

# Mechanical Fail-Safe Damper Actuator TF24



Spring return actuator for the operation of air dampers that perform safety functions (e.g. frost and smoke protection, hygiene, etc.) for building services installations

- Torque 2.5Nm
- Nominal voltage AC/DC 24V
- Control: Open-close

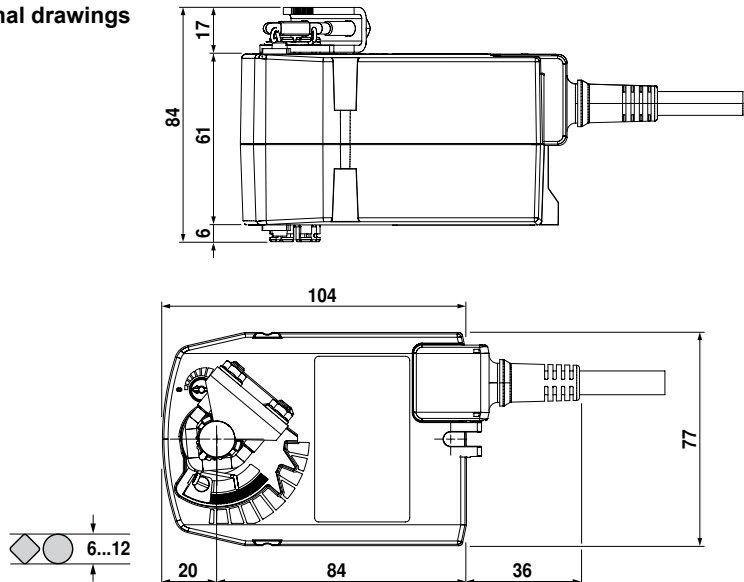


## Technical data

|                            |                       |   |
|----------------------------|-----------------------|---|
| <b>Electrical data</b>     | Nominal voltage       | AC 24V, 50/60Hz<br>DC 24V   |
|                            | Nominal voltage range | AC 19.2...28.8V<br>DC 21.6...28.8V  |
|                            | Power consumption     | In operation 2.5W @ nominal torque<br>At rest 1.5W<br>For wire sizing 5VA                                 |
|                            | Connection            | Cable 1m, 2 x 0.75mm <sup>2</sup>   |
| <b>Functional data</b>     | Torque                | Motor Min. 2.5Nm @ nominal voltage<br>Spring return Min. 2.5Nm  |
|                            | Direction of rotation | Selected by mounting L / R  |
|                            | Angle of rotation     | Max. 95° <math>\swarrow</math> (adjustable 37...100% <math>\swarrow</math> with built-in mechanical stop) |
|                            | Running time          | Motor < 75s (0...2Nm)<br>Spring return < 25s @ -20...50°C / max. 60s @ -30°C                              |
|                            | Sound power level     | Motor Max. 50dB(A)<br>Spring return Approx. 62dB(A)   |
|                            | Service life          | Min. 60,000 operations  |
|                            | Position indication   | Mechanical  |
|                            | <b>Safety</b>         | Protection class  |
| Degree of protection       |                       | IP42 in any mounting position   |
| EMC                        |                       | CE according to 2004/108/EC   |
| Mode of operation          |                       | Type 1.AA (to EN 60730-1)   |
| Overvoltage category       |                       | III   |
| Control pollution degree   |                       | 3   |
| Ambient temperature range  |                       | -30...+50°C   |
| Non-operating temperature  |                       | -40...+80°C   |
| Ambient humidity range     |                       | 95% r.H., non-condensating (EN 60730-1)   |
| Maintenance                |                       | Maintenance-free  |
| <b>Dimensions / Weight</b> | Dimensions            | See «Dimensions»  |
|                            | Weight                | Approx. 0.68kg  |

## Dimensions [mm]

Dimensional drawings



Spring return actuator for the operation of air dampers that perform safety functions (e.g. frost and smoke protection, hygiene, etc.) for building services installations

- Torque 2.5Nm
- Nominal voltage AC/DC 24V
- Control: Open-close
- Integrated auxiliary switch

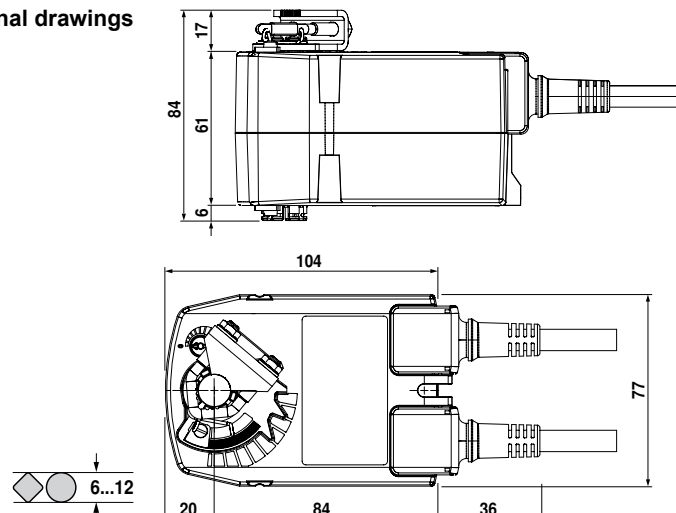


## Technical data

|                            |                           |  |  |
|----------------------------|---------------------------|--|--|
| <b>Electrical data</b>     | Nominal voltage           | AC 24V, 50/60Hz<br>DC 24V  |  |
|                            | Nominal voltage range     | AC 19.2...28.8V<br>DC 21.6...28.8V   |  |
|                            | Power consumption         | In operation 2.5W @ nominal torque<br>At rest 1.5W<br>For wire sizing 5VA                                      |  |
|                            | Auxiliary switch          | 1 x SPDT 3 (0.5) A, AC 250V <input type="checkbox"/><br>(Switching point adjustable 0...100% $\triangleleft$ ) |  |
|                            | Connection                | Motor Cable 1m, 2 x 0.75mm <sup>2</sup><br>Auxiliary switch Cable 1m, 3 x 0.75mm <sup>2</sup>                  |  |
|                            | <b>Functional data</b>    | Torque Motor<br>Spring return  | Min. 2.5Nm @ nominal voltage<br>Min. 2.5Nm |
| Direction of rotation      |                           | Selected by mounting L / R   |  |
| Angle of rotation          |                           | Max. 95° $\triangleleft$ (adjustable 37...100% $\triangleleft$ with built-in mechanical stop)                  |  |
| Running time               |                           | Motor < 75s (0...2Nm)<br>Spring return < 25s @ -20...50°C / max. 60s @ -30°C                                   |  |
| Sound power level          |                           | Motor Max. 50dB(A)<br>Spring return Approx. 62dB(A)  |  |
| Service life               |                           | Min. 60,000 operations   |  |
| Position indication        |                           | Mechanical   |  |
| <b>Safety</b>              |                           | Protection class   | III Safety extra-low voltage               |
|                            |                           | Degree of protection   | IP42 in any mounting position              |
|                            |                           | EMC  | CE according to 2004/108/EC                |
|                            | Low voltage directive     | CE according to 2006/95/EC   |  |
|                            | Mode of operation         | Type 1.AA.B (to EN 60730-1)  |  |
|                            | Overvoltage category      | III  |  |
|                            | Control pollution degree  | 3  |  |
|                            | Ambient temperature range | -30...+50°C  |  |
|                            | Non-operating temperature | -40...+80°C  |  |
|                            | Ambient humidity range    | 95% r.H., non-condensating (EN 60730-1)  |  |
| Maintenance                | Maintenance-free          |  |  |
| <b>Dimensions / Weight</b> | Dimensions                | See «Dimensions»   |  |
|                            | Weight                    | Approx. 0.78kg   |  |

## Dimensions [mm]

### Dimensional drawings



# Mechanical Fail-Safe Damper Actuator TF24-3



Spring return actuator for the operation of air dampers that perform safety functions (e.g. frost and smoke protection, hygiene, etc.) for building services installations

- Torque 2.5Nm
- Nominal voltage AC 24V
- Control: 3-point

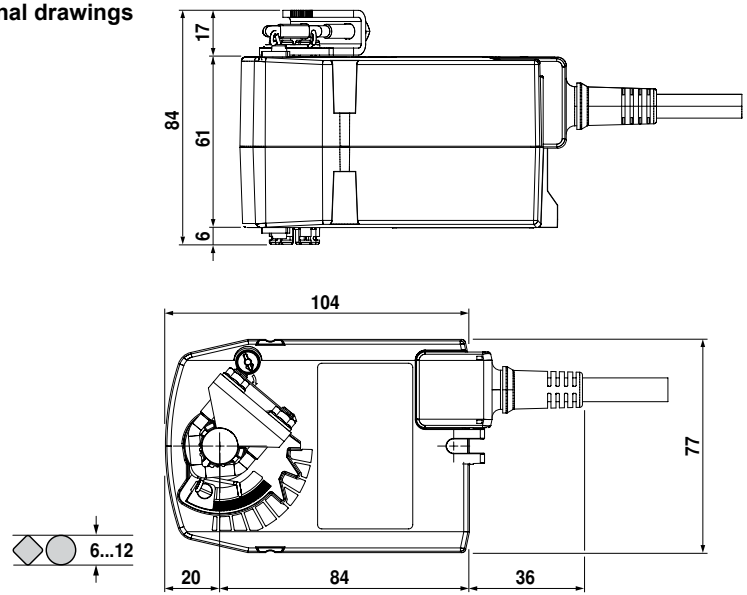


## Technical data

|                            |                           |   |                                       |  |
|----------------------------|---------------------------|---|---------------------------------------|--|
| <b>Electrical data</b>     | Nominal voltage           | AC 24V, 50/60Hz   |                                       |  |
|                            | Nominal voltage range     | AC 19.2...28.8V   |                                       |  |
|                            | Power consumption         | In operation  | 2.5W @ nominal torque                 |  |
|                            |                           | At rest   | 1W                                    |  |
|                            | For wire sizing           | 4VA   |                                       |  |
|                            | Connection                | Cable 1m, 4 x 0.75mm <sup>2</sup>                                 |                                       |  |
| <b>Functional data</b>     | Torque                    | Motor   | Min. 2.5Nm @ nominal voltage          |  |
|                            |                           | Spring return   | Min. 2.5Nm                            |  |
|                            | Direction of rotation     | Motor   | Selectet with switch ↺ bzw. ↻         |  |
|                            |                           | Spring return   | Selected by mounting L / R            |  |
|                            | Angle of rotation         | Max. 95° ↯ (adjustable 37...100% ↯ with built-in mechanical stop) |                                       |  |
|                            | Running time              | Motor   | < 150s (0...2Nm)                      |  |
|                            |                           | Spring return   | < 25s @ -20...50°C / max. 60s @ -30°C |  |
|                            | Sound power level         | Motor   | Max. 35dB(A)                          |  |
|                            |                           | Spring return   | Approx. 62dB(A)                       |  |
|                            | Service life              | Min. 60,000 operations  |                                       |  |
| Position indication        | Mechanical                |   |                                       |  |
| <b>Safety</b>              | Protection class          | III Safety extra-low voltage                                      |                                       |  |
|                            | Degree of protection      | IP42 in any mounting position                                     |                                       |  |
|                            | EMC                       | CE according to 2004/108/EC                                       |                                       |  |
|                            | Mode of operation         | Type 1.AA (to EN 60730-1)   |                                       |  |
|                            | Overvoltage category      | III   |                                       |  |
|                            | Control pollution degree  | 3   |                                       |  |
|                            | Ambient temperature range | -30...+50°C   |                                       |  |
|                            | Non-operating temperature | -40...+80°C   |                                       |  |
|                            | Ambient humidity range    | 95% r.H., non-condensating (EN 60730-1)                           |                                       |  |
|                            | Maintenance               | Maintenance-free  |                                       |  |
| <b>Dimensions / Weight</b> | Dimensions                | See «Dimensions»  |                                       |  |
|                            | Weight                    | Approx. 0.64kg  |                                       |  |

## Dimensions [mm]

Dimensional drawings



Spring return actuator for the operation of air dampers that perform safety functions (e.g. frost and smoke protection, hygiene, etc.) for building services installations

- Torque 2.5Nm
- Nominal voltage AC/DC 24V
- Control: modulating DC (0)2...10V, position feedback DC 2...10V

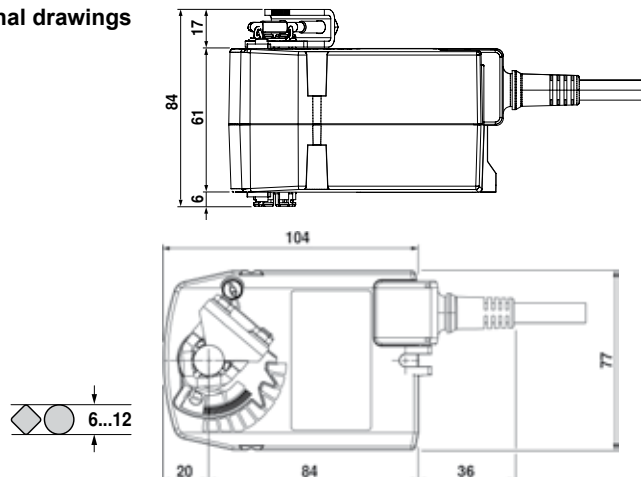


## Technical data

|                            |                                       |                                   |   |
|----------------------------|---------------------------------------|-----------------------------------|---|
| <b>Electrical data</b>     | Nominal voltage                       |                                   | AC 24V, 50/60Hz<br>DC 24V   |
|                            | Nominal voltage range                 |                                   | AC 19.2...28.8V<br>DC 21.6...28.8V                                |
|                            | Power consumption                     | In operation                      | 2.5W @ nominal torque   |
|                            |                                       | At rest                           | 1W  |
| For wire sizing            |                                       | 4VA                               |   |
| Connection                 |                                       | Cable 1m, 4 x 0.75mm <sup>2</sup> |   |
| <b>Functional data</b>     | Torque                                | Motor                             | Min. 2.5Nm @ nominal voltage                                      |
|                            |                                       | Spring return                     | Min. 2.5Nm  |
|                            | Control                               | Control signal Y                  | DC (0)2...10V, typical input impedance 100kΩ                      |
|                            |                                       | Working range                     | DC 2...10V  |
|                            | Position feedback (Measuring voltage) |                                   | DC 2...10V, max. 0.5mA  |
|                            | Direction of rotation                 | Motor                             | Selectet with switch ↻ bzw. ↻                                     |
|                            |                                       | Spring return                     | Selected by mounting L / R  |
|                            | Angle of rotation                     |                                   | Max. 95° ↻ (adjustable 37...100% ↻ with built-in mechanical stop) |
|                            | Running time                          | Motor                             | 150s (0...2Nm)  |
|                            |                                       | Spring return                     | < 25s @ -20...50°C / max. 60s @ -30°C                             |
| Sound power level          | Motor                                 | Max. 35dB(A)                      |   |
|                            | Spring return                         | Approx. 62dB(A)                   |   |
| Service life               |                                       | Min. 60,000 operations            |   |
| Position indication        |                                       | Mechanical                        |   |
| <b>Safety</b>              | Protection class                      |                                   | III Safety extra-low voltage                                      |
|                            | Degree of protection                  |                                   | IP42 in any mounting position                                     |
|                            | EMC                                   |                                   | CE according to 2004/108/EC                                       |
|                            | Mode of operation                     |                                   | Type 1.AA (to EN 60730-1)   |
|                            | Overvoltage category                  |                                   | III   |
|                            | Control pollution degree              |                                   | 3   |
|                            | Ambient temperature range             |                                   | -30...+50°C   |
|                            | Non-operating temperature             |                                   | -40...+80°C   |
|                            | Ambient humidity range                |                                   | 95% r.H., non-condensating (EN 60730-1)                           |
|                            | Maintenance                           |                                   | Maintenance-free  |
| <b>Dimensions / Weight</b> | Dimensions                            |                                   | See «Dimensions»  |
|                            | Weight                                |                                   | Approx. 0.69kg  |

## Dimensions [mm]

### Dimensional drawings



# Mechanical Fail-Safe Damper Actuator TF230



Spring return actuator for the operation of air dampers that perform safety functions (e.g. frost and smoke protection, hygiene, etc.) for building services installations

- Torque 2.5Nm
- Nominal voltage AC 100...240V
- Control: Open-close

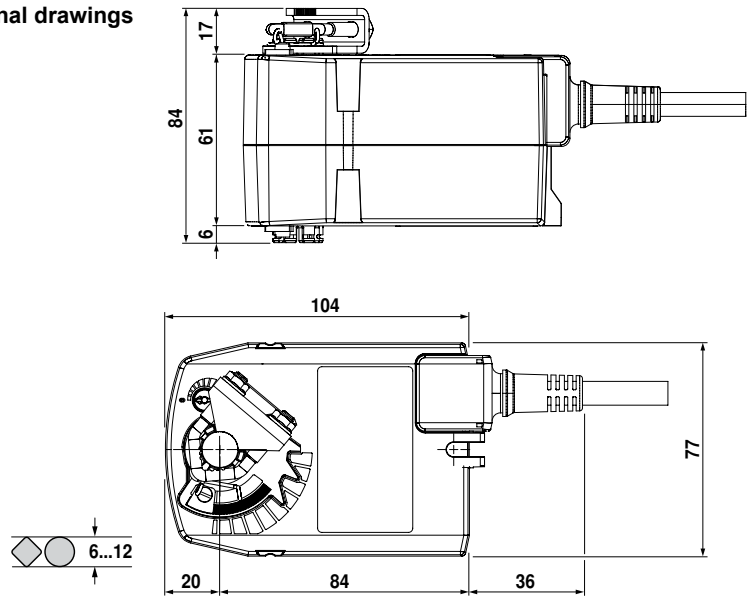


## Technical data

|                            |                           |   |  |  |
|----------------------------|---------------------------|---|--|--|
| <b>Electrical data</b>     | Nominal voltage           | AC 100...240V, 50/60Hz  |  |  |
|                            | Nominal voltage range     | AC 85...265V  |  |  |
|                            | Power consumption         | In operation  | 2.5W @ nominal torque                              |  |
|                            |                           | At rest   | 1.5W   |  |
|                            | For wire sizing           | 5VA   |  |  |
|                            | Connection                | Cable 1m, 2 x 0.75mm <sup>2</sup>   |  |  |
| <b>Functional data</b>     | Torque                    | Motor   | Min. 2.5Nm @ nominal voltage                       |  |
|                            |                           | Spring return   | Min. 2.5Nm   |  |
|                            | Direction of rotation     | Selected by mounting L / R  |  |  |
|                            | Angle of rotation         | Max. 95° <math>\nabla</math> (adjustable 37...100% <math>\nabla</math> with built-in mechanical stop) |  |  |
|                            | Running time              | Motor   | <math>< 75s</math> (0...2Nm)                       |  |
|                            |                           | Spring return   | <math>< 25s</math> @ -20...50°C / max. 60s @ -30°C |  |
|                            | Sound power level         | Motor   | Max. 50dB(A)                                       |  |
|                            |                           | Spring return   | Approx. 62dB(A)                                    |  |
|                            | Service life              | Min. 60,000 operations  |  |  |
|                            | Position indication       | Mechanical  |  |  |
| <b>Safety</b>              | Protection class          | II Totally insulated $\square$  |  |  |
|                            | Degree of protection      | IP42 in any mounting position   |  |  |
|                            | EMC                       | CE according to 2004/108/EC   |  |  |
|                            | Low voltage directive     | CE according to 2006/95/EC  |  |  |
|                            | Mode of operation         | Type 1.AA (to EN 60730-1)   |  |  |
|                            | Overvoltage category      | III   |  |  |
|                            | Control pollution degree  | 3   |  |  |
|                            | Ambient temperature range | -30...+50°C   |  |  |
|                            | Non-operating temperature | -40...+80°C   |  |  |
|                            | Ambient humidity range    | 95% r.H., non-condensating (EN 60730-1)   |  |  |
| Maintenance                | Maintenance-free          |   |  |  |
| <b>Dimensions / Weight</b> | Dimensions                | See «Dimensions»  |  |  |
|                            | Weight                    | Approx. 0.68kg  |  |  |

## Dimensions [mm]

Dimensional drawings



Spring return actuator for the operation of air dampers that perform safety functions (e.g. frost and smoke protection, hygiene, etc.) for building services installations

- Torque 2.5Nm
- Nominal voltage AC 100...240V
- Control: Open-close
- Integrated auxiliary switch

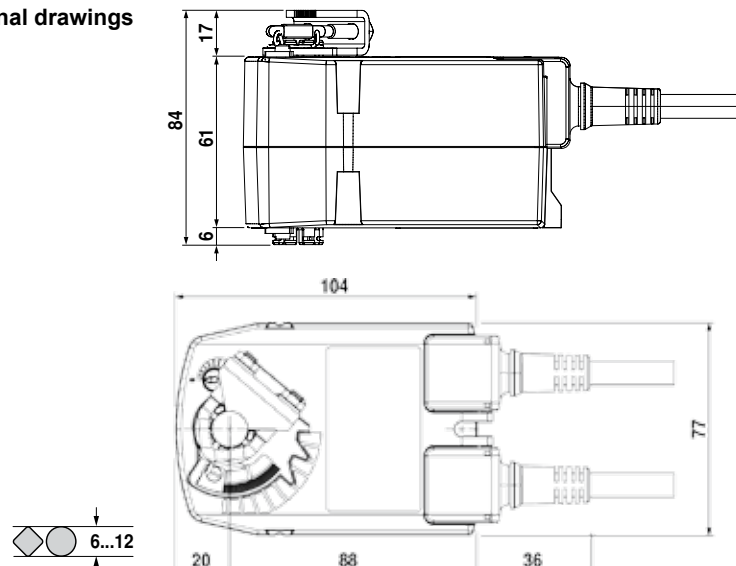


## Technical data

|                            |                           |  |   |
|----------------------------|---------------------------|--|---|
| <b>Electrical data</b>     | Nominal voltage           |  | AC 100...240V, 50/60Hz  |
|                            | Nominal voltage range     |  | AC 85...265V  |
|                            | Power consumption         | In operation   | 2.5W @ nominal torque   |
|                            |                           | At rest  | 1.5W  |
|                            |                           | For wire sizing  | 5VA   |
| Auxiliary switch           |                           | 1 x SPDT 3 (0.5) A, AC 250V <input type="checkbox"/><br>(Switching point adjustable 0...100% <math>\sphericalangle</math>) |   |
| Connection                 | Motor                     | Cable 1m, 2 x 0.75mm <sup>2</sup>  |   |
|                            | Auxiliary switch          | Cable 1m, 3 x 0.75mm <sup>2</sup>  |   |
| <b>Functional data</b>     | Torque                    | Motor  | Min. 2.5Nm @ nominal voltage  |
|                            |                           | Spring return  | Min. 2.5Nm  |
|                            | Direction of rotation     |  | Selected by mounting L / R  |
|                            | Angle of rotation         |  | Max. 95° <math>\sphericalangle</math> (adjustable 37...100% <math>\sphericalangle</math> with built-in mechanical stop) |
|                            | Running time              | Motor  | < 75s (0...2Nm)   |
|                            |                           | Spring return  | < 25s @ -20...50°C / max. 60s @ -30°C   |
|                            | Sound power level         | Motor  | Max. 50dB(A)  |
| Spring return              |                           | Approx. 62dB(A)  |   |
| Service life               |                           | Min. 60,000 operations   |   |
| Position indication        |                           | Mechanical   |   |
| <b>Safety</b>              | Protection class          |  | II Totally insulated <input type="checkbox"/>   |
|                            | Degree of protection      |  | IP42 in any mounting position   |
|                            | EMC                       |  | CE according to 2004/108/EC   |
|                            | Low voltage directive     |  | CE according to 2006/95/EC  |
|                            | Mode of operation         |  | Type 1.AA.B (to EN 60730-1)   |
|                            | Overvoltage category      |  | III   |
|                            | Control pollution degree  |  | 3   |
|                            | Ambient temperature range |  | -30...+50°C   |
|                            | Non-operating temperature |  | -40...+80°C   |
|                            | Ambient humidity range    |  | 95% r.H., non-condensating (EN 60730-1)   |
|                            | Maintenance               |  | Maintenance-free  |
| <b>Dimensions / Weight</b> | Dimensions                |  | See «Dimensions»  |
|                            | Weight                    |  | Approx. 0.79kg  |

## Dimensions [mm]

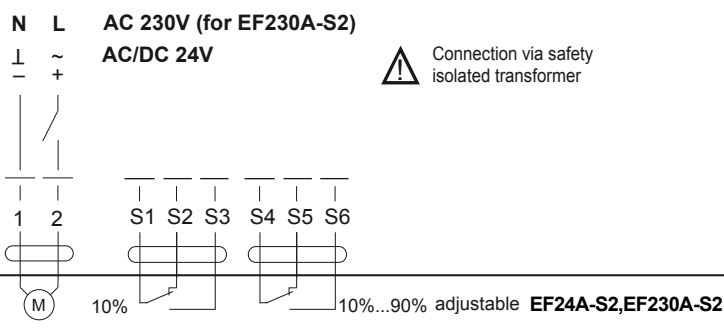
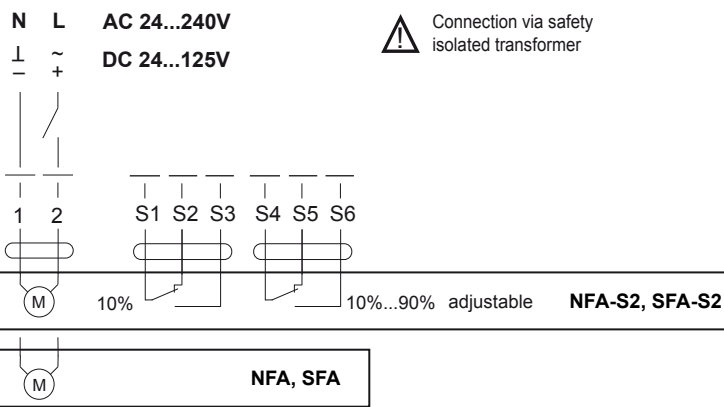
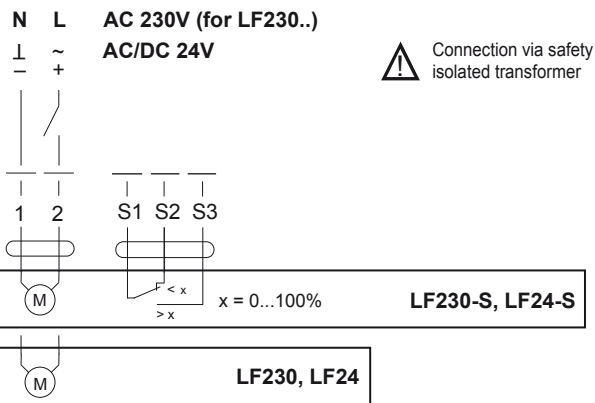
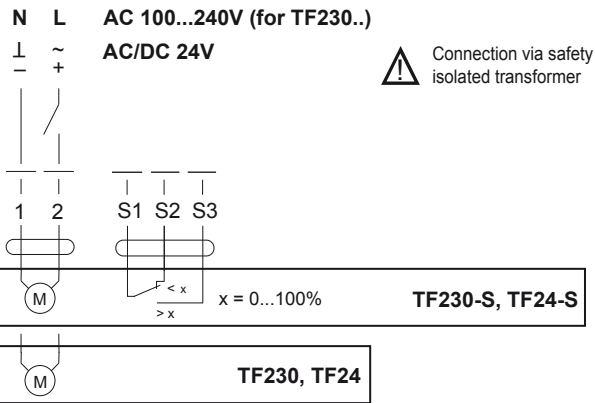
### Dimensional drawings



## Wiring diagrams: Open/Close actuators

**Notes:**

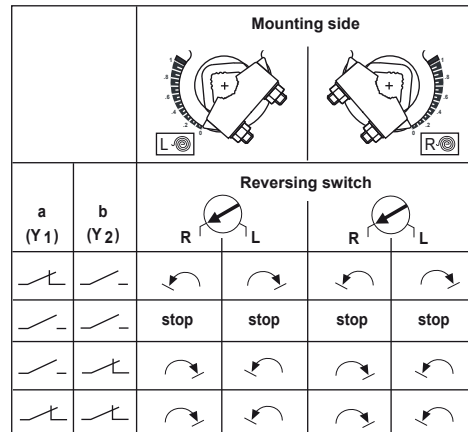
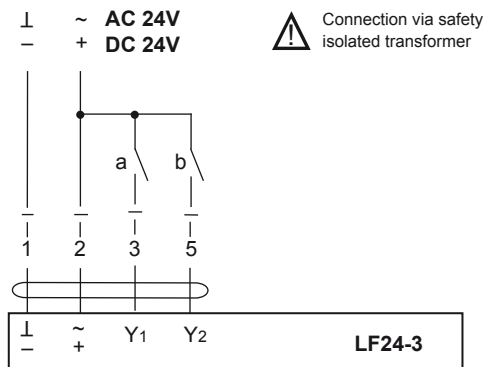
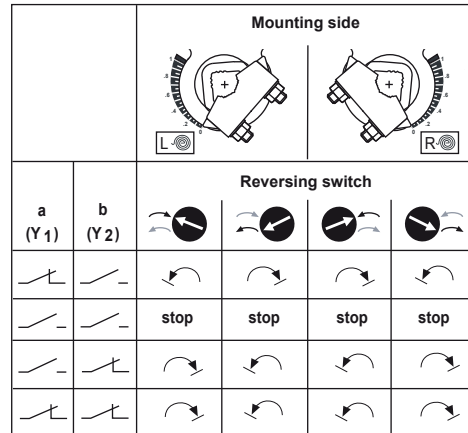
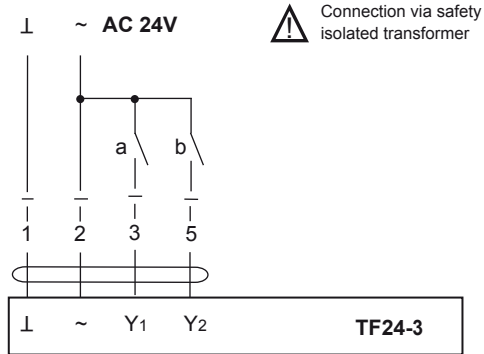
- Parallel connection of several actuators is possible.
- Power consumption must be observed.



## Wiring diagrams: 3-point actuators

**Notes:**

- Connection via safety isolating transformer.
- Parallel connection of several actuators is possible.
- Power consumption must be observed.





## Wiring diagrams: modulating actuators

**Notes:**

- Connection via safety isolating transformer.
- Parallel connection of several actuators is possible.
- Power consumption must be observed.

