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MODEL KEFS LIQUID LEVEL FLOAT SWITCH INSTALLATION / OPERATION INSTRUCTIONS

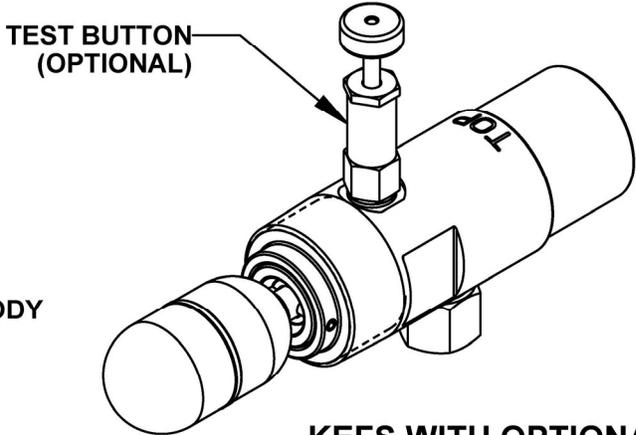
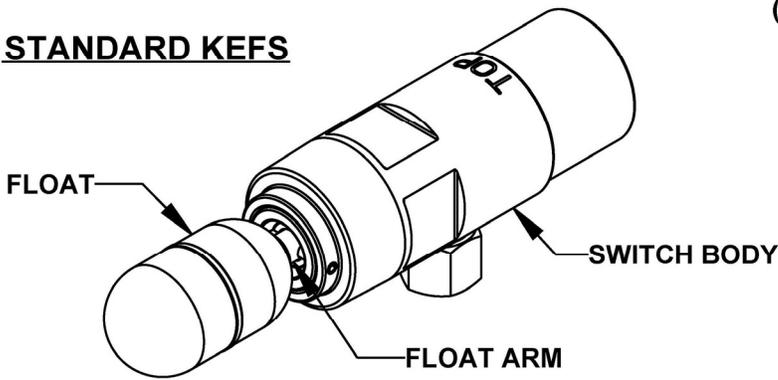
PRINCIPLE OF OPERATION

The Model KEFS uses a float to determine the presence or absence of liquid at the process connection. The float arm assembly consists of a float at one end and a magnet at the other. As the level rises, the float rises, and the magnet falls. The magnet actuates a second magnet on the other side of the pressure boundary. This second magnet causes the switch to change state.

The pressure boundary contains no seals; it is a solid stainless steel barrier that passes a magnetic field, but no liquids. It is impossible for the process liquid to enter the switch enclosure through this barrier.

The electrical contacts consist of a microswitch that can be either a Single-pole, Double-throw (SPDT) or Double-pole, Double-throw (DPDT) Configuration. The SPDT Switch is available with either a 5 Amp or 8 Amp current load. The DPDT is available with a 5 Amp/30Vdc current load (See Switch Types and Ratings in the Product Specifications for more details).

STANDARD KEFS



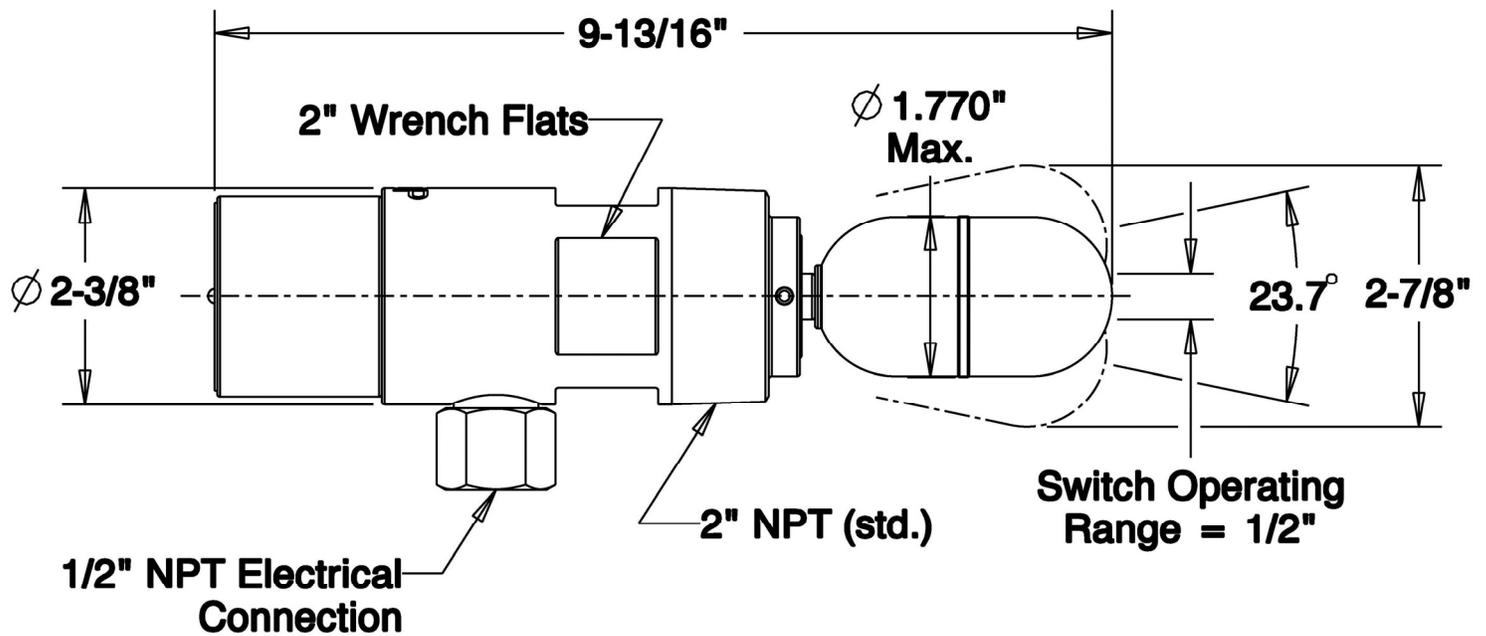
KEFS WITH OPTIONAL TEST BUTTON

MODEL DESCRIPTION

KEFS	2				
Model	Process Connection	Switch Rating	Temperature Rating	Wetted Parts	Test Button
	2 = 2" NPT	SPDT5 = 5A SPDT DPDT4 = 4A DPDT SPDT8 = 8A SPDT	Standard (Leave Blank) High Temp = 400	303 Stainless Steel (Leave Blank) S6 = 316 Stainless Steel	No Test Button (Leave Blank) TB = Test Button

* High temperature option only available with 5A SPDT switch
 * For details on optional Test Button, see I.O.M. on KENCO Engineering Website.

SWITCH DIMENSIONS



INSTALLATION

Unpack the switch carefully. Inspect the unit(s) for damage. Report any damage to carrier immediately. Check the contents against the packing slip and purchase order.

Operational Check

Before installing the switch a simple operational check should be performed, as follows:

1. Remove the Switch Housing Cover
2. Connect an Ohmmeter to CM1 and NC1 (See **Wiring** section).
3. With the conduit connection pointing downward, the "TOP" label facing upward, and the float downward (at rest), the Ohmmeter should be showing approximately 0Ω .
4. Lift the float up. The Ohmmeter should be showing infinite Ω (some digital meters will show OL).
5. Disconnect the Ohmmeter

Mounting

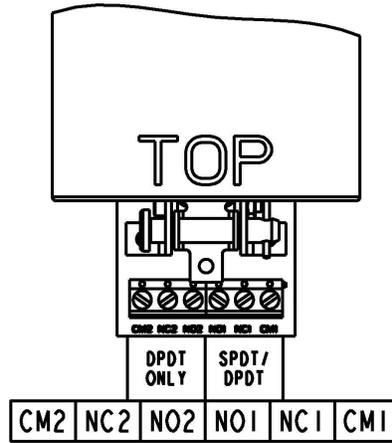
1. Make sure the float will not be obstructed by the coupling, vessel wall or other vessel components.
2. To prevent galling, Kenco recommends the use of RectorSeal Virgin 100 pipe sealer with Teflon or an equivalent Teflon based pipe sealer. Apply pipe sealer liberally to the threads of the switch.
3. Screw the switch into the process vessel by hand until snug. Tighten at least one full turn until switch is level and the $1/2-14$ NPT conduit connection is on the bottom. To make sure switch is in the proper operating position place a level on the wrench flats.

Wiring

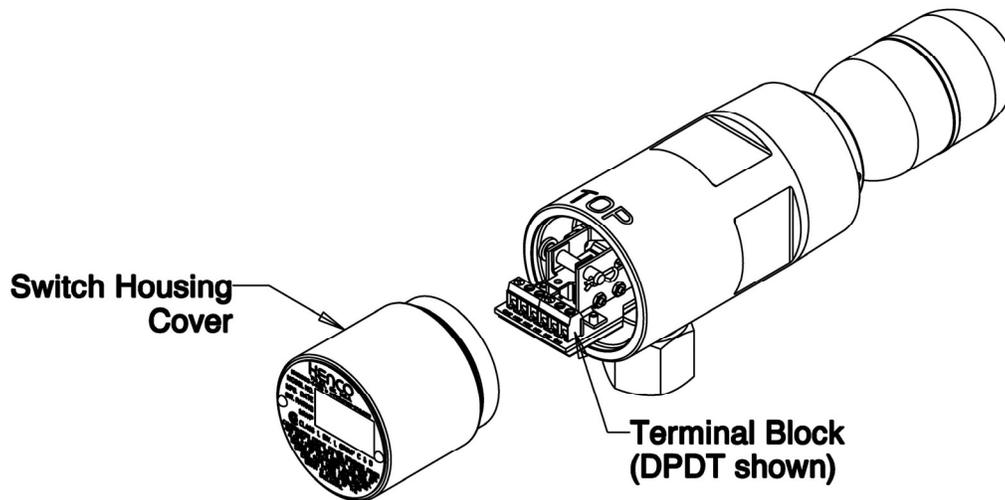
It is recommended that conduit be installed onto the $1/2"$ NPT connection on the switch body. A seal drain fitting should be used to prevent moisture from entering the switch. All wiring, conduit, and electrical fittings must conform to local electrical codes for the location selected. If the switch is to be used in a Hazardous Area, the applicable sections of the National Electrical Code must be followed as well.

(Note: The SPDT5-400 high temperature option is wired differently than the other KEFS models. It does not have a terminal block and uses four 18 AWG color coded wires instead. It has a separate wiring instruction sheet that is included as an addendum to this one)

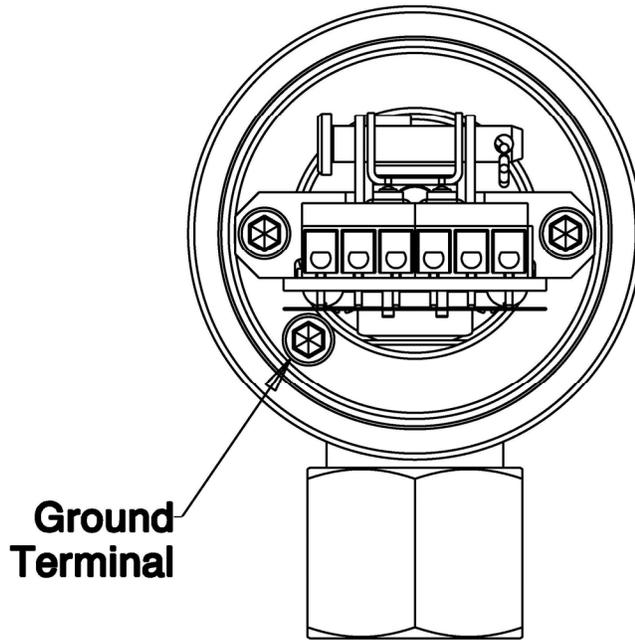
WIRING TERMINALS



CM = Common; NC = Normally Closed; NO=Normally Open
1 = Used in both SPDT and DPDT Switches; 2 = Used in DPDT Switches Only



1. Remove the switch housing cover.
2. Feed wire up through the conduit (user supplied) and conduit opening, and out through the opening below the terminal blocks, taking care not to damage insulating paper on bottom of circuit board inside unit.
3. Do not use any more wire than is necessary to make the connections. Make sure that any excess wire is stored below the terminal block / circuit board. Too much wire inside the switch cap could interfere with the operation of the switch mechanism.
4. The terminal block is designed to handle 16 AWG to 22 AWG stranded, insulated wire. Be sure to size the wire appropriately for your electrical loads. If in doubt, use 16 AWG. Strip approximately 1/4" of insulation off of the wire.
5. See the following table for the switch connections:
6. Insert the wire into the appropriate terminal, and tighten the screw. Make sure that the screw is snug enough, so that the wire will not fall out of the terminal. Do not over tighten! Damage to the terminal block could occur, which will render the switch inoperable!
7. Crimp a #8 ring terminal of the appropriate wire gage to the ground wire and attach to the ground terminal shown.



8. Carefully reinstall the Switch Housing Cover; **BE CAREFUL** not to pinch the wires

PRODUCT SPECIFICATIONS

Description		Specification
Specific Gravity		≥ 0.53
Wetted Parts Material	Standard	303 SS
	Optional	316 SS
Process Connection Size	Standard	2" NPT
	Optional	1½" NPT (Not yet available)
Temperature Range	Standard	-67°F to 257°F (-55°C to 125°C)
	Optional	-40°F to 400°F (-40°C to 205°C)
Process Pressure Range		Vacuum to 2000psig
Switch Types & Ratings	Standard	SPDT5; 5A @ 250Vac; 5A @ 30Vdc resistive
	Optional	SPDT8; 8A @ 250Vac; 12A @ 125Vac resistive
	Optional	DPDT4; 4A @ 250Vac; 5A @ 30Vdc resistive
	Optional	SPDT5-400; (high temp. option); 5A @ 250Vac; 0.3A @ 125Vdc
Housing Rating (CSA Certified)*		Class I, Div. 1, Groups C & D
Conduit Connection		½" – 14 NPT

*Excludes high temperature version of the KEFS with the SPDT5-400 Option