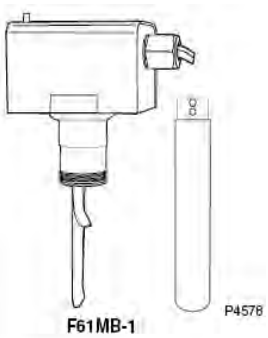
JOHNSON CONTROLS - LIQUID LEVEL AND FLOW CONTROLS

F61 SERIES FLOW SWITCH (Standard Flow Rate — SPDT)

SELECTION CHART



F61MB-1

F61KB-11

DESCRIPTION

The F61 Series Flow Switches are Single-Pole, Double-Throw (SPDT) flow switches used on fluid lines carrying water, ethylene glycol, or other fluids not classified as hazardous. They can be wired to energize one device and de-energize another device powered from the same source when fluid flow either exceeds or drops below the set flow rate. The F61MG type flow switches are used for low- energy loads to operate small relays, solenoid valves, and electronic control circuits. These flow switches have gold-plated contacts for improved electrical performance in low voltage, low current circuits.

FEATURES

- Stainless steel paddle w/3 segments for use in pipes from 1” to 3” (25-75 mm) diameter
- Paddle segments can be removed or trimmed as needed
- F61KB-11 and F61MB-1 include a 6” (152 mm) paddle for pipes 4” to 6” (102-152 mm)
- Gold-plated contacts on F61MG-1 reduce intermittent contact problems in low-voltage and low-current circuits

APPLICATIONS

- Use on lines carrying water or ethylene glycol
- Not for use with hazardous fluids or in hazardous atmospheres

SELECTION CHART

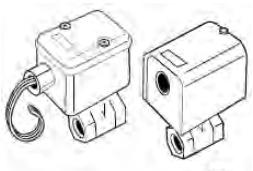
PART NO	ENCLOSURE	BELLOWS	PADDLE
F61KB-11C	NEMA 1	Phosphor Bronze	Stainless Steel; 3-piece Paddle (3 in., 2 in., and 1 in. Segments)Installed; 6 in. Paddle Supplied Uninstalled
F61LB-1C	NEMA 1	Phosphor Bronze	Stainless Steel; 3-piece Paddle (3 in., 2 in. and 1 in. Segments)Installed
F61MB-1C	NEMA 3R	Phosphor Bronze	Stainless Steel; 3-piece Paddle (3 in., 2 in., and 1 in. Segments)Installed; 6 in. Paddle Supplied Uninstalled
F61MB-5C	NEMA 3R	Stainless Steel	Stainless Steel; 3-piece Paddle (3 in., 2 in., and 1 in. Segments)Installed; 6 in. Paddle Supplied Uninstalled
F61MG-1*C	NAME 3R	Phosphor Bronze	Stainless Steel; 3-piece Paddle (3 in., 2 in., and 1 in. Segments)Installed; 6 in. Paddle Supplied Uninstalled

*Gold plated Contact

JOHNSON CONTROLS - LIQUID LEVEL AND FLOW CONTROLS

F61 SERIES FLOW SWITCH (Low Flow Rate — SPDT)

SELECTION CHART



F61MD (Left) and F61KD (Right) Sensitive Flow Switches

DESCRIPTION

For use on liquid lines using water, ethylene glycol solutions, or other liquids not injurious to the brass and phosphor bronze parts. The SPDT contact switch is activated by a low flow rate however, it has a large flow capacity with a minimum pressure drop.

APPLICATIONS

Typical applications include:

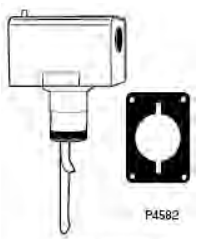
- Water purification and treatment systems
- Booster pumps
- Fast shutdown on high input boilers to guard against circulation failure
- Cooling systems for electronic tubes, bearings and compressors

SELECTION CHART

PART NO	INLET AND OUTLET SIZE FEMALE NPT	ENCLOSURE NEMA TYPE	ADJUSTMENT RANGE — GPM (L/Min) R to Y		LIQUID TEMP		MAXIMUM LIQUID PRESSURE
			Closes Flow Increase	Opens Flow Decrease	MAXIMUM	MINIMUM	
F61KD-3C	1/2 x 1/2 in. (13 x 13 mm)	1	Minimum 0.6 (2.27);Maximum 1.1 (4.17)	Minimum 0.3 (1.14);Maximum 0.9 (3.4)	250° F (121° C)	32° F (0° C)	150 psig (1034 kPa)
F61KD-4C	3/4 x 3/4 in. (19 x 19 mm)	1	Minimum 0.6 (2.27);Maximum 1.1 (4.17)	Minimum 0.3 (1.14);Maximum 0.9 (3.4)	250° F (121° C)	32° F (0° C)	150 psig (1034 kPa)
F61KD-8C	3/4 x 3/4 in. (19 x 19 mm)	1	Minimum 8.5 (32.2);Maximum 9.0 (34.1)	Minimum 4.5 (17.1);Maximum 6.3 (23.9)	250° F (121° C)	32° F (0° C)	150 psig (1034 kPa)
F61MD-1C	1/2 x 1/2 in. (13 x 13 mm)	3R	Minimum 0.6 (2.27);Maximum 1.1 (4.17)	Minimum 0.3 (1.14);Maximum 0.9 (3.4)	250° F (121° C)	–20° F (–29° C)	150 psig (1034 kPa)
F61MD-2C	3/4 x 3/4 in. (19 x 19 mm)	3R	Minimum 0.6 (2.27);Maximum 1.1 (4.17)	Minimum 0.3 (1.14);Maximum 0.9 (3.4)	250° F (121° C)	–20° F (–29° C)	150 psig (1034 kPa)

F62 SERIES AIRFLOW SWITCH (SPDT — Contact Unit)

SELECTION CHART



Airflow Control

DESCRIPTION

This control detects airflow or the absence of airflow in ducts, responding only to the velocity of air movement. The one-piece stainless steel paddle can be trimmed, if necessary. The control is supplied with mounting plate gasket. The range adjusting screw permits field adjustment of flow rate setting.

SELECTION CHART

PART NO	PADDLE SIZE (in)	DIMENSION	MAX AMBIENTTEMP °F (°C)	MAX AIR VELOCITY
F62AA-8C	2-1/8 in. x 6-7/8 in	10-3/8 in. H (including paddle),4 in. W, 2-13/16 in. D	100 (40)	2000 FPM (10 m/sec.)
F62AA-9C	3-1/8 in. x 6-7/8 in.	10-3/8 in. H (including paddle),4 in. W, 2-13/16 in. D	100 (40)	2000 FPM (10 m/sec.)

JOHNSON CONTROLS - LIQUID LEVEL AND FLOW CONTROLS

F63 SERIES LIQUID LEVEL FLOAT SWITCH

SELECTION CHART (For Closed Tanks)

F63BF Float Switch

DESCRIPTION

The F63 can be wired to close one circuit and open another circuit when liquid level rises above or falls below the required level. The F63AC-1 has a NEMA 1 general purpose enclosure. The F63BF-1 has a NEMA 3R rain tight enclosure. Not for use with hazardous fluids or in hazardous atmosphere.

FEATURES

- SPDT snap-acting switch
- Rugged steel enclosure

SELECTION CHART (For Closed Tanks)

PART NO	SWITCH ACTION	TYPE OF ENCLOSURE	MAXIMUM LIQUID PRESSURE	MAX AMBIENT TEMP °F (°C)	LIQUID TEMP MAXMUM	LIQUID TEMP MINIMUM
F63AC-1C	SPDT	250 (121)	General Purpose NEMA 1	180 (40)	32 (0)*	100 (690)
F63BF-1C	SPDT	250 (121)	Vaportight/ Raintight NEMA 3R	180 (40)	–20 (–29)**	100 (690)

*Or Ambient Dew Point.
**Or Liquid Freezing Point.

F92 SERIES AIR VOLUME CONTROL (For Shallow Wells)

SELECTION CHART (For Shallow Wells)

F92B

DESCRIPTION

Shallow well air volume control prevents water logged or air bound tanks by maintaining proper air volume.

FEATURES

- Internal parts are constructed of brass to minimize corrosion
- High impact plastic body is resistant to mechanical damage and corrosion

APPLICATIONS

- Air volume control for shallow well tanks

SELECTION CHART (For Shallow Wells)

PART NO	GAUGE TAPPING	TANK CONNECTOR	SUPPLY TANK
F92B-1C	1/4 in. Tap for Gauge 0.016 in. Brass Orifice	1-1/4 in. (32 mm) Male NPT	80 lbs (552 kPa) Max Pressure Min Diameter 9 in. (229 mm)
F92B-1C	1/4 in. Tap for Gauge 0.016 in. Brass Orifice	1-1/4 in. (32 mm) Male NPT	80 lbs (552 kPa) Max Pressure Min Diameter 9 in. (229 mm)
F92B-9C	1/4 in. Tap for Gauge	1-1/4 in. (32 mm) Male NPT	80 lbs (552 kPa) Max Pressure Min Diameter 9 in. (229 mm)