

Application

Electric actuator for plant engineering and HVAC



The actuator is a linear actuator either in a three-step version or a version with digital positioner. It is particularly suitable for attachment to SAMSON Series 240 and 250 Valves, Type 3260 Valve (DN 200, 250 and 200) and Type 3214 Valve (DN 300 and 400).

Special features

- Attachment using an M30x1.5 or M60x1.5 ring nut including the necessary stem connector parts
- 30 and 60 mm travel
- Mechanical manual override
- Motor switched off by torque-dependent limit contacts
- Thrust up to 12.5 kN
- Power supply 230 V with 50/60 Hz
- Asynchronous motor with maintenance-free planetary gear
- No maintenance required

Versions

- Type 3375-10 and Type 3375-11
- Version with digital positioner:
 - Operation using rotary pushbutton on the actuator
 - Settings performed in TROVIS-VIEW
 - Backlit LCD

Additional electrical equipment

- Three-step version:
 - Resistance transmitters (2x 1000 Ω)
 - Mechanical limit contacts
- Version with digital positioner:
 - Mechanical limit contacts
 - Electronic limit contacts
 - RS-485 module for Modbus-RTU communication



Fig. 1: Type 3375 Electric Actuator

Principle of operation

The electric actuator consists of a reversible asynchronous motor and a maintenance-free planetary gear with ball screw drive. The motor is switched off by torque-dependent limit contacts. Additionally, the asynchronous motor is protected by a temperature fuse.

Additional electrical equipment

The following components are optional and can be installed subsequently:

– Resistance transmitter ¹⁾:

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

– 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 ²⁾:

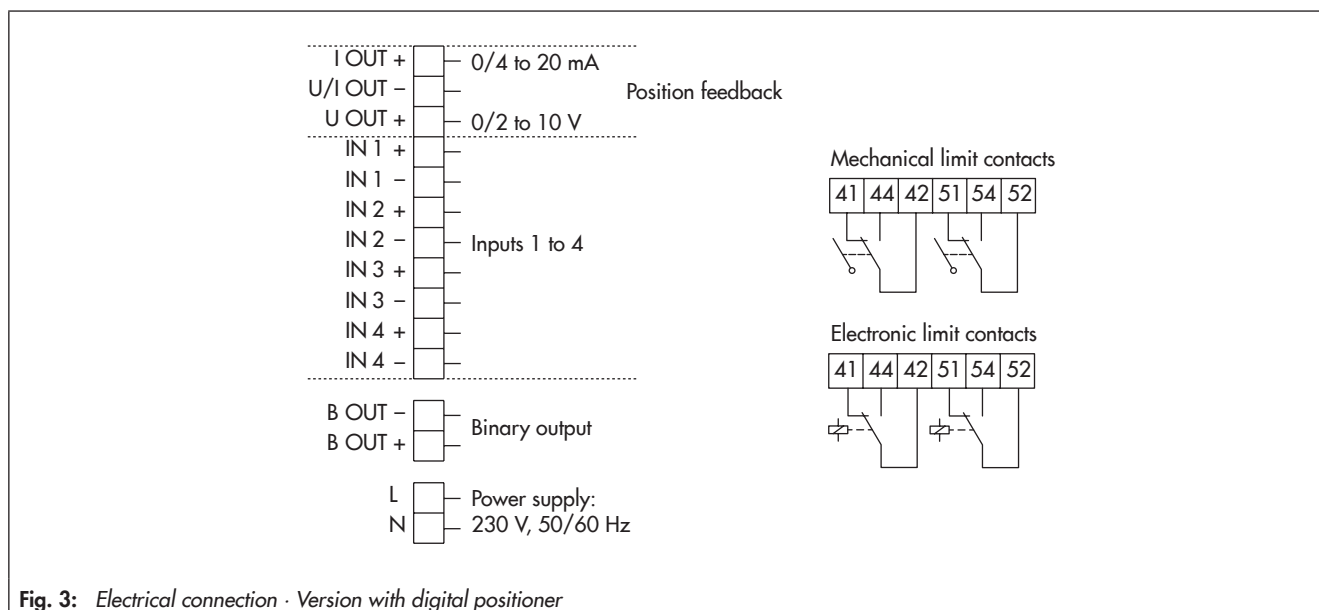
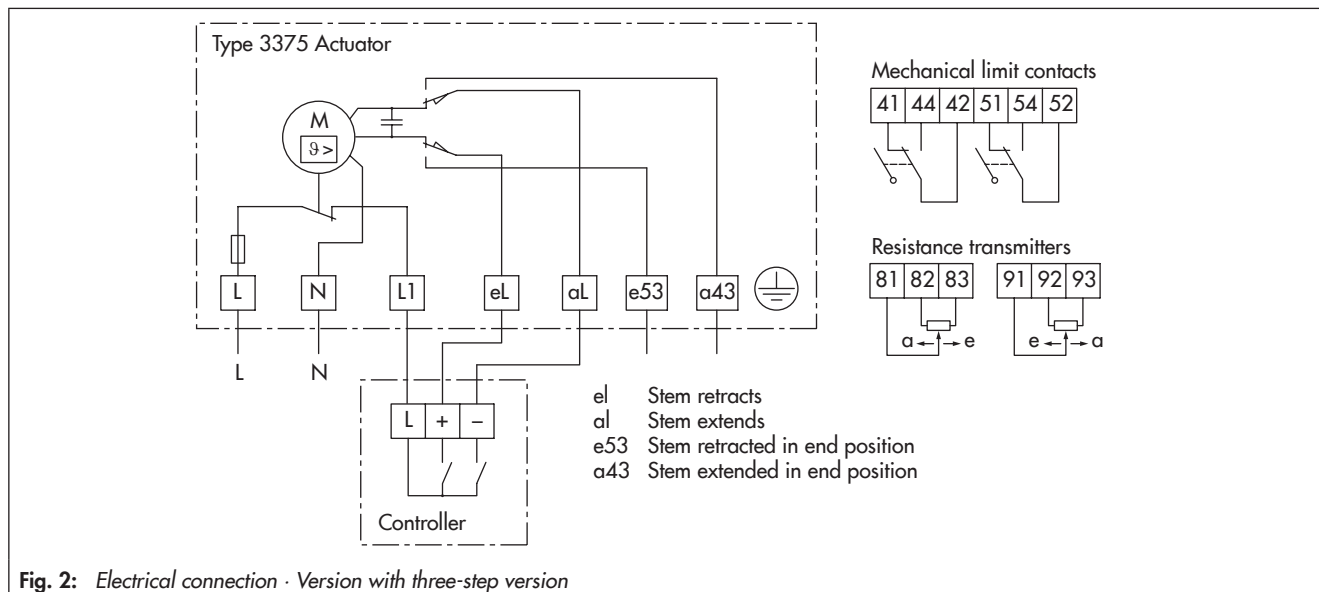
The electronic limit contacts consist of relays with change-over contacts. In contrast to the mechanical limit contacts, the electronic limit contacts no longer function after a power supply failure. The relays are de-energized and the contacts change to the idle state.

– Modbus-RTU communication ²⁾:

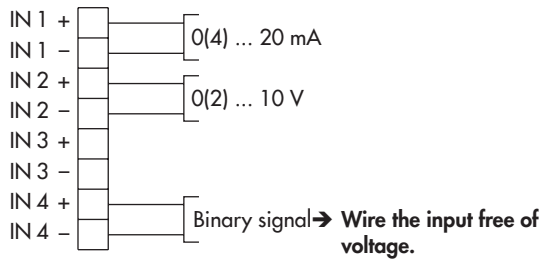
The electric actuator can be connected to a control station over Modbus and can be configured using TROVIS-VIEW. For Modbus-RTU communication, the RS-485 module (order no. 1402-1522) must be inserted into the actuator.

¹⁾ Only in three-step version

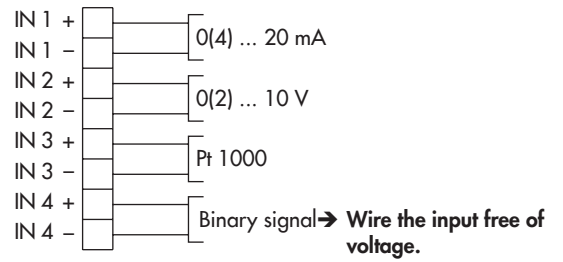
²⁾ Only in the version with digital positioner



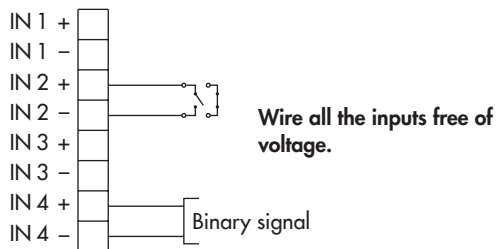
Application: Positioner (POSI)



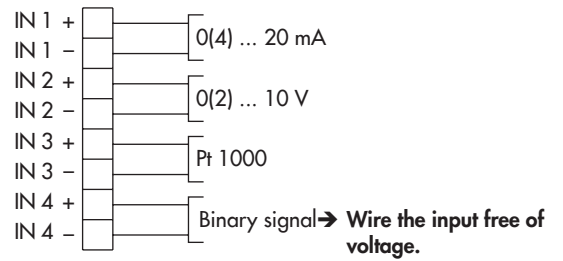
Application: PID controller (PID)



Application: Two-step mode (2STP)

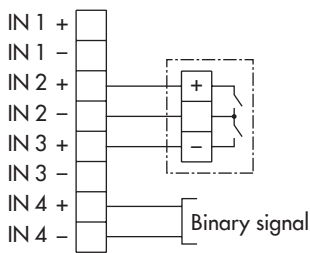


Application: Temperature closed-loop control upon input signal failure (POSF)

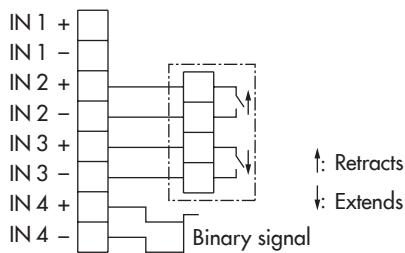


Application: Three-step mode (3STP)

Three-wire connection:



Four-wire connection:



Wire all the inputs free of voltage.

Fig. 4: Terminal assignment depending on the application selected

Table 1: Technical data · Three-step version

Type 3375		-10	-11
Connection (form-fit)		M30x1.5	M60x1.5
Rated travel	mm	30	60
Transit time in s for rated travel	50 Hz	50	100
	60 Hz	42	84
Stroking speed in mm/s	50 Hz	0.6	0.6
	60 Hz	0.7	0.7
Thrust (stem extends)	kN	12.5	12.5
Thrust (stem retracts)	kN	12.5	12.5
Power supply		230 V, 50 to 60 Hz	
Type of operation		S3 - 50 % ED (1200 c/h) according to IEC 60034-1	
Power consumption	VA	180	180
Manual override		Handwheel	
Permissible temperatures ¹⁾	Ambient	5 to 60 °C	
	Storage	-20 to +70 °C	
Compliance		CE · EAC	
Degree of protection		IP 54 according to EN 60529 · IP 65 with cable gland ²⁾ · Suspended mounting not permitted	
Overvoltage category		II according to EN 60664	
Design and testing		According to EN 61010	
Class of protection		I according to EN 61140	
EMC		According to EN 61000-6-2, EN 61000-6-3 and EN 61326	
Materials			
Housing	Bottom section	Spheroidal graphite iron	
	Middle section	Cast aluminum alloy	
	Motor housing	Cast aluminum alloy	
	Fan guard	Plastic	
Cover		Glass-fiber-reinforced plastic	
Actuator stem		Stainless steel	
Weight			
	kg (approx.)	11.7	14.5
Additional electrical equipment			
Limit contacts		Two contacts, max. 250 V AC, 1 A	
Resistance transmitters		0 to 1000 Ω, max. 1 mA, usable range up to approx. 900 Ω	

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

²⁾ Cable glands M20 x 1.5 with metal nut SW 23/24 (order no. 1400-8828)

Table 2: Technical data · Version with digital positioner

Type 3375		-10	-11
Connection (form-fit)		M30x1.5	M60x1.5
Rated travel	mm	30	60
Transit time in s for rated travel	50 Hz	50	100
	60 Hz	42	84
Stroking speed in mm/s	50 Hz	0.6	0.6
	60 Hz	0.7	0.7
Thrust (stem extends)	kN	12.5	12.5
Thrust (stem retracts)	kN	12.5	12.5
Power consumption	VA	144	144
Power supply		230 V, 50 to 60 Hz	
Type of operation		S3 - 50 % ED (1200 c/h) according to IEC 60034-1	
Manual override		Mechanical manual override using handwheel	
		Manually controlled manual override	
Permissible temperatures ¹⁾	Ambient	5 to 60 °C	
	Storage	-20 to +70 °C	
Compliance		CE · EAC	
Materials			
Housing	Bottom section	Spheroidal graphite iron	
	Middle section	Cast aluminum alloy	
	Motor housing	Cast aluminum alloy	
	Fan guard	Plastic	
Cover		Glass-fiber-reinforced plastic	
Actuator stem		Stainless steel	
Weight			
	kg (approx.)	11.7	14.5
Digital positioner			
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 °C, 300 μ A	
	Binary input	By bridging the terminals, not galvanically isolated	
Position feedback	Current	0/4 to 20 mA, adjustable · Error message 24 mA	
	Resolution	1000 steps or 0.02 mA	
	Load	Max. 200 Ω	
	Voltage	0/2 to 10 V, adjustable · Error message 12 V	
	Resolution	1000 steps or 0.01 V	
	Load	Minimum 5 k Ω	
Binary input		Open-circuit voltage: 10 V; short-circuit current: 5 mA By bridging the terminals, not galvanically isolated	
Binary output		Floating, 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 behavior, control over binary input	
	Three-step mode	Three-step behavior, control over binary input	
	Temperature closed-loop control upon input signal failure	The integrated PID controller uses a fixed set point for closed-loop control when the input signal is missing.	

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

Operating controls		
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
Safety		
Motor switch-off		By torque-dependent limit contacts
Degree of protection acc. to EN 60529		IP 65, suspended mounting not permitted according to EN 60664
Overvoltage category		II according to EN 61010
Design and testing		According to EN 61010
Class of protection		I according to EN 61140
EMC		According to EN 61000-6-2, EN 61000-6-3 and EN 61326
Degree of contamination		2 according to EN 61010
Noise immunity		According to EN 61000-6-2
Noise emission		According to EN 61000-6-3
Environmental conditions		
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
Ambient conditions		
Humidity		5 to 95 % relative humidity, no dew formation
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 (order no. 1402-1522)		Module for Modbus-RTU communication

Dimensions in mm

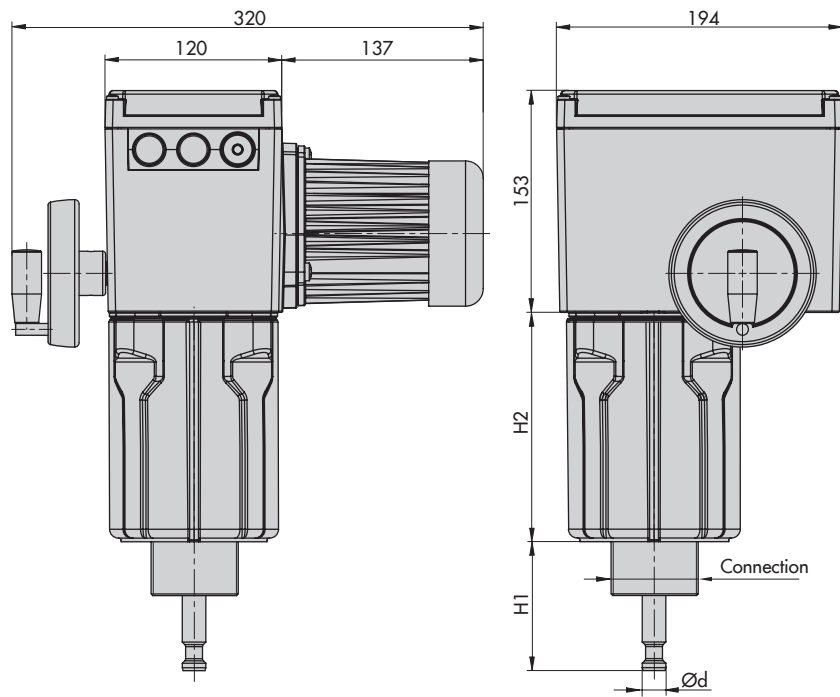


Table 3: Dimensions for Type 3375 Actuator

Type 3375		-10	-11
Connection		M30x1.5	M60x1.5
Rated travel	mm	30	60
Actuator stem	Ød in mm	16	22
H1	Stem retracted in mm	60	105
	Stem extended in mm	90	165
H2	mm	124	174

Ordering text

Three-step version:

Electric actuator	Type 3375-xx
Rated travel	30/60 mm
Power supply	230 V/50 and 60 Hz
Additional electrical equipment	
Two limit contacts	
Two resistance transmitters	0 to 1000 Ω

Version with digital positioner

Electric actuator	Type 3375-xx
Rated travel	30/60 mm
Power supply	230 V/50 and 60 Hz
Additional electrical equipment	
Two limit contacts	Mechanical/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

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2017-11-16 · English