

Liquid Flow Switches



DBSF

DESCRIPTION

Watertight liquid flow switches.

APPLICATION

Control and monitor liquid flow of boilers, pumps, etc., of heating, cooling, and air conditioning equipment.

FEATURES

- NEMA 1 & 4 housing
- Stainless steel paddle
- Setpoint adjustable
- Brass material

SPECIFICATIONS

Type of operation	On/Off, single-stage, micro switch
Output	1 SPDT, or 2 SPDT, 24/250 VAC, 15 (8) A
Flow rates	See flow rate table
Flow rate setting adjustment	Internal screw
Sensing element	Paddle
Paddle sizes	- Factory mounted - Included
	3 inch for 1 to 3 inch pipes 6 inch for 4 to 8 inch pipes
Pipe connection	NPT 1 inch
Liquid applications	Hot, chilled, well, pool and sea water, brine or ethylene glycol
Parts material in contact with fluid	Brass
Paddle material	Stainless steel, V4A
Liquid pressure	Maximum 160 PSI (1103 kPa)
Liquid temperature	-40°F to 248°F (-20°C to 120°C)
Permissible ambient temperature	
- Housing	-40°F to 185°F (-40°C to 85°C)
Permissible ambient humidity	95% RH
Wire	
- Connection	Terminal with wire retaining screws
- Size	Maximum 14 AWG (2.5 mm ²)
Cable entry	M20 fitting, replaceable by 1/2" conduit connection
Housing	
- Material	Byblend base, ABS cover, fire retardant
- Color	Gray/dark gray
- Protection	NEMA 1 (IP 40), or NEMA 4 (IP 65)
- Dimensions	4.3 x 2.8 x 2.8 in. (108 x 70 x 72 mm)
Installation	Pipe mounted
Ship weight	2.2 lb (1.0 kg)



certified ISO 9001

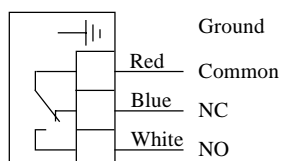
Part Numbers

1 SPDT, NEMA 1	DBSF-1KPLN-1US
1 SPDT, NEMA 4	DBSF-1KPLN-4US
2 SPDT, NEMA 1	DBSF-1KPLNB-1US
2 SPDT, NEMA 4	DBSF-1KPLNB-4US

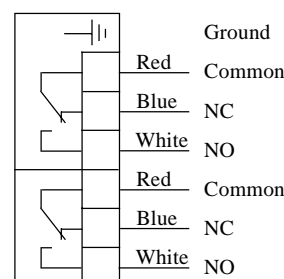
WIRING DIAGRAM

Increased flow and attained setpoint:
Red & White connected
Decreased flow and attained setpoint:
Red & Blue connected

DBSF-1KPLN



DBSF-1KPLNB



Liquid Flow Rate Table

DBSF - 1KPLN Flow Rates: GPM (m³/hr) required to actuate switch

Line Pipe Size (inch)		1	1-1/4	1-1/2	2	2-1/2	3	4	4Z	5	5Z	6	6Z	8	8Z
Min.*	Flow Increase Red & Wht Connected	4.2 (1.0)	5.8 (1.3)	7.5 (1.7)	13.7 (3.1)	17.6 (4.0)	27.5 (6.2)	64.7 (14.7)	35.2 (8.0)	125.0 (28.4)	57.01 (12.9)	90.0 (43.1)	74.0 (16.8)	374.7 (85.1)	204.7 (46.5)
	Flow Decrease Red & Blue Connected	2.5 (0.6)	3.7 (0.8)	5.0 (1.1)	9.5 (2.2)	11.9 (2.7)	19.0 (4.3)	50.1 (11.4)	26.9 (6.1)	101.0 (22.9)	41.0 (9.3)	158.0 (35.9)	54.0 (12.3)	319.7 (72.6)	170.0 (38.6)
Max.	Flow Increase Red & Wht Connected	9.2 (2.1)	13.3 (3.0)	17.6 (4.0)	26.9 (6.1)	30.8 (7.0)	50.2 (11.4)	127.6 (29.0)	81.0 (18.4)	245.0 (55.6)	118.0 (26.8)	374.7 (85.1)	144.0 (32.7)	759.5 (172.5)	415.0 (94.2)
	Flow Decrease Red & Blue Connected	8.1 (2.0)	12.5 (2.8)	16.3 (3.7)	25.1 (5.7)	28.6 (6.5)	47.1 (10.7)	122.0 (27.7)	76.2 (17.3)	234.7 (53.3)	111.0 (25.2)	359.7 (81.7)	134.7 (30.6)	729.6 (165.7)	400.6 (90.8)

Note: For flow rates with suffix "Z", the 6-inch paddle must be installed.

- * Factory calibrated at minimum flow level / high sensitivity.
To adjust for less sensitivity / higher flow rate, turn adjustment screw located below switch clockwise .