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**Series NV**

**Liquid Level Switch**

## Precautions

**User's Responsibility for Safety:** KOBOLD manufactures a wide range of process sensors and technologies. While each of these technologies are designed to operate in a wide variety of applications, it is the user's responsibility to select a technology that is appropriate for the application, to install it properly, 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.

**Proper Installation and Handling:** Use a proper sealant with all installations. Never over-tighten the sensor within its fittings. Always check for leaks prior to system start-up.

**Wiring and Electrical:** Because this device is used in an electric circuit, only properly trained personnel should install and maintain this product. Current limits must never be exceeded. The circuit should never exceed a maximum of 250 Volts. Electrical wiring of the sensor should be performed in accordance with all applicable national, state and local codes.

**Temperature and Pressure:** The NV is designed for use with media not exceeding 230°F and pressures not exceeding 232 PSIG. Operation outside these limits will cause damage to the unit.

**Material Compatibility:** The NV's process wetted parts are brass or stainless steel and either NBR or FKM o-rings depending on the model. Make sure that the NV is chemically compatible with the application liquids. While the sensor's outer housing is liquid resistant when installed properly, it is not designed to be immersed. It should be mounted in such a way that it does not normally come into contact with fluid.

### Flammable, Explosive and Hazardous Applications:

The NV is not an explosion-proof design. It should not be used in applications where an explosion-proof design is required.

**Make a Fail-Safe System:** Design a fail-safe system that accommodates the possibility of sensor or power failure. In critical applications, KOBOLD recommends the use of redundant backup systems and alarms in addition to the primary system.

## Specifications

### Wetted Parts:

Housing:	Brass or 304 Stainless Steel
Float:	304 Stainless Steel
Plate spring:	304 Stainless Steel
Sleeve:	Brass or 304 Stainless Steel
Seals:	NBR (Brass), FKM (SS)

### Switch housing:

Polyamide

### Cable:

PVC (5 ft. standard)

### Fitting:

¾" NPT

### Max. Pressure:

232 PSIG

### Max Media Temp.:

230°F

### Electrical:

Contact: Reed switch, SPST, N/O or N/C

Max. Ratings: 2A @ 20 VAC, 0.18 @ 230 VAC, Max. 40 W (SPST)

cCSAus Approval

### Protection:

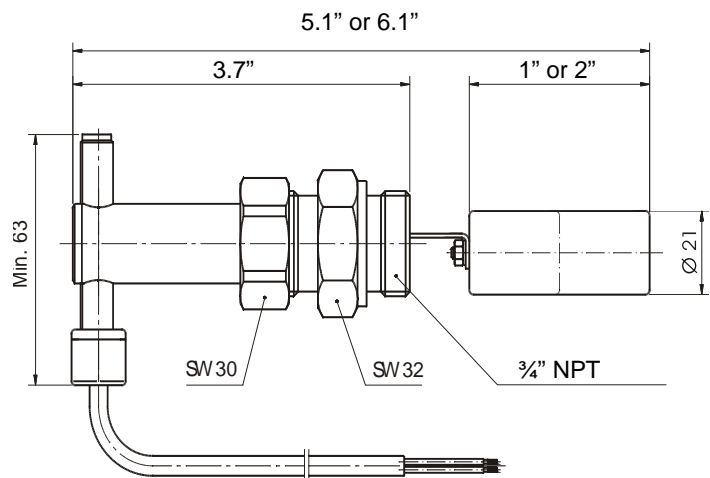
NEMA 4/IP65

### Minimum Fluid Density:

1" float = 0.72 gm/cc (SG: 0.72)

2" float = 0.63 gm/cc (SG: 0.63)

## Dimensions:



Order Numbers for Standard Types		
Float Length	Brass type	Stainless Steel type
1"	NV-5101	NV-5201
2"	NV-5103	NV-5203
Optional extended cable: -EC Spare SPST Switch: PS-P202047		

**Application information:** Kobold NV Liquid level switches may be installed wherever a reasonably priced compact device is required for monitoring liquid levels. A cylindrical stainless steel float is located at one end of the horizontal balance arm; the float moves up and down with the liquid level. The float movements are transmitted through the balance arm to a permanent magnet on the opposite end. The magnet actuates a reed contact located within a movable housing. The reed contact switches ON or OFF depending on the position of the permanent magnet relative to the switch housing. The reed switch is set as a normally open (N/O) contact at the factory, i.e., the contact closes as the liquid level rises. The switching function can be changed to normally closed (N/C) by moving the switch housing. Additionally, the switch sensitivity is adjustable to minimize the effects of turbulence.

**Mechanical installation:** The float switch should be installed horizontally so that the float can move freely over its entire range and not touch the walls, bottom, or cover of the container. Avoid positions where turbulence may be encountered due to agitators or intake valves.

**N.O. contact:**

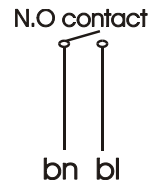
The switching unit is to be set within the range of the red arrow. (The contact closes on increasing liquid level.)

**N.C. contact:**

The switching unit is to be set within the range of the white arrow. (The contact opens on increasing liquid level.)

The container should be free of circulating solids or ferrous particles, which may adhere to the float magnet and interfere with the switching function. If the liquid contains sediments or suspended materials, special precautions must be taken to keep these materials away from the float system.

**Electrical connection:** Insert the sensor's switch contact into an appropriately rated electrical circuit using the brown and blue conductors:



**Adjustment of switching unit:** To adjust the switching function, the clamp plate on upper part of housing must be loosened slightly and the switch assembly inserted more or less into the top of the housing. To assist in the adjustment procedure, a white and red arrow is provided on the switching assembly. The leading edge of clamp plate serves as adjustment mark.

