

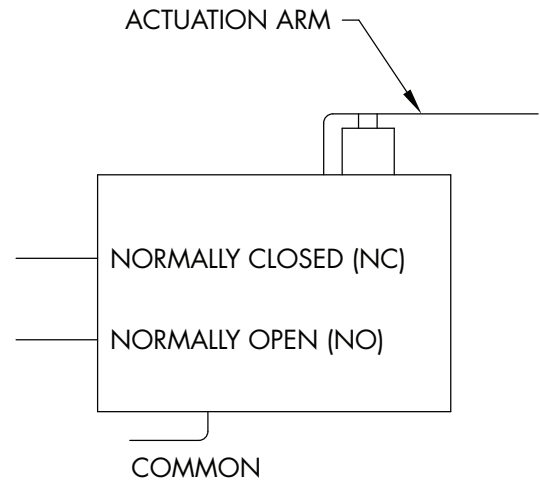
# MODEL L-21

**HARWIL CORPORATION**

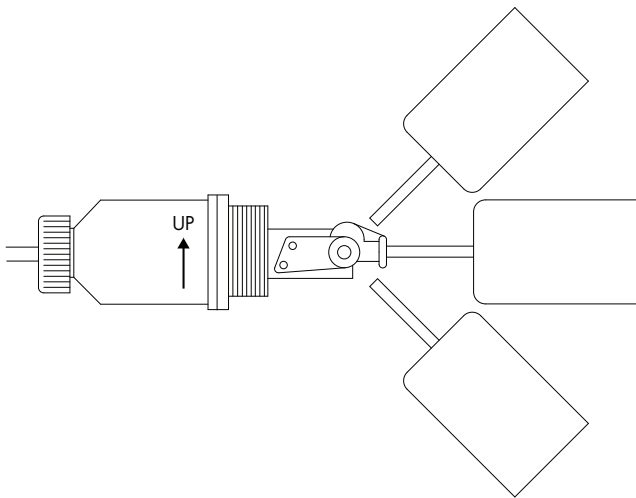
541 KINETIC DRIVE, OXNARD, CA 93030  
TEL: (805) 988-6800

## INSTALLATION AND OPERATING INSTRUCTIONS

1. If the shipping container and contents are received damaged, immediately call the shipping company for damage inspection and file the appropriate report, sending a copy to Harwil Corp. for product replacement and insurance adjustment.
2. If the contents are not damaged, inspect the units received against the packing list and the original purchase order. If incorrect units are received, call Harwil Corp. immediately for resolution of the problem.
3. Check for damage or scuffing on the Teflon tape applied to the 1 1/4" NPT threads of the switch body. Re-tape as required with 2 to 3 layers wound clockwise (looking at the end of the threaded body with the float toward the viewer).
4. Remove the cover and check switch action with a multimeter while moving the float up and down.



## FLOAT UP/DOWN CONFIGURATION



FLOAT POSITION	MULTIMETER CONNECTION	METER READING
UP	COMM. AND NO TERMINALS	CONTINUITY
	COMM. AND NC TERMINALS	OPEN CIRCUIT
DOWN	COMM. AND NO TERMINALS	OPEN CIRCUIT
	COMM. AND NC TERMINALS	CONTINUITY

5. Replace the domed cover on the unit and insert the float through the 1 1/4" NPT hole in the tank. Mate the switch body threads with tank threads and tighten with an appropriate wrench until the thread joint is leak-tight and the arrow on the cover label is pointing vertically upward.

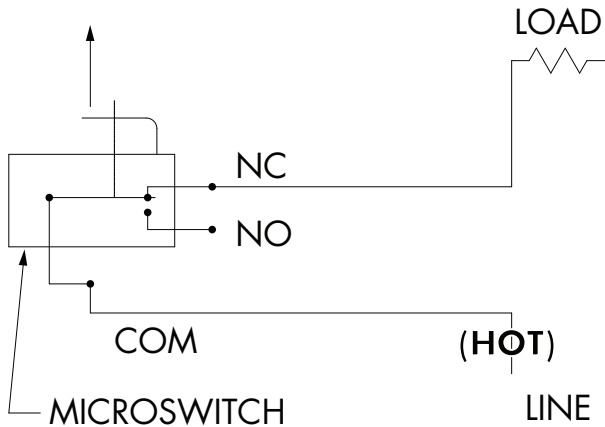
**NOTE:** Model L-21 can be supplied with 1 1/2" x 1 1/4" or larger reducer bushings as required to fit existing large holes in a tank wall.

6. Remove the cover and wire as indicated on page 3.

## LOW LIQUID LEVEL ALARM

**Fig 1:** Wiring schematic for power applied to load when liquid level is less than set point (power to load interrupted when level increases to above set point).

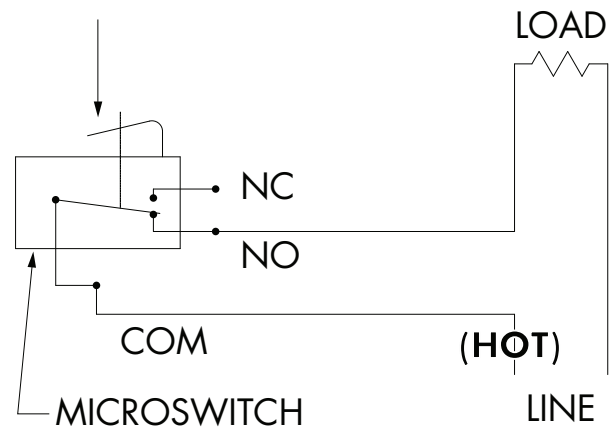
Decreasing liquid level moves actuator in direction shown.



## HIGH LIQUID LEVEL ALARM

**Fig 2:** Wiring schematic for power applied to load when liquid level is greater than set point (power to load interrupted when level decreases to below set point).

Increasing liquid level moves actuator in direction shown.



Microswitch actuation point may be monitored by an audible click or with an ohmmeter before connecting line power to the switch terminals or by monitoring the voltage supplied to the load through the microswitch.

\* **Pump Up** wiring diagram same as low level alarm shown in Fig. 1

\* **Pump Down** wiring diagram same as high level alarm shown in Fig. 2

\* **Electrical Wiring** (Strain Relief Grommet):

Step 1) Remove the gland nut, grommet, and switch cover.

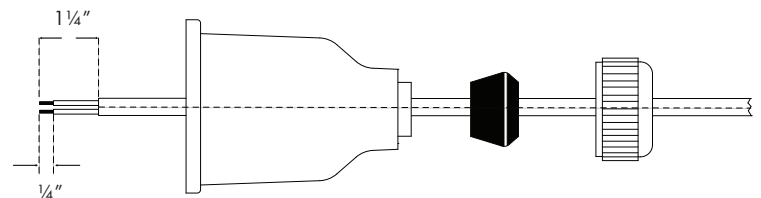
Step 2) Strip the outer jacket of the electrical cord back approximately 1 ¼" (inches). Strip insulation from individual conductors back approximately ¼" (inch).

Step 3) Slip-on terminals are supplied with each switch.

Remove from switch terminals and crimp on or solder to electrical leads.

Step 4) Feed the electrical cable through the strain relief nut, grommet, and switch cover.

Step 5) Apply slip-on terminals to appropriate contacts of microswitch. Slide cover down the cable and fasten it to the body of the switch with four (4) screws provided. Slide grommet down the cable and push the grommet into the tapered end of the cover. Hold the cable jacket to prevent rotation and thread gland nut firmly onto cover.



\* **Electrical Wiring** ('F' Cover):

Step 1) Remove switch cover.

Step 2) Strip the outer jacket of the electrical cord back approximately 1 ¼" (inches). Strip insulation from individual conductors back approximately ¼" (inch).

Step 3) Slip-on terminals are supplied with each switch. Remove from switch terminals and crimp on or solder to electrical leads.

Step 4) Thread user supplied ½" flexible conduit fitting into ½" female thread on end of cover. Feed electrical

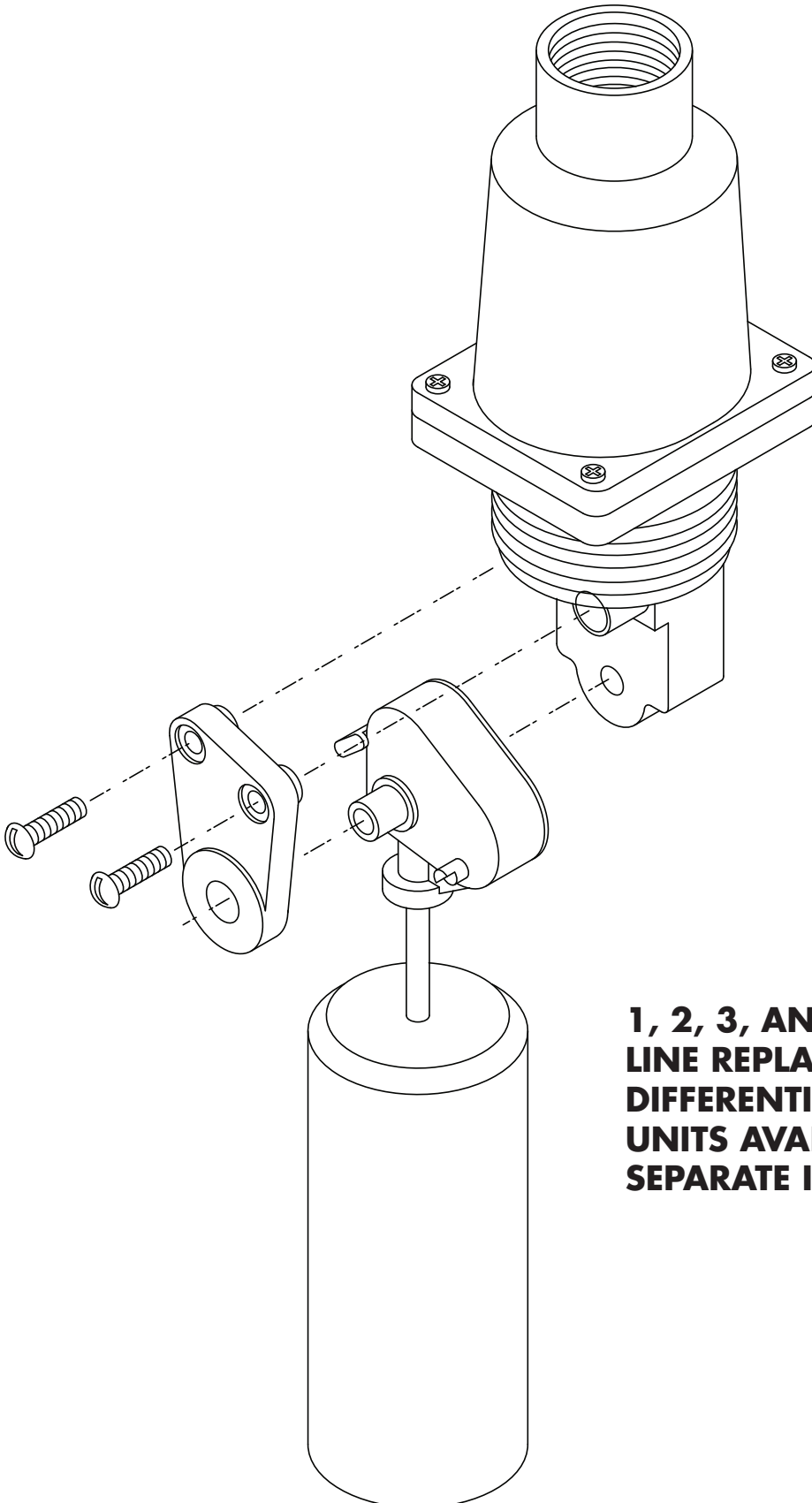
cable through conduit fitting.

Step 5) Apply slip-on terminals to appropriate male spade contacts on microswitch. Slide cover down cable and fasten to body of switch with four (4) screws provided. Be sure to install the "O" ring between the body and cover. Connect flexible ½" metal or plastic conduit-to-conduit fitting on end of cover per standard procedure.

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**1, 2, 3, AND 5 INCH  
LINE REPLACEABLE  
DIFFERENTIAL FLOAT  
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SEPARATE ITEMS.**