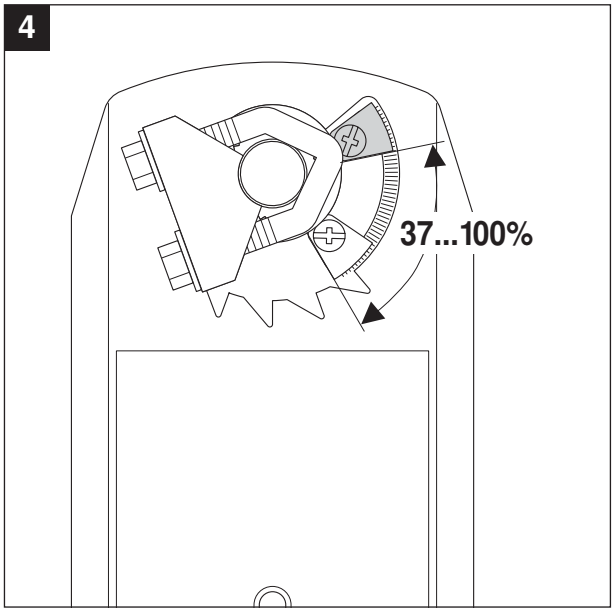
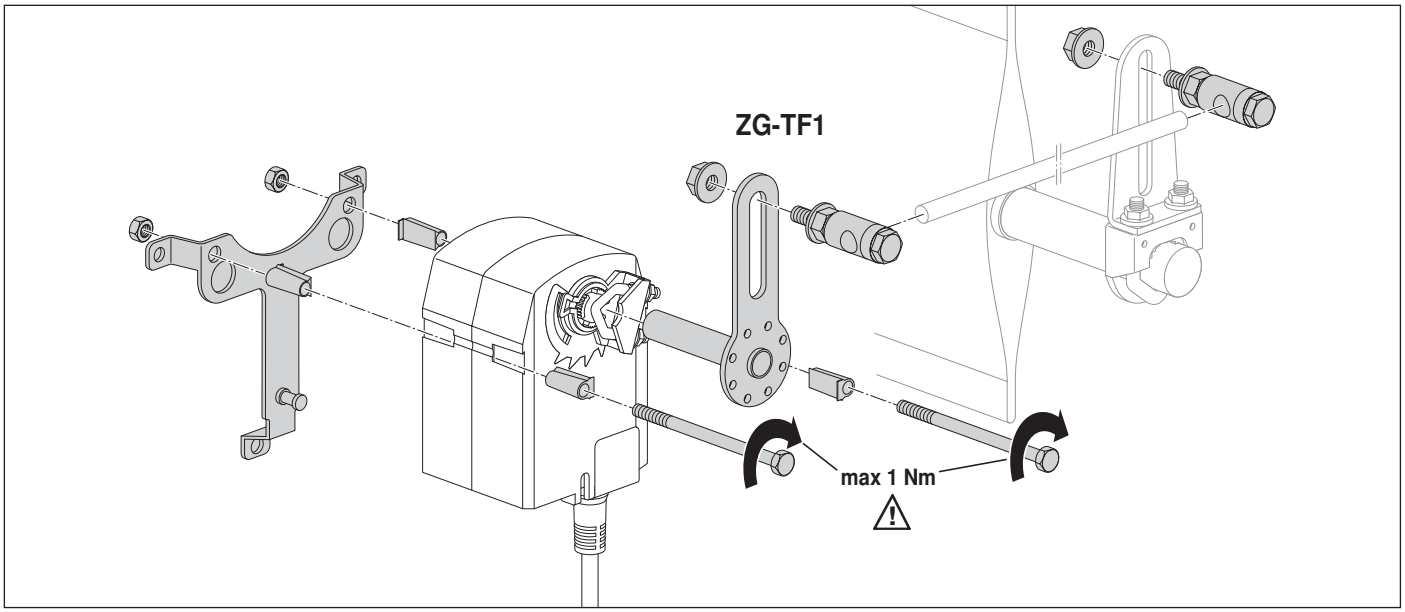
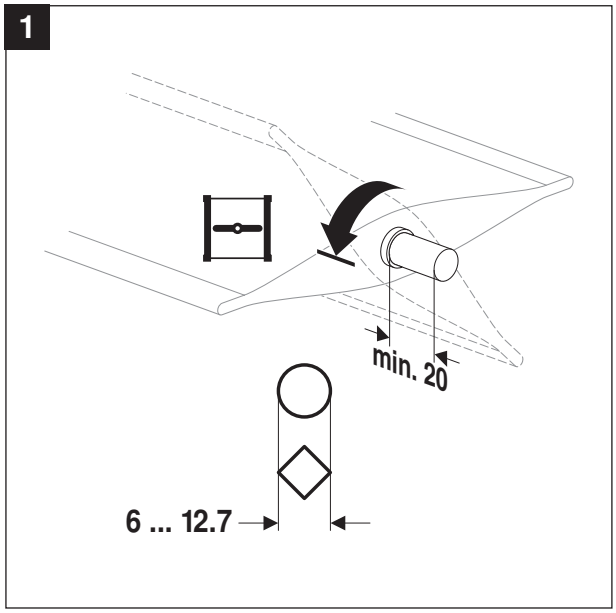
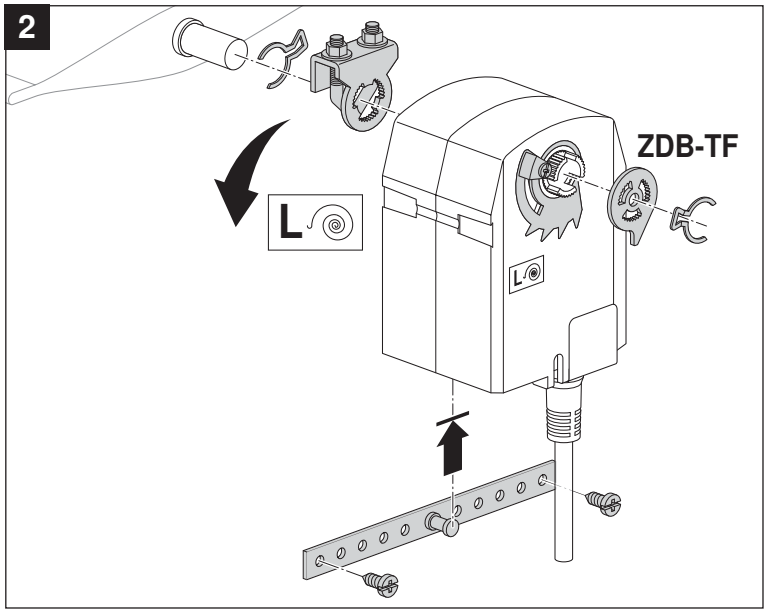
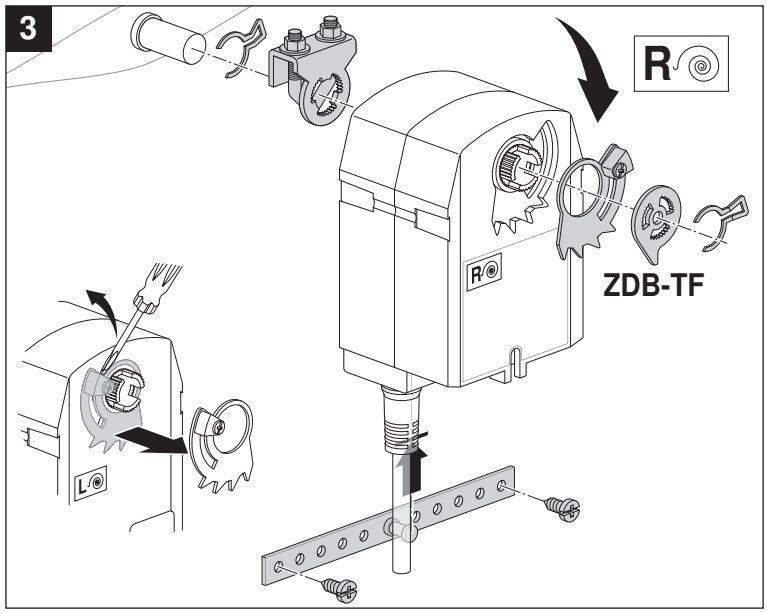


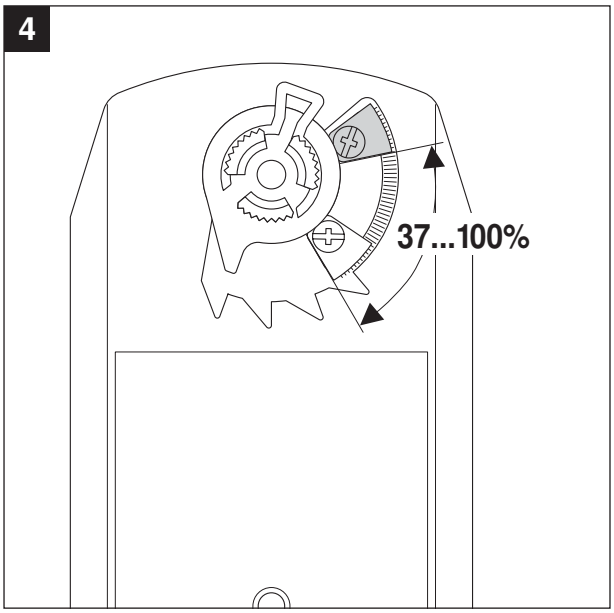


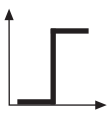
BELIMO



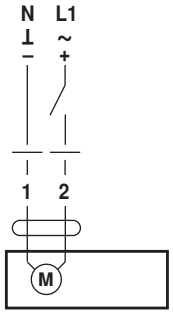




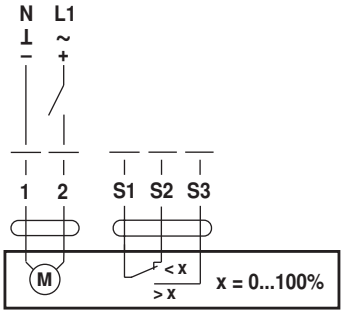




AC 230 V ⚠
AC 24 V / DC 24 V

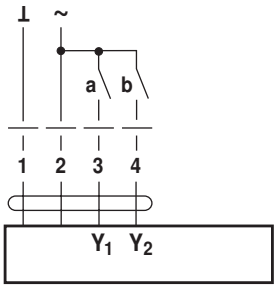


TF230 / TF24



TF230-S / TF24-S

AC 24 V



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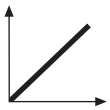
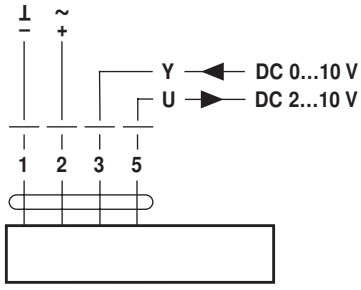
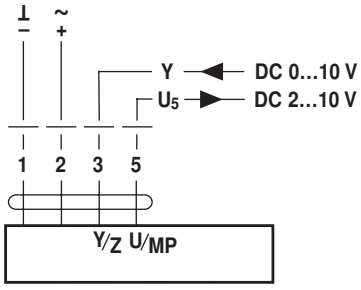


AC 24 V / DC 24 V



TF24-SR

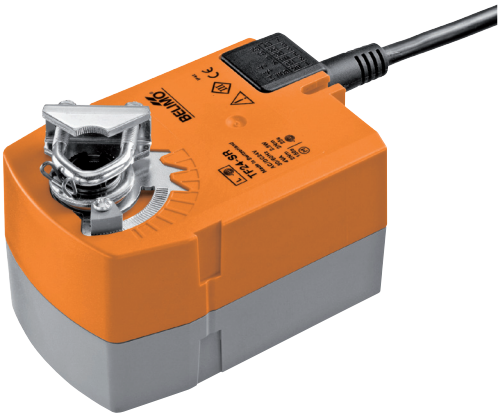


TF24-MFT

Technical data sheet TF24-SR

Spring-return actuator for adjusting dampers with safety functions (e.g. frost and smoke control, hygiene, etc.) in technical building installation

- **Damper size up to approx. 0.5 m²**
- **Nominal torque 2.5 Nm**
- **Nominal voltage AC/DC 24 V**
- **Control: modulating DC 0 V ... 10 V**
- **Position feedback DC 2 V ... 10 V**



PROTECT ASSETS
FAIL-SAFE SOLUTIONS BY BELIMO

Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2 V ... 28.8 V / DC 21.6 V ... 28.8 V
	Power consumption in operation	2.5 W
	Power consumption in rest position	1 W
	Power consumption for wire sizing	4 VA
	Connection supply / control	Cable 1 m, 4 x 0.75 mm²
Functional data	Torque motor	Min. 2.5 Nm
	Torque spring-return	Min. 2.5 Nm
	Positioning signal Y	DC 0...10 V
	Positioning signal Y note	Typical input impedance 100 kΩ
	Operating range Y	DC 2...10 V
	Position feedback U	DC 2...10 V
	Position feedback U note	Max. 0.5 mA
	Direction of rotation motor	As an option with switch R / L
	Direction of rotation spring-return	Can be selected by mounting L / R
	Angle of rotation	Max. 95° adjustable 37 ... 100% with integrated mechanical limitation
	Running time motor	150 s / 90°
	Running time emergency control function	<25 s / 90°
	Sound power level motor max.	35 dB (A)
	Spindle driver	Universal spindle clamp 6...12 mm
	Position indication	Mechanical
	Service life	Min. 60,000 security settings
Safety	Protection class IEC/EN	III Safety extra-low voltage
	Degree of protection IEC/EN	IP42 in all mounting positions
	EMC	CE according to 2004/108/EC
	Certification IEC/EN	Certified to: IEC/EN 60730-1 and IEC/EN 60730-2-14
	Principle of operation	Type 1.AA
	Overvoltage category	III
	Control pollution degree	3
	Ambient temperature	-30°C ... 50°C
	Non-operating temperature	-40°C ... 80°C
	Ambient humidity	95% r.h., non-condensing
	Maintenance	Maintenance-free
Weight	Weight approx.	0.6 kg

Safety notes

- The spring-return actuator is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- The cable must not be removed from the device.

Safety notes

- The device contains electrical and electronic components and is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Product features

Principle of operation The actuator is connected with a standard modulating signal DC 0 ... 10 V. The actuator moves the damper to the operating position at the same time as tensioning the return spring. The damper is turned back to the emergency position by spring energy when the supply voltage is interrupted.

Direct mounting Simple direct mounting on the damper spindle with a universal spindle clamp, supplied with a universal mounting bracket to prevent the actuator from rotating.

High functional reliability The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.

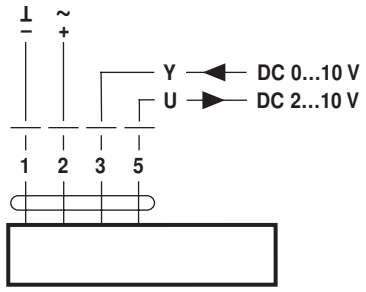
Electrical installation

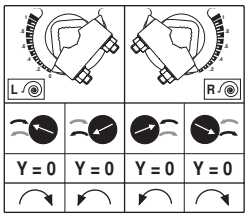
Notes

- Connection via safety isolating transformer.
- Parallel connection of other actuators possible. Observe the performance data.

Wiring diagrams

AC/DC 24V, modulating

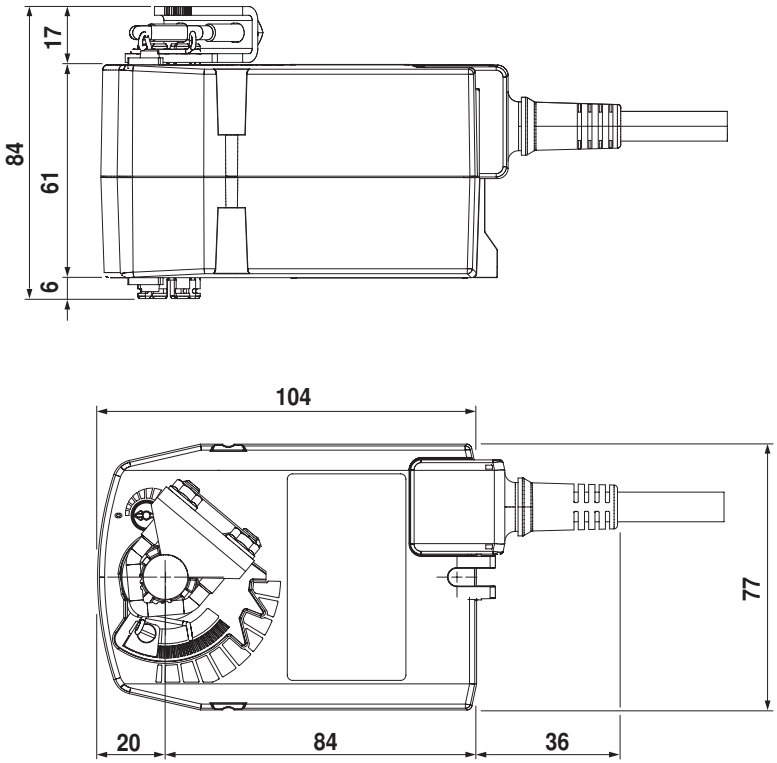




Cable colours:
1 = black
2 = red
3 = white
5 = orange

Dimensions [mm]

Dimensional drawings



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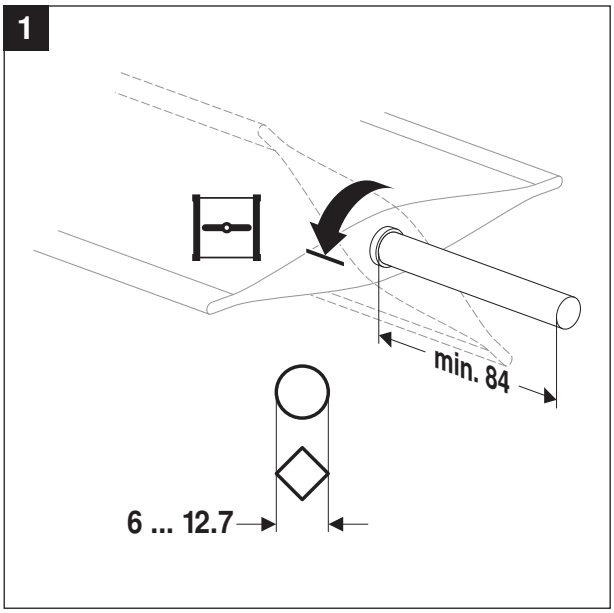

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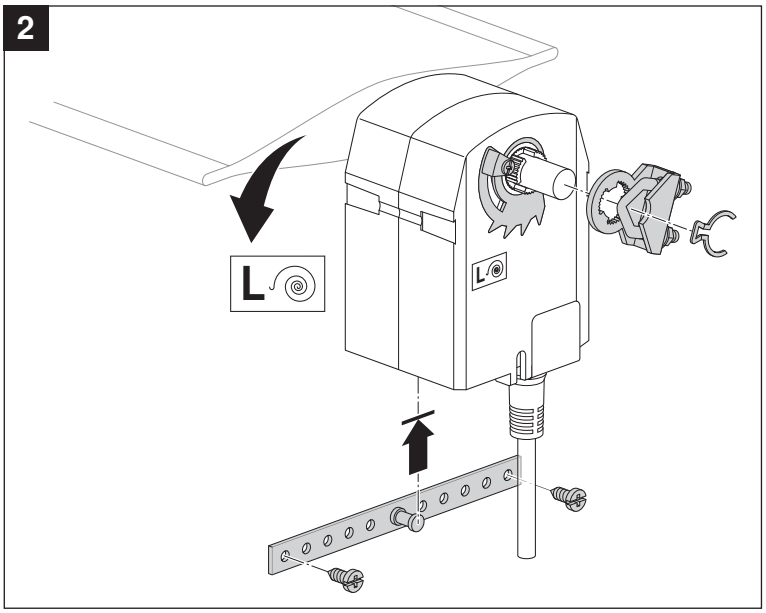

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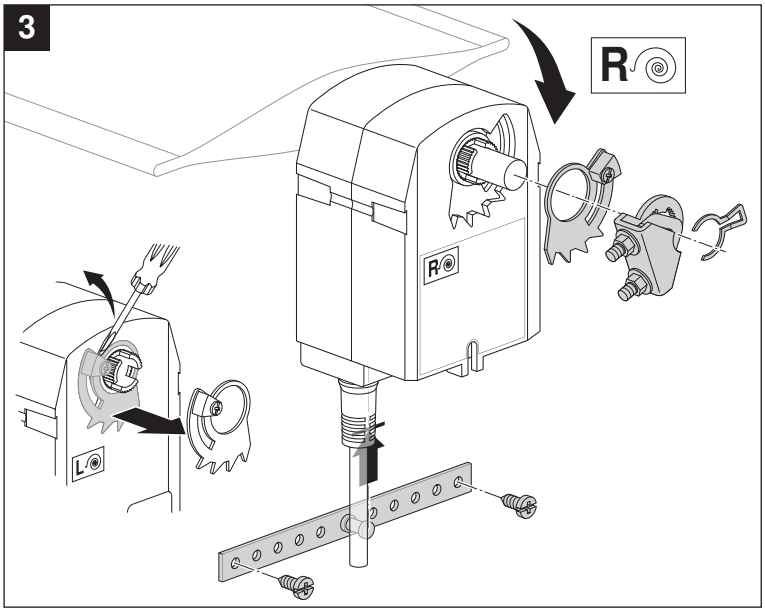

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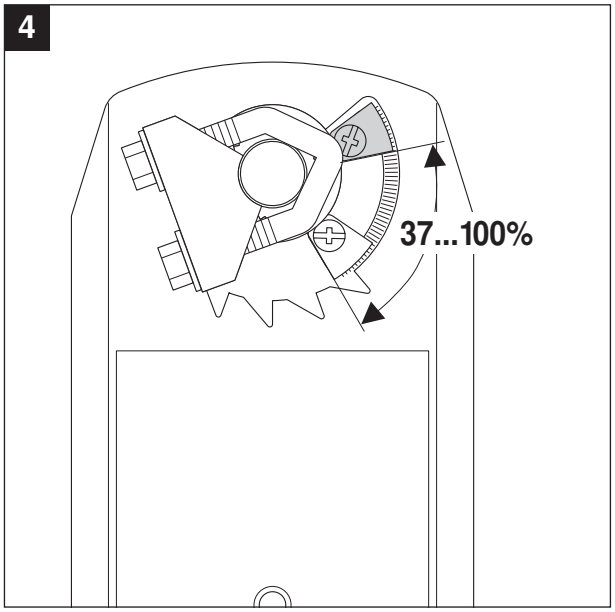

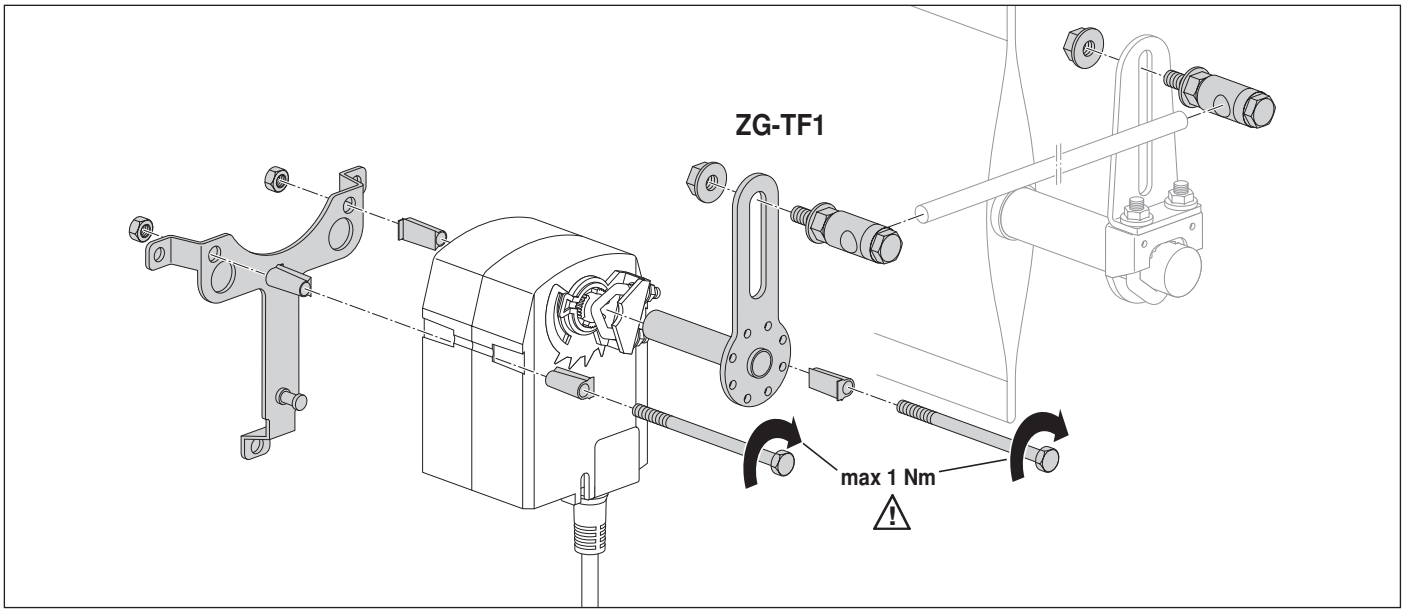

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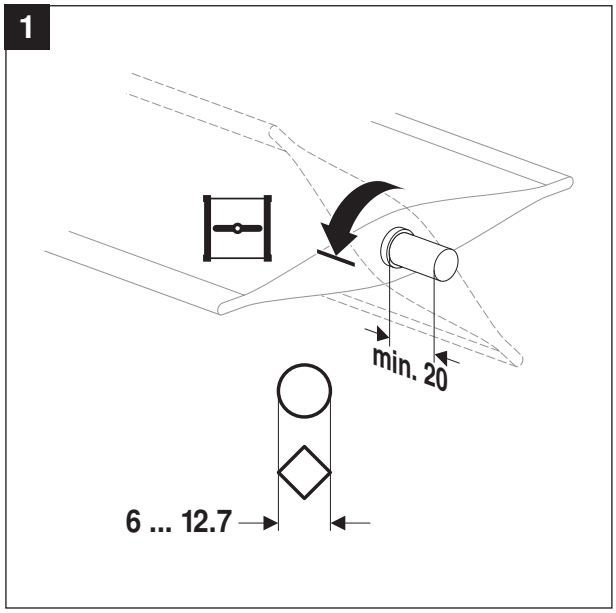
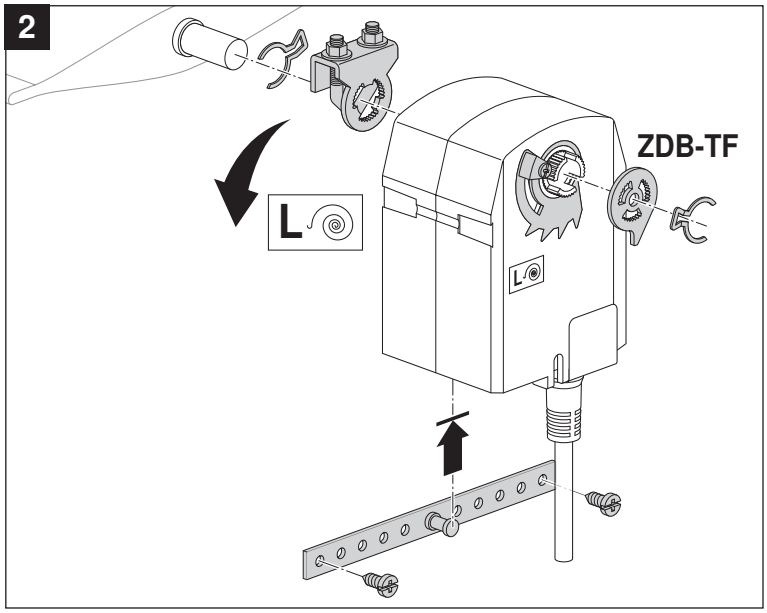
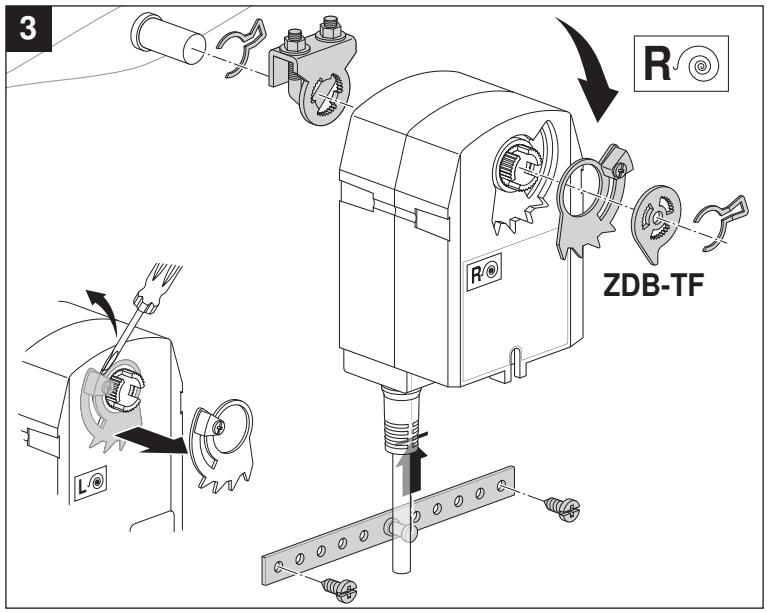
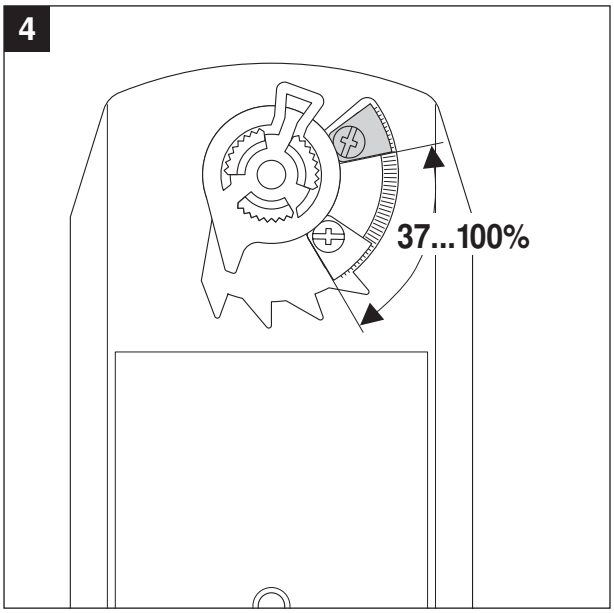
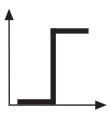


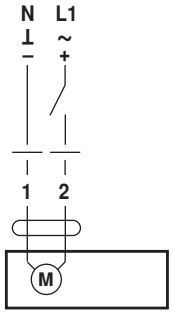




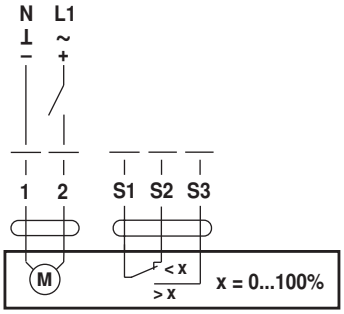




AC 230 V ⚠
AC 24 V / DC 24 V

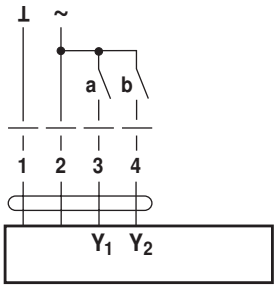


TF230 / TF24

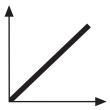


TF230-S / TF24-S

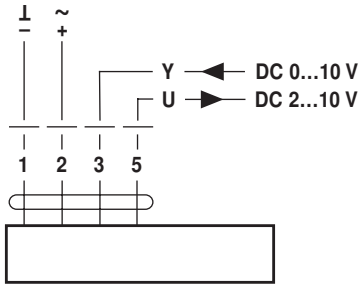
AC 24 V



TF24-3



AC 24 V / DC 24 V



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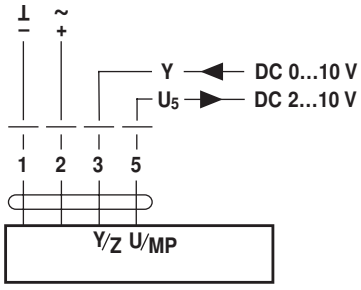

TF24-MFT