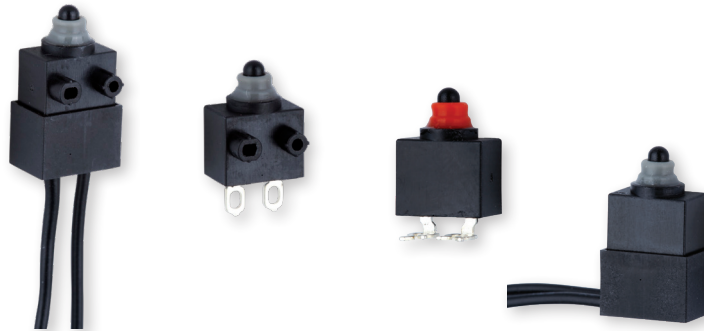


HD1 SERIES

004997

Issue 1

MICRO SWITCH Technology



APPLICATIONS



Presence Detection

Ensures door latching and safe operation



Flow Switch

Enables safe and efficient water usage



Power Switch

Reliable system control for motors, pumps, fans



Operator Controls

Interface control for system auxiliary functions



Pressure Switch

Detection and warning of high pressure or over pressure events

VALUE PROPOSITION

The HD1, Honeywell's sealed subminiature MICRO SWITCH family, provides a small-footprint switching solution to assist in hitting overall system-level size and design goals in high volume applications.

The HD1 switch provides a fully certified, reliable, and repeatable solution over the lifetime of the product. Slow-action mechanism enables compact switch footprint and design.

| HD1 FEATURES | HD1 BENEFITS | OUR VALUE |
|---|---|---|
| 0.1 A, SPNC & SPNO circuitry | Electrical ratings for design flexibility in a small switch footprint | Competitive cross references available |
| Slow-acting switching mechanism | Globally certified for reliable, repeatable actuation for life | Simpler mechanical construction and smaller overall solution footprint |
| UL/CSA, cUL, ENEC, CQC, RoHS and REACH compliant | Identical system designs for platform applications worldwide | Certifications enable global design acceptance and cost savings in agency approvals |
| Integrated pillars and mounting holes in switch housing | Simplifies installation, reduces time and cost for switch subassemblies | Configurable pillar options enable design flexibility for various switch orientations |
| Wiring, molding and connector value-add capabilities available | Delivers "plug-and-play" IP67-rated switch solutions | Reduction in supply chain complexity |

MICRO SWITCH, HD1 SERIES

Unless otherwise stated, all characteristic measurements tested according to UL, EN and IEC standards and conditions. Parameters and acceptance criteria validated and confirmed in a certified lab environment. Technical details available upon request.

TABLE 1. PERFORMANCE SPECIFICATIONS

| CHARACTERISTIC | MEASURE |
|--------------------------------------|--|
| Circuitry | SPNC, SPNO |
| Operating force | 100 gf max., 130 gf max., 200 gf max. |
| Termination | wired: downward, side pcb: straight, angle long solder clips special |
| Actuators | pin plunger, special |
| Mounting | no pillar, right pillar, left pillar, both pillars, special |
| Agency certification | ENEC, CQC, UL, cUL |
| Certified mechanical life | 300,000 cycles |
| Ingress protection rating | IP67 per IEC 60529 (wired) IP00 (terminal versions) |
| Vibration resistance | 10 Hz to 55 Hz, displacement 1,5 mm (peak-to-peak); no contact separation > 1 millisecond |
| Shock resistance | destruction: 294 m/s ² (30 g max.); switch is functional after test malfunction: 100 m/s ² (10 g max.); no contact separation > 1 millisecond |
| Contact resistance | 500 mΩ max. as measured using 4-wire voltage drop method @ 6 Vdc and 100 mA |
| Dielectric strength | 500 Vac for 1 minute; leakage current ≤10 mA between open contacts 500 Vac for 1 minute, leakage current ≤10 mA between live parts and ground/between live parts and dead metal parts |
| Insulation resistance | min. 100 mΩ (500 Vdc for one minute) |
| Storage conditions | 0°C to 40°C, max. 85 %RH |
| Stationary contact/terminal material | silver-plated copper alloy |
| Housing material | pbt |
| Plunger material | acetal (POM) copolymer |
| Plunger seal material | silicon |
| Average unit weight | 1,5 g [0.004 lb] |
| Packaging dimensions | 203 mm x 264 mm x 273 mm [8 in x 10.4 in x 10.75 in] |
| Packaging weight | 3,3 kg [7.28 lb] |

MICRO SWITCH, HD1 SERIES

TABLE 2. ELECTRICAL SPECIFICATIONS

| RATING | UL/CUL (CUL 61058-1, FILE 12252) AMERICAS | ENEC (IEC 61058-1) EUROPE | CQC (GB15092-1) ASIA-PACIFIC |
|--------|---|--|--------------------------------|
| 0.1 A | 0.01 RA, 12 Vdc 10,000 cycles (Use temp 55°C) | 0.01 A, 12 Vdc, 100,000 cycles (Use temp 0°C to 55°C) | 0.01 A, 12 Vdc, 100,000 cycles |

- RA = Resistive Amps (Resistive Load)

FIGURE 1. PRODUCT NOMENCLATURE

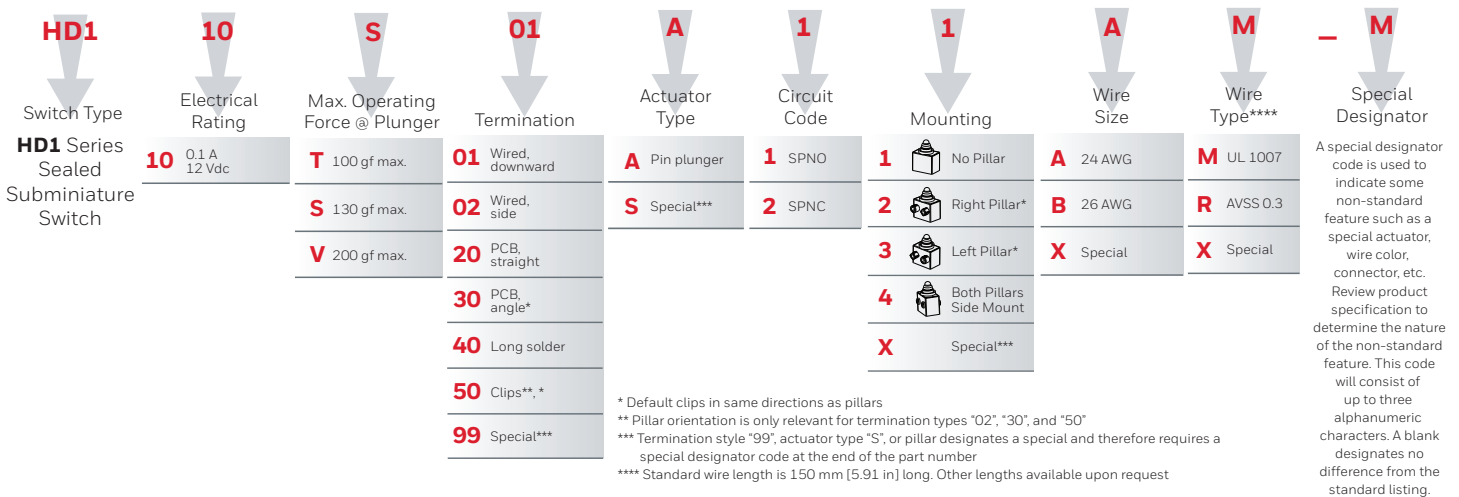
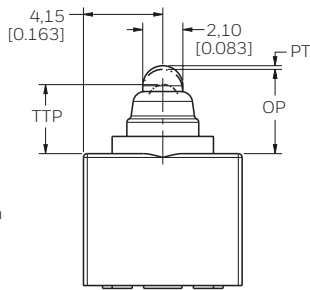


TABLE 3. WIRE SPECIFICATIONS

| WIRE GAUGE | INSULATION OUTSIDE DIAMETER |
|--|--|
| 24 | Ø1,40 [0.055] |
| 26 | Ø0,762 [0.030] |
| CHARACTERISTIC | MEASURE |
| Operating temperature (manufacturer specified) | terminal type: -40°C to 85°C [-40°F to 185°F] wired type (UL 1007/UL 1061): -20°C to 80°C [-4°F to 176°F] wired type (UL 1430): -20°C to 85°C [-4°F to 185°F] wired type (AVSS): -40°C to 85°C [-40°F to 185°F] |

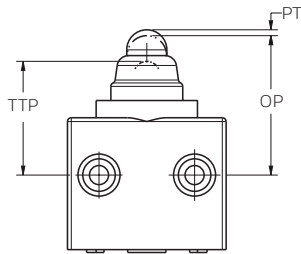
MICRO SWITCH, HD1 SERIES

ACTUATOR



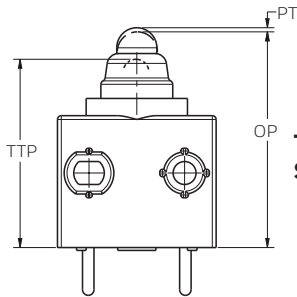
Datum reference is top of switch if no pillar or no pcb terminals

PILLAR TYPE 1



Datum reference is pillars

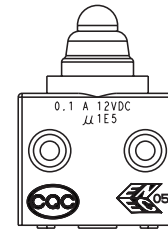
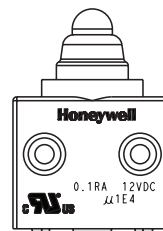
PILLAR TYPE 2, 3, AND 4



Datum reference is base of switch for pcb terminals

TERMINAL STYLE 20 AND 30

MARKING INFORMATION



Note: "Honeywell" name will be tool marked and rating symbols will be laser marked.

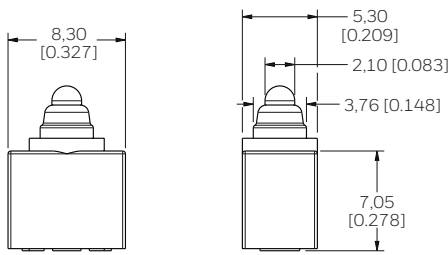
TABLE 4. SWITCH OPERATING CHARACTERISTICS

| CATALOG LISTING | OPERATE FORCE MAX. (gf) | PRETRAVEL (mm) MAX. | OVERTRAVEL (mm) MAX. | OPERATE POINT (mm) FROM TOP OF SWITCH | OPERATE POINT (mm) FROM PILLARS | OPERATE POINT (mm) FROM BASE | TOTAL TRAVEL POSITION (mm) FROM TOP OF SWITCH MIN. | TOTAL TRAVEL POSITION (mm) FROM PILLARS MIN. | TOTAL TRAVEL POSITION (mm) FROM BASE MIN. |
|-----------------|-------------------------|---------------------|----------------------|---------------------------------------|---------------------------------|------------------------------|--|--|---|
| HD110T | 100 | 1 | 1,1 | 4,1 +0,2/-0,4 | 7,1 +0,2/-0,4 | 11,1 +0,2/-0,4 | 2,0 | 6,0 | 10,0 |
| HD110S | 130 | 1 | 1,1 | 4,1 +0,2/-0,4 | 7,1 +0,2/-0,4 | 11,1 +0,2/-0,4 | 2,0 | 6,0 | 10,0 |
| HD110V | 200 | 1 | 1,1 | 4,1 +0,2/-0,4 | 7,1 +0,2/-0,4 | 11,1 +0,2/-0,4 | 2,0 | 6,0 | 10,0 |

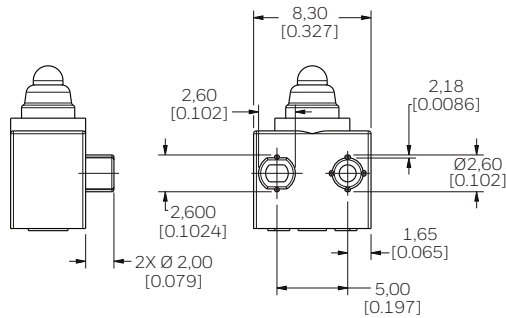
MICRO SWITCH, HD1 SERIES

FIGURE 2. HD1 SERIES DIMENSIONS

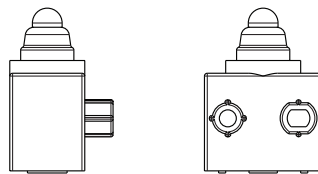
PACKAGE DIMENSIONS



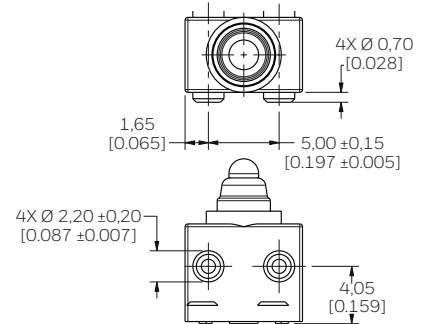
PILLAR TYPE 1



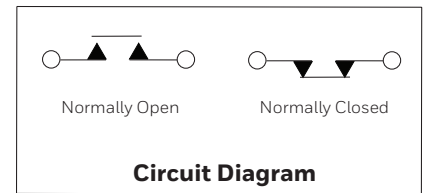
PILLAR TYPE 2 (RIGHT PILLAR)



PILLAR TYPE 3 (LEFT PILLAR)

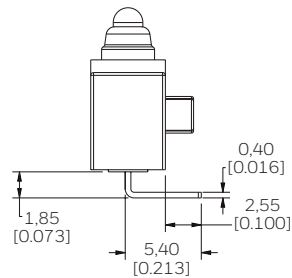


PILLAR TYPE 4

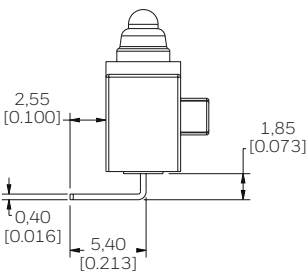


TERMINAL DIMENSIONS

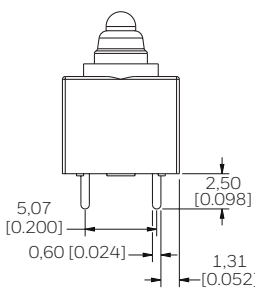
TYPE 30 TERMINALS WITH TYPE 2 PILLARS



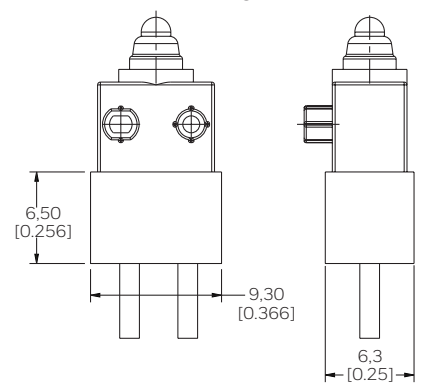
TYPE 30 TERMINALS WITH TYPE 3 PILLARS



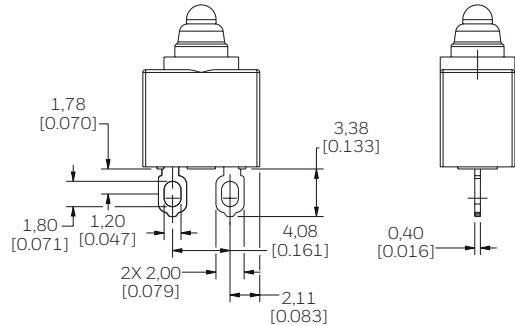
TYPE 20



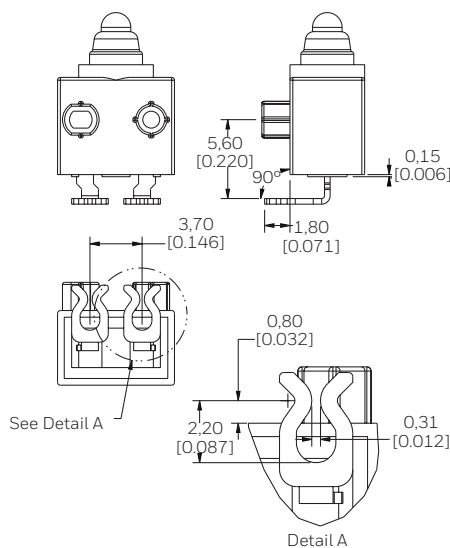
TYPE 01-WIRED



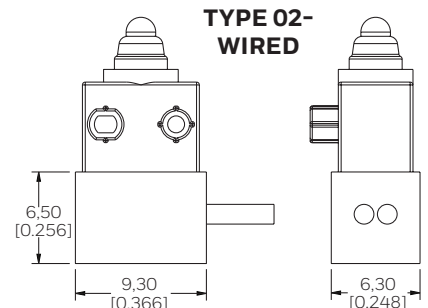
TYPE 40






TYPE 50



TYPE 02-WIRED



HONEYWELL SEALED SUBMINIATURE BASIC PORTFOLIO

| | ZD | HD | HD1 |
|-----------------------|---|---|---|
| |  |  |  |
| Target Market | Applications that require flexibility in design with special configurations available | Cost-sensitive applications requiring configurability in actuation and termination | Applications that require slow-action mechanism and small overall design footprint |
| Differentiator | Logic level and power-duty (3 A, 125 Vac) amp ratings | Industry standard switch footprint and global certifications ideal for “low-cost-of-failure” applications | Smallest sealed switch footprint in the Honeywell MICRO SWITCH portfolio |
| Options | Multiple contact variants to enable design and regulation compliance | Integrated mounting pins for reduced installation time | Special levers, terminals and wiring options available |

RELATED DOCUMENTATION

- Submin Comparison Chart
- Applying Precision Switches
- ZD datasheet
- ZW datasheet

FOR MORE INFORMATION

Honeywell Sensing and Internet of Things services its customers through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing, or the nearest Authorized Distributor, visit sensing.honeywell.com or call:

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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.

⚠️ WARNING IMPROPER INSTALLATION

- Consult with local safety agencies and their requirements when designing a machine-control link, interface and all control elements that affect safety.
- Strictly adhere to all installation instructions.

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.