

# MINIATURE MICROSWITCHES - SEALED, COMPACT

## V3DS - 8329

- › C-spring snap-action mechanism with wiping contacts
- › IP67 protection
- › Broad range of operating forces from 1 N to 4.5 N
- › Quick-connect terminals or wire lead output
- › Ratings from 1 mA 4 V<sub>DC</sub> to 10 A 250 V<sub>AC</sub>
- › Choice of actuators on 3 possible fixing positions (pre-assembled or retrofittable)
- › ENEC, cURus and CCC approved



### Main specifications

|                                         |                    | Standard<br>83293 | High current<br>83291 | High current<br>High force<br>83290 | Low force<br>83294 | Dual-current<br>83298 | Dual-current<br>Low force<br>83299 |
|-----------------------------------------|--------------------|-------------------|-----------------------|-------------------------------------|--------------------|-----------------------|------------------------------------|
| <b>Function</b>                         | <b>Connections</b> |                   |                       |                                     |                    |                       |                                    |
| I (changeover)                          | W3 (QC 6.3 x 0.8)  | 83293001          | 83291001              | 83290001                            | 83294001           | 83298001              | 83299001                           |
| I (changeover)                          | F0 (wires)         | 83293009          | 83291009              | 83290009                            | 83294009           | 83298009              | 83299009                           |
| R (normally closed)                     | W3 (QC 6.3 x 0.8)  | ●                 | ●                     | ●                                   | ●                  | ●                     | ●                                  |
| R (normally closed)                     | F0 (wires)         | 83293609          | 83291609              | 83290609                            | 83294609           | 83298609              | 83299609                           |
| C (normally open)                       | W3 (QC 6.3 x 0.8)  | ●                 | ●                     | ●                                   | ●                  | ●                     | ●                                  |
| C (normally open)                       | F0 (wires)         | 83293809          | 83291809              | 83290809                            | 83294809           | 83298809              | 83299809                           |
| <b>Electrical characteristics</b>       |                    |                   |                       |                                     |                    |                       |                                    |
| Rating nominal / 250 V AC (A)           |                    | 5                 | 10                    | 10                                  | 3                  | 3*                    | 3*                                 |
| Rating thermal / 250 V AC (A)           |                    | 7.5               | 10                    | 10                                  | 7.5                | 6                     | 6                                  |
| Rating UL / 125/250 VAC (A)             |                    | 6(1)              | 10(2)                 | 10(2)                               | 6(1)               | 6(1) - 0.1(0.04)      | 6(1) - 0.1(0.04)                   |
| <b>Mechanical characteristics</b>       |                    |                   |                       |                                     |                    |                       |                                    |
| Maximum operating force (N)             |                    | 2                 | 2.5                   | 4.5                                 | 1                  | 2                     | 1                                  |
| Min. Release force (N)                  |                    | 0.2               | 0.5                   | 0.8                                 | 0.1                | 0.2                   | 0.1                                |
| Max. Allowable overtravel force (N)     |                    | 20                | 20                    | 20                                  | 20                 | 20                    | 20                                 |
| Rest position max. (mm)                 |                    | 16.2              | 16.2                  | 16.2                                | 16.2               | 16.2                  | 16.2                               |
| Operating position (mm)                 |                    | 14.7 ±0.5         | 14.7 ±0.5             | 14.7 ±0.5                           | 14.7 ±0.5          | 14.7 ±0.5             | 14.7 ±0.5                          |
| Maximum differential travel (mm)        |                    | 0.5               | 0.5                   | 0.5                                 | 0.5                | 0.5                   | 0.5                                |
| Min. overtravel (mm)                    |                    | 1                 | 1                     | 1                                   | 1                  | 1                     | 1                                  |
| Ambient operating temperature (°C)      |                    | -40 → +85         | -40 → +85             | -40 → +85                           | -40 → +85          | -40 → +85             | -40 → +85                          |
| Mechanical life for 2/3 OT (operations) |                    | 10 <sup>6</sup>   | 10 <sup>6</sup>       | 10 <sup>6</sup>                     | 10 <sup>6</sup>    | 10 <sup>6</sup>       | 10 <sup>6</sup>                    |
| Contact gap (mm)                        |                    | 1                 | 1                     | 1                                   | 1                  | 1                     | 1                                  |
| Weight, terminal versions (g)           |                    | 9                 | 9                     | 9                                   | 9                  | 9                     | 9                                  |
| Weight, wire versions (g)               |                    | 39                | 39                    | 39                                  | 39                 | 39                    | 39                                 |

### Additional specifications

- Case: PBT GF (UL 94-V0 / GWFI 850 °C)
- Button: PA66 GF
- Membrane: silicone rubber
- Contacts: silver alloy, gold-plated silver alloy (dual-current)
- Terminals: brass
- Wire leads: tinned copper, XLPE insulated
- Levers: stainless steel

- Degree of protection: IP67 (mechanism and wire output)
- Recommended min actuating speed: 83290: 0.1 mm/s  
83291: 0.3 mm/s  
83293/83298: 1 mm/s  
83294/83299: 3 mm/s

- Certification marks: ENEC CE

### Product adaptations

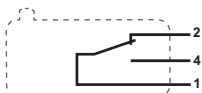


- › Special levers: special shapes and lengths, pinned actuators, ...
- › Special leads
- › Special connections: 4.8 x 0.5 and 4.8 x 0.8 quick-connect, ...
- › Cable output

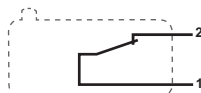
### Principles

#### Single break snap-action switch

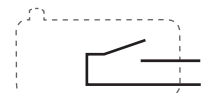
##### Changeover - SPDT (form C)



##### Normally closed - SPST-NC (form B)



##### Normally open - SPST-NO (form A)



Standard product

Product made to order



Contact us

## Curves

### Electrical life

#### 83290 - 83291

- 250 V~ 10 A resistive 50 000 cycles

#### 83293

- 250 V~ 5 A resistive 100 000 cycles

#### 83294

- 250 V~ 3A resistive 100 000 cycles

#### 83298 - 83299

- 5 V~ 1 mA resistive 200 000 cycles

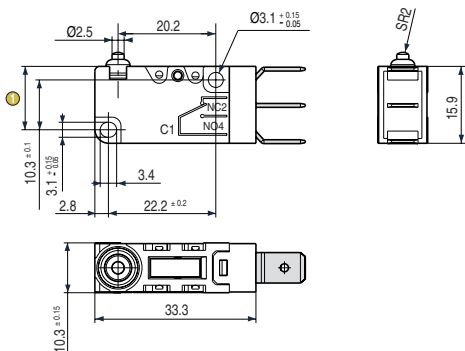
- 250 V~ 3A resistive 100 000 cycles

\* Models 83298 and 83299 are designed to operate equally well on low-current (1 mA 4 V minimum recommended) or medium-current circuits (3 A maximum recommended) circuits. However, a given product should only be used to switch one type of circuit during its working life.

## Dimensions

### Product

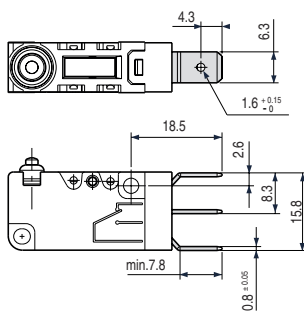
#### 8329



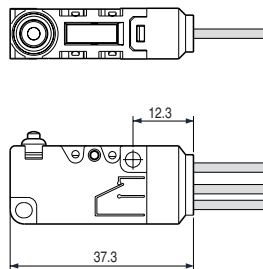
① Total travel position = 13.2 max

## Connections

### W3 quick-connect 6.3 x 0.8



### F0 wire output



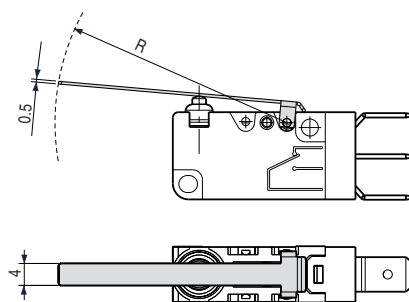
### Wire characteristics

1: Black (common)  
2: Red (NC)  
4: Brown (NO)  
Cross-section: 0.8 mm<sup>2</sup>  
Standard length: 300 mm  
Other lengths on request  
(length in meters: e.g. 1.5)

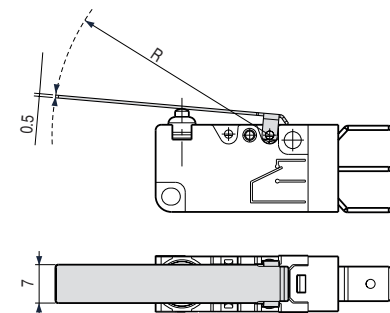
Other connections:  
consult us

## Actuators

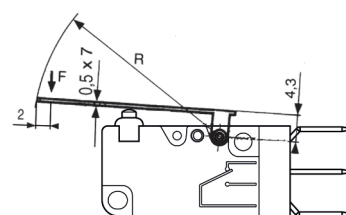
### 290A4 flat



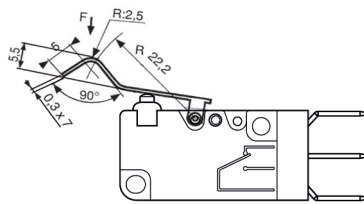
### 290A7 flat



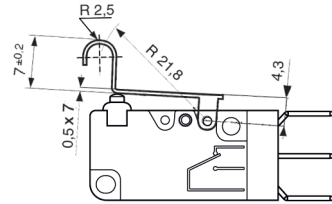
### 161A flat



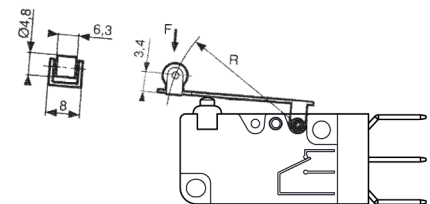
### 161F dummy roller



### 161G dummy roller

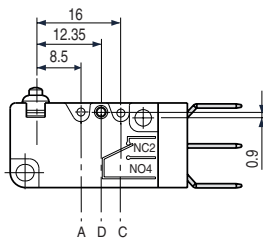


### 161E roller



Other shapes and dimensions: consult us

## Actuator mounting positions



Positions A and C are standard  
Position D is for factory mounted pinned actuators: consult us.

## Actuators and mounting accessories

### Part numbers for standard actuators

Actuators

70771217

Flat **290A4**  
R42.3



70771218

Flat **290A7**  
R39.5



| Fixing position             |    | A        | C        | A        | C        |
|-----------------------------|----|----------|----------|----------|----------|
| Coefficient for force *     |    | 4.5      | 2.5      | 4.5      | 2.5      |
| Rest position - max         | mm | 21.5     | 19       | 22       | 18.7     |
| Operating position          | mm | 14.7±2.5 | 15.2±1.5 | 14.8±2.5 | 15.2±1.5 |
| Total travel position - max | mm | 10.6     | 12.6     | 10.3     | 12.7     |
| Differential travel - max   | mm | 2.5      | 1.5      | 2.5      | 1.5      |

### Part numbers for standard actuators

Actuators

70507524

Flat **161A**  
R25.4



70507529

Roller **161E**  
R24.1



70507528

Dummy roller **161F**  
R22.2



79218651

Dummy roller **161G**  
R21.8



| Fixing position             |    | A        | C      | A      | C      | A        | C | A        | C      |
|-----------------------------|----|----------|--------|--------|--------|----------|---|----------|--------|
| Coefficient for force *     |    | 3        | 1.5    | 3      | 1.5    | 2.5      | - | 2.5      | 1.3    |
| Rest position - max         | mm | 20       | 19     | 25     | 24.5   | 25       | - | 25.5     | 25     |
| Operating position          | mm | 14.2±1.5 | 15±0.9 | 20±1.5 | 20.5±1 | 20.2±1.5 | - | 21.5±1.3 | 22.2±1 |
| Total travel position - max | mm | 12       | 13.8   | 18     | 19.2   | 18.5     | - | 20       | 21     |
| Differential travel - max   | mm | 1.5      | 1      | 1.5    | 1      | 1.5      | - | 1.3      | 1      |

\* To calculate force on actuator, divide the switch force by the coefficient given in the table.

Example: 83291 with lever 290A7 R39.5 Pos C (coeff. 2.5)

Max Operating force: 2.5 N / 2.5 = 1 N

Min Release force: 0.5 N / 2.5 = 0.2 N

Except where otherwise indicated, levers are supplied unmounted. For factory mounting, specify fixing position A or C.

## Installation recommendations

See "Basic technical concepts"

## How to order

Use 8 digit part numbers when they are defined

Other cases, precise: Type of microswitch - Function - Connection - Actuator\* - Fixing position\*

\* if needed

Example: 83293 I W3 290A7 R39.5 C

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