



#### Application

Electric actuator for plant engineering and HVAC

#### Special features

The actuator is a linear actuator, which can be combined with Series V2001 and 240 as well as Types 3260 and 3214 Valves.

- Construction with integrated yoke (Fig. 1) or using an M30 x 1.5 ring nut (Fig. 2) including the necessary stem connecting parts
- Available with or without fail-safe action
- 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 contacts
- Mechanical override <sup>1)</sup>
- No maintenance

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

#### Versions

- Three-step version
  - Synchronous motor with maintenance-free planetary gear
- Version with positioner
  - Stepper motor with maintenance-free planetary gear
  - All function settings performed using a rotary pushbutton on the actuator
  - Settings made using the TROVIS-VIEW software



**Fig. 1:** Type 3374-11 Electric Actuator, construction with integrated yoke (form B)



**Fig. 2:** Type 3374-15 Electric Actuator, construction for attachment using ring nut (form A)

## Options

- Limit contacts
  - Mechanical
  - Over a relay (version with positioner only)
- Resistance transmitters
  - Two resistance transmitters with resistance range of from 0 to 1000  $\Omega$
- Special version with three-key operation
  - The actuator with positioner is not operated using the rotary pushbutton. Instead, keys on the cover are used for operation.
  - This actuator version can be operated without having to remove the housing cover.
- Communication
  - RS-485 module for Modbus RTU communication (actuator versions with positioner)

## Design and principle of operation

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

The Type 3374 Actuator with 15 mm travel is available with or without fail-safe action:

- **Fail-safe action "actuator stem extends":**  
Upon supply voltage failure, the actuator stem extends.
- **Fail-safe action "actuator stem retracts":**  
Upon supply voltage failure, the actuator stem retracts.
- **Limit contacts**
  - **Mechanical limit contacts**  
Two 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 relays with changeover 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 change to the idle state.
- **Resistance transmitters**  
The resistance transmitter is linked to the gear and produces a resistance signal between approx. 0 and 1000  $\Omega$  (usable range 0 to 800  $\Omega$ ) proportional to the valve travel.

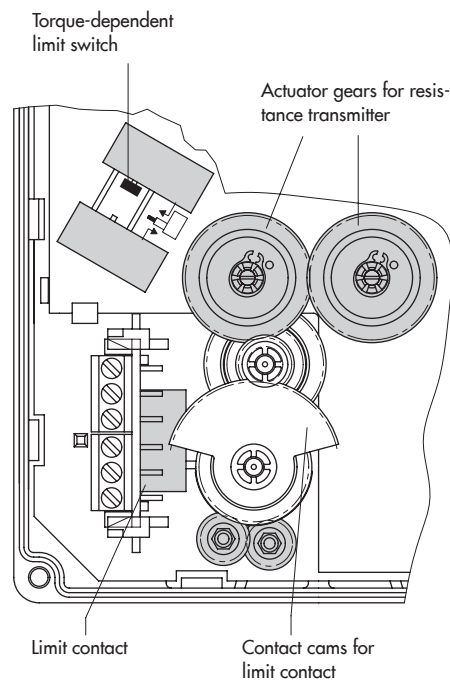


Fig. 3: Partial view with opened cover

## Mounting

Actuators with an integrated yoke (Fig. 5a) are primarily combined with the following valves:

- Series 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

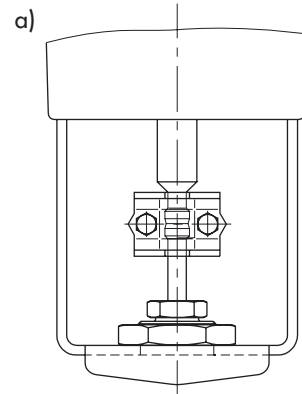
Actuators with central attachment are primarily combined with valves that have their own yoke:

- Series 240 (Fig. 5b)
- Type 3214 balanced by a bellows, DN 125 to 250 (Fig. 5c)

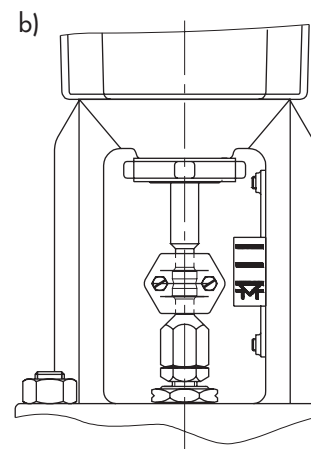


**Fig. 4:** For example, Type 3374-21 Electric Actuator, mounted on a Series V2001 Globe Valve

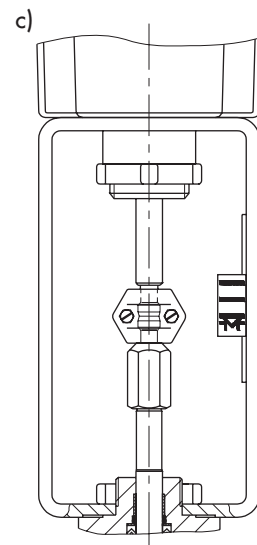
- a) **With integrated yoke**
- Series V2001 Valve
  - Type 3260 Valve, DN 65 to 150



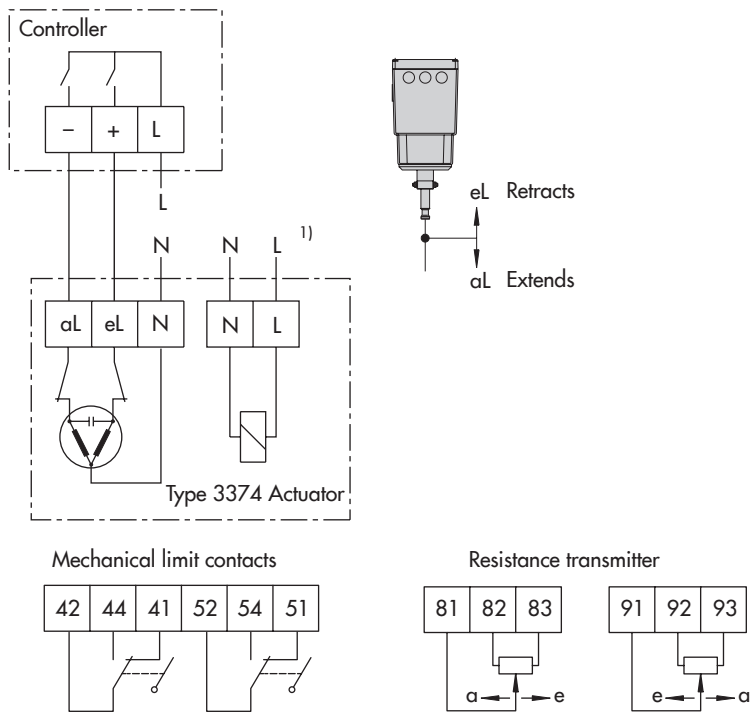
- b) **With central attachment**
- Series 240 Valve



- c) **With central attachment**
- Type 3214 Valve, DN 125 to 250
  - Series 240 Valve



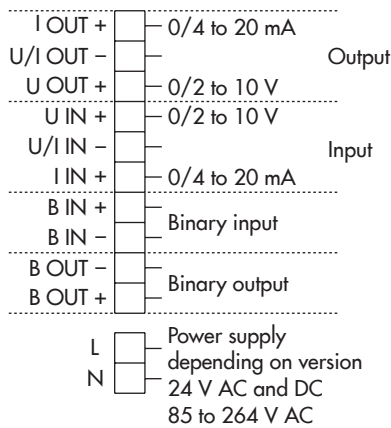
**Fig. 5:** Attachment to various valves



1) L and N terminal for solenoid (actuator with fail-safe action only)

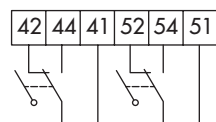
Fig. 6: Electrical connection · Three-step version

For actuators with firmware version 2.xx (revision 2)

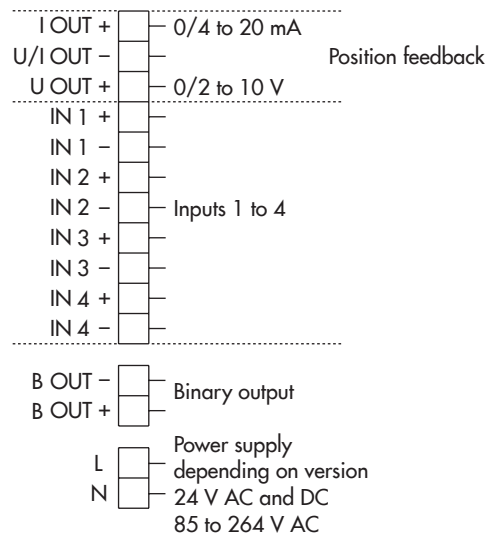


Options:

Mechanical limit contacts



For actuators with firmware version 3.xx (revision 3)

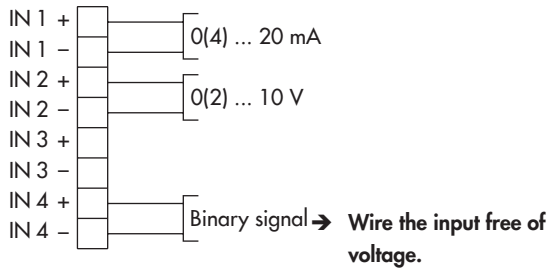


Electronic limit contacts

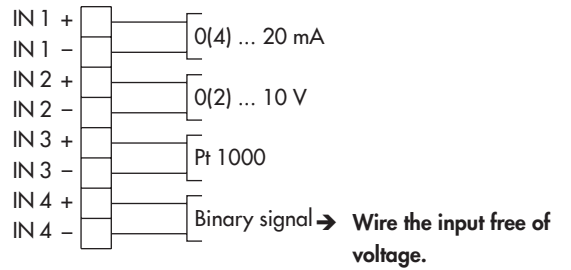


Fig. 7: Electrical connection · Version with digital positioner

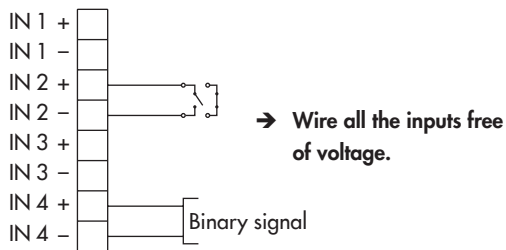
**Application: Positioner (POSI)**



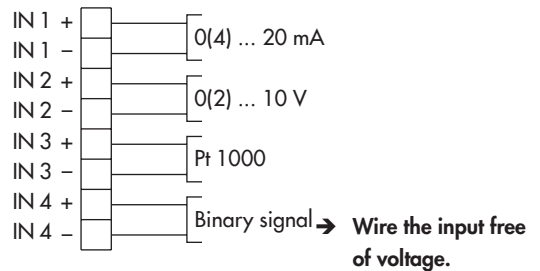
**Application: PID controller (PID)**



**Application: Two-step mode (2STP)**



**Application: Temperature closed-loop control upon input signal failure (POSF)**



**Application: Three-step mode (3STP)**

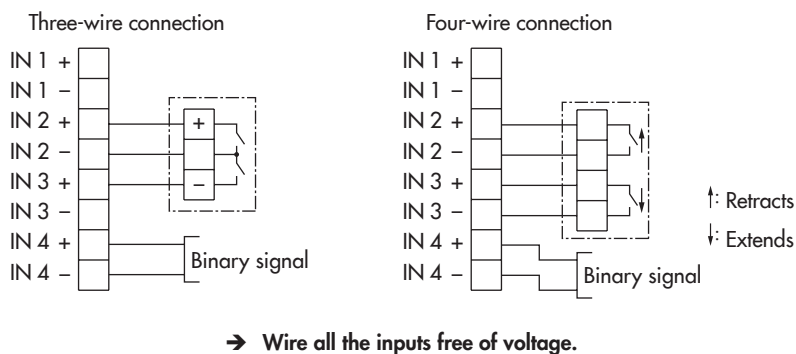


Fig. 8: Terminal assignment depending on the application selected

## Technical data

**Table 1:** Technical data for *three-step version*

Type 3374		-10	-11	-15	-21	-26	-31	-36
Version with		Yoke		Ring nut	Yoke	Ring nut	Yoke	Ring nut
Fail-safe action		Without			Extends		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			
In the event of fail-safe action	s	-			12			
Stroking speed								
Standard	mm/s	0.125						
Fast	mm/s	0.25						
In the event of fail-safe action	mm/s	-			1.25			
Thrust	Retracts	2.5 kN			0.5 kN			
	Extends	2.5 kN			2 kN			
Supply voltage		230 V (+10/-15 %), 50 Hz 230 V (+10/-15 %), 60 Hz 24 V (+10/-15 %), 50 Hz 24 V (+10/-15 %), 60 Hz						
Duty type		S1 - 100 % according to EN 60034-1						
Power consumption	VA	7.5/13 <sup>1)</sup>			10.5/16 <sup>1)</sup>			
Motor switch-off		Torque dependent						
Degree of protection		IP 54 according to EN 60529, IP 65 with cable glands (can be retrofitted) <sup>2)</sup> Suspended mounting not permitted						
Overvoltage category		II according to EN 60664						
Design and testing		According to EN 61010-1						
Class of protection		II according to EN 61140						
Noise immunity		According to EN 61000-6-2 and EN 61326-1						
Noise emission		According to EN 61000-6-3 and EN 61326-1						
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)						
Conformity		<b>CE · EAC</b>						
<b>Additional electrical equipment</b>								
Limit contacts		Two travel-dependent, adjustable changeover switches, max. 250 V AC, 1 A						
Resistance transmitters		0 to 1000 Ω, (0 to 900 Ω at rated travel) max. permissible current 1 mA						

<sup>1)</sup> Actuator with faster motor

<sup>2)</sup> Cable glands M20x1.5 with metal nut (SW 23/24)


**Table 2: Technical data for versions with positioner (without fail-safe action)**

Type 3374		-10	-11	-15
Type of connection		With yoke		With ring nut
Travel	mm	30	15	30
Limited travel range		Between 10 and 100 % of the rated travel		
Manual override		4 mm hex wrench		
<b>Electrical connection</b>				
Supply voltage		24 V ( $\pm 15\%$ ), 47 to 63 Hz and 24 V DC ( $\pm 15\%$ ) 85 to 264 V, 47 to 63 Hz		
Duty type		S1 - 100 % according to EN 60034-1		
<b>Power consumption</b>		<b>Speed level: Normal · Fast</b>		
At 24 V	AC	12.5 VA · 16.5 VA		
	DC	7.5 W · 11 W		
At 85 to 264 V	AC	13.8 to 20 VA		
<b>Transit time in s · Stroking speed in mm/s</b>				
Standard version	Standard	120 · 0.25	60 · 0.25	120 · 0.25
	Fast	60 · 0.5	30 · 0.5	60 · 0.5
Actuator with faster motor	Standard	60 · 0.5	30 · 0.5	60 · 0.5
	Fast	30 · 1.0	15 · 1.0	30 · 1.0
<b>Thrust in kN (standard version · Version with faster motor)</b>				
Extends		2.5 · 1.25	2.5 · 1.25	2.5 · 1.25
Retracts		2.5 · 1.25	2.5 · 1.25	2.5 · 1.25
<b>Weight</b>				
kg (approx.)		3.5	3.5	3.6

**Table 3: Technical data for versions with positioner (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		Extends		Retracts	
Travel	mm	15		15	
Limited travel range		Between 10 and 100 % of the rated travel			
Manual override		-			
<b>Electrical connection</b>					
Supply voltage		24 V ( $\pm 15\%$ ), 47 to 63 Hz and 24 V DC ( $\pm 15\%$ ) 85 to 264 V, 47 to 63 Hz			
Duty type		S1 - 100 % according to EN 60034-1			
<b>Power consumption</b>		<b>Speed level: Normal · Fast</b>			
At 24 V	AC	18 VA · 23 VA			
	DC	11.5 W · 15 W			
At 85 to 264 V	AC	19.8 to 26 VA			
<b>Transit time in s · Stroking speed in mm/s</b>					
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
<b>Forces in kN</b>					
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
<b>Weight [kg]</b>					
Approx.		4.2	4.3	3.8	3.9

**Table 4: Technical data for versions *with positioner (with and without fail-safe action)***

Type 3374-xx			
Input signal	Current input	0/4 to 20 mA, adjustable · $R_i = 50 \Omega$	
	Voltage input	0/2 to 10 V, adjustable · $R_i = 20 k\Omega$	
	Pt 1000 input	Measuring range: $-50$ to $150 \text{ }^\circ\text{C}$ , $300 \mu\text{A}$	
	Binary input	By jumpering the terminals (floating), not galvanically isolated	
Position feedback	Current	0/4 to 20 mA, adjustable · Error message 24 mA	
		Resolution	1000 steps or 0.02 mA
	Voltage	Load	Max. $200 \Omega$
		Resolution	0/2 to 10 V, adjustable · Error message 12 V
		Load	1000 steps or 0.01 V
Binary input		Open-circuit voltage: 10 V; short-circuit current: 5 mA By jumpering the terminals, not galvanically isolated	
Binary output (floating)	Revision 2	Galvanically isolated · Max. 24 V DC/50 mA · No short-circuit protection · Reversible polarity	
	Revision 3	Max. 230 V AC/1 A	
Applications	Positioner	The travel follows the input signal	
	PID controller	Fixed set point control	
	Two-step mode	Two-step mode, floating binary input for actuation	
	Three-step mode <sup>1)</sup>	Three-step mode, floating binary input for actuation	
	Temperature closed-loop control upon input signal failure <sup>1)</sup>	The integrated PID controller uses a fixed set point for closed-loop control when there is no input signal.	
Display		Icons for functions, codes and text field with backlight	
Rotary pushbutton		Operating control for on-site operation to select and confirm codes and values	
Interface	Standard	RS-232 · For point-to-point connection to communication participants or for memory pen Permanently installed · Connection: RJ-12 connector socket	
Motor switch-off		By torque-dependent limit contacts	
Degree of protection acc. to EN 60529		IP 54 with cable entries, IP 65 with cable glands (can be retrofitted) <sup>2)</sup> Suspended mounting not permitted according to EN 60664	
Overvoltage category		II according to EN 61010-1	
Design and testing		According to EN 61010-1	
Class of protection		II according to EN 61140	
EMC		According to EN 61000-6-2, EN 61000-6-3 and EN 61326-1	
Degree of contamination		2 according to EN 61010-1	
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	
Permissible temperatures <sup>3)</sup>	Ambient	5 to 60 °C	
	Storage	$-25$ to $+70 \text{ }^\circ\text{C}$	
Humidity		5 to 95 % relative humidity, no dew formation	
Compliance			
Additional electrical equipment			
Limit contacts	Mechanical	Two adjustable limit contacts with changeover switches; 230 V AC/1 A · Without contact protection	
	Electronic	Two adjustable limit contacts with relay and changeover switches; 230 V AC/1 A · Without contact protection	
RS-485 module		Module for Modbus RTU communication	

<sup>1)</sup> Application only available in Type 3374, revision 3

<sup>2)</sup> Cable glands M20x1.5 with metal nut (SW 23/24)

<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.

**Dimensions**



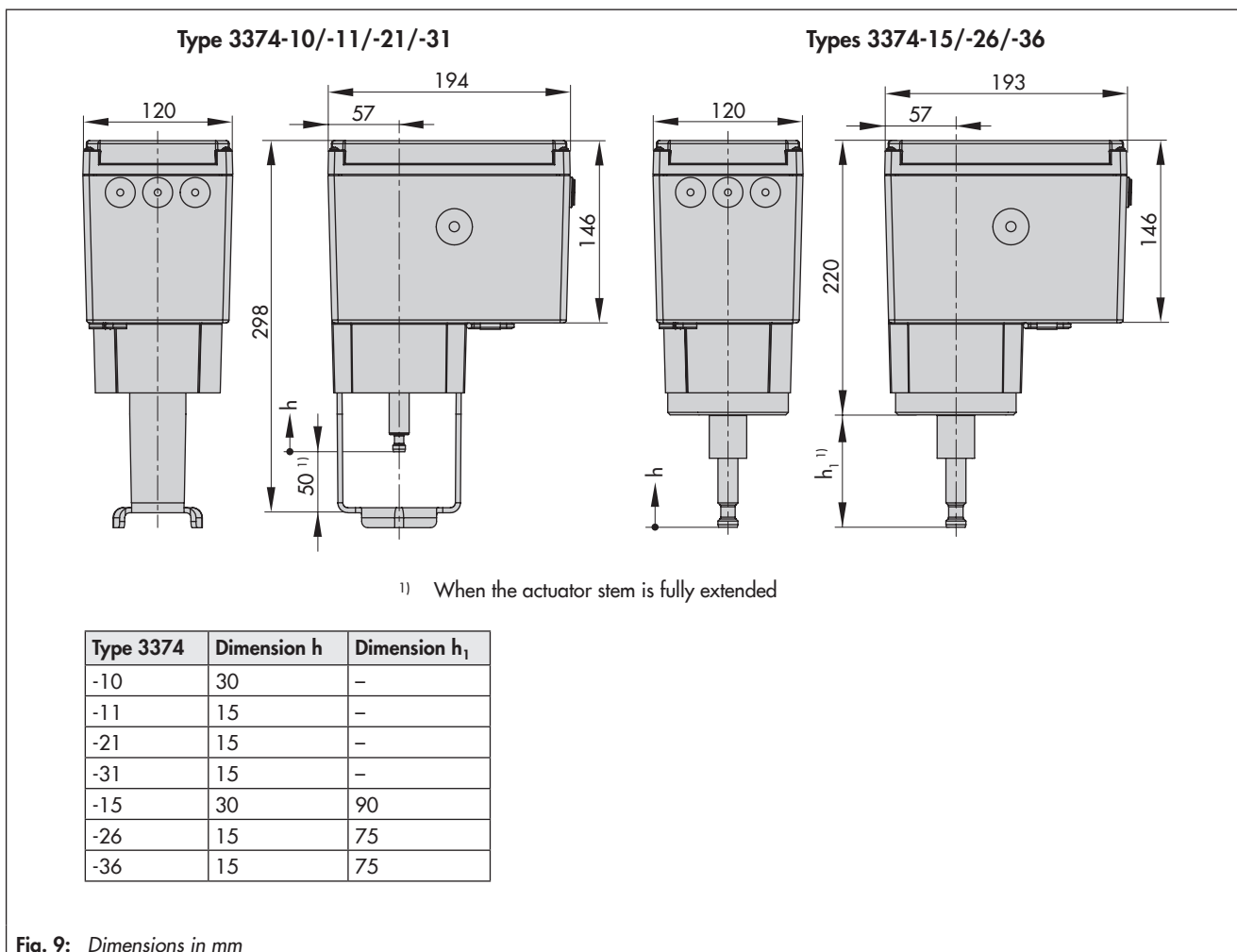


Fig. 9: Dimensions in mm

### Accessories

For all versions	Ordering number
Set with three cable glands M20x1.5 with metal nut (SW 23/24):	1400-8828
For version with digital positioner	Ordering number
Hardware package consisting of:	1400-9998
<ul style="list-style-type: none"> <li>- Memory pen-64</li> <li>- Connecting cable</li> <li>- Modular adapter</li> </ul>	
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
RS-485 module:	1402-1522
Software	
TROVIS-VIEW (free of charge)	▶ <a href="http://www.samsongroup.com">www.samsongroup.com</a>

## Ordering text

Type 3374-... Electric Actuator

### – Three-step version

Rated travel

15/30 mm

Fail-safe action

Stem extends/stem retracts/without

Gear version

Standard/Fast

Supply voltage:

230 V, 50 or 60 Hz or

24 V, 50 or 60 Hz

### Additional electrical equipment

Two mechanical limit contacts

With/without

Two resistance transmitters

With/without

### – Version with digital positioner

Rated travel

15/30 mm

Fail-safe action

Stem extends/stem retracts/without

Gear version

Standard/Fast

Supply voltage:

85 to 264 V, 50/60 Hz

24 V, 50/60 Hz and DC

### Additional electrical equipment

Two limit contacts

Mechanical/electronic/without

## Associated mounting and operating instructions

- Type 3374 (three-step version): ▶ **EB 8331-3**
- Type 3374 (positioner revision 2): ▶ **EB 8331-4 (rev. 2)**
- Type 3374 (positioner revision 3): ▶ **EB 8331-4 (rev. 3)**