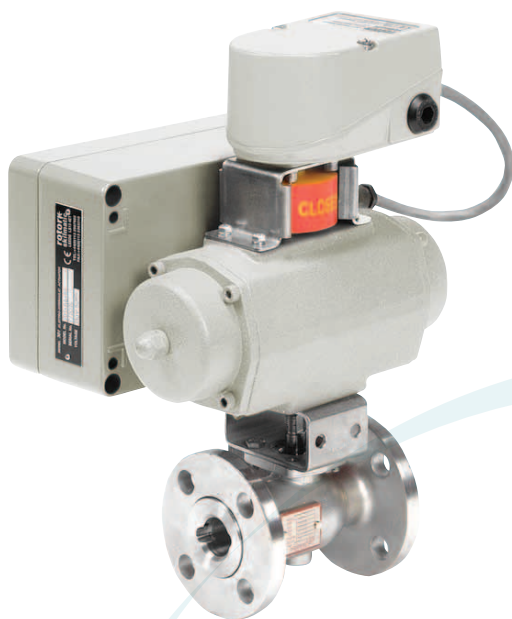


SB301/302 Specification

rotork[®]
Fluid Systems

Electro-hydraulic Quarter-turn Valve Actuator for General Purpose Two-Position



The **SKILMATIC**[®]
Range

Features

- Electrically operated spring-return fail safe open or close.
- Minimal moving parts - no motors or gears.
- 110/120 or 230 VAC, 50/60 Hz power supply options.
- Low power consumption.

The SB301/302 are compact and robust electrically operated failsafe spring-return, quarter-turn actuators for two-position or ESD applications. They are suitable for all types of quarter-turn valves. The SB301 features a compact, single oscillating pump system; the SB302 features a dual, redundant internal oscillating pump system. SB301/302 actuators provide end torque ranging from 24 to 65 Nm (212 to 575 lbf-in).

SB301/302 actuators provide environmental protection to IP66 / NEMA 4 as standard with the option of IP67 / NEMA 6. This option also includes two volt-free end-of-stroke limit switches.

The actuators combine the simplicity of electrical operation with the precision of hydraulic control and the reliability of spring-powered fail-safe action. The spring-return mechanism provides the most reliable means of positioning a valve to the safe condition and can be provided as fail safe close or open on loss of power. They are available with either a clockwise or anticlockwise spring stroke.

A manual override gearbox is available on all sizes as is biodegradable oil for food and water applications.

See SB405/406 specification for modulating applications.

See SB range specifications for hazardous area applications (Zone 1 Division 1).

SB301/302 Specification

Ordering Information and Model Code

KEY MODEL CODE		SB302	A6	D1	M0
Table 1	Actuator Type				
Table 2	Supply Voltage				
Table 2	Actuator Size				
Table 3	Accessories				

Table 1 – Actuator Type

Code	Description
SB301	Quarter-turn failsafe electro-hydraulic actuator (one pump) with torque output type A, B or C (table 3).
SB302	Quarter-turn failsafe electro-hydraulic actuator (two pumps) with torque output type D, E, F or G (table 3).

Table 2 – Supply Voltage

Code	Description
A6	230 VAC $\pm$ 10% 50 Hz.
B6	110/120 VAC $\pm$ 10% 50/60 Hz.

Table 4 – Accessories

Code	Description
MO	Geared manual override.
TJ	High temperature thermal jacket.
NPT	1/2" NPT cable entry.
BIO	Bio-degradable oil (for water and food industries).
SI	20 cSt silicone oil (for low temperature applications -40 °C).
ESD1	Quick close manifold solenoid. See stroke speeds in table 3.
LS	Industrial switchbox with 2 spare volt-free limit switches to IP67.
BR	Valve mounting kit to suit specific valve.

Table 4 – Actuator Size

Code		Torque Nm (see note 2)						Stroke speed (Seconds)		
Spring Return		Hydraulic Stroke			Spring Return			Hydraulic Direction	Spring-Return	
Clockwise	Anti-clockwise	Start	Mid	End	Start	Mid	End		B	ESD
A1	AA1	34	-	17	38	-	24	16	3	-
B1	BA1	50	-	23	60	-	38	22	4	-
C1	CA1	95	42	60	93	40	65	30	5.5	1.5
D1	DA1	190	95	120	180	100	140	30	10	2
E1	EA1	290	140	170	325	170	240	50	15	4
F1	FA1	720	360	500	500	260	380	95	29	6
G1	GA1	620	300	350	630	340	480	95	29	6

GENERAL NOTES:

1. All torques are in Nm (lbf-in x 8.85).
2. Stroke speeds are typical for actuators with no load at 20 °C, tolerance $\pm$ 10%.
3. Rotork Fluid Systems reserve the right to change specifications without prior notice.



Certification

Enclosure: Splashproof and dustproof to IP66 / NEMA 4.

Power unit: Aluminium Al Si 12, DIN1725.

Actuator

Body: Anodised aluminium.

Piston: Aluminium.

Drive shaft: Zinc-plated stainless steel.

Springs: Corrosion protected spring steel.

Paint Finish: 2-pack epoxy red.

Weight: See dimensional detail on last page.

Operating

Temperature: -25 to 75 °C (-13 to 167 °F).
Optional thermal jacket for Low (-40 °C)
and High (250 °C / 400 °C) temperature
protection for over two hours.

Mounting: Vertical or horizontal. (See Instruction Manual).

Stroke: 0° to 90° adjustment +/- 3°.

Action: Spring return clockwise or anti-clockwise.

Failure Mode: Fail safe in the direction of the spring or
fail in last position.

**Maximum internal
working pressure:** 12 bar.

Torque/Stroke

Speed: See table 3.

Hydraulic

Fluid: 10 cSt hydraulic fluid, 15 cSt biodegradable fluid
or silicon fluid for low temperatures.

Electrical

Supply: 230 VAC 110 V / 120 VAC, 50/60 Hz ± 10%.

Power

Consumption:

Model SB301:

@ 230 VAC 207 VA (106 Watts) nominal,

@ 110 VAC 264 VA (135 Watts) nominal,
reducing to 15 VA (6 Watts) in balanced state.

Model SB302:

374 VA (190 Watts), reducing to 15 VA (6 Watts)
in balanced state. When quick closure valve part
number ESD1 is required, add 23 VA to assembly.

Cable Entries: One threaded M20 (optional 1/2 NPT adapter).
Two threaded M20 when "LS" option is selected
in table 4.

Duty Rating: 80%.

Optional

Limit

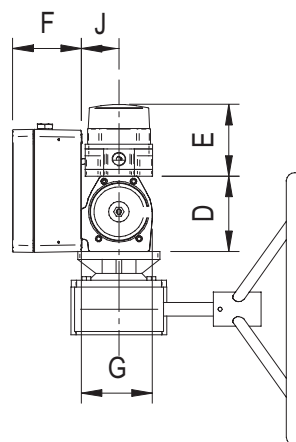
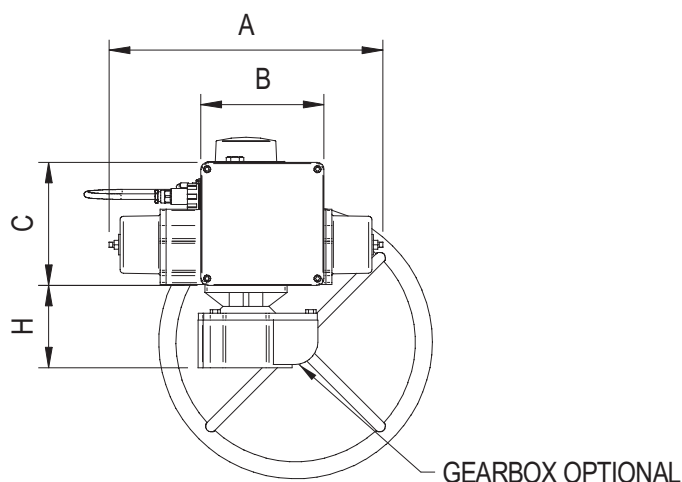
Switches: Two spare volt-free switches rated at 5 A at 230
VAC. Select "LS" in the table 4.

Manual

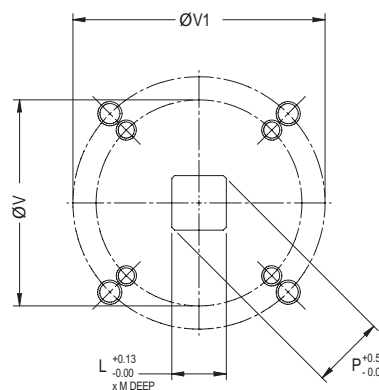
override: Manual override gearbox.

*For modulating control applications see product specification
for SB405/6.*

SB301/302 Dimension & Mounting Details



DIMENSIONS (mm)	ACTUATOR CODE						
	Model SB301			Model SB302			
	A	B	C	D	E	F	G
A	204	249	265	360	387	477	517
B	200	200	200	180	180	180	180
C	140	140	140	180	180	180	180
D	93	105	113	113	158	158	158
E	110	110	110	110	110	110	110
F	90	90	90	110	110	110	110
G	96	107	104	104	144	144	144
H	84.5	84.5	119	119	131	131	131
J	53	58	55	55	75	75	75
L	14	14	17	22	22	27	27
M	27	30	30	30	30	37	37
P	18.1	18.1	22.2	28.2	28.2	36.2	36.2
ØV	50	50	70	70	102	102	102
ØV1	70	70	102	102	125	125	125
W	M6 x 10	M6 x 10	M8 x 14	M8 x 14	M10 x 17	M10 x 17	M10 x 17
W1	M8 x 10	M8 x 10	M10 x 17	M10 x 17	M12 x 21	M12 x 21	M12 x 21
Weight (kg)	7.5	8.5	9	15	27.5	38	38
Weight (kg) with gearbox	22.5	23.5	14	25	42.5	53	53



Flange & Square Drive Details
to ISO 5211