

14CE SERIES

002387
Issue 7

MICRO SWITCH Miniature Precision Limit Switches



DESCRIPTION

All MICRO SWITCH 14CE Series miniature precision switches incorporate fluorocarbon diaphragm sealing to provide reliable protection, meeting IP65, IP66, IP67, and IP68, as well as NEMA 1, 2, 3, 3R, 4, 6, 6P, and 13 requirements. Versions with a boot seal also meet NEMA 12 requirements (dust, falling dirt, liquid media with solid contaminants). The cable or connector and basic switch terminals are encapsulated in an epoxy sealant, offering excellent resistance in harsh environments. For low temperature applications (down to -40 °C, -40 °F), the CE Series switches are rugged and versatile switches which can be applied indoors in many harsh factory environments, as well as on outdoor equipment in extreme temperatures. A full range of actuators are available, including pin plungers, roller plungers, side rotary, multi-directional wire, and manually operated. The switches are also available with the industry standard, M12 micro-change 4-pin connector. MICRO SWITCH 14CE products meet both European and Asian CE requirements, as well as the United Kingdom's UKCA requirements.

FEATURES

- Rugged, miniature construction means minimal real estate on equipment
- NEMA 1, 2, 3, 3R, 4, 6, 6P, 12 (boot seal), 13, and IP66/67/68 environmental sealing
- Pre-leaded (Cenelec cable) or supplied with a M12 four-pin connector
- Wide selection of actuators and cable length variations with side and bottom exit cable/connector options
- 25 mm mounting centers engineered with a MICRO SWITCH SM switch for consistent, precise actuation
- Well suited for up to 10 million actuation cycles (Up to 5 million actuation cycles for wobble actuators)
- Gang mounting capability to provide a multi-plunger limit switch
- Low temperature variants available for indoor and outdoor applications

POTENTIAL APPLICATIONS

- European approval for European use
- Asian use: UKCA approval for United Kingdom use
- Machine tools
- Off-road equipment
- Material handling
- Access and mobility solutions
- Textile machinery
- Robotics
- Packaging equipment
- Commercial appliances
- Print trade machinery
- Agricultural machinery

VALUE TO CUSTOMERS

- **Cost-effective:** Provides a single source for a compact SPDT and DPDT limit switch, which can help minimize the Original Equipment Manufacturer's sourcing expenses by simplifying their supply chain
- **Versatile:** Durable packaging allows for use in many harsh indoor or outdoor applications, providing performance confidence
- **Configurable:** Allows design engineers to standardize on a single footprint while meeting a variety of electrical requirements
- **Application support:** Customers with a global footprint can count on Honeywell for regional support for new applications and troubleshooting

DIFFERENTIATION

- With two times the vibration (10 g) and shock (50 g) ratings of comparable competitive devices, the NGC Series can be implemented in the harshest of environmental conditions, providing enhanced reliability and repeatability
- Broader current capacity (10 A) than comparable devices allows for potential use in a wider set of applications, making platform standardization an easier task

PORTFOLIO

The 14CE Series is part of the 914CE, NGC, SZL-VL-S, SSCE and SL1 Series of miniature limit switches. Honeywell also offers a portfolio of MICRO SWITCH Heavy-Duty Limit Switches

Honeywell

MICRO SWITCH MINIATURE PRECISION LIMIT SWITCHES

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TABLE 1. SPECIFICATIONS

| Characteristic | Parameter |
|--|---|
| Description | compact enclosed limit switch |
| Actuators | <ul style="list-style-type: none"> • Top pin plunger (14CE1-) • Cross roller plunger (14CE3-) • Top pin plunger with boot seal (14CE18-) • Wobble (14CE20-) • Top pin plunger, panel mount (14CE27-) • Top roller plunger, parallel and panel mount (14CE28-) • Top roller plunger, perpendicular, panel mount (14CE29-) • Top roller plunger, parallel and boot sealed (14CE31-) • Top roller plunger, perpendicular, boot seal (14CE55-) • Parallel roller plunger (14CE2-) • Side rotary (14CE16-) • Top adjustable plunger (14CE19-) • Manually operated (14CE22-) • Ball bearing plunger (14CE66-) |
| Terminations | Harmonized Cenelec PVC sheathed 4 x 0,75 mm (18 AWG) cable Connector (dc), 4-pin male, M12 thread (-Q) Connector (ac), 4-pin male, 1/2 in x 20 thread (-Q1) |
| Switching options | SPDT, snap action contacts (1NC/1NO) Form C |
| Sealing | IP66, IP67, IP68* NEMA 1, 2, 3, 3R, 4, 6, 6P, 12 (boot seal), |
| Operating temperature | 0°C to 70 °C [32 °F to 158 °F]; optional -40 °C to 70 °C [-40 °F to 158 °F] |
| Mechanical life | up to 10 million; up to 5 million (wobble actuators) cycles |
| Thermal current | 1 A, 3 A, 5 A (depending upon model) |
| Rated insulation voltage (Ui) | 250 V |
| Rated impulse withstand voltage (Uimp) | 1.5 kV |
| Short circuit protection device (SCP) | Quick blow fuse suitable for rated current of switch |
| Pollution degree | 3 |
| Min. actuation speed | 0.003 m/s |
| Max. actuation speed | 0.1 m/s |
| Max. actuation frequency | ac – 200 Hz; dc – 20 Hz |
| Shock | 50 g – IEC 60068-2-27 |
| Vibration | 10 g – IEC 60068-2-6 |
| Approvals | CE, UKCA |
| Conforming to standards | EN 60947-5-1; AC-14 D300, DC-13 R300 |

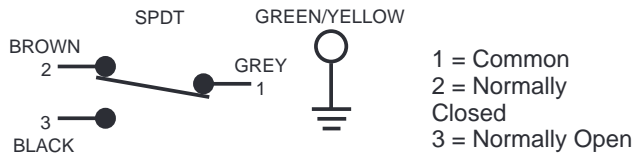
*IP68 sealing submerged in one meter of water for 24 hours

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SWITCHING AND LEAD IDENTIFICATION

14CE

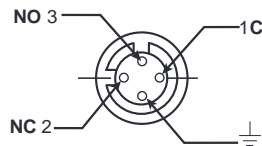


PINOUTS

Connector - (dc) (-Q)



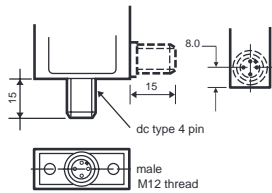
Connector (ac) (-Q1)



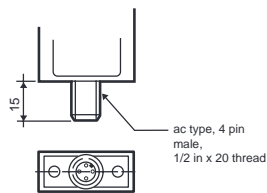
CONNECTOR VERSIONS

The 14CE Series is available with a 4-pin, M12 size connector both bottom and side exit versions.

Q1 Version



OPTION Q



OPTION Q1

MOUNTING

MICRO SWITCH 14CE Series switches are mounted by using two M5 screws. The mounting holes are counter bored to keep

the screw heads within the overall switch housing

GANG MOUNT CAPABILITY

The housing on the 14CE Series has been designed to enable the user to build his own multiple plunger switch by gang

mounting several switches. All pin plunger and roller plunger

types are suitable for gang mounting. There is a 16 mm distance between the plungers. Both Series are very versatile

BOTTOM EXIT OR SIDE EXIT ORIENTATION

The 14CE Series has been designed with a prewired cable row.

connector fitted in the bottom of the switch housing.

Other

GOLD CONTACT VERSIONS

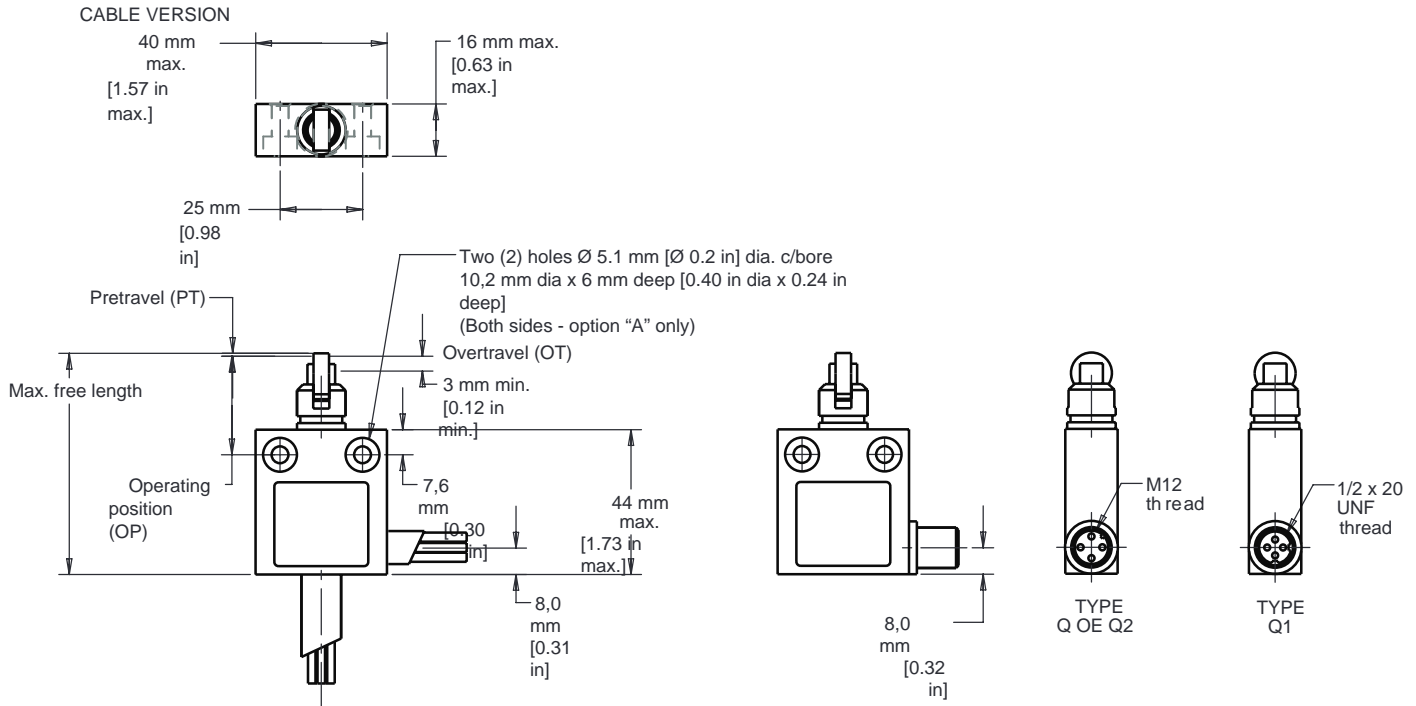
For higher energy applications, gold contact versions of the

14CE

switches can be supplied upon request.

MICRO SWITCH MINIATURE PRECISION LIMIT SWITCHES 14CE SERIES

GENERAL DIMENSIONS • ALL SWITCHES



PRODUCT NOMENCLATURE

| 14CE | 16 | — | 3 | | |
|---|--|--|--|--|--|
| Switch Type | Actuator Type | | Cable Length* | Options ^{1,2} | Connectors* (micro type) |
| 14CE Series Compact Precision Limit Switch | 1 Top pin plunger | 22 Manually oper. nylon button | 1 1 meter | A Side entry | Q dc type single keyway 4-pin male, M12 |
| | 2 Top roller plunger, parallel | 27 Top pin plunger, panel mount | 2 2 meters | B Elongated mounting holes | Q1 ac type two keyways 4-pin male, 1/2-20 |
| | 3 Top roller plunger, perp. Side rotary | 28 Top roller plunger, parallel panel mount | 3 3 meters | D Halogen-free cable | |
| | 16 Side rotary | 29 Top roller plunger, perp. panel mount | 4 4 meters | G Gold contacts | |
| | 18 Top pin plunger w/ boot seal | 31 Top roller plunger, parallel boot seal | 5 5 meters | H High temp., 150 °C | |
| | 19 Top adjustable pin plunger | 55 Top roller plunger, perp. boot seal | | L Low temp., -40 °C switch and cable | |
| | 20 Coil wobble | 66 Top ball bearing plunger | | L1 Low temp., -40 °C, cable not for exing | |
| | | | | P Top mounting | |
| | | | V Viton® seals/gasket (side rotary and booted sealed plunger is only) | | |

NOTE: not all combinations of model codes are available. Please contact your Honeywell provider /representative for assistance.

¹More than one option may be permissible.

* Select Cable Length or Connectors

²OPTION K to be discontinued. Replaced with fluorocarbon diaphragm seal, standard switch.
²OPTION KV to be discontinued. Replaced with fluorocarbon diaphragm seal, standard switch.

Bottom entry is only standard.

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PRODUCT SPECIFICATIONS AND LISTINGS

Contact your Honeywell rep or distributor for additional listings

| 14CE 1 • Pin Plunger 14CE 27 • Pin Plunger Panel Mount | | Contacts | Elec Rating | Cable/Connector Position | Free Position | Operating Position (OP) | Options | Listing |
|--|---------|----------|-------------|--------------------------|----------------------|-------------------------|----------------------|------------------|
| <p>Pretravel • 1,8 mm [0.071 in]</p> <p>Diff. travel • 0,1 mm [0.004 in]</p> <p>Overtravel • 3,0 mm [0.118 in]</p> <p>Oper. force • 22,5 N [5.06 lb]</p> | GRY-BRK | Silver | A | Bottom | 17,5 mm [0.69 in] | 15,7 mm [0.62 in] | – | 14CE1-1 |
| | GRY-BLK | Gold | B | Bottom | 17,5 mm [0.69 in] | 15,7 mm [0.62 in] | Gold-plated contacts | 14CE1-1G |
| | GRY-BLK | Silver | A | Side | 17,5 mm [0.69 in] | 15,7 mm [0.62 in] | Side exit cable | 14CE1-1A |
| | GRY-BRK | Silver | C | Bottom | 17,5 mm [0.69 in] | 15,7 mm [0.62 in] | dc-type connector | 14CE1-Q |
| | GRY-BRK | Silver | A | Bottom | 31,1 mm [1.23 in] | 29,3 mm [1.15 in] | Panel mount | 14CE27-1 |
| | GRY-BLK | | | | | | | |
| 14CE 18 • Boot Sealed Pin Plunger | | Contacts | Elec Rating | Cable/Connector Position | Free Position | Operating Position (OP) | Options | Listing |
| <p>Pretravel • 1,8 mm [0.071 in]</p> <p>Diff. travel • 0,1 mm [0.004 in]</p> <p>Overtravel • 3,0 mm [0.118 in]</p> <p>Oper. force • 22,5 N [5.06 lb]</p> | GRY-BRK | Silver | A | Bottom | 26,7 mm [1.05 in] | 24,9 mm [0.98 in] | – | 14CE18-1 |
| | GRY-BLK | Silver | A | Side | 26,7 mm [1.05 in] | 24,9 mm [0.98 in] | Side exit cable | 14CE18-1A |
| | GRY-BLK | Silver | C | Bottom | 26,7 mm [1.05 in] | 24,9 mm [0.98 in] | dc-type connector | 14CE18-Q |
| | GRY-BRK | | | | | | | |
| 14CE 66 • Ball Bearing Plunger | | Contacts | Elec Rating | Cable/Connector Position | Free Position | Operating Position (OP) | Options | Listing |
| <p>Pretravel • 1,8 mm [0.071 in]</p> <p>Diff. travel • 0,1 mm [0.004 in]</p> <p>Overtravel • 3,0 mm [0.118 in]</p> <p>Oper. force • 11,8 N [2.65 lb]</p> | GRY-BRK | Silver | A | Bottom | 26,2 mm [1.03 in] | 24,4 mm [0.96 in] | – | 14CE66-1 |
| | GRY-BLK | Silver | A | Side | 26,2 mm [1.03 in] | 24,4 mm [0.96 in] | Side exit cable | 14CE66-1A |
| | GRY-BRK | | | | | | | |

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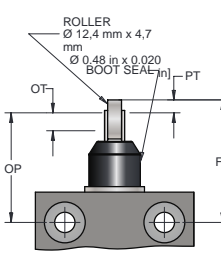
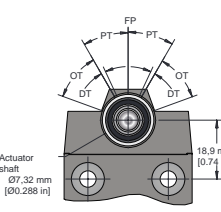
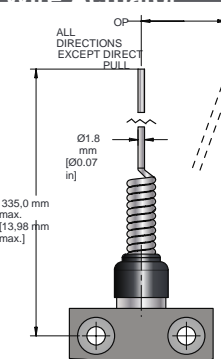
| 14CE 2 • Roller Plunger 14CE 28 • Roller Plunger Panel Mount | Con- tacts | Elec Rating | Cable/ Connector Position | Free Posi- tion | Operating Position (OP) | Options | Listing |
|---|---|----------------|---------------------------------|-----------------------|-------------------------------|------------------------|-----------------|
| | Silver | A | Bottom | 30,3 mm [1,19 in] | 28,5 mm [1,12 in] | – | 14CE2-1 |
| | Gold | B | Bottom | 30,3 mm [1,19 in] | 28,5 mm [1,12 in] | Gold-plated contacts | 14CE2-1G |
| | Silver | C | Bottom | 30,3 mm [1,19 in] | 28,5 mm [1,12 in] | dc-type connector | 14CE2-Q |
| | Silver | A | Side | 30,3 mm [1,19 in] | 28,5 mm [1,12 in] | Side exit cable | 14CE2-1A |
| | Silver | A | Bottom | 44,3 mm [1.75 in] | 42,5 mm [1.67 in] | Panel mount, 2 m cable | 14CE28-2 |
| | Color chart for 14CE28: GRY-BRI (39.5, 42.5, 31.4), GRY-BLK (42.6). | | | | | | |

| 14CE 31 • Boot Sealed Roller Plunger | Con- tacts | Elec Rating | Cable/ Connector Position | Free Posi- tion | Operating Position (OP) | Options | Listing |
|--------------------------------------|---------------|----------------|---------------------------------|-----------------------|-------------------------------|-------------------------------|------------------|
| | Silver | A | Bottom | 36,2 mm [1.43 in] | 34,4 mm [1.36 in] | – | 14CE31-1 |
| | Silver | A | Bottom | 36,2 mm [1.43 in] | 34,4 mm [1.36 in] | Fluorocarbon seals, 6 m cable | 14CE31-6V |

| 14CE 3 • Cross Roller Plunger | Con- tacts | Elec Rating | Cable/ Connector Position | Free Posi- tion | Operating Position (OP) | Options | Listing |
|-------------------------------|---------------|----------------|---------------------------------|-----------------------|-------------------------------|-------------------------|-----------------|
| | Silver | A | Bottom | 30,3 mm [1.19 in] | 28,5 mm [1.12 in] | – | 14CE3-1 |
| | Silver | A | Side | 30,3 mm [1.19 in] | 28,5 mm [1.12 in] | 3 m of cable, side exit | 14CE3-3A |
| | Silver | C | Bottom | 30,3 mm [1.19 in] | 28,5 mm [1.12 in] | dc-type connector | 14CE3-Q |

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| 14CE 55 • Boot Sealed Cross Roller | Con- tacts | Elec Rating | Cable/ Connector Position | Free Posi- tion | Operating Position (OP) | Options | Listing |
|---|---------------|----------------|---------------------------------|-----------------------|-------------------------------|--|-------------------------------|
|  <p>ROLLER Ø 12,4 mm x 4,7 mm Ø 0,48 in x 0,020 in BOOT SEAL</p> <p>36,2 34,4 31,4 34,5</p> <p>Pretravel • 1,8 mm [0.071 in] Diff. travel • 0,1 mm [0.004 in] Overtravel • 3,0 mm [0.118 in]</p> <p>Oper. force • 17,5 N [3.93 lb]</p> | Silver | A | Bottom | 36,2 mm [1.43 in] | 34,4 mm [1.36 in] | 3 meters of cable | 14CE55-3 |
|  <p>Actuator shaft Ø7,32 mm [Ø0.288 in]</p> <p>18,9 mm [0.74 in]</p> <p>Pretravel • 30° Diff. travel • 3° Overtravel • 40° Oper. force • 0,34 Nm [3 in-lb]</p> | Silver | A | Bottom | (0°) | 30° | – | 14CE16-1 ¹ |
| | Gold | B | Bottom | 0° | 30° | Gold-plated contacts, 3 meters of cable, dc-type connector | 14CE16-3G ¹ |
| | Silver | C | Bottom | 0° | 30° | | 14CE16-Q ¹ |
| 14CE 20 • Random Motion Wire Actuator | Con- tacts | Elec Rating | Cable/ Connector Position | Free Posi- tion | Operating Position (OP) | Options | Listing |
|  <p>ALL DIRECTIONS EXCEPT DIRECT PULL</p> <p>Ø1,8 mm [Ø0.07 in]</p> <p>335,0 mm max. [13.19 in max.]</p> <p>Oper. position • 28 mm [1.10 in] max. Oper. force • 0,55 N [0.12 lb] max.</p> | Silver | A | Bottom | (FP) – | 28 mm [1.10 in] max. | – | 14CE20-1 |

¹ Switch operates on clockwise and counterclockwise rotation of lever shaft

Note: Most part numbers are shown with 1 meter of cable. The -X indicates the number of meters of cable provided: 2-meters, 3-meters, 4-meters, and 5-meters. Custom lengths are also available.

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TABLE 3. LEVERS FOR USE WITH 14CE SIDE

ROTARY

| SWITCHES | Catalog Listing | Roller Material | Roller Dia. mm [in] | Roller Width mm [in] |
|--|-----------------|-----------------|---------------------|----------------------|
| Fixed length lever; 38,1 mm [1.5 in] radius | | | | |
|  | GLZ51A | Nylon | 19,0 [0.75] | 6,35 [0.25] |
| | GLZ51B | Steel | 19,0 [0.75] | 6,35 [0.25] |
| | GLZ51C | Nylon | 25,4 [1.00] | 12,7 [0.50] |
| | GLZ51E | Bronze | 19,0 [0.75] | 6,35 [0.25] |
| | GLZ51T | SST | 19,0 [0.75] | 9,5 [0.38] |
| Fixed length offset lever; 38,1 mm [1.5 in] radius | | | | |
|  | GLZ55A | Nylon | 19,0 [0.75] | 6,35 [0.25] |
| | GLZ55B | Steel | 19,0 [0.75] | 6,35 [0.25] |
| | GLZ55E | Bronze | 19,0 [0.75] | 6,35 [0.25] |
| Adjustable 38,1 mm to 89,0 mm [1.5 in to 3.5 in] radius | | | | |
|  | GLZ52A | Nylon | 19,0 [0.75] | 6,35 [0.25] |
| | GLZ52B | Steel | 19,0 [0.75] | 6,35 [0.25] |

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.

For more information

Honeywell Sensing & Safety Technologies services its customers through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing or the nearest Authorized Distributor, visit [our website](#) or call:

| | |
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WARNING MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a 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.