



#### Application

Electric actuator for heating, ventilation and air-conditioning systems

#### Special features

The linear actuator is suitable for force-locking attachment to Types 3222, 3222 N, 2488 and 2488 N Valves as well as special versions of Types 3260 and 3226 Valves.

- Motor switched off by torque switches
- Manual override
- Travel indicator
- No maintenance

#### Versions

- Three-step version
  - Synchronous motor with maintenance-free gearing
- Digital positioner
  - Stepper motor with maintenance-free gearing
  - Direction of action reversed by slide switch
  - Start-up at the actuator
  - Settings made using the TROVIS-VIEW software

#### Design and principle of operation

→ See Fig. 2.

The actuator is connected to the valve by a coupling nut (4) which provides a force-locking connection between the actuator stem and the plug stem of the valve.

The control signal from the input side is transferred over the motor and the connected gear to move the actuator stem.

When the actuator stem (3) extends, the valve is closed, opposing the force of the valve spring (7). When the actuator stem retracts, the valve is opened as the plug stem (6) follows the motion of the return spring. The motor is switched off by torque switches when an end position is reached or in case the motor is overloaded.

The valve can be moved to any position in the de-energized state by the handwheel (2).

Travel and direction of action can be read off the travel indicator (5) on the side of the actuator housing.

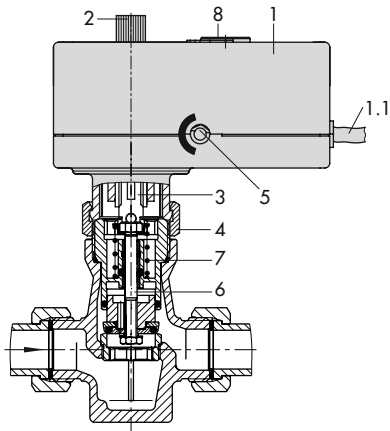


Fig. 1: Type 5857 Electric Actuator

## – Version with digital positioner

The positioner ensures a predetermined assignment of the valve position to the input signal. For position feedback, a 0 to 10 V signal can be picked off at the output.

The version with positioner allows the characteristic to be reversed and is suitable for split-range operation.



- |                      |  |
|----------------------|--|
| 1 Actuator           | 6 Plug stem  |
| 1.1 Connecting cable | 7 Valve spring   |
| 2 Handwheel          | 8 Cover, serial interface, slider switch, pushbutton and LEDs (only for version with digital positioner) |
| 3 Actuator stem      |  |
| 4 Coupling nut       |  |
| 5 Travel indicator   |  |

**Fig. 2:** Design of Type 5857

- Initialization by pressing a button
- Automatic zero calibration after connecting the supply voltage
- Direction of action reversed by slide switch
- Momentary travel calculated from transit time
- Operating status and errors indicated by LEDs
- Adjustable actuating time
- Blockage detection and removal
- Blocking protection
- Adjustable input and output signal ranges
- Configuration, parameterization, diagnostic function and online connection for monitoring using the TROVIS-VIEW software
- Direct data transmission using a connecting cable (direct connection to computer)
- Data transmission over a memory pen

## Settings

The positioner settings can be changed in the TROVIS-VIEW software.

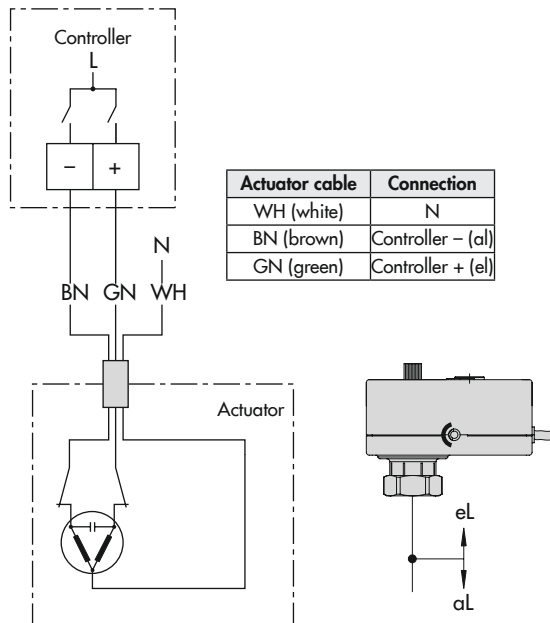
**Table 1:** TROVIS-VIEW settings

Configuration	Default setting	Adjustment range
<b>Input signal</b>		
Lower range value	0.0 V	0.0 to 7.5 V
Upper range value	10.0 V	2.5 to 10.0 V
<b>Position feedback signal</b>		
Lower range value	0.0 V	0.0 to 10.0 V
Upper range value	10.0 V	0.0 to 10.0 V
<b>Functions</b>		
Detect input signal failure	No	Yes/No
Positioning value upon input signal failure	Internal positioning value	Internal positioning value/last travel value
Internal positioning value	0.0 %	0.0 to 100.0 %
Value below limit (end position guiding)	1.0 %	0.0 to 49.9 %
Value above limit (end position guiding)	99.0 %	50.0 to 100.0 %
<b>Blockage</b>		
Blockage detection	No	Yes/No
Blockage removal	No	Yes/No
Indicate blockage	No	Yes/No
Blocking protection	No	Yes/No
<b>Travel</b>		
Limited travel range	100 %	30.0 to 130.0 %
Travel adjustment	Absolute	Absolute/Relative
Speed	Standard	Slow/Standard/Fast
Dead band (switching range)	2.0 %	0.5 to 5.0 %
<b>Characteristic</b>		
Characteristic type	Linear	Linear/Equal percentage/Reverse equal percentage/User-defined

## Electrical connection

### Connecting cable with wire-end ferrules

Three-step version



Version with positioner

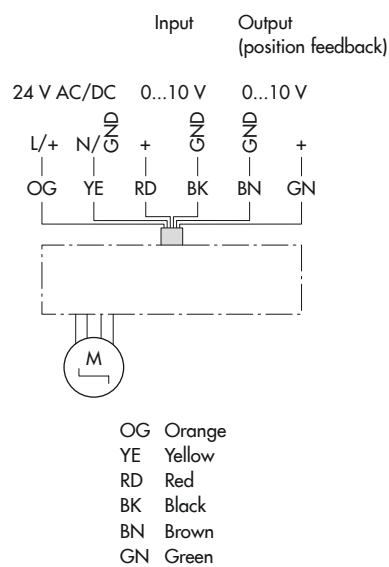


Fig. 3: Electrical connection

## Technical data

Type 5857 Actuator	Version	Three-step	With digital positioner
Connection to valve		Force-locking	
Rated travel		6 mm	
Transit time for rated travel		20 s	30/20 <sup>1)</sup> /10 s
Thrust		300 N	
Supply voltage		230 V (±10 %), 50 Hz 24 V (±10 %), 50 Hz	24 V (±10 %), 50 Hz, 60 Hz and DC <sup>2)</sup>
Power consumption		Approx. 3 VA	5 VA
Manual override		Yes	
Permissible temperature ranges			
Ambient		0 to 50 °C	
Storage		-20 to +70 °C	
Process medium <sup>3)</sup>		0 to 120 °C	
Degree of protection		IP 42 according to EN 60529	
Class of protection		II according to EN 61140	
Device safety		According to EN 61010-1	
Noise immunity		According to EN 61000-6-2 and EN 61326-1	
Noise emission		According to EN 61000-6-3 and EN 61326-1	
Conformity		<b>CE EAC</b>	
Weight		Approx. 0.7 kg	
<b>Digital positioner</b>		-	
Input signal			0 bis 10 V <sup>1)</sup> , R <sub>i</sub> = 20 kΩ
Position feedback			0 bis 10 V <sup>1)</sup> , R <sub>b</sub> = 1 kΩ
Characteristic			Linear <sup>1)</sup> , equal percentage, reverse equal percentage, user-defined

1) Default setting

2) For 'Transit time for rated travel' setting = 10 s, the following applies: 24 V DC (0 %, +10 %).

3) The permissible medium temperature depends on the valve on which the electric actuator is mounted. The limits in the valve documentation apply.

## Dimensions

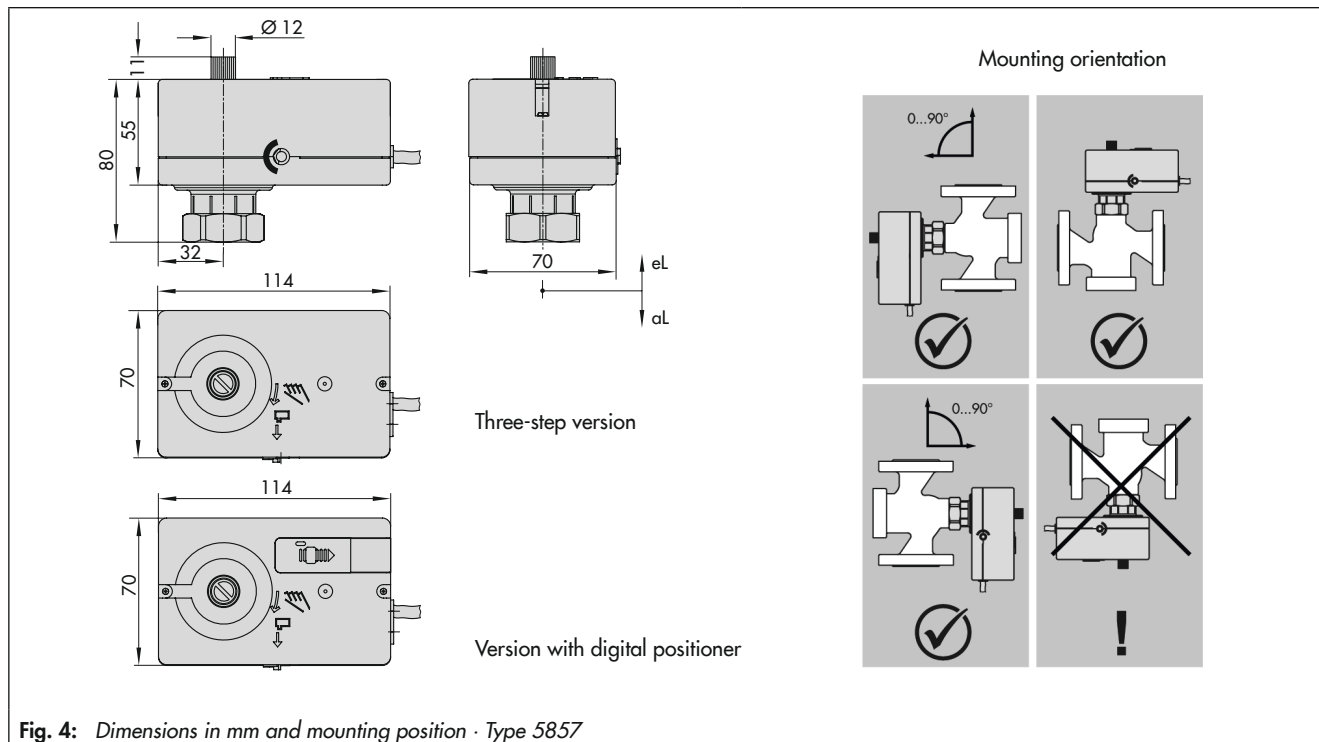


Fig. 4: Dimensions in mm and mounting position · Type 5857

## Accessories

<b>For version with digital positioner</b>	<b>Order no.</b>
Hardware package consisting of: <ul style="list-style-type: none"><li>- Memory pen-64</li><li>- Connecting cable</li><li>- Modular adapter</li></ul>	1400-9998
Memory pen-64	1400-9753
Connecting cable RJ-12/D-sub, 9 pin	1400-7699
Modular adapter D-sub 9-pin/RJ-12 for memory pen	1400-7698
USB to RS232 adapter	8812-2001
<b>Software</b>	
TROVIS-VIEW (free of charge)	<a href="http://www.samsongroup.com">▶ www.samsongroup.com</a> > SERVICE & SUPPORT > Downloads > TROVIS-VIEW

## Ordering text

Type 5857 Electric Actuator

Three-step version:

230 V, 50 Hz/24 V, 50 Hz

Version with digital positioner:

24 V, 50 Hz, 60 Hz and DC

## Associated Mounting and Operating Instructions

– Type 5857

▶ **EB 5857**