



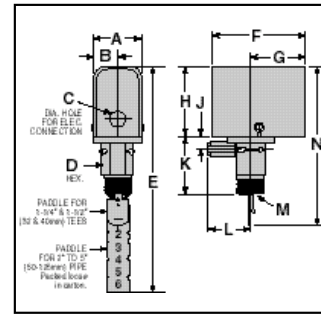
Flow Switches

McDonnell & Miller

Flow Switches – Liquid

Series FS7-4 (for specified models)

- Universal design serves the widest variety of large pipe applications, including heating and hydronic systems, air conditioning, refrigeration and process work
- 1 1/4" NPT
- Brass with sealed tube construction
- Single pole, double throw snap switch
- Magnetic switching mechanism eliminates need for bellows
- Sensitivity adjusting screw makes flow adjustment easy
- Paddles can be trimmed to suit application needs
- Optional features
 - Extended paddle arm - Model FS7-4L
 - Two SPDT switches to make or break two separate circuits
 - Stainless steel body and paddles
 - BSPT threads
 - Fire sprinkler service - Model FS7-4F- for 1 1/4" thru 2 1/2" NPT piping only (see chart p.93)
- Minimum temperature (fluid or ambient) 32°F (0°C)
- Maximum temperature 300°F (149°C)
- Maximum operating pressure
 - 300 psi (21 kg/cm²)
 - 1000 psi (70 kg/cm²) – Stainless Steel models
- Pneumatic control - FS7-4A - option available w/ 1/8" NPT airline connection; max. 50 psi air supply (non-electrical)



Electrical Ratings

Voltage	Motor Switch Rating (Amperes)		Pilot Duty
	Full Load	Locked Rotor	
120 VAC	7.4	44.4	125 VA at 120 or 240 VAC 50 or 60 cycles
240 VAC	3.7	22.2	

Dimensions, in. (mm)

A	B	C	D	E	F	G
2 7/8 (73)	1 7/16 (37)	7/8 (22)	1 3/4 (45)	13 9/16 (345)	5 13/16 (148)	3 3/8 (86)
H	J	K	L	M	N	
4 1/8 (105)	1 5/16 (24)	3 7/16 (87)	2 5/8 (67)	1 1/4 NPT	9 1/2 (241)	

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Flow Rates

Model	Size NPT in.	Settings	Mode of Operation		Max. Flow Rate gpm (lpm) w/o Paddle Damage
			Flow gpm (lpm)	No Flow gpm (lpm)	
FS7-4	1¼	Factory or Minimum	4.8 (18.2)	3 (11.4)	47 (177.9)
		Maximum	7.7 (29.1)	5.9 (22.3)	
	1½	Factory or Minimum	6.3 (23.8)	3.6 (13.6)	63 (238.5)
		Maximum	10 (37.9)	7 (26.5)	
	2	Factory or Minimum	9.9 (37.5)	5.9 (22.3)	105 (397.4)
		Maximum	15.8 (59.8)	11 (41.6)	
	2½	Factory or Minimum	15.3 (57.9)	9.5 (36)	149 (564)
		Maximum	23.7 (89.7)	17 (64.3)	
	3	Factory or Minimum	24.4 (92.4)	15.4 (58.3)	230 (870.6)
		Maximum	35.5(134.4)	29.2(110.5)	
	4	Factory or Minimum	33.3 (126)	21.1 (79.9)	397 (1502.7)
		Maximum	61.4(232.4)	37.7(142.7)	
	5	Factory or Minimum	44.4(168.1)	31 (117.3)	654 (2475.4)
		Maximum	84 (317.9)	51 (193)	
	6	Factory or Minimum	56.3(213.1)	48.7(184.3)	900 (3406.5)
		Maximum	114.8(434.5)	71 (270.6)	
8	Factory or Minimum	104(393.6)	89 (336.9)	1,500 (5677.5)	
	Maximum	210(794.9)	131(495.8)		
10	Factory or Minimum	184(696.4)	157(594.2)	2,500 (9462.5)	
	Maximum	369 (1397)	231(874.3)		
12	Factory or Minimum	289 (1094)	247(934.9)	3,500 (13,247.5)	
	Maximum	582 (2203)	363 (1374)		
14	Factory or Minimum	387 (1465)	323 (1223)	4,000 (15,140)	
	Maximum	753 (2850)	495 (1874)		
16	Factory or Minimum	513 (1942)	428 (1620)	5,000 (18,925)	
	Maximum	998 (3777)	656 (2483)		
FS7-4L	20	Factory or Minimum	520 (1968)	260 (984)	8,000 (30,280)
		Maximum	780 (2952)	693 (2623)	
	24	Factory or Minimum	752 (2846)	376 (1423)	12,000 (45,420)
		Maximum	1128(4269)	1002(3793)	
	30	Factory or Minimum	1177(4455)	589 (2229)	20,200 (76,457)
		Maximum	1766(6684)	1570(5950)	
	36	Factory or Minimum	1723(6522)	861 (3259)	28,270 (107,002)
		Maximum	2584(9870)	2297(8694)	

Values are ± 10%

NOTE: DO NOT USE LIQUID FLOW SWITCHES ON SYSTEMS WITH FLOW GREATER THAN 10 FEET (3M) PER SECOND.

Ordering Information

Model Number	Part Number	Description	Weight lbs. (kg)
FS7-4	119700	Industrial flow switch	5.5 (2.5)
FS7-4D	119750	FS7-4 w/2 SPDT switches	5.5 (2.5)
FS7-4S	120160	FS7-4 w/SS body	5.0 (2.3)
FS7-4DS	119760	FS7-4S w/2 SPDT switches	5.0 (2.3)
FS7-4J	120060	FS7-4 w/ BSPT connections	5.5 (2.5)
FS7-4SJ	120171	FS7-4J w/SS body	5.0 (2.3)
FS7-4SDJ	120174	FS7-4SJ w/2 SPDT switches	5.0 (2.3)
FS7-4L	119900	FS7-4 w/extended paddle and paddle arm	5.5 (2.5)
FS7-4LJ	119980	FS7-4L w/ BSPT connections	5.7 (2.6)
FS7-4J-E	120061	FS7-4J - CE conformance rated	5.5 (2.5)
FS7-4SJ-E	120172	FS7-4SJ - CE conformance rated	5.0 (2.3)

See page 132 for CE Conformance information

Ordering Information

Model Number	Part Number	Description	Weight lbs. (kg)
FS7-4F	119800	FS7-4 for fire sprinkler service	5.5 (2.5)
FS7-4F CAN	119801	FS7-4 for fire sprinkler service (Canada)	5.5 (2.5)
FS7-4DF	119825	FS7-4F w/2 SPDT switches	5.7 (2.6)

For Model FS7-4F Only

NPT Pipe Size In.	Paddle to use Length	TEE Size NPT
1¼	1 13/16" as furnished (only)	1¼" x 1¼" x 1¼" Tee
1½	Trim 2" pipe size paddle with template	1½" x 1½" x 1¼" NPT Tee
2	2 9/16" as furnished (only)	2" x 2" x 1¼" Tee
2½	3" as furnished (only)	2½" x 2½" x 1¼" Tee (Paddle must be bowed to insert into 1¼" NPT opening)

NOTE: ONLY LISTED PIPE SIZES MEET UL REQUIREMENTS FOR FIRE SPRINKLER SYSTEMS.

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