

Valve Position Indicator

DESCRIPTION

Valve Position Indicator, VPX Series switches are built especially for outdoor use in potentially hazardous atmospheres. The switch enclosures are constructed to withstand the pressure of an internal explosion. Flame paths cool the exploded gases to a point less than the lowest safe operating temperature of the surrounding gas. The VPX Series versions equipped with the inductive proximity switches has the Intrinsically Safe (IS) rating. Regardless of where the equipment or machinery is designed, built or installed, the VPX Series products carry global agency coverage.

The VPX Series switches have standard rugged die-cast aluminum housing. The products housing is weather sealed for outdoor use and comply with NEMA 4X requirement for protection against corrosion, in addition to various NEMA enclosure standards.

The product's o-ring seals make the enclosure rain tight, but are outside of required flame paths so explosion proof requirements are maintained. The VPX Series switches are available in multiple colors and angles, visible from all directions. Unless special ordered, all basic switches operate on clockwise and counterclockwise rotation.

DIFFERENTIATION

- With numerous environmental ratings (Ingress Protection and NEMA), the VPX Series is protected for all kinds of outdoor conditions
- VPX Series is certified flame-proof, explosion-proof and Intrinsically Safe (optional), thereby making the product safe for a wide variety of potentially hazardous area applications
- The Safety Integrity Level, SIL 3 certification, puts the VPX Series in the higher safety category as compared to its competitors

VALUE TO CUSTOMERS

- cULus, ATEX, IEC EX, NEPSI, and KOSHA certified for hazardous (explosive) environments
- Designed with the end user in mind, these switches help to create user-friendly interfaces with broad applications possibilities to help meet the challenges of many different environments
- Weather sealed to NEMA and IP ratings
- Reliable, dependable and accurate
- Versions available in both snap-action switches and intrinsically safe inductive proximity switches

POTENTIAL APPLICATIONS

- Seaside grain and duel loading docks
- Oil and gas wells
- Refineries
- Fuel storage facilities
- Mining
- Petrochemical and chemical plants
- Waste water treatment facilities
- Oil and gas production pipeline networks
- Paint batching/blending plants
- Pharmaceuticals and drug processing plants
- Food and beverage industries
- Pesticides manufacturing plants
- Textile dyeing and finishing plants
- Lead acid battery manufacturing facilities



FEATURES

- VPX Series switches are certified for ATEX, IEC Ex, CE, cULus, NEPSI, and KOSHA specifications for global applications that requires protection from explosive gases, vapors & combustible dust
- Die-cast aluminum housing and various sealing (NEMA 4, 4X, 6, and 13), certifies the VPX Series is rated for rain, wind, snow, ice and blowing dust environments
- Wide operating temperature range from -40 °C to 80 °C (see Table 1 for detailed specifications)
- Versions of the VPX with proximity switches carry an Intrinsically Safe (IS) rating
- Well suited for up to 500,000 actuation cycles
- Available in multiple indicator colors that is visible from all directions



PORTFOLIO

The VPX Series joins the CX Series of valve position indicator switches for hazardous areas applications. The standard offerings of the VPX Series is certified for flammable gases, vapors and combustible dust. The VPX Series also offers the Intrinsically Safe versions (optional). To view the entire product portfolio, [click here](#).

VALVE POSITION INDICATOR, VPX SERIES

| TABLE 1. SPECIFICATIONS | |
|--|---|
| CHARACTERISTIC | PARAMETER |
| Series name | VPX Series |
| Product type | Valve Position Indicator |
| Housing material | Aluminum with protective paint finish |
| Housing size | 152,3 mm H x 140 mm W x 140 mm D [6.0 in H x 5.5 in W x 5.5 in D] ref. |
| Operating temperature | Versions with four electromechanical switches: -40 °C to 50 °C [-40 °F to 122 °F] Versions with two electromechanical switches: -40 °C to 60 °C [-40 °F to 140 °F] Versions with proximity switches: -40 °C to 80 °C [-40 °F to 176 °F] |
| Sealing | NEMA 4, 4X, 6, and 13 per UL 50E; IP66 per IEC 60079-0; IP67 per IEC 60529 (self-certified by Honeywell) |
| Agency approvals | cULus, ATEX, IEC EX, CE, NEPSI, KOSHA       |
| Explosion proof hazardous area designations | North America: Division 1, Class I, Groups B, C, and D (Gas Rating) Division 1, Class II, Groups E, F, and G (Dust Rating) ATEX/IEC Ex: II 2 G, II 2 D (ATEX Rating) Ex db IIC T6 Gb (Gas Rating) Ex tb IIIC T85°C Db (Dust Rating) Ta -40 °C to +50 °C (Switch Code 4A or 4B) Ta -40 °C to +60 °C (Switch Code 2A or 2B) |
| Intrinsically safe hazardous area designations | Versions of the VPX with proximity switches carry an intrinsically safe rating: North America: Not Available ATEX/IEC Ex: II 1 G, II 1 D (ATEX Rating) Ex ia IIC T4 Ga (Gas Rating) Ex ia IIIC T135°C Da (Dust Rating) Ta -40 °C to 80 °C |
| Visual indicator | Available in multiple colors and angles. Visible from all directions. |
| Electrical ratings | Versions with snap-action switches: UL Rating: 15 A 150 Vac CE Rating: 16 A 250 Vac 10 A 250 Vac 0.5 A 250 Vdc 0.5 A 250 Vdc Versions with Intrinsically Safe Proximity Switches: Switch element function: NAMUR, NC Nominal voltage: 8.2 V Current consumption (On) ≤ 1 mA Current consumption (Off) ≥ 3 mA |
| Mechanical endurance | 500,000 cycles min. |
| Safety Integration Level (SIL) | SIL 3 per IEC 61508-2. The Mean Cycle to Failure (MCTF) requirements are: Mechanical endurance MCTF: 500,000 cycles Electrical endurance MCTF proximity switches: 50,000 cycles Electrical endurance MCTF electromechanical switches loaded at 16 A 250 Vac: 25,000 cycles Electrical endurance MCTF electromechanical switches loaded at 0.5 A 250 Vdc: 10,000 cycles |
| Shock | IEC 60068-2-27; half sine, 50 g, 11 mS, 3 axis |
| Vibration | IEC 60068-2-6; 10 Hz to 59 Hz with 1,5 mm peak-to-peak, 60 Hz to 500 Hz @ 5 g, 7.5 min sweeps, 20 sweeps per axis |
| Product weight | 2,4 kg [5.2 lb] (approx.) |

VALVE POSITION INDICATOR, VPX SERIES

FIGURE 1. PRODUCT NOMENCLATURE

| VPX | 1 | C | 2A | A | GR | 1 | A | 2A | 1 | - - - |
|--|--------------------|---|---|-----------------|------------------------------------|-----------------------------------|----------------------|---|--|---|
| Series | Enclosure Material | Origin and Certifications | Switch Options | Indicator Angle | Indicator Color | Shaft End | Shaft Rotation | Conduit Entry | Number of Conduit Plugs | Specials |
| VPX Series Valve Position Indicator | 1 Aluminum | A Standard IEC Ex, ATEX, CE, NEPSI | 2A 2X snap action SPDT | A 45° | GR Green (open) Red (closed) | 1 Namur | A 360° continuous | 2A (2) 1/2-14 NPT (A & D) | Leave blank for no plugs | Up to two letters or numbers to indicate a special feature. |
| | | C Premium IEC Ex, ATEX, cULus, CE, SIL3, NEPSI, KOSHA | 4A 4X snap action SPDT | B 90° | BY Black (open) Yellow (closed) | 2 1/4 in flats | B ±90° | 2B (2) 3/4-14 NPT (A & D) | 1 1 plug | |
| | | | 2B 2X snap action SPDT, gold contacts | | YB Yellow (open) Black (closed) | 3 Ø7.25 knurl for ex. lever | | 2C (2) M20 x 1.5 (A & D) | 2 2 plugs | |
| | | | 4B 4X snap action SPDT, gold contacts | | RY Red (open) Yellow (closed) | | | 2D (2) M25 x 1.5 (A & D) | 3 3 plugs | |
| | | | 2C 2X I.S. inductive proximity switch (Namur) | | GY Green (open) Yellow (closed) | | | 3B (3) 3/4-14 NPT (A, B, & D) | Indicate how many plugs should be included. Any unused conduit entries must be sealed with a blanking element certified to the hazardous location environment (or better). Plugs can also be purchased separately. (see page 7). | |
| | | | | | RG Red (open) Green (closed) | | | 4C (4) M20 x 1.5 | | |
| | | | | | YR Yellow (open) Red (closed) | | | 4D (4) M25 x 1.5 | | |
| | | | | | YG Yellow (open) Green (closed) | | | (2) 1/2-14 NPT (B & D) & (2) 3/4-14 NPT (A & D) | | |

| TABLE 2. OPERATING CHARACTERISTICS | |
|--|---|
| CHARACTERISTIC | PARAMETER |
| Operating torque | 1,0 Nm [8.9 in-lb] max. |
| Operating point | Adjustable to any angle in 4° increments |
| Factory set points for 4-switch option | Switches 1 & 2: 25° ±25° when the shaft is rotated clockwise |
| | Switches 3 & 4 (45° indicator): 45° ±25° when the shaft is rotated counterclockwise |
| | Switches 3 & 4 (90° indicator): 90° ±25° when the shaft is rotated counterclockwise |
| Factory set points for 2-switch option | Switch 1: 25° ±25° when the shaft is rotated clockwise |
| | Switch 2 (45° indicator): 45° ±25° when the shaft is rotated counterclockwise |
| | Switch 2 (90° indicator): 90° ±25° when the shaft is rotated counterclockwise |

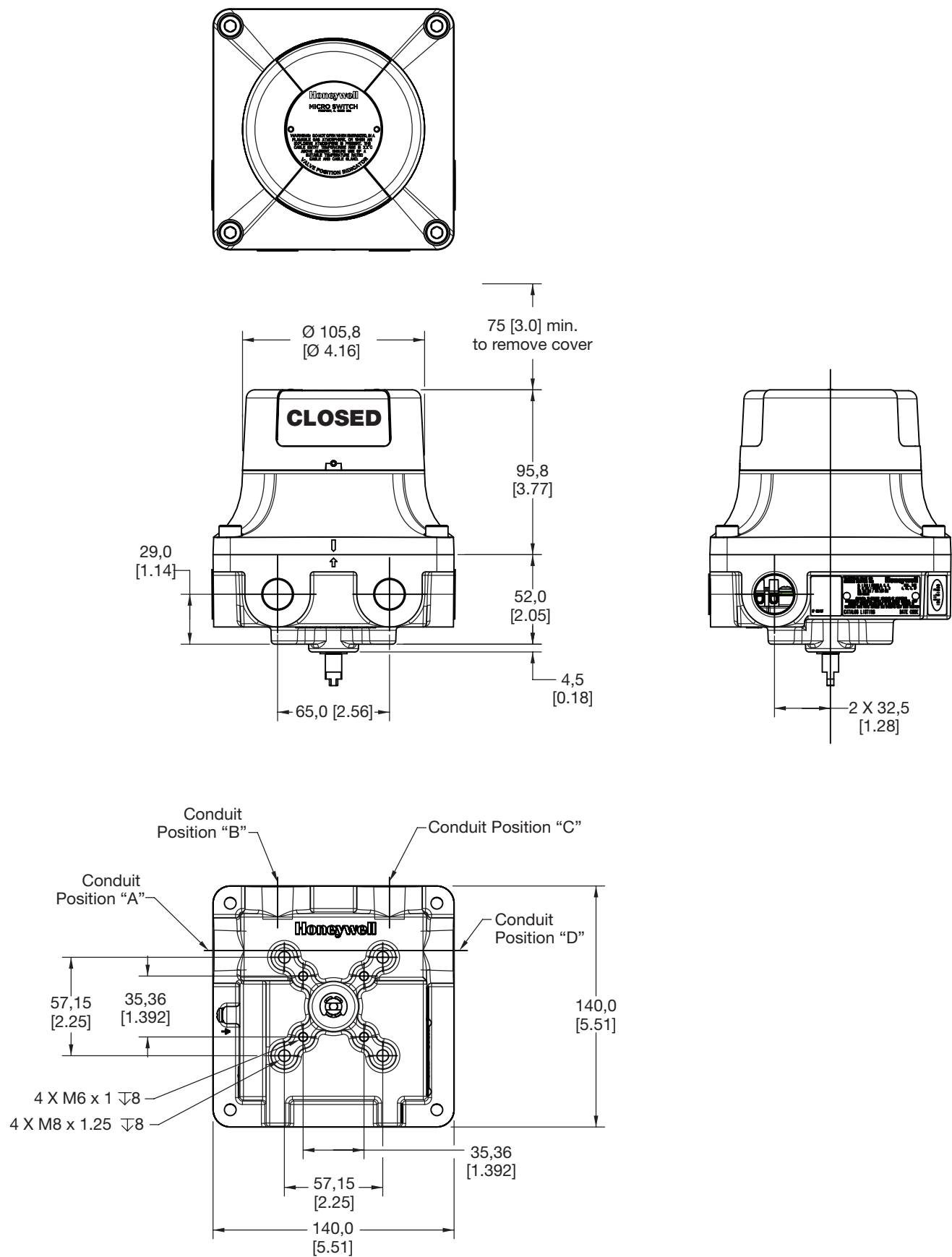
VALVE POSITION INDICATOR, VPX SERIES

TABLE 4. ORDER GUIDE

| Catalog Listing | Certifications | | Temperature Rating | | | Temperature Class | | Hazardous Location Approvals | | | | | Switch Options | | | | Indicator Angle | | Indicator Color | | | | Shaft | | | Shaft Rotation | | Conduit | | | | | | | | |
|-----------------|----------------|----------|--------------------|-----------------|-----------------|-------------------|----|------------------------------|------|-------|-------|-------|----------------|----------------|--------------|----------------------|-----------------|-----|-----------------|--------------|------------|--------------|-------|--------------|-------|----------------|------|----------------------|----------------------|---------------------|---------------------|------------------------|---------------|---------------|-------------------------|---|
| | Premium | Standard | -40 °C to 50 °C | -40 °C to 60 °C | -40 °C to 80 °C | T6 | T4 | IEC Ex | ATEX | cULus | KOSHA | NEPSI | 2X snap action | 4X snap action | 2X I.S. Prox | Gold-plated contacts | 45° | 90° | Green/Red | Black/Yellow | Red/Yellow | Green/Yellow | NAMUR | 1/4 in flats | Knurl | 360° | ±90° | (2) 1/2-14 NPT (A&D) | (2) 3/4-14 NPT (A&D) | (2) M20 x 1.5 (A&D) | (2) M25 x 1.5 (A&D) | (3) 3/4-14 NPT (A,B&D) | (4) M20 x 1.5 | (4) M25 x 1.5 | (2) 1/2-14 & (2) 3/4-14 | |
| VPX1C2ABGR1A2A | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | ✓ | | | ✓ | | ✓ | | | | | | | | | |
| VPX1C2ABGR1A2B | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | ✓ | | | ✓ | | | ✓ | | | | | | | | |
| VPX1C2ABGR1A4F | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | ✓ | | | ✓ | | | | | | | | | | | ✓ |
| VPX1C2ABYB1A2A | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | | ✓ | | ✓ | | | ✓ | | ✓ | | | | | | | | | |
| VPX1A2BBBY1B2A2 | | ✓ | ✓ | | ✓ | | | ✓ | ✓ | | | ✓ | ✓ | | | ✓ | | ✓ | | ✓ | | ✓ | | | | ✓ | | ✓ | | | | | | | | |
| VPX1C2AAYB1A2B | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | | ✓ | | ✓ | | | ✓ | | | | ✓ | | | | | | | |
| VPX1C2ABGR1A2C | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | ✓ | | | ✓ | | | | | ✓ | | | | | | |
| VPX1C2ABYB1A2A | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | | ✓ | | ✓ | | | ✓ | | ✓ | | | | | | | | | |
| VPX1C2ABYB1A2A2 | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | | ✓ | | ✓ | | | ✓ | | ✓ | | | | | | | | | |
| VPX1C2ABYR1A2A | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | | | ✓ | ✓ | | | ✓ | | ✓ | | | | | | | | | |
| VPX1C2ABYR1A2B | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | | | ✓ | ✓ | | | ✓ | | | ✓ | | | | | | | | |
| VPX1C2ABYR1A4F | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | | | ✓ | ✓ | | | ✓ | | ✓ | | | | | | | | | ✓ |
| VPX1C2BBBY1B2A2 | ✓ | | ✓ | | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | | ✓ | | ✓ | | ✓ | | | | ✓ | | ✓ | | | | | | | | |
| VPX1C2CBGR1A2A | ✓ | | | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | | | ✓ | ✓ | | | ✓ | | | ✓ | | ✓ | | ✓ | | | | | | | |
| VPX1C2CBGR1A2B | ✓ | | | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | | | ✓ | ✓ | | | ✓ | | | ✓ | | | ✓ | | | | | | | | |
| VPX1C2CBGR1A2C | ✓ | | | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | | | ✓ | ✓ | | | ✓ | | | ✓ | | | | | ✓ | | | | | | |
| VPX1C2CBGR1A4C | ✓ | | | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | | | ✓ | ✓ | | | ✓ | | | ✓ | | ✓ | | | | | | ✓ | | | |
| VPX1C2CBGR1A4F | ✓ | | | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | | | ✓ | ✓ | | | ✓ | | | ✓ | | ✓ | | | | | | | | | ✓ |
| VPX1C2CBYR1A2A | ✓ | | | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | | | ✓ | | | ✓ | ✓ | | | ✓ | | ✓ | | ✓ | | | | | | | |
| VPX1C2CBYR1A2B | ✓ | | | ✓ | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | | | ✓ | | | ✓ | ✓ | | | ✓ | | | ✓ | | | | | | | | |
| VPX1C4ABGR1A2A | ✓ | | ✓ | | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | ✓ | | | ✓ | | ✓ | | ✓ | | | | | | | |
| VPX1C4ABGR1A3B | ✓ | | ✓ | | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | ✓ | | | ✓ | | | | | | | ✓ | | | | |
| VPX1C4ABGR1A4F | ✓ | | ✓ | | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | | | ✓ | | | ✓ | | ✓ | | | | | | | | | ✓ |
| VPX1C4ABYR1A3B | ✓ | | ✓ | | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | | | ✓ | ✓ | | | ✓ | | | | | | | ✓ | | | | |

VALVE POSITION INDICATOR, VPX SERIES

FIGURE 2. MOUNTING DIMENSIONS

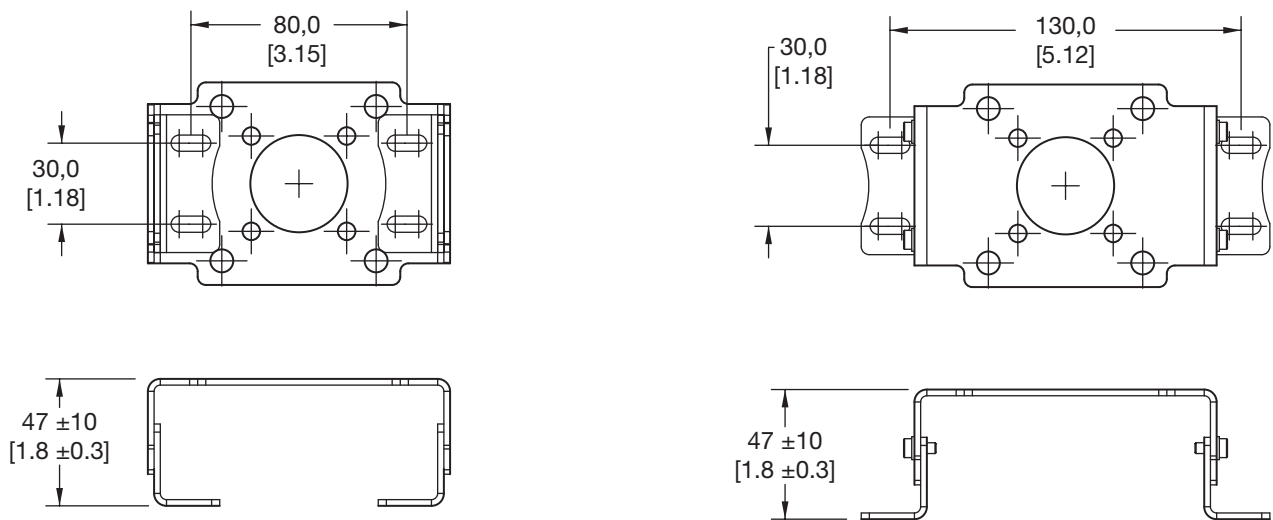


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ACCESSORIES

A mounting bracket kit is available as an accessory, Honeywell part number VPZB1.

FIGURE 3. ACCESSORY BRACKET



| TABLE 5. CONDUIT PLUG ACCESSORIES | | | | |
|-----------------------------------|--|------------|-----------------------|---|
| | | SIZE | HONEYWELL PART NUMBER | TIGHTENING SPECIFICATION |
| | | 1/2-14 NPT | VPZPA | Hand tight and then 1 to 2 full turns using a wrench |
| | | 3/4-14 NPT | VPZPB | Hand tight and then 1 to 2 full turns using a wrench |
| | | M20 x 1.5 | VPZPC | Hand tight and then 1/4 to 1 full turn using a wrench |
| | | M25 x 1.5 | VPZPD | Hand tight and then 1/4 to 1 full turn using a wrench |

VALVE POSITION INDICATOR, VPX SERIES

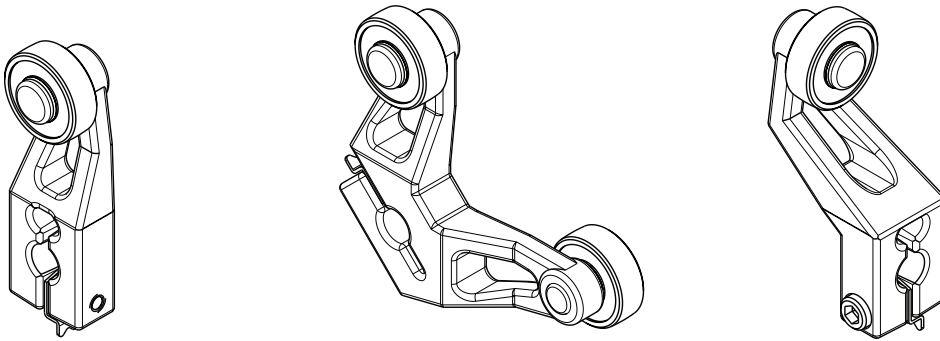


TABLE 6. LEVER ACTUATOR ACCESSORIES

| LEVER LISTING | DESCRIPTION |
|---------------|---|
| LSZ51 | Fixed, rollerless (1.5 R) |
| LSZ51A | Fixed, 0.75 in x 0.25 in nylon roller, open (1.5 R) |
| LSZ51C | Fixed, 0.75 in x 0.25 in nylon roller, closed (1.5 R) |
| LSZ52C | Adjustable, 0.75 in x 0.25 in nylon roller, closed |
| LSZ52J | Adjustable, 1.0 in x 0.5 in nylon roller, closed |
| LSZ52K | Adjustable, 1.25 in x 0.25 in nylon roller, closed |
| LSZ53E | Yoke, 0.75 in x 0.25 in nylon rollers, closed & open |
| LSZ53S | Yoke, 0.75 in x 0.25 in nylon rollers, same side closed |
| LSZ54 | Hub only |
| LSZ54M | Hub, aluminum rod actuator |
| LSZ55 | Offset lever, rollerless |
| LSZ55A | Offset, 0.75 in x 0.25 in nylon roller, open |
| LSZ55C | Offset, 0.75 in x 0.25 in nylon roller, closed |
| LSZ59A | Fixed, 0.75 in x 0.25 in nylon roller, open (1.33 R) |
| LSZ59C | Fixed, 0.75 in x 0.25 in nylon roller, closed (1.33 R) |

ADDITIONAL MATERIALS

The following associated literature is available at sensing.honeywell.com:

- Product range guide
- Installation instructions
- Application note

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship during the applicable warranty period. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items that Honeywell, in its sole discretion, finds defective.

The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.

While Honeywell may provide application assistance personally, through our literature and the Honeywell web site, it is buyer's sole responsibility to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this writing. However, Honeywell assumes no responsibility for its use.

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| | |
|--------------|-----------------|
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WARNING PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

WARNING MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

Mouser Electronics

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[VPX1E4ABBY3A2B](#) [VPX1E4ABRG2A2B](#) [VPX1E4ABGR3A2B](#) [VPX1E4ABGR2A2B](#) [VPX1E2ABBY2A2B](#)
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