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Sensing and Control  
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### Sensing and Control

Honeywell Inc.

11 West Spring Street

Freeport, IL 61032

[www.honeywell.com/sensing](http://www.honeywell.com/sensing)

## Enclosed Switches



OP enclosed switches are precision snap-action switches sealed in rugged cast aluminum housings. Cover and shaft seals keep out moisture and other contaminants on rotary operated switches. The plungers in the Q-plunger version are not sealed.

Refer to page A123 for explosion-proof Type EX switches, which are dimensionally interchangeable with OP switches.

### FEATURES

- Cast aluminum housing
- Mounts from 4 sides
- Cover seal, captive cover screws
- Momentary contact

- UL Recognized, file #E12252
  - CSA Certified, file #LR57325
  - Grounding screw
  - NEMA 1, 3\*, 4\* and 13\*
- (\* Except Q-plunger and high temperature types)

### ELECTRICAL RATING

| Circuitry                                                                                                        | Electrical Rating                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br>Single-pole<br>Double-throw | <b>A</b> UL/CSA Rating:<br>15 amps, 125, 250 or 480 VAC;<br>1/8 Hp, 125 VAC; 1/4 Hp, 250 VAC;<br>1/2 amp, 125 VDC; 1/4 amp, 250 VDC.                              |
| <br>Double-pole<br>Double-throw | <b>B</b> UL/CSA Rating:<br>10 amps, 125, 250 VAC;<br>0.3 amp, 125 VDC; 0.15 amp, 250 VDC.                                                                         |
| <br>Single-pole<br>Double-throw | <b>D</b> UL/CSA Rating:<br>20 amps, 125, 250 or 480 VAC;<br>1 Hp, 125 VAC; 2 Hp, 250 VAC;<br>1/2 amp, 125 VDC; 1/4 amp, 250 VDC.<br>Lamp Load — 10 amps, 125 VAC. |
| <br>Single-pole<br>Double-throw | <b>E</b> 5 amps, 125, 250 or 480 VAC;<br>1/2 amp - 125VDC; 1/4 amp - 250 VDC                                                                                      |

## ROLLER LEVER ACTUATED SWITCHES



N = Newtons

\* Actuation is designated as CW (clockwise) or CCW rotation, when looking at the switch nameplate.

† Choice of levers available for use with OP-AR20:  
**6PA5-EX** (non-sparking roller), **6PA6-OP** (steel roller), **6PA127-EX** (nylon roller), **6PA130-EX** (CW), **6PA142-EX** (CCW), and **6PA136-EX** (Aluminum rod).

Characteristics: O.F. — Operating Force; P.T. — Pretravel; O.T. — Overtravel; D.T. — Differential Travel

For rapid response – off the shelf service, all **bold face** listings are normally stocked items.

### ORDER GUIDE

| Description                                   |                                                                                   | Elec. Rating | Catalog Listing | O.F.                          | P.T. max. mm in.       | O.T. max. | D.T. max. mm in.       |
|-----------------------------------------------|-----------------------------------------------------------------------------------|--------------|-----------------|-------------------------------|------------------------|-----------|------------------------|
| Roller Lever is field adjustable through 360° | CW actuation* SPDT                                                                | A            | <b>OP-AR</b>    | 2,22-5,56 N<br>.5-1.25 lbs.   | 5,56<br>.219<br>(8°)   | 90°       | 0,18<br>.007<br>(.25°) |
|                                               | CW actuation* SPDT will withstand 400°F for 100 hours                             | E            | OP-AR400        | 2,22-5,56 N<br>.5-1.25 lbs.   | 5,56<br>.219<br>(8°)   | 90°       | 0,18<br>.007<br>(.25°) |
|                                               | CW actuation* High capacity. SPDT                                                 | D            | <b>OPA-AR</b>   | 3,34-8,90 N<br>.75-2 lbs.     | 5,56<br>.219<br>(8°)   | 25°       | 0,3<br>.012<br>(.4°)   |
|                                               | CW actuation* DPDT                                                                | B            | <b>OPD-AR</b>   | 2,22-6,67 N<br>.5-1.5 lbs.    | 4,78<br>.250<br>(10°)  | 25°       | 2,77<br>.109<br>(4°)   |
|                                               | CCW actuation* SPDT                                                               | A            | <b>OP-AR30</b>  | 1,11 N max.<br>2.5 lbs. max.  | 1,65<br>.065<br>(3.5°) | 25°       | 0,18<br>.007<br>(.25°) |
|                                               | CCW actuation* Basic switch plunger held depressed (normal position) DPDT         | B            | <b>OPD-AR30</b> | 12,2 N max.<br>2.75 lbs. max. | 5,56<br>.219<br>(8°)   | 25°       | 2,77<br>.109<br>(4°)   |
|                                               | CW or CCW actuation* No lever return spring. No mounting bracket furnished. SPDT. | A            | OP-AR16         | 0,56 N max.<br>2 oz. max.     | —                      | —         | —                      |
| No lever furnished.† CW actuation.* SPDT      |                                                                                   | A            | <b>OP-AR20</b>  | 0,08-0,23 N<br>.75-2 in. lb.  | 8°                     | 90°       | .25°                   |

Enclosed Switches

CROSS ROLLER LEVER ACTUATED SWITCH



ORDER GUIDE

| Description                                          | Elec. Rating | Catalog Listing | O.F. max. N lbs.     | P.T. max. mm in.     | O.T. min. mm in. | D.T. max. mm in.       |
|------------------------------------------------------|--------------|-----------------|----------------------|----------------------|------------------|------------------------|
| CW actuation*<br>Field adjustable through 360°. SPDT | A            | OP-CR           | 2,22-5,56<br>.5-1.25 | 5,56<br>.219<br>(8°) | 90°<br>max.      | 0,18<br>.007<br>(.25°) |

MANUALLY ACTUATED SWITCH



ORDER GUIDE

| Description                                           | Elec. Rating | Catalog Listing | O.F. max.                          |
|-------------------------------------------------------|--------------|-----------------|------------------------------------|
| Large 3x3.5 inch paddle for fast, easy operation SPDT | A            | OP-AR50         | 11.1 Newtons<br>2.5 lbs. (approx.) |

Limit/Enclosed

OVERTRAVEL PLUNGER ACTUATED SWITCHES



ORDER GUIDE

| Description       |                    | Elec. Rating | Catalog Listing | O.P. mm in.             | O.F. max. N lbs. | P.T. max. mm in. | O.T. min. mm in. | D.T. max. mm in. |
|-------------------|--------------------|--------------|-----------------|-------------------------|------------------|------------------|------------------|------------------|
| In-line actuation | SPDT               | A            | OP-Q            | 47,2±1,52<br>1.859±.060 | 13,3<br>3        | 1,98<br>.078     | 4,78<br>.188     | 0,10<br>.004     |
|                   | High Capacity SPDT | D            | OPA-Q           | 46±1,52<br>1.812±.060   | 8,90<br>2        | 1,27<br>.050     | 3,18<br>.125     | 0,23<br>.009     |
|                   | DPDT               | B            | OPD-Q           | 46±1,52<br>1.812±.060   | 13,3<br>3        | 2,77<br>.109     | 3,58<br>.141     | 1,52<br>.060     |

BOOT SEALED PLUNGER ACTUATED SWITCH

ORDER GUIDE

| Description                      | Elec. Rating | Catalog Listing | O.F. max. N lbs. | P.T. max. mm in. | O.T. min. mm in. | D.T. max. mm in. |
|----------------------------------|--------------|-----------------|------------------|------------------|------------------|------------------|
| In-line actuation with boot seal | A            | OP-N            | 15,5<br>3.5      | 1,98<br>.078     | 4,78<br>.188     | 0,10<br>.004     |

\* Clockwise actuation, when looking at the switch nameplate.  
N = Newtons

Characteristics: O.F. — Operating Force; P.T. — Pretravel; O.T. — Overtravel; D.T. — Differential Travel; O.P. — Operating Position

## Enclosed Switches

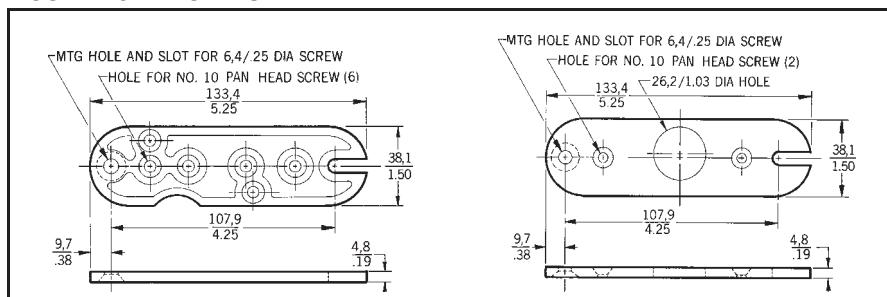
### REPLACEMENT PARTS

In addition to the items shown below, these replaceable internal levers are available:  
**33PA2-OP** for OP-AR, OP-AR20 and OP-CR; and  
**33PA3-OP** for OP-AR50.

| Switch Listing | Catalog Listing<br>Replacement Part Numbers |           |          |
|----------------|---------------------------------------------|-----------|----------|
|                | Switching Unit                              | Actuator  | Springs  |
| OP-AR          | BZ-2R-P4                                    | 6PA6-OP   | 33PA7-EX |
| OPA-AR         | BA-2R-P4                                    | 6PA6-OP   | 33PA6-EX |
| OPD-AR         | DT-2R4-A7                                   | 6PA6-OP   | 33PA6-EX |
| OP-AR30        | BZ-2R-P4                                    | 6PA6-OP   | 33PA5-EX |
| OPD-AR30       | DT-2R711-A7                                 | 6PA6-OP   | 33PA5-EX |
| OP-AR16        | BZ-2RW88-P5                                 | 6PA6-OP   | —        |
| OP-AR20        | BZ-2R-P4                                    | †         | 33PA7-EX |
| OP-Q           | BZ-2R-P4                                    | 8PA7-OP   | —        |
| OPA-Q          | BA-2R-P4                                    | —         | —        |
| OPD-Q          | DT-2R-A7                                    | —         | —        |
| OP-CR          | BZ-2R-P4                                    | 6PA131-EX | 33PA7-EX |
| OP-AR50        | BZ-2R-P4                                    | 6PA134-OP | 33PA7-EX |

† Levers for OP-AR20 are on pages A108 and A109.

### MOUNTING BRACKETS



### CONDUIT SEALING PACKETS

| Catalog Listing<br>Packet | Cable O.D. Inches |
|---------------------------|-------------------|
| 2PA6                      | .400" – .435"     |
| 2PA16                     | .435" – .470"     |
| 2PA1                      | .530" – .570"     |

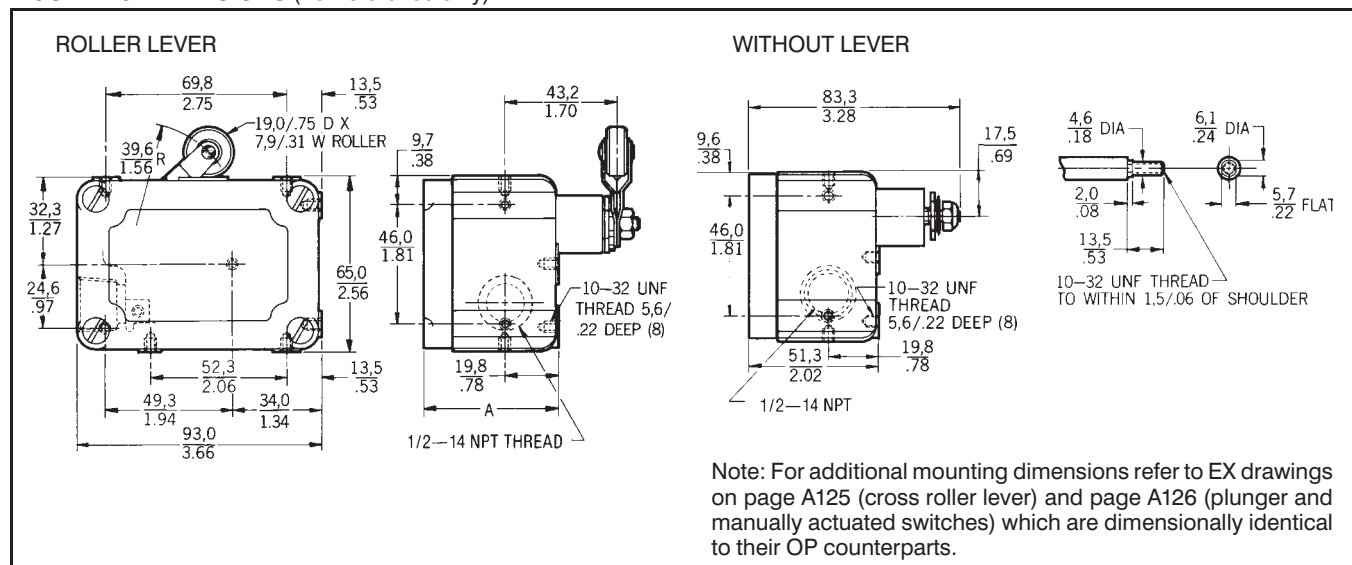
(See page A99 for description.)

**15PA85-EX** is used for top, bottom, back or end mounting. It is furnished with each switch, except OP-AR16 and OP-AR62.

**15AP86-EX** is ordered separately for top mounting of plunger switches.

(Switches may also be direct mounted using 10-32 NF screws.)

### MOUNTING DIMENSIONS (For reference only)



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