

## Application

Electric actuator for plant engineering and HVAC



The actuator is a linear actuator with or without fail-safe action available either in a version with a three-step signal or in a version with digital positioner. It can be combined with SAMSON Series V2001 and Series 240 Valves as well as Type 3260 and Type 3214 Valves.

### Special features

- Actuator optionally available with either integrated yoke or using an M30 x 1.5 ring nut including the necessary stem connector parts
- Actuator with fail-action "actuator stem extends" tested by the German Technical Inspectorate (TÜV) according to DIN EN 14597 in combination with various SAMSON valves
- Motor switched off by torque-dependent limit switches
- Manual override <sup>1)</sup>
- Thrusts up to 2.5 kN

### Three-step version

- Power supply:  
230 V/24 V with 50/60 Hz or  
120 V/60 Hz
- Synchronous motor with maintenance-free planetary gear
- Additional electrical equipment:
  - Mechanical limit contacts
  - Resistance transmitters

### Version with digital positioner

- Power supply:  
24 V with 47 to 63 Hz and DC  
85 to 264 V with 47 to 63 Hz
- Stepper motor with maintenance-free planetary gear
- All function settings performed using a rotary pushbutton on the actuator
- Backlit LCD
- Additional electrical equipment:
  - Mechanical limit contacts
  - Electronic limit contacts

- Settings performed in TROVIS-VIEW

<sup>1)</sup> Not for actuators with positioner and fail-safe action



**Fig. 1:** Type 3374 Electric Actuator with integrated yoke, mounted on a V2001 Globe Valve

## Principle of operation

The electric actuator consists of a reversible motor and a maintenance-free planetary gear with ball screw. The motor is switched off by torque-dependent limit switches or in case of overload.

Actuators with an integrated yoke (Fig. 3a) are primarily combined with the following valves:

- V2001
- Type 3260 in DN 65 to 150
- Type 3214 in DN 65 to 100
- Type 3214 balanced by a diaphragm, DN 125 to 250

Actuators with central attachment are primarily combined with valves that have their own yoke:

- Series 240 (Fig. 3b)
- Type 3214 balanced by a bellows, DN 125 to 250 (Fig. 3c)

## Fail-safe action

The Type 3374 Electric Actuator is available optionally with fail-safe action:

**Actuator stem extends:** Upon power supply failure, the actuator stem extends

**Actuator stem retracts:** Upon power supply failure, the actuator stem retracts

## Additional electrical equipment

### • Mechanical limit contacts

The mechanical limit contacts can be adjusted independently from one another. They are actuated by continuously adjustable cam disks.

### • Electronic limit contacts

The electronic limit contacts consist of a relay with change-over contacts. In contrast to the mechanical limit contacts, the electronic limit contacts no longer function after a power supply failure. The relays are de-energized and the contacts are in the idle state.

### • Resistance transmitters

The resistance transmitter is linked to the gear and produces a resistance signal between approx. 0 and 1000  $\Omega$  (useable range 0 to 800  $\Omega$ ) proportional to the valve travel.

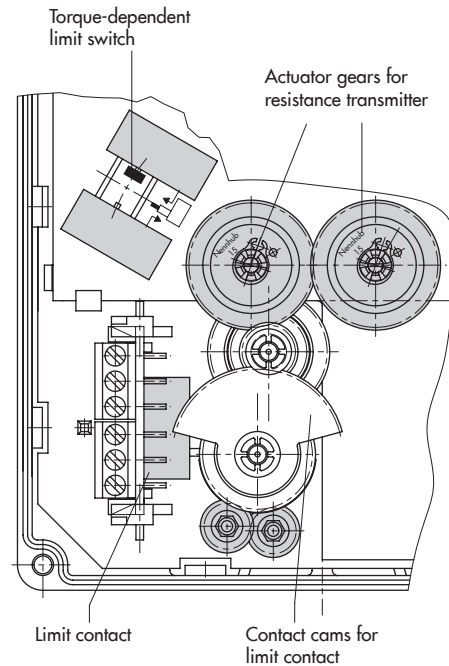
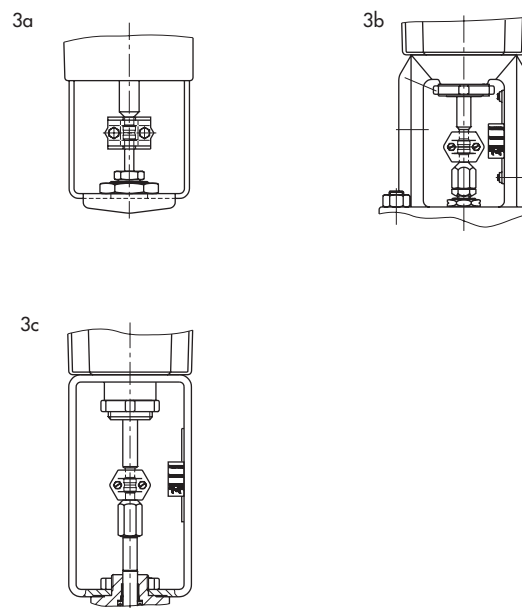


Fig. 2: Partial view with opened cover



With integrated yoke for

3a · Series V2001, Type 3260 (DN 65 to 150)  
Type 3214 (DN 65 to 100)

With central attachment for

3b · Series 240

3c · Type 3214 (DN 125 to 250)

Series 240 (Type 3241 and Type 3244)

Fig. 3: Attachment to various valves

## 1. Three-step version

**Table 1:** Technical data

Actuator	Type 3374	-10	-11	-15	-21	-26	-31	-36
Version with		Yoke		Ring nut	Yoke	Ring nut	Yoke	Ring nut
Fail-safe action		Without			Stem extends		Stem retracts	
Rated travel	mm	30	15	30	15			
Transit time for rated travel								
Standard	s	240	120	240	120			
Fast	s	120	60	120	60			
Upon fail-safe action	s	-			12			
Stroking speed								
Standard	mm/s	0.125						
Fast	mm/s	0.25						
Upon fail-safe action	mm/s	-			1.25			
Thrust	Stem retracts	2.5 kN			0.5 kN			
	Stem extends	2.5 kN			2 kN			
Power supply		230 V, +10/-15 %, 50 Hz, 230 V, +10/-15 %, 60 Hz, 24 V, +10/-15 %, 50 Hz, 24 V, +10/-15 %, 60 Hz, 120 V (90 to 132 V), 60 Hz						
Power consumption	VA	7.5/13 <sup>2)</sup>			10.5/16 <sup>2)</sup>			
Motor switch-off		Torque-dependent						
Permissible temperatures <sup>3)</sup>								
Ambient		5 to 60 °C						
Storage		-25 to +70 °C						
Degree of protection		IP 54 acc. to EN 60529, (IP 65 with three cable glands <sup>1)</sup> ) Suspended mounting position not approved						
Overvoltage category		II according to EN 60664						
Design and testing		According to EN 61010						
Class of protection		II according to EN 61140						
Noise immunity		According to EN 61000-6-2, EN 61326						
Noise emission		According to EN 61000-6-3, EN 61326						
Manual override		Hex wrench · Adjustment not possible after fail-safe action has been triggered						
Weight	kg (approx.)	3.2	3.3	3.9	4.0	3.5	3.6	
Materials		Housing and cover: Plastic (glass-fiber reinforced PPO)						
<b>Additional electrical equipment</b>								
Limit contacts		Two travel-dependent, adjustable changeover switches, perm. load 250 V AC, 1 A						
Resistance transmitter		0 to 1000 Ω, (0 to 900 Ω at rated travel) max. permissible current 1 mA						

<sup>1)</sup> Cable glands M20 x 1.5 with metal nut SW 23/24

<sup>2)</sup> Actuator with faster motor

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

## 2. Version with digital positioner

**Table 2: Technical data · Actuator without fail-safe action**


Actuator	Type 3374	-10	-11	-15	
Type of connection		With yoke		With ring nut	
Travel	mm	30	15	30	
Travel stop		Between 10 and 100 % of the rated travel			
Electrical connection					
Power supply		24 V AC ± 15 %, 47 to 63 Hz · 24 V DC ± 15 % · 85 to 264 V AC, 47 to 63 Hz			
Power consumption					
24 V	AC	8 to 20 VA			
	DC	8 to 13.5 W			
85 to 264 V	AC	13 to 25 VA			
Possible fuse protection		Melting integral of upstream fuse: $I^2t_s \geq 12 \text{ A}^2\text{s}$			
Transit time in s · Stroking speed in mm/s					
Standard		120 · 0.25	60 · 0.25	120 · 0.25	240 · 0.125
Fast		60 · 0.5	30 · 0.5	60 · 0.5	120 · 0.25
Thrust in kN					
Stem extends		2.5	2.5	2.5	5 <sup>1)</sup>
Stem retracts		2.5	2.5	2.5	5 <sup>1)</sup>
Manual override		Electric or using 4 mm hex wrench			
Weight					
kg (approx.)		3.5	3.5	3.6	

**Table 3: Technical data · Actuator with fail-safe action**

Actuator	Type 3374	-21	-26	-31	-36
Type of connection		With yoke	With ring nut	With yoke	With ring nut
Fail-safe action		Stem extends		Stem retracts	
Travel	mm	15		15	
Travel stop		Between 10 and 100 % of the rated travel			
Electrical connection					
Power supply		24 V AC ± 15 %, 47 to 63 Hz · 24 V DC ± 15 % · 85 to 264 V AC, 47 to 63 Hz			
Power consumption					
24 V	AC	10 to 22 VA			
	DC	10 to 15 W			
85 to 264 V	AC	16 to 28 VA			
Possible fuse protection		Melting integral of upstream fuse: $I^2t_s \geq 12 \text{ A}^2\text{s}$			
Transit time in s · Stroking speed in mm/s					
Standard		60 · 0.25	60 · 0.25	60 · 0.25	60 · 0.25
Fast		30 · 0.5	30 · 0.5	30 · 0.5	30 · 0.5
Upon fail-safe action		12 · 1.25	12 · 1.25	12 · 1.25	12 · 1.25
Thrusts in kN					
Thrust (stem extends)		2	2	2	2
Thrust (stem retracts)		0.5	0.5	0.5	0.5
Nominal thrust of safety spring		2	2	0.5	0.5
Manual override		-			
Weight					
kg (approx.)		4.2	4.3	3.8	3.9

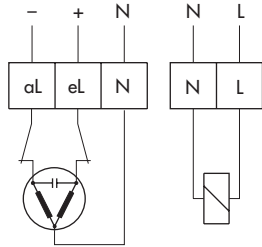
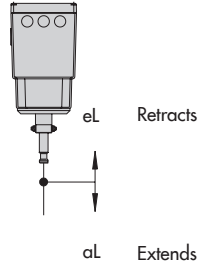
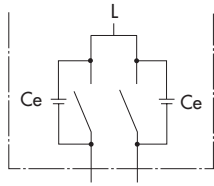
<sup>1)</sup> In preparation

**Table 4: Common technical data**

<b>Type 3374-xx Actuator</b>		
Input signal	Voltage input	0/2 to 10 V, adjustable · $R_i = 20 \text{ k}\Omega$
	Current input	0/4 to 20 mA, adjustable · $R_i = 50 \Omega$
<i>Note: Only one of the two inputs may be connected.</i>		
Position feedback	Voltage	0/2 to 10 V, adjustable · Error message 12 V
	Resolution	1000 steps or 0.01 V
	Load	Minimum 5 k $\Omega$
	Current	0/4 to 20 mA, adjustable · Error message 24 mA
	Resolution	1000 steps or 0.02 mA
	Load	Max. 200 $\Omega$
Binary input		Not galvanically isolated · Polarity configurable
Binary output	Normal polarity	Floating · Galvanically isolated · Max. 24 V DC/50 mA · No short-circuit protection · Polarity configurable
Control modes	Positioner	The travel follows the input variable
	PID controller	Simple fixed set point control
	On/off mode	On/off behavior, control over binary input
LCD		Icons for functions and codes · With backlight
Rotary pushbutton		Operating control for on-site operation to select and confirm codes and values
Interfaces	Standard	RS-232 · For point-to-point connection to communication participants or for memory pen Permanently installed · Connection: RJ-12 connector socket at the front
Motor switch-off		By torque-dependent limit switches
Permissible temperatures <sup>1)</sup>		
Ambient		5 to 60 °C
Storage		-25 to 70 °C
Ambient conditions		5 to 95 % relative humidity, no dew formation
Degree of protection acc. to EN 60529		IP 54 with cable entries · IP 65 with cable glands Suspended mounting position not approved according to EN 60664
Class of protection		II according to EN 61140
Degree of contamination		2 according to EN 61010
Overvoltage category		II according to EN 61010
Noise immunity		According to EN 61000-6-2
Noise emission		According to EN 61000-6-3
Mechanical environmental conditions		Class 1M2 according to EN 60721-3-1:1998
		Class 2M1 according to EN 60721-3-2:1998
		Class 3M4 according to EN 60721-3-3:1998
		Class 4M4 according to EN 60721-3-4:1998
Compliance		
<b>Materials</b>		
Housing and cover		Plastic (glass-fiber reinforced PPO)
Actuator stem		1.4104
<b>Additional electrical equipment</b>		
Limit contacts	Mechanical	Two adjustable limit contacts with changeover contacts; 250 V AC, 1 A; without contact protection
	Electronic	Two adjustable limit contacts with relay and changeover contacts; 250 V AC, 1 A ; without contact protection

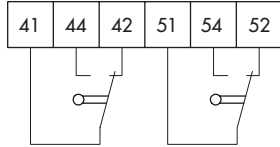
<sup>1)</sup> The permissible medium temperature depends on the valve on which the electric actuator is mounted. The limits in the valve documentation apply.

Electrical connection · Three-step version

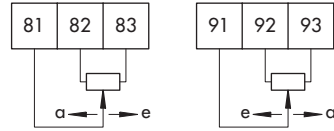


Magnet in version with fail-safe action

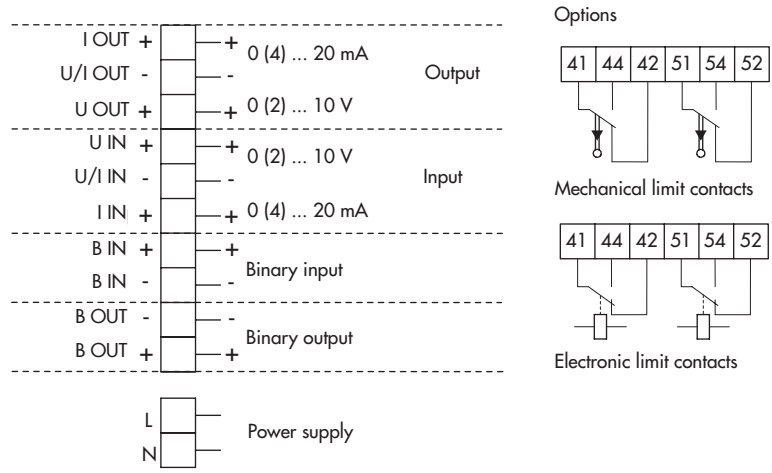
Limit contacts (optional)



Resistance transmitters (optional)

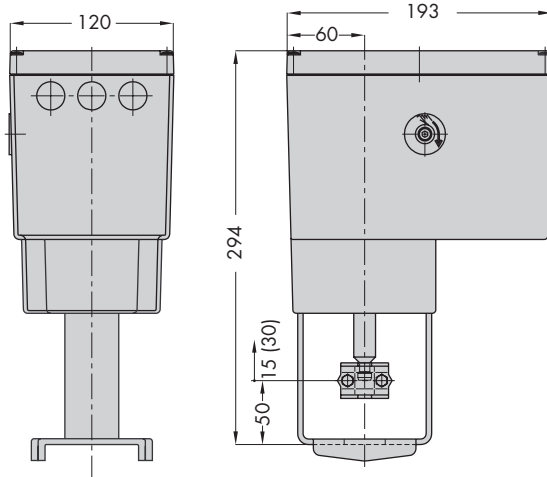


Electrical connection · Version with digital positioner

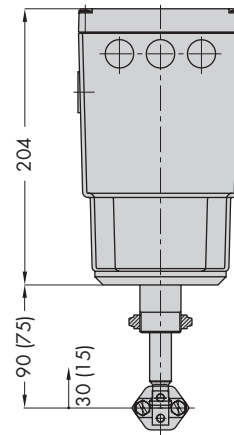


## Dimensions

Type 3374-10/-11/-21/-31



-15/-26/-36



### Ordering text · Three-step version

Electric actuator	Type 3374- ...
Rated travel	15/30 mm
Version with fail-safe action	Actuator stem extends or retracts only with 15 mm travel
Power supply	230 V/50 or 60 Hz, 24 V/50 or 60 Hz or 120 V/60 Hz

Additional electrical equipment

Two mechanical limit contacts

Two resistance transmitters 0 to 1000 Ω

### Ordering text · Version with digital positioner

Electric actuator	Type 3374- ...
Rated travel	15/30 mm
Version with fail-safe action	With/without
Power supply	24 V, 50/60 Hz and DC 85 to 264 V, 50/60 Hz

Additional electrical equipment

Two limit contacts Mechanic/electronic

Specifications subject to change without notice



SAMSON AG · MESS- UND REGELTECHNIK  
Weismüllerstraße 3 · 60314 Frankfurt am Main, Germany  
Phone: +49 69 4009-0 · Fax: +49 69 4009-1507  
samson@samson.de · www.samson.de

**T 8331 EN**

2016-01-25 · English