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Datasheet

## MICRO SWITCH ${ }^{\text {M }}$ 914CE Series Compact Precision Limit Switches

All MICRO SWITCH ${ }^{\text {TM }}$ 914CE Series compact enclosed switches incorporate fluorocarbon diaphragm sealing to provide reliable protection, meeting NEMA 1, 2, 3, 3R, 4, 6, 6P, and 13 as well as IP66, IP67, and IP68 requirements. Versions with boot seal also meet NEMA 12 requirements (dust, falling dirt, liquid media with solid contaminates). 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 $-40^{\circ} \mathrm{C},-40^{\circ} \mathrm{F}$ ), CE Series switches can be supplied with low temperature seals and lubricant.

The CE Series switches are rugged and versatile switches which can be applied indoors in many harsh factory floor applications, as well as on outdoor equipment in extreme temperatures. A full range of actuators are available, including plain 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 ${ }^{\text {TM }}$ 914CE products meet North American, cURus standards, as well as European CE requirements.

## What makes our switches better?

- Compact construction for minimal real estate on equipment
- Gang mounting capability to provide a multi-plunger limit switch
- Rugged, die-cast zinc housing for many demanding environments
- Variety of cable length options and choice of side or bottom exit cable/connector for design flexibility
- Functionality over a wide temperature range with factory sealed connectors or wiring

RUGGED, COMPACT CONSTRUCTION<br>MICRO SWITCH ${ }^{\text {M }}$ 914CE Series limit switches' compact construction means minimal real estate on equipment. Delivers consistent performance in many demanding environments where petroleum, synthetic or water based fluids are present. Its die-cast zinc housing and fluorocarbon diaphragm maintain a tightly sealed, NEMA 1, 2, 3, 3R, 4, 6, 6P, 12 (boot seal), and 13 IP66/67/68 rugged package.

## Gang-mounting option

## CUSTOMIZATION

Switches are pre-leaded (UL cable) or supplied with a M12 four-pin connector to decrease installation time. 914CE Series' wide selection of actuators minimize installation or time issues. Cable length variations for equipment requiring different cable lengths with side and bottom exit cable/connector options for equipment flexibility.

## COMPACT DESIGN

Rugged, compact switch with a 25 mm hole-hole mounting footprint. Engineered with a MICRO SWITCH ${ }^{\text {TM }}$ SM switch for consistent, precise actuation.

High performance switch for small spaces

## LONG LIFE

Well suited for up to $\mathbf{1 0}$ million actuation cycles. (Up to 5 million actuation cycles for wobble actuators)

## DESIGN FLEXIBILITY

Gang mounting capability to provide a multi-plunger limit switch. Low
temperature variants available for indoor and outdoor applications.

## GLOBAL APPLICATIONS

cURus, CE approvals for world-wide use.

## Potential Applications



## MACHINE TOOLS

Detects tool and piece part location on CNC and other machining equipment
OFF-ROAD EQUIPMENT
Used as a cab door switch on crane booms

## MATERIAL HANDLING

Used in dock locks for trucks and trailers, and vehicle wash systems

## ACCESS AND MOBILITY SOLUTIONS

Often used on vehicle wheelchair lifts and stairway lifts
TEXTILE MACHINERY
Senses roll size, tensioning, and other functions

ROBOTICS
Controls arm movement limits

## PACKAGING EQUIPMENT

Often used on stretch pallet wrapping equipment

COMMERCIAL APPLIANCES
Functions as a door switch

## PRINT TRADE MACHINERY

Senses roll size, tensioning, along with controlling gates and panels

## AGRICULTURAL MACHINERY

Used on grain and livestock equipment

## MICRO SWITCH ${ }^{\text {TM }}$ Compact Precision Limit Switches

Table 1. Specifications

| Characteristic | Parameter |
| :---: | :---: |
| Description | compact enclosed limit switch |
| Actuators | - Top pin plunger (914CE1-) <br> - Cross roller plunger (914CE3-) <br> - Top pin plunger with boot seal (914CE18-) <br> - Wobble (914CE20-) <br> - Top pin plunger, panel mount (914CE27-) <br> - Parallel roller plunger (914CE2-) <br> - Front rotary (914CE16-) <br> - Top adjustable plunger (914CE19-) <br> - Manually operated (914CE22-) <br> - Ball bearing plunger (914CE66-) <br> - Top roller plunger, parallel and panel mount (914CE28-) <br> - Top roller plunger, perpendicular, panel mount (914CE29-) <br> - Top roller plunger, parallel \& boot sealed (914CE31-) <br> - Top roller plunger, perpendicular, boot seal (914CE55-) |
| Terminations | SJTO $4 \times 0,75 \mathrm{~mm}^{2}$ ( 18 AWG) cable <br> Connector (dc), 4-pin male, M12 thread (-Q), (-Q2) Revised pin-out, see page 6 Connector (ac), 4-pin male, $1 / 2$ in $\times 20$ thread (-Q1) |
| Switching options | SPDT, snap action contacts (1NC/1NO) |
| Sealing | IP66, IP67, IP68 (depending upon model) NEMA 1, 2, 3, 3R, 4, 6, 6P, 12 (boot seal), 13 |
| Operating temperature | $0^{\circ} \mathrm{C}$ to $105^{\circ} \mathrm{C}\left[32^{\circ} \mathrm{F}\right.$ to $\left.221^{\circ} \mathrm{F}\right]$ optional $-40^{\circ} \mathrm{C}$ to $105^{\circ} \mathrm{C}\left[-40^{\circ} \mathrm{F}\right.$ to $\left.221^{\circ} \mathrm{F}\right]$ Rotary: $-40^{\circ} \mathrm{C}$ to $100^{\circ} \mathrm{C}\left[-40^{\circ} \mathrm{F}\right.$ to $\left.212^{\circ} \mathrm{F}\right]$ |
| Mechanical life | up to 10 million (up to 5 million for wobbles) |
| Thermal current | $1 \mathrm{~A}, 3 \mathrm{~A}, 5 \mathrm{~A}$ (depending upon model) |
| Rated Insulation voltage (Ui) | 250 V |
| Rated impulse withstand voltage (Uimp) | 1.5 kV |
| Pollution degree | 3 |
| Min. actuation speed | $0.003 \mathrm{~m} / \mathrm{s}$ |
| Max. actuation speed | 0.1 m/s |
| Max. actuation frequency | ac - 200 Hz ; dc - 20 Hz |
| Shock | 50 g - IEC68-2-27 |
| Vibration | 10 G - IEC68-2-6 |
| Approvals | cURus, CE |
| Conforming to standards | IEC947-5-1, EN 60947-5-1; AC14 D300, DC13 R300 UL recognized to US and Canadian Requirements |

Table 2. Electrical Ratings (in amperes)

```
Model example
914CE* - * 914CE* - *G 914CE* -Q, -AQ, -AQ1, -Q2
```


## Contacts

Silver contacts Gold contacts Silver contacts

## Rating

A
B
C with 4-pin connector

| Rating code | Electrical rating |  | Make | Break |
| :---: | :---: | :---: | :---: | :---: |
| A | cURus, CE | 240 Vac , ind. | 1.2 | 0.2 |
|  |  | 240 Vac, res. | 5 | 5 |
|  |  | 28 Vdc , res. | 3 | 3 |
|  |  | 28 Vdc , ind. | 3 | 3 |
|  |  | 5 A, 1/10 HP, 125 Vac or 250 Vac | - | - |
| B | cURus, CE | 1 A res., 0.5 A ind., 30 Vdc <br> $1 \mathrm{~A}, 125 \mathrm{Vac}$ | - | - |
| C | cURus, CE | $3 \mathrm{~A}, 125 \mathrm{Vac}$ or 250 Vac | - | - |

## 914CE Series

SWITCHING AND LEAD IDENTIFICATION


## PINOUTS

Connector - (dc) (-Q) Connector (dc) (-Q2) Connector (ac) (-Q1)

## CONNECTOR VERSIONS

The 914CE Series is available with a 4-pin, M12 size connector in both bottom and side exit versions.


## MOUNTING

MICRO SWITCH ${ }^{\text {TM }}$ 914CE Series switches are mounted by using two M5 or \#10 screws. The mounting holes are counter bored to keep the screw heads within the overall switch housing dimensions.

## GANG MOUNT CAPABILITY

The housing on the 914CE 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 that even a lever-type version could be added at the end of the row.

## BOTTOM EXIT OR SIDE EXIT ORIENTATION

The CE Series has been designed with a pre-wired cable fittied in the bottom of the switch housing. Other variations are available with a side exit cable.

## GOLD CONTACT VERSIONS

For low energy applications (up to $30 \mathrm{Vdc}, 1$ A), gold contact versions of the 914CE switches can be supplied upon request.

## MICRO SWITCH ${ }^{\text {TM }}$ Compact Precision Limit Switches

## GENERAL DIMENSIONS • ALL SWITCHES



PRODUCT NOMENCLATURE


NOTE: not all combinations of model code are available.
Please contact your Honeywell provider/representative for assistance.
${ }^{1}$ More than one option may be permissible.

## 914CE Series

PRODUCT SPECIFICATIONS AND LISTINGS
Contact your Honeywell rep or distributor for additional listings


## MICRO SWITCH ${ }^{\text {TM }}$ Compact Precision Limit Switches

| 914CE • Roller Plunger <br> 914CE 28 Roller Plunger Panel Mount |  | Contacts | Elec <br> Rating | $\begin{aligned} & \text { Cable } \\ & \text { Exit } \end{aligned}$ | Free <br> Position <br> (FP) | Operating Position (OP) | Options | Listing |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Pretravel • $1,8 \mathrm{~mm}[0.071 \mathrm{in}]$ <br> Diff. travel • 0,1 mm [0.004 in] <br> Overtravel • $3,0 \mathrm{~mm}$ [0.118 in] <br> Oper. force • 12,2 N [2.75 in-lb] | Silver | A | Bottom | $\begin{aligned} & 30,3 \mathrm{~mm} \\ & {[1.19 \mathrm{in}]} \end{aligned}$ | $\begin{gathered} 28,5 \mathrm{~mm} \\ {[1.12 \mathrm{in}]} \end{gathered}$ |  | 914CE2-3 |
|  |  | Gold | B | Bottom | $\begin{aligned} & 30,3 \mathrm{~mm} \\ & {[1.19 \mathrm{in}]} \end{aligned}$ | $\begin{aligned} & 28,5 \mathrm{~mm} \\ & {[1.12 \mathrm{in}]} \end{aligned}$ |  | 914CE2-3G |
|  |  | Silver | C | Bottom | $\begin{aligned} & 30,3 \mathrm{~mm} \\ & {[1.19 \mathrm{in}]} \end{aligned}$ | $\begin{gathered} 28,5 \mathrm{~mm} \\ {[1.12 \mathrm{in}]} \end{gathered}$ | ac-type, two keyways | 914CE2-Q1 |
|  |  | Silver | C | Bottom | $\begin{aligned} & 30,3 \mathrm{~mm} \\ & {[1.19 \mathrm{in}]} \end{aligned}$ | $\begin{aligned} & 28,5 \mathrm{~mm} \\ & {[1.12 \mathrm{in}]} \end{aligned}$ | dc-type, single keyway | 914CE2-Q |
|  |  | Silver | A | Side | $\begin{aligned} & 30,3 \mathrm{~mm} \\ & {[1.19 \mathrm{in}]} \end{aligned}$ | $\begin{gathered} 28,5 \mathrm{~mm} \\ {[1.12 \mathrm{in}]} \end{gathered}$ |  | 914CE2-3A |
|  |  | Silver | A | Bottom | $\begin{aligned} & 44,3 \mathrm{~mm} \\ & {[1.75 \mathrm{in}]} \end{aligned}$ | $\begin{aligned} & 42,5 \mathrm{~mm} \\ & {[1.67 \mathrm{in}]} \end{aligned}$ | Panel mount | 914CE28-3 |
|  |  | Silver | C | Bottom | $\begin{aligned} & 44,3 \mathrm{~mm} \\ & {[1.75 \mathrm{in}]} \end{aligned}$ | $\begin{aligned} & 42,5 \mathrm{~mm} \\ & {[1.67 \mathrm{in}]} \end{aligned}$ | Panel mount, actype, two keyways | 914CE28-Q1 |
| 914CE - Boot Sealed Roller Plunger |  | Contacts | $\begin{gathered} \text { Elec } \\ \text { Rating } \end{gathered}$ | Cable Exit | Free Position (FP) | Operating <br> Position (OP) | Options | Listing |
|  | Pretravel • $1,8 \mathrm{~mm}[0.071 \mathrm{in}]$ Diff. travel • 0,1 mm [0.004 in] | Silver | A | Bottom | $\begin{aligned} & 36,2 \mathrm{~mm} \\ & {[1.43 \mathrm{in}]} \end{aligned}$ | $\begin{gathered} 34,4 \mathrm{~mm} \\ {[1.36 \mathrm{in}]} \end{gathered}$ |  | 914CE31-3 |
|  |  | Silver | A | Bottom | $\begin{aligned} & 36,2 \mathrm{~mm} \\ & {[1.43 \mathrm{in}]} \end{aligned}$ | $\begin{aligned} & 34,4 \mathrm{~mm} \\ & {[1.36 \mathrm{in}]} \end{aligned}$ | Fluorocarbon seals | 914CE31-3V |



| Contacts | Elec <br> Rating | Cable <br> Exit | Free <br> Position <br> (FP) | Operating <br> Position <br> (OP) | Options | Listing |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Silver | A | Bottom | $30,3 \mathrm{~mm}$ <br> $[1.19 \mathrm{in}]$ | $28,5 \mathrm{~mm}$ <br> $[1.12 \mathrm{in}]$ |  | 914CE3-3 |
| Gold | B | Bottom | $30,3 \mathrm{~mm}$ <br> $[1.19 \mathrm{in}]$ | $28,5 \mathrm{~mm}$ <br> $[1.12 \mathrm{in}]$ |  | 914CE3-3G |
| Silver | A | Side | $30,3 \mathrm{~mm}$ <br> $[1.19 \mathrm{in}]$ | $28,5 \mathrm{~mm}$ <br> $[1.12 \mathrm{in}]$ |  | 914CE3-3A |
| Silver | A | Bottom | $44,3 \mathrm{~mm}$ <br> $[1.75 \mathrm{in}]$ | $42,5 \mathrm{~mm}$ <br> $[1.67 \mathrm{in}]$ | Panel mount | 914CE29-3 |
| Silver | C | Bottom | $30,3 \mathrm{~mm}$ <br> $[1.19 \mathrm{in}]$ | $28,5 \mathrm{~mm}$ <br> $[1.12 \mathrm{in}]$ | dc-type, <br> single keyway | 914CE3-Q |
| Silver | C | Bottom | $30,3 \mathrm{~mm}$ <br> $[1.19 \mathrm{in}]$ | $28,5 \mathrm{~mm}$ <br> $[1.12 \mathrm{in}]$ | ac-type, <br> two keyways | 914CE3-Q1 |

[^0] with custom lengths, are also available.

## 914CE Series



[^1]
## MICRO SWITCH ${ }^{\text {TM }}$ Compact Precision Limit Switches



Note: part numbers are shown with 3 ft of cable. The -X indicates the number of feet of cable provided. 6 -foot, 9 -foot lengths, and 12 -foot lengths along with custom lengths, are also available.

This Honeywell datasheet supports the following MICRO SWITCH ${ }^{\text {M }}$ 914CE Series Limit Switch Listings

| 914CE1-12 | 914CE18-GQ | 914CE2-3KV | 914CE2-N83 |
| :---: | :---: | :---: | :---: |
| 914CE1-12A | 914CE18-Q | 914CE2-3L1 | 914CE2-N85 |
| 914CE1-15 | 914CE18-Q1 | 914CE2-6 | 914CE2-N86 |
| 914CE1-15A | 914CE1-9 | 914CE2-6A | 914CE2-N87 |
| 914CE1-3 | 914CE19-12 | 914CE2-6AK | 914CE2-N88 |
| 914CE1-3A | 914CE19-3 | 914CE2-6-C | 914CE2-N89 |
| 914CE1-3AK | 914CE19-6 | 914CE2-6G | 914CE2-N92 |
| 914CE1-3AKV | 914CE19-9 | 914CE2-6K | 914CE2-N95 |
| 914CE1-3G | 914CE19-9A | 914CE2-6KV | 914CE2-N96 |
| 914CE1-3K | 914CE1-9A | 914CE27-12 | 914CE2-Q |
| 914CE1-6 | 914CE1-AKQ | 914CE27-3 | 914CE2-Q1 |
| 914CE16-12 | 914CE1-AKQ1 | 914CE27-6 | 914CE2-Q2 |
| 914CE16-18 | 914CE1-AQ | 914CE27-9 | 914CE31-12 |
| 914CE16-18V | 914CE1-AQ1 | 914CE27-AGQ1 | 914CE31-12A |
| 914CE16-27 | 914CE1-GQ1 | 914CE27-GQ1 | 914CE31-12AV |
| 914CE16-3 | 914CE1-KQ | 914CE27-Q | 914CE31-18 |
| 914CE16-3A | 914CE1-KQ1 | 914CE28-12 | 914CE3-12 |
| 914CE16-3N1 | 914CE1-N94 | 914CE28-18 | 914CE3-12AK |
| 914CE16-6 | 914CE1-Q | 914CE28-3 | 914CE3-12K |
| 914CE16-6A | 914CE1-Q1 | 914CE28-6 | 914CE31-3 |
| 914CE16-6AN14 | 914CE1-Q2 | 914CE28-9 | 914CE31-3A |
| 914CE16-9 | 914CE20-12 | 914CE28-Q | 914CE31-3C |
| 914CE16-9A | 914CE20-12G | 914CE28-Q1 | 914CE31-3L1 |
| 914CE1-6A | 914CE20-12GL1 | 914CE2-9 | 914CE31-3V |
| 914CE16-AQ | 914CE20-3 | 914CE29-3 | 914CE31-6 |
| 914CE16-AQ2 | 914CE20-6 | 914CE29-6 | 914CE31-9AL1 |
| 914CE1-6G | 914CE20-9 | 914CE299 | 914CE31-9L1 |
| 914CE1-6K | 914CE20-9L1 | 914CE29-9 | 914CE31-9V |
| 914CE1-6L1 | 914CE20-N69 | 914CE29-9L1 | 914CE31-AQ |
| 914CE16-N53 | 914CE20-N77 | 914CE2-9A | 914CE31-N52 |
| 914CE16-N54 | 914CE20-Q | 914CE2-9AK | 914CE31-RH09 |
| 914CE16-N79 | 914CE20-Q1 | 914CE2-9AL1 | 914CE3-3 |
| 914CE16-N82 | 914CE2-12 | 914CE2-9C | 914CE3-3A |
| 914CE16-N91 | 914CE2-12AK | 914CE2-9G | 914CE3-3AK |
| 914CE16-Q | 914CE2-12GK | 914CE2-9K | 914CE3-3AL1 |
| 914CE16-Q1 | 914CE2-12GKL1 | 914CE2-9KL1 | 914CE3-3G |
| 914CE16-Q2 | 914CE212GL1 | 914CE2-9L1 | 914CE3-3K |
| 914CE16QV | 914CE2-12KL1 | 914CE29Q | 914CE3-3KL1 |
| 914CE16-QV | 914CE2-15 | 914CE2-9Q | 914CE3-3L1 |
| 914CE16-RH29 | 914CE2-15A | 914CE29-Q | 914CE3-6 |
| 914CE16-VCQ1 | 914CE2-18 | 914CE2-AGQ | 914CE3-6A |
| 914CE18-12 | 914CE2-21 | 914CE2-AKLQ | 914CE3-6AK |
| 914CE18-12AL1 | 914CE22-12 | 914CE2-AKQV | 914CE3-6G |
| 914CE18-15 | 914CE2-21N36 | 914CE2-AQ | 914CE3-6K |
| 914CE18-15A | 914CE22-3 | 914CE2-AQ1 | 914CE3-9 |
| 914CE18-21A | 914CE2-24K | 914CE2-KQ | 914CE3-9AK |
| 914CE1827 | 914CE22-6 | 914CE2-KQ1 | 914CE3-9G |
| 914CE18-27 | 914CE2-27 | 914CE2-KQV | 914CE3-9K |
| 914CE18-3 | 914CE22-9 | 914CE2-N47 | 914CE3-9L1 |
| 914CE18-3A | 914CE2-3 | 914CE2-N49 | 914CE3-9V |
| 914CE18-3AL1 | 914CE2-33 | 914CE2-N50 | 914CE3-AKQ |
| 914CE18-6 | 914CE2-33AK | 914CE2-N51 | 914CE3-AQ |
| 914CE18-6A | 914CE2-33K | 914CE2-N55 | 914CE3-KQ |
| 914CE18-9 | 914CE2-33N37 | 914CE2-N57 | 914CE3-KQ1 |
| 914CE18-9A | 914CE2-3A | 914CE2-N58 | 914CE3-N93 |
| 914CE18-9AGL1 | 914CE2-3AK | 914CE2-N59 | 914CE3-Q |
| 914CE18-9AL1 | 914CE2-3AL1 | 914CE2N67 | 914CE3-Q1 |
| 914CE18-9V | 914CE2-3G | 914CE2-N67 | 914CE55-12 |
| 914CE18-AQ | 914CE2-3K | 914CE2-N71 | 914CE55-3 |
| 914CE18-AQ1 | 914CE2-3KL1 | 914CE2-N81 | 914CE553A |

914CE55-3A
914CE55-3AG
914CE66-12
914CE66-3
914CE66-6
914CE66-9

## ADDITIONAL INFORMATION

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

- Product installation instructions
- Product range guide
- Product nomenclature tree
- Product application-specific information
- Limit and enclosed switches application information
- Limit and enclosed switches operating characteristics
- Limit and enclosed switches reference standards
- Limit and enclosed switches typical applications
- Product flyer: CE Family Miniature Limit Switches


## A WARNING PERSONAL INJURY <br> 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. <br> Failure to comply with these instructions could result in death or serious injury.

## AWARNING 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.


## WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement 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 it 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.

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

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[^0]:    Note: part numbers are shown with 3 ft of cable. The -X indicates the number of feet of cable provided. 6 -foot, 9 -foot lengths, and 12 -foot lengths along

[^1]:    ${ }^{1}$ Switch operates on clockwise and counterclockwise rotation of lever shaft

