

# Installation Instructions for L971 Series Crankcase Level Switch

L-94071N  
Revised 09-97  
Section 15  
(00-02-0173)



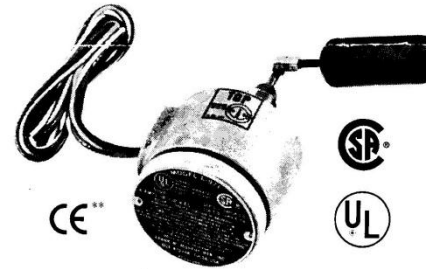
Please read the following information before installing. A visual inspection of this product for damage during shipping is recommended before mounting. It is your responsibility to have a qualified person install this unit and make sure it conforms to local codes.

## GENERAL INFORMATION

**WARNING**

BEFORE BEGINNING INSTALLATION OF THIS MURPHY PRODUCT

- ✓ Disconnect all electrical power to the machine.
- ✓ Make sure the machine cannot operate during installation.
- ✓ Follow all safety warnings of the machine manufacturer.
- ✓ Read and follow all installation instructions.



### Description

The Murphy L971 Series Level Switch detects low oil level in a compressor's crankcase. It is designed for Ingersoll-Rand Type 30, Type 40 and ESH compressors, yet can be adapted to fit other compressors that have an inspection plate extending below normal operating oil level. The L971 has a 1/2 NPT process connection and features an explosion-proof enclosure, durable SPDT snap-switch and rigid polyurethane foam float.

### Specifications

**Operating Temperature:** -15 to 275°F (-26 to 135°C).  
**Maximum Working Pressure:** 30 psi (206 kPa) [2.06 bar].  
**Switch Rating:** 4 A @ 250 VAC.

**Material**  
 Case: *Aluminum (explosion-proof).*  
 Mounting Adaptor: *Brass.*  
 Floats:  
 • *Rigid polyurethane.*  
 • *304 stainless steel (L971-C only).*

Other Wetted Parts: *303, 304, and 316 stainless steel.*  
 O-Ring Seals: *Viton and Buna.*

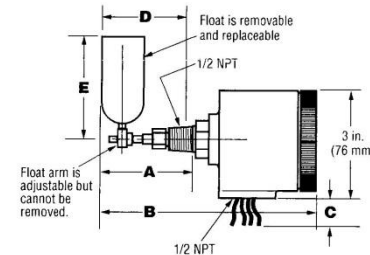
**Process Connection:** 1/2 NPT.

**Enclosure Rating:** UL and CSA listed for Class I, Groups C & D; Class II, Groups F & G, Hazardous Locations.

**Conduit Connection:** 1/2 NPT.

**Wire:** 18 AWG (0.75 mm<sup>2</sup>).

### Dimensions



| Models | Dimensions in inches* (see drawing above) |              |           |             |              |
|--------|---|--------------|-----------|-------------|--------------|
|        | A   | B            | C         | D           | E            |
| L971   | 2-5/8 (67)                                | 5-7/8 (149)  | 30 (762)  | 2-1/2 (64)  | 2-27/32 (72) |
| L971-A | 2-5/8 (67)                                | 5-7/8 (149)  | 30 (762)  | 2-1/2 (64)  | 2-27/32 (72) |
| L971-B | 4-13/16 (122)                             | 8-1/16 (205) | 30 (762)  | 4-5/8 (117) | 2-27/32 (72) |
| L971-C | 2-13/16 (71)                              | 6-1/16 (154) | 30 (762)  | 2-7/8 (73)  | 3-1/8 (79)   |
| L971-D | 3-7/8 (98)                                | 7-1/8 (181)  | 30 (762)  | 3-3/4 (95)  | 2-27/32 (72) |
| L971-E | 4-13/16 (122)                             | 8-1/16 (205) | 30 (762)  | 5-1/8 (130) | 2-27/32 (72) |
| L971-F | 2-5/8 (67)                                | 5-7/8 (149)  | 40 (1016) | 2-1/2 (64)  | 2-27/32 (72) |
| L971-G | 2-5/8 (67)                                | 5-7/8 (149)  | 40 (1016) | 2-1/2 (64)  | 2-27/32 (72) |

\*Millimeter dimensions are shown in parenthesis ( ).

### Warranty

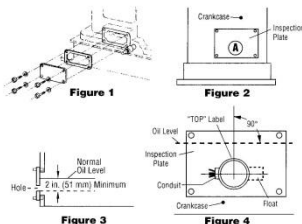
A limited warranty on materials and workmanship is given with this FW Murphy product. A copy of the warranty may be viewed or printed by going to [www.fwmurphy.com/support/warranty.htm](http://www.fwmurphy.com/support/warranty.htm)

\*\*Products covered by this literature comply with EMC Council directive 89/336/EEC regarding electromagnetic compatibility except as noted.

## INSTALLATION

### Compressors With Inspection Plate

1. Drain crankcase.
2. Remove crankcase inspection plate (Figure 1).
3. Drill and tap a 1/2 NPT female pipe thread into the inspection plate at point "A" (Figure 2). **CAUTION: Clean area of metal shavings.** The hole is to be a minimum of 2 in. (51 mm) below normal running oil level (Figure 3).



4. Unscrew and remove float on the L971 switch.
5. Apply pipe dope to the process connection threads.
6. Thread the L971 switch into crankcase hole until "TOP" label is up (Figure 4). Be sure the float moves freely and there are no obstructions.
7. If adjustment of shutdown level is required, loosen hex set screw on float attachment. Rotate float attachment to desired level. Retighten set screw.
8. Replace float and reinstall inspection plate and gasket in original position.
9. Install drain plug.
10. Wire accordingly.
11. Fill crankcase to proper level.

### Compressors Without Inspection Plate

1. If installing into a thick wall crankcase, drill and tap a 1/2 NPT female pipe thread into the crankcase. **CAUTION: Clean area of metal shavings.** The hole is to be a minimum of 2 in. (51 mm) below normal running oil level (Figure 3).

If installing into a thin wall crankcase, drill a hole in the crankcase slightly larger than outside diameter of a 1/2 in. coupling. The hole is to be a minimum of 2 in. (51 mm) below normal running oil level (Figure 3). **CAUTION: Clean area of metal shavings.** Weld a half collar (1/2 NPT) into the hole.

2. Follow steps 4 thru 11 above.

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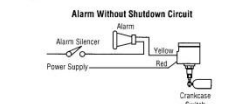
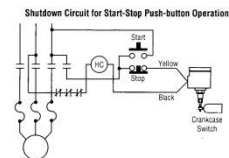
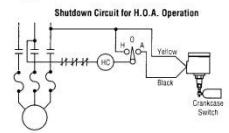
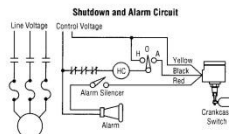
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## TYPICAL WIRING



## REPLACEMENT PARTS

| Description  | Part Number | Description     | Part Number |
|--------------|-------------|-----------------|-------------|
| Cover        | 15050443    | Float           | 15050679    |
| Cover Gasket | 15050369    | Polyurethane    | 15050356    |
| Snap-switch  | 00002326    | Stainless Steel | 15050356    |