



Electric Fail-Safe Actuators

SELECTOR SWITCH
(SPRING RETURN TYPE)

DL POWER(DC24V,0.2A)

- 1 >>
- 2 >>
- 1 >>
- 2 >>
- 1 >>
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- 1 >>
- 2 >>

IN
SWITCH
UNIT



Spring Return Electric Fail-Safe

Mechanical failure torques
up to 2300 in-lbs.



Battery Backup Electric Fail-Safe

Torques up to 2640 in-lbs.
Emergency shutdown applications

Spring Return Electric Fail-Safe Actuators

FSE Series

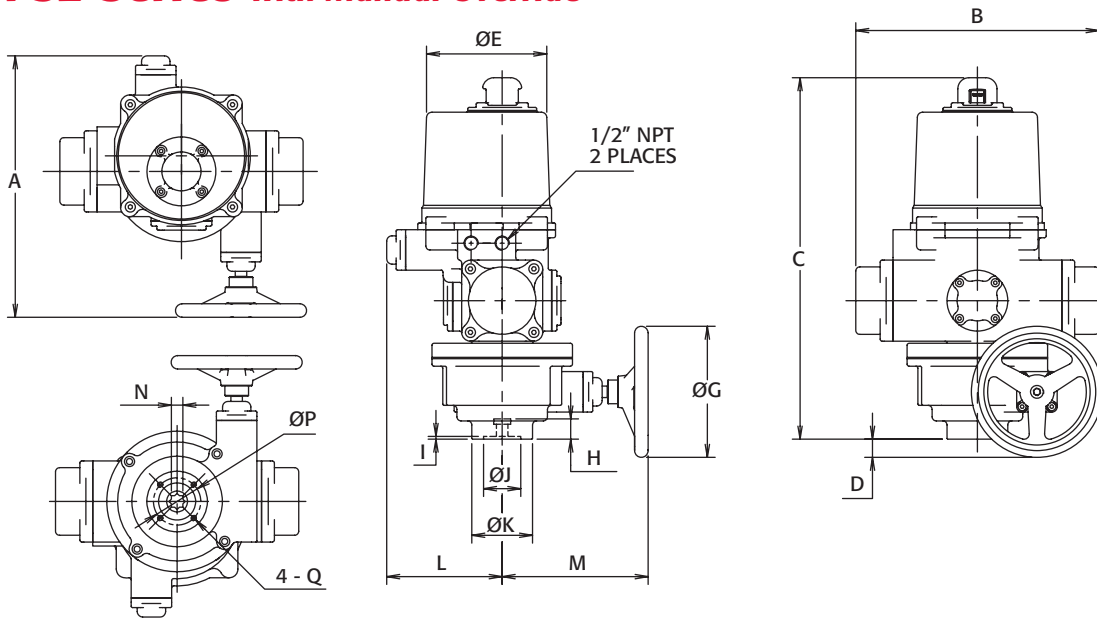


Features and General Information

- Corrosion resistant NEMA 4 construction
- Die cast aluminum housing and cover
- Powder polyurethane coated
- Stainless steel fasteners
- Visual position indicator
- Reliable clutching mechanism for spring failure
- Four models 440 in.-lbs.– 2300 in.-lbs.
- 120VAC and 220VAC, or 24 VDC
- Heater and thermostat
- Optional manual override

Spring Return Electric Fail-Safe Actuators Technical and Dimensional Information

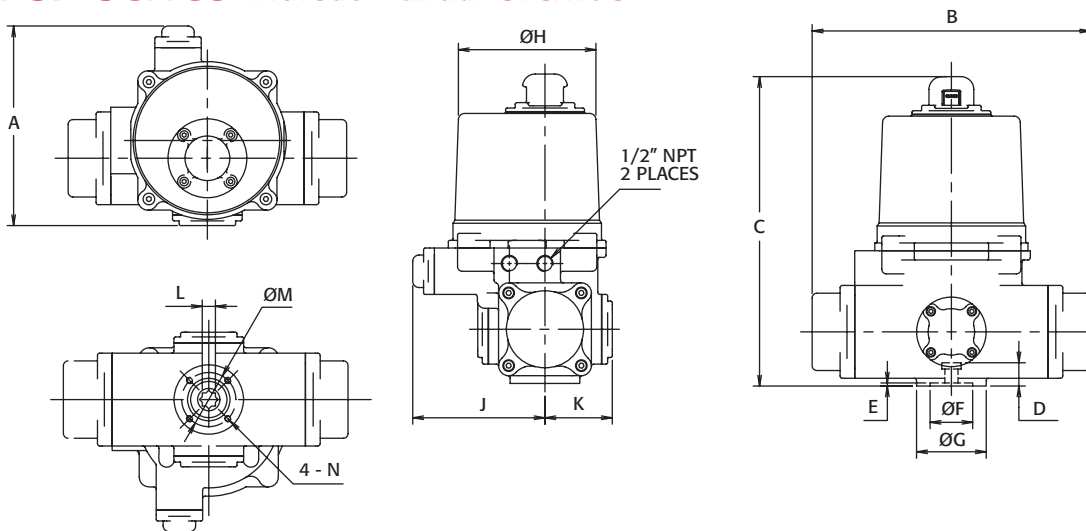
FSE Series with Manual Override



DIMENSIONS

MODEL NO.	A	B	C	D	E	G	H	I	J	K	L	M	N	P	Q	ISO
FSE-440MO	15.24	14.17	21.06	1.06	7.01	7.64	1.18	0.16	2.17	3.54	6.73	8.50	0.669	2.756	M8-1.25	F07
FSE-1150MO	19.02	18.19	25.31	2.28	10.31	11.65	1.54	0.20	2.76	4.92	9.72	9.29	0.866	4.016	M10-1.5	F10
FSE-1770MO	23.19	23.62	29.06	3.94	11.97	15.75	1.77	0.20	3.35	5.91	12.01	11.18	1.063	4.921	M12-1.75	F12
FSE-2300MO	23.19	23.62	29.06	3.94	11.97	15.75	1.77	0.20	3.35	5.91	12.01	11.18	1.063	4.921	M12-1.75	F12

FSE Series without Manual Override



DIMENSIONS

MODEL NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	ISO
FSE-440	10.16	14.17	15.75	1.18	0.16	2.17	3.54	7.01	6.73	3.43	0.669	2.756	M8-1.25	F07
FSE-1150	14.37	18.19	18.82	1.54	0.20	2.76	4.92	10.31	9.72	4.65	0.866	4.016	M10-1.5	F10
FSE-1770	17.24	23.62	21.57	1.77	0.20	3.35	5.91	11.97	12.01	5.24	1.063	4.921	M12-1.75	F12
FSE-2300	17.24	23.62	21.57	1.77	0.20	3.35	5.91	11.97	12.01	5.24	1.063	4.921	M12-1.75	F12

Backup Battery Electric Fail-Safe Actuators

BFS Series

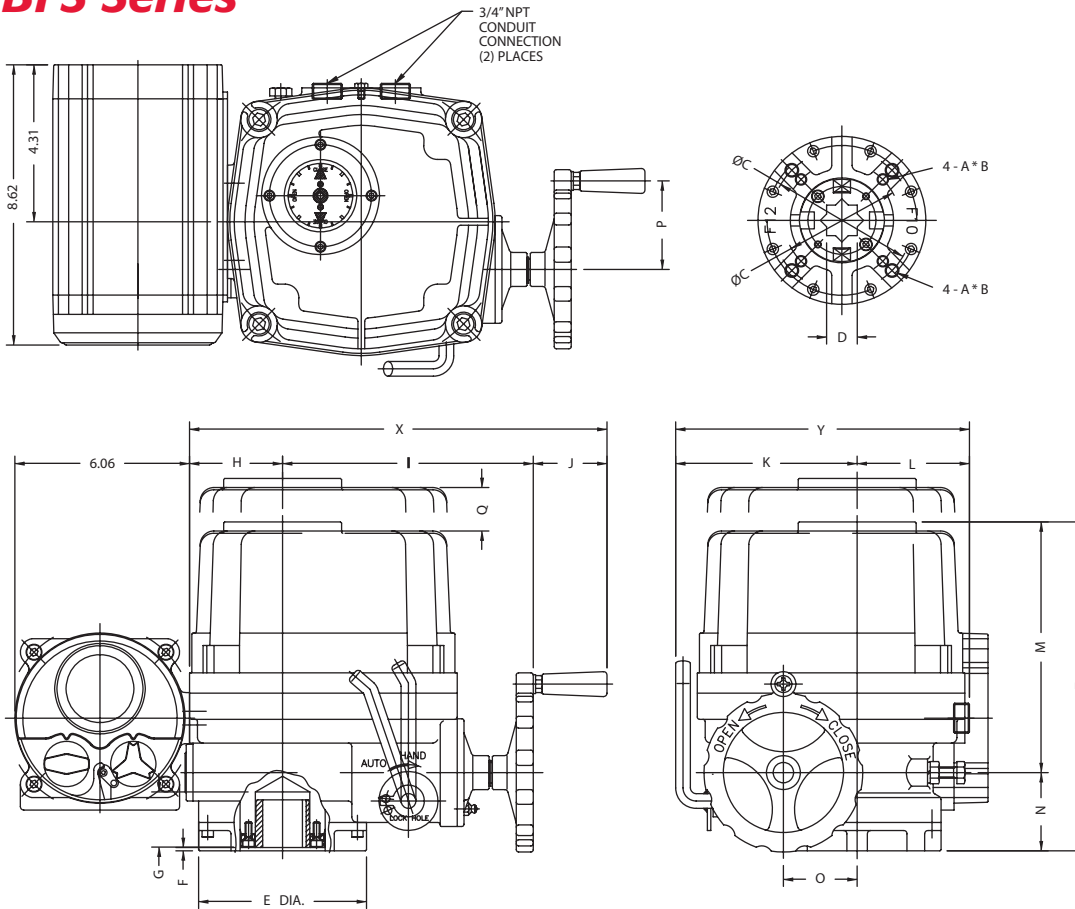


Features and General Information

- Corrosion resistant housing and enclosure NEMA 4 and 6, IP65
- Four limit switches standard
- Heater and thermostat standard
- Cutting edge lithium battery technology
- 110 VAC, 220 VAC or 24 VDC
- On-off / local control box
- Battery power level indication
- Five operations per hour
- LED indication for power supply, open and close
- Manual override standard

Technical and Dimensional Information

BFS Series



LED LAMP SIGNAL	
WHITE	○ POWER
GREEN/BLACK/RED	○ BATTERY LEVEL
BLUE	○ REMOTE
YELLOW	○ FAULT
RED	○ OPEN
GREEN	○ CLOSE

Configurable to fail close or fail open on loss of electricity
 Lithium battery sized for 5 cycles per hour with automatic recharge

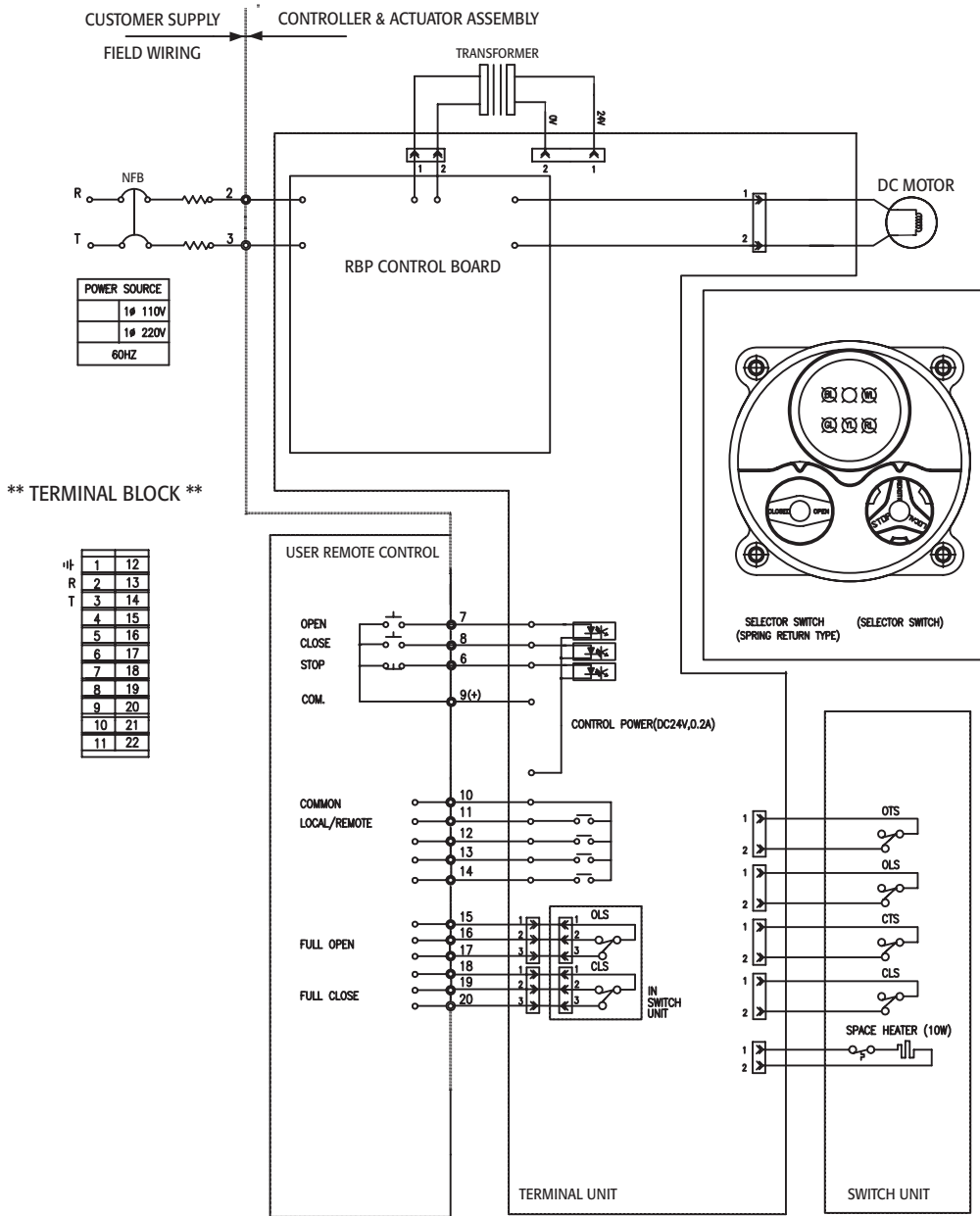
DIMENSIONS

Model	A	B	C	D sq	E	F	G	H	I	J
BFS-690	M8	0.47	2.756	0.669	3.46	0.12	1.26	1.97	6.18	2.01
BFS-1350	M8 / M10	0.47 / 0.59	2.756 / 4.016	0.748	4.92	0.12	1.65	2.87	7.87	2.56
BFS-1700	M8 / M10	0.47 / 0.59	2.756 / 4.016	0.748	4.92	0.12	1.65	2.87	7.87	2.56
BFS-2640	M10 / M12	0.59 / 0.71	4.016 / 4.921	1.063	5.83	0.12	1.93	3.23	8.70	2.56

Model	K	L	M	N	O	P	Q	R	S	X	Y	Z	ISO
BFS-690	3.94	2.76	6.57	2.09	1.57	2.36	4.72	--	--	10.16	6.69	9.25	F07
BFS-1350	5.59	3.43	7.56	2.68	2.13	3.07	6.30	--	--	13.31	9.02	10.55	F07/F10
BFS-1700	5.59	3.43	7.56	2.68	2.13	3.07	6.30	--	--	13.31	9.02	10.55	F07/F10
BFS-2640	6.30	3.90	8.70	2.72	2.56	3.07	7.09	--	--	14.49	10.20	11.42	F10/F12

Wiring Diagrams

BFS Series



NOTE:
 AUTO: REMOTE mA CONTROL
 OLS: OPEN LIMIT SWITCH
 CLS: CLOSED LIMIT SWITCH
 OTS: OPEN TORQUE LIMIT SWITCH
 RL: RED LAMP FOR OPEN
 WL: WHITE LAMP FOR POWER
 CL: GREEN LAMP FOR CLOSE
 BL: BLUE LAMP FOR REMOTE
 YL: YELLOW LAMP FOR FAULT
 RY1: REMOTE MONITOR RELAY
 ⊙: MARKS FOR TERMINAL

**** LIMIT SWITCH CONTACT POSITIONS ****

ROTOR	CON-TACT	VALVE OPENING (%)
	0	100
OPEN (OLS)	1-3	---
	1-2	---
CLOSE (CLS)	1-3	---
	1-2	---

--- : CONTACT ON --- : CONTACT OFF

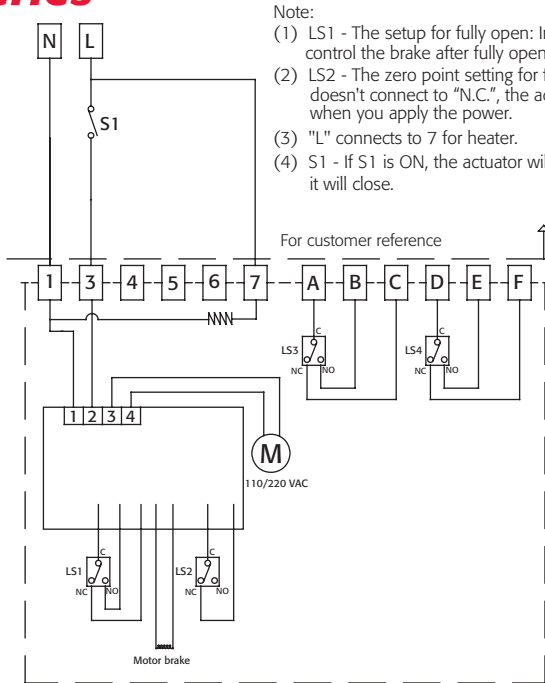
BFS Motor Data (110VAC)

Model	Torque (In-Lbs)	Speed (Quarter-Turn)	Current Run
BFS 690	690	13	0.7
BFS 1350	1350	21	1
BFS 1700	1700	21	1
BFS 2640	2640	26	1

NOTE: Power consumption = 40 watts

FSE Series

Power
AC 110/220V
1-phase



Note:

- (1) LS1 - The setup for fully open: Input the signal to control the brake after fully open.
- (2) LS2 - The zero point setting for fully closed: If "C" doesn't connect to "N.C.", the actuator will not operate when you apply the power.
- (3) "L" connects to 7 for heater.
- (4) S1 - If S1 is ON, the actuator will open and if S1 is OFF, it will close.

FSE-440

Voltage	Torque (In-Lbs)	Speed (Quarter-Turn)		Current	
		Motor (60Hz/50Hz)	Spring	Run (60Hz / 50Hz)	Lock(60Hz / 50Hz)
110VAC	440	7 sec / 8.5 sec	3 sec	1.0 A / 1.3 A	2.0 A / 2.1 A
220VAC	440	7 sec / 8.5 sec	3 sec	0.6 A / 0.7 A	1.0 A / 1.1 A
380VAC, 3PH	440	7 sec / 8.5 sec	3 sec	0.35A / 0.38A	0.5 A / 0.6 A
440VAC, 3PH	440	7 sec / 8.5 sec	3 sec	0.3 A / 0.38A	0.5 A / 0.6 A
DC 24V	440	7 sec	3 sec	3.0A	4.0A

** Weight (1) FSE-500-60 Lbs (2) FSE-500MO-82 Lbs (including manual override)

FSE-1150

Voltage	Torque (In-Lbs)	Speed (Quarter-Turn)		Current	
		Motor (60Hz/50Hz)	Spring	Run (60Hz / 50Hz)	Lock(60Hz / 50Hz)
110VAC	1150	7 sec / 8.5 sec	8 sec	2.6 A / 4.5 A	10 A / 10.5 A
220VAC	1150	7 sec / 8.5 sec	8 sec	1.5 A / 2.2A	5.0 A / 5.1 A
380VAC, 3PH	1150	7 sec / 8.5 sec	8 sec	0.9A / 1.4A	2.8 A / 2.9 A
440VAC, 3PH	1150	7 sec / 8.5 sec	7 sec	0.7A / 1.0A	2.1A / 2.2A
DC 24V	1150	8 sec	3 sec	9A	19A

** Weight (1) FSE-1300-125 Lbs (2) FSE-1300MO-165 Lbs (including manual override)

FSE-1770

Voltage	Torque (In-Lbs)	Speed (Quarter-Turn)		Current	
		Motor (60Hz/50Hz)	Spring	Run (60Hz / 50Hz)	Lock(60Hz / 50Hz)
110VAC	1770	11 sec / 13 sec	12 sec	2.6 A / 4.5 A	10 A / 10.5 A
220VAC	1770	11 sec / 13 sec	12 sec	1.5 A / 2.2A	5.0 A / 5.1 A
380VAC, 3PH	1770	11 sec / 13 sec	12 sec	0.9A / 1.4A	2.8 A / 2.9 A
440VAC, 3PH	1770	11 sec / 13 sec	12 sec	0.7A / 1.0A	2.1A / 2.2A
DC 24V	1770	11 sec	3 sec	9A	19A

** Weight (1) FSE-2000-210 Lbs (2) FSE-2000MO-300 Lbs (including manual override)

FSE-2300

Voltage	Torque (In-Lbs)	Speed (Quarter-Turn)		Current	
		Motor (60Hz/50Hz)	Spring	Run (60Hz / 50Hz)	Lock(60Hz / 50Hz)
110VAC	2300	14 sec / 17 sec	12 sec	2.6 A / 4.5 A	10 A / 10.5 A
220VAC	2300	14 sec / 17 sec	12 sec	1.5 A / 2.2A	5.0 A / 5.1 A
380VAC, 3PH	2300	14 sec / 17 sec	12 sec	0.9A / 1.4A	2.8 A / 2.9 A
440VAC, 3PH	2300	14 sec / 17 sec	12 sec	0.7A / 1.0A	2.1A / 2.2A
DC 24V	2300	17 sec	3 sec	9A	19A

** Weight (1) FSE-2600-210 Lbs (2) FSE-2600MO-300 Lbs (including manual override)

USER REMOTE CONTROL



COMMON
LOCAL/



10

11

12

13

14

15

16

17

18

19

20

1

2

3

1

2

3

OLS

CLS



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FULL CLOSE