

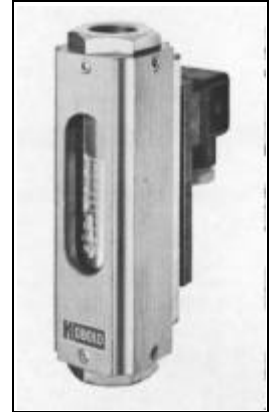
**KOBOLD Instruments Inc.**  
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## BVO Series Flowmeter and Switch Installation Instructions

www.koboldusa.com

### BVO Model Number Information

Range GPM Water	Fittings NPT	Pressure Loss @ Max Flow PSIG	Model Number	
			Brass	304 SS
0.1-1.0	1/4"	0.9	BVO-6102	BVO-6202
0.2-2.0	1/4"	1.4	BVO-6106	BVO-6206
1.0-5.0	1/2"	1.1	BVO-6116	BVO-6216
1.0-13	1"	2.1	BVO-6150	BVO-6250
Option Suffix "U" SPDT switch in place of the N/O switch				



### Installation Precautions

**User's Responsibility for Safety:** it is the user's responsibility to select the instrument that is appropriate for the application, to install it per these installation instructions, to perform tests of the installed system, and to maintain all components. The failure to do so could result in property damage or serious injury.

**Temperature and Pressure:** The BVO is designed for use in application temperatures from -10 to 212°F, and pressures to 145 PSIG. Operation outside these limitations will cause damage to the unit and possible personal injury.

**Flammable, Explosive and Hazardous Applications:** The switch provided with the BVO is not of an explosion proof design. If the unit is to be used in an area where risk of explosion exists, the switch must be connected via an appropriately selected and installed intrinsic safety barrier.

### Specifications

**Accuracy:** ±5% of full scale  
**Repeatability:** ±2% of full scale  
**Media:** Water-like liquids  
**Fittings:** NPT  
**Wetted Parts:**  
**Brass Meters:** Nickel-Plated Brass, NBR, Glass  
**SS Meters:** 304 SS, FKM, Glass  
**Temperature Range:** -10 to 212°F  
**Maximum Pressure:** 145 PSIG  
**Flow Direction:** Vertical, flow bottom to top

**Material Compatibility:** Check your model number with the wetted materials specification. Make sure that the model which you have selected is chemically compatible with the application liquids.

**Proper Installation and Handling:** Use a proper sealant with all installations. Never overtighten the unit within the fitting. **Never use the housing to thread the unit into its fitting.** Always use only an appropriate sized wrench on the hex portion of the body. Ensure that the piping is rigidly supported at the inlet and outlet of the meter. Always check for leaks prior to system start-up.

**Make a Fail-safe System:** Design a fail-safe system that accommodates the possibility of switch failure as well as operator error. In critical applications, KOBOLD recommends the use of redundant backup systems and alarms in addition to the primary system.

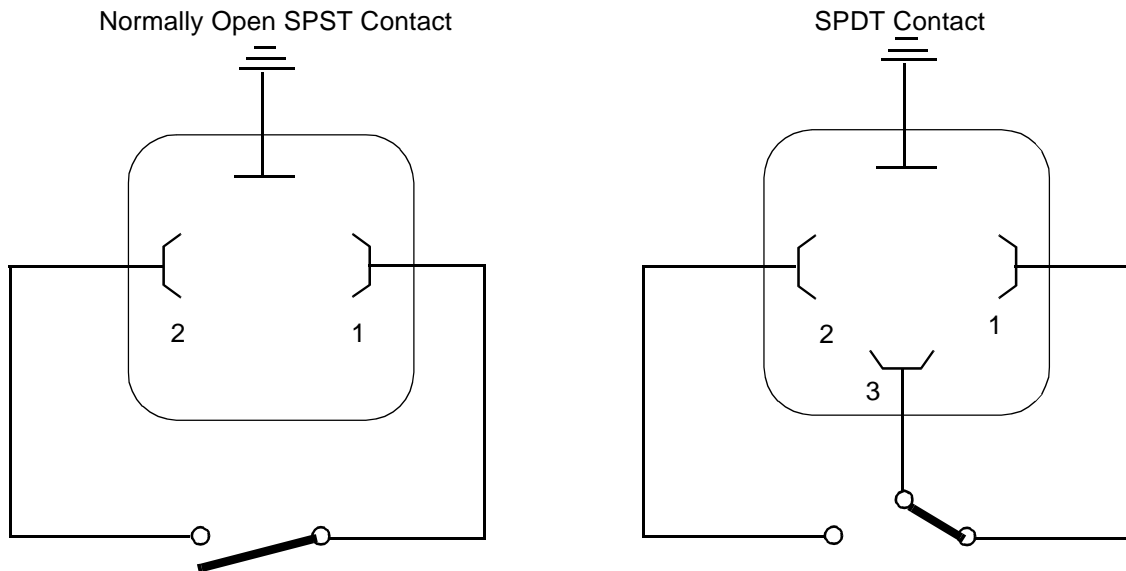
#### N/O Switch Specifications:

**Max. Voltage:** 240 VAC, 200 VDC  
**Max. Current:** 1.5 Amp AC, 1.0 Amp DC  
**Max. Power:** 50 VA, 50 Watts  
**Switching Hysteresis:** 4-8 mm of float travel

#### SPDT Switch Specifications:

**Max. Voltage:** 240 VAC  
**Max. Current:** 0.8 Amp AC  
**Max. Power:** 30 VA  
**Switching Hysteresis:** 4-8 mm of float travel

## Electrical Connections



## Adjusting the Switch Setpoint

### Adjusting to Switch on Increasing Flow

Adjust the setpoint as follows:

1. Loosen the hold-down screws on the reed contact housing.
2. Slide the contact upwards along its rail until it reaches the stop.
3. Open the medium feed line and set flow to desired volume.
4. Slide the reed contact downwards until the contact actuates.
5. Tighten the hold-down screws.
6. Step 3 may be simulated by moving the float to the desired flow setpoint using a non-metallic object (such as an ink pen) and adjusting the switch setpoint prior to installing the meter into the process piping.

### Adjusting to Switch on Decreasing Flow

Adjust the setpoint as follows:

1. Loosen the hold-down screws on the reed contact housing.
2. Slide the contact downwards (toward inlet) along the rail until it reaches the stop. The reed contact will be actuated at this point.
3. Open the feed line and introduce flow until the reed contact deactuates, then lower the flow value to the desired minimum.
4. Slide the contact upwards (toward outlet) until the reed contact actuates again.
5. Tighten the hold-screws.
6. Step 3 may be simulated by moving the float to the desired flow setpoint using a non-metallic object (such as an ink pen) and adjusting the switch setpoint prior to installing the meter into the process piping.