

GENERAL DESCRIPTION

Rotork Skilmatic quarter turn actuators are compact and robust electrically operated spring return devices, providing a 90 degree travel, for two position applications, on all types of Ball, Butterfly, Plug Valves and Dampers.

The **Model SB301/302** Actuators are the general purpose two position versions of the Skilmatic range, with torque outputs of 29Nm (256 in lbs) to 65Nm (575 in lbs) for the Model SB301 and 140Nm (1239 in lbs) to 480Nm (4248 in lbs) for the Model SB302.

The Model SB301/2 have been specifically designed for Fail Safe valve isolation and damper control. The actuators combine the simplicity of electrical operation with the power of hydraulics and the reliability of spring-powered fail safe action. The integral fully sealed Skilmatic Electro-hydraulic pump system provides the power to operate the scotch yoke spring return drive. Offering the most reliable means of positioning the valve or damper in a safe condition. Available with spring return clockwise or anti-clockwise for fail-safe to close or open on power failure.

The **Model SB301** is supplied as a compact single oscillating Electro-hydraulic pump system.

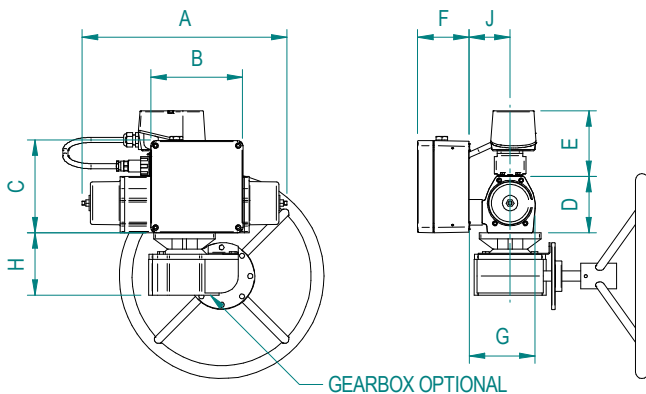
The **Model SB302** provides a dual redundant internal oscillating pump system.

All models are supplied with two volt free end of stroke limit switch. Manual gearbox overrides are also available and the option of biodegradable oil for food and water applications. The actuators are available with thermal jackets to meet high temperature applications such as smoke and fire damper in tunnel.

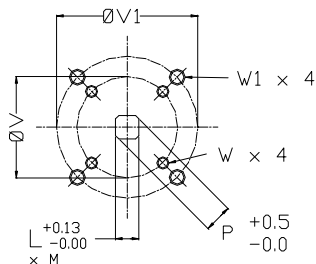
Weatherproof to IP67. For modulating control applications see product specification sheet Model SB406.

For Hazardous area Zone 1 / Division 1 application see product specification sheet Model SB-1Q and SB-2Q.

DIMENSIONS



Actuator Mounting Details



Flange and Square Drive to ISO 5211

PRODUCT SPECIFICATION

Skilmatic GENERAL PURPOSE 1/4 TURN FAIL-SAFE ELECTRIC ACTUATOR ON / OFF CONTROL MODEL SB301/302



FEATURES

- Electrically operated, spring return – fail-safe.
- Compact and robust.
- Minimal moving parts no motors or gears.
- Model SB301 compact, single internal Oscillating pump.
- Model SB302 Dual redundant internal Oscillating pumps.
- Operates from a 230 or 110/120 V.ac 50/60Hz Supply.
- Minimal power consumption.

APPLICATIONS

- Remote fail-safe isolating valves.
- Emergency Shutdown.
- Smoke & Fire Dampers.

Dimensions	Model SB301		Model SB302			
	B	C	D	E	F	G
A	249	265	360	387	477	517
B	200	200	180	180	180	180
C	140	140	180	180	180	180
D	105	113	113	158	158	158
E	130	130	130	130	130	130
F	90	90	110	110	110	110
G	107	104	104	169	169	169
H	84.5	119	119	131	131	131
J	58	55	55	100	100	100
L	14	17	22	22	27	27
M	19	30	30	30	37	37
P	18.1	22.2	28.2	28.2	36.2	36.2
ØV	50	70	70	102	102	102
ØV1	70	102	102	125	125	125
W	M6 x10	M8 x14	M8 x14	M10 x17	M10 x17	M10 x17
W1	M8 x10	M10 x17	M10 x17	M12 x21	M12 x21	M12 x21
Weight (kg)	8.5	9	15	27.5	38	38
Weight (kg) WITH GEARBOX	23.5	14	25	42.5	53	53

SPECIFICATION

Enclosure: Splash and dust proof to IP67
Power unit: Aluminium Al Si 12, DIN1725
Actuator Body: Anodised Aluminium
Piston: Aluminium
Drive shaft: Zinc-plated stainless steel
Springs: Corrosion protected springs steel
Paint Finish: 2-pack epoxy red.
Weight: See dimensional table

Operating

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

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 order information.

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

Electrical Supply: 230V a.c. 110V/120V a.c./50/ 60Hz ± 10%

Power Consumption:

Model SB301 @230Vac 207VA(106watts)nominal,
 @ 110Vac - 264VA(135watts) nominal reducing to
 15VA(6watts) in balanced state.
 Model SB302 -374VA(190 watts), reducing to 15VA(6watts)
 in balanced state.

When quick closure valve part number ESD1 is
 required add 23VA to assembly.

Cable Entries: - Two treaded M20 optional 1/2" NPT adaptor

Duty Rating: 80 % rated

Optional:

Limit Switches: Two spare volt free switch rated at 5A
 at 230Vac

Manual override: Manual override gearbox.

**For modulating control applications see product
 specification SB406.**

ORDERING INFORMATION AND MODEL CODE

KEY MODEL CODE SB302 - A6 - D1 - MO

Table 1 - Supply Voltage

Table 2 - Actuator Torque

Table 3 - Accessories

KEY MODEL CODE

Code	Description
SB301	1/4 Turn Fail –safe electro-hydraulic. actuator with torque output type A, B or C Table 2
SB302	1/4 Turn Fail – safe electro-hydraulic actuator with torque output type D, E, F or G Table 2

TABLE 1 - SUPPLY VOLTAGE

Code	Description
A6	230V a.c ± 10% 50Hz
B6	110/120V a.c ± 10% 50/60Hz

TABLE 2 - ACTUATOR TORQUE

Code	Torque Nm								Stroke speed (see table3)		
	Spring Return		Hydraulic stroke			Spring return			Hyd	Spring Direction	
	Clockwise	anti-clockwise	start	mid	finish	start	mid	finish		Std	ESD
301	B1	BA1	69	30	37	43	21	29	16	3	1
	C1	CA1	95	42	60	93	40	65	30	5.5	1.5
302	C1	CA1	95	42	60	93	40	65	15	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

NOTES

- All torques are in Nm. For torque in lbs in x 8.85.
- Stroke speeds are typical for actuators with no load at 20°C Tolerance ± 10%.
 Rotork SKILmatic reserve the right to change the specifications without prior notice.

TABLE 3 - 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	20cSt Silicone oil. For low temperature applications -40°C
ESD1	Quick closure Manifold solenoid (see stroke speeds in table 2)
BR	Valve mounting kit to suit specific valve

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