# P400 Single-Point Differential Lube Oil Pressure Switch

## Application

See Table 1 for backwards-compatibility information.

**Table 1: Control and Switch/Switch Compatibility**

| Test | P345 or P445 Control with P300 Sensor | P345 or P445 Control with P400 Switch | P545 Control and P300 Sensor | P545 Control and P400 Switch |
|---|---|---|---|---|
| **Wiring Harness**[1] | WHA-P300-xxx only | WHA-P300-xxx or WHA-P400-xxx | WHA-P300-xxx only | WHA-P300-xxx or WHA-P400-xxx |
| **Test Switch** | 6-8 Second delay | Does not function[2] | Immediate | Immediate |

1. WHA-P300-xxx is the 3-wire harness supplied with the P345 or P445 control and the P300 sensor. WHA-P400-xxx is the 2-wire harness supplied with the P545 control and the P400 switch.
2. When the P445 control is wired to a P400 switch, The **Test** button may operate when first powered up; however, after a couple minutes of operation, the **Test Switch** function no longer works. All other control functions operate normally.

## Installation

See Figure 1 for dimensional information.

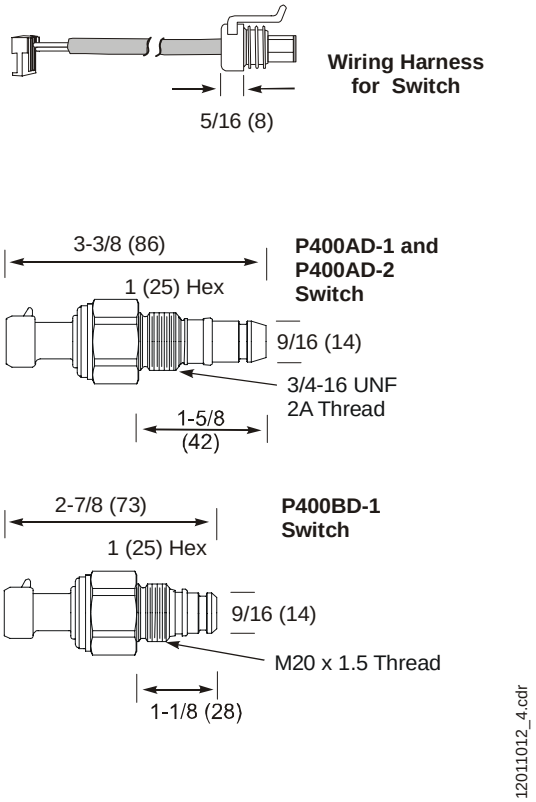


**Figure 1: WHA Wiring Harness and P400 Switch Dimensions, in. (mm)**

## Accessories

See Table 2 for information on ordering accessories.

**Table 2: Wiring Harness Ordering Information**

| Product Code Number | Description |
|---|---|
| **WHA-P400-100C** | 3 1/3 ft (1 m) length wiring harness |
| **WHA-P400-125C** | 4 ft (1 1/4 m) length wiring harness |
| **WHA-P400-250C** | 8 ft (2 1/2 m) length wiring harness |
| **WHA-P400-430C** | 14 ft (4 1/3 m) length wiring harness |

## Mounting

To modify an existing refrigeration compressor to accept the P400 switch may involve installing an adapter block (such as a Johnson Controls® CST29A-600C) or other part. For proper installation, follow all procedures recommended by the compressor manufacturer.

1. Wet the switch nozzle and gasket with oil.
2. Fit the gasket over the nozzle as shown in Figure 2.
3. Install the switch in the lube oil port according to the compressor manufacturer's instructions.
4. Hand-tighten until surfaces of gasket and compressor housing meet.

5. Use a torque wrench to tighten the switch until sealed (40 lb·ft recommended torque).

## Wiring

Use this procedure to connect the P400 switch to the control:

1. Insert the plug into the connector until it snaps and locks in place. See Figure 2.
2. Connect the wiring harness to the P545 control at P2. Refer to the *P545 Series Electronic Lube Oil Control Product/Technical Bulletin (LIT-12011012)*.

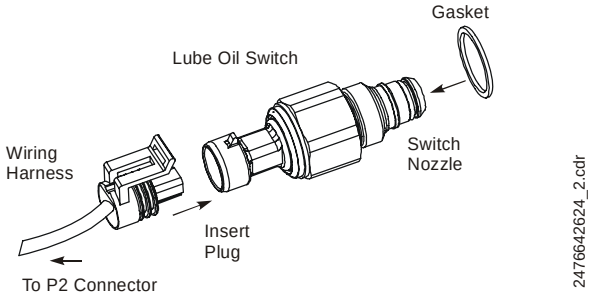


**Figure 2: Connecting the Wiring Harness to the P400 Switch**

## Repairs and Replacement

Do not make field repairs or attempt calibration. Order switches and alternate length wiring harnesses as separate items through local Johnson Controls wholesalers.

**Table 3: P400 Single-Point Differential Oil Pressure Switch Ordering Information**

| Product Code Number | Open Point (Differential Pressure) | Close Point (Differential above Open Point) | Threads | Wiring Harness | Fits Compressors Manufactured by |
|---|---|---|---|---|---|
| **P400AD-1C*** | 7.0 ± 1.0 psid | Less than or equal to 2.0 psid | 3/4-16 UNF | WHA-P400-100 | Carlyle® |
| **P400AD-2C*** | 12.75 ± 0.75 psid | Less than or equal to 1.5 psid | | | Copeland® |
| **P400BD-1C*** | 10.0 ± 1.5 psid | Less than or equal to 3.0 psid | M20 x 1.5 | WHA-P400-125 | Bitzer |

* Wiring harness included

## Technical Specifications

| | |
|---|---|
| **Product** | P400 Single-Point Differential Lube Oil Pressure Switch |
| **Ambient Operating Conditions** | 0 to 221ºF (-18 to 105ºC) |
| **Ambient Storage Conditions** | -40 to 250ºF (-40 to 120ºC) |
| **Shipping Weight** | 0.5 lb (0.232 kg) |

*The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office or Johnson Controls/PENN Application Engineering at (414) 524-5535 or 1-800-275-5676 (1-800-ASK-JNSN). Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.*

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