



## V4 8318 Sealed High-current 83180 Part number made to order



- IP 67 protection
- Nominal ratings 0.1 A to 10 A / 250 VAC
- Minimum rating 1 mA / 4 VDC
- Operating temperature -40 °C to +125 °C
- Choice of actuators with 2 possible fixing positions

### Part numbers

|        | Type               | Function       | Connections                                                                 |
|--------|--------------------|----------------|-----------------------------------------------------------------------------|
| 831800 | High-current 83180 | I (changeover) | X1A* - X1S* - X2A* - X2S* - X3A* - X3S* - FB0 - FG0 - CD0** - CB0** - CG0** |

### Specifications

#### Electrical characteristics

|                              |      |
|------------------------------|------|
| Rating nominal / 250 VAC (A) | 10   |
| Rating thermal / 250 VAC (A) | 12,5 |

#### Mechanical characteristics

|                                                            |                 |
|------------------------------------------------------------|-----------------|
| Maximum operating force (N)                                | 3,4             |
| Min. Release force (N)                                     | 1               |
| Maximum total travel force (N)                             | 5               |
| Max. permitted overtravel force (N)                        | 10              |
| Maximum rest position (mm)                                 | 9,3             |
| Operating position (mm)                                    | 8,4 ±0,3        |
| Maximum differential travel (mm)                           | 0,1             |
| Min. overtravel (mm)                                       | 0,6             |
| Ambient operating temperature for blade version (°C)       | -40 → +125      |
| Ambient operating temperature for wires/cable version (°C) | -40 → +105      |
| Mechanical life (operations)                               | 10 <sup>6</sup> |
| Contact gap (mm)                                           | 0,4             |
| Weight (g) (tags version)                                  | 2               |

### Comments

\* Type 83180 available on request

\*\* Cable version for types 83181, 83183 and 83186

### Additional specifications

#### Components

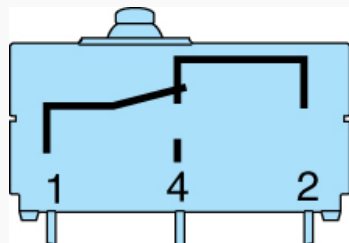
##### Material

- Case : polyester UL 94VO
- Button : polyester
- Membrane : silicon
- Contacts : AgCdO or AgSnO<sub>2</sub> gold-plated AgNi (dual-current)
- Terminals : silver-plated, tinned brass
- Cable/Lead : PVC

##### Levers

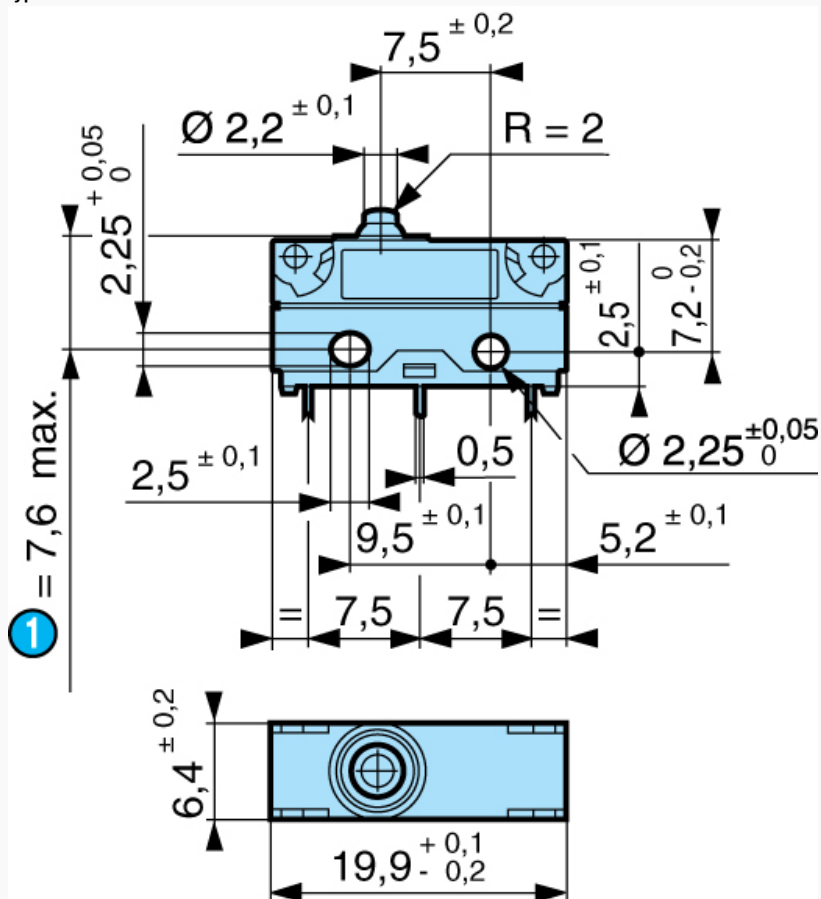
- Flat : stainless steel
- Roller : stainless steel, polyamide roller

### Principles



## Product

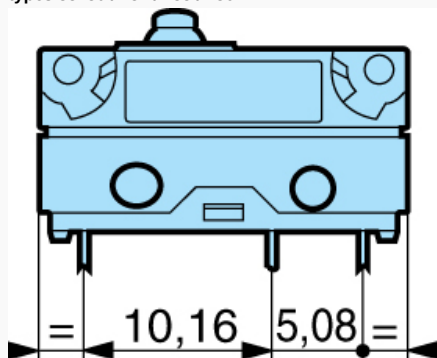
**Symmetrical version**  
types 83180 / 181 / 183 / 186



|    |               |
|----|---------------|
| Nº | <b>Legend</b> |
| 1  | OL = 7.6 max. |

## Product

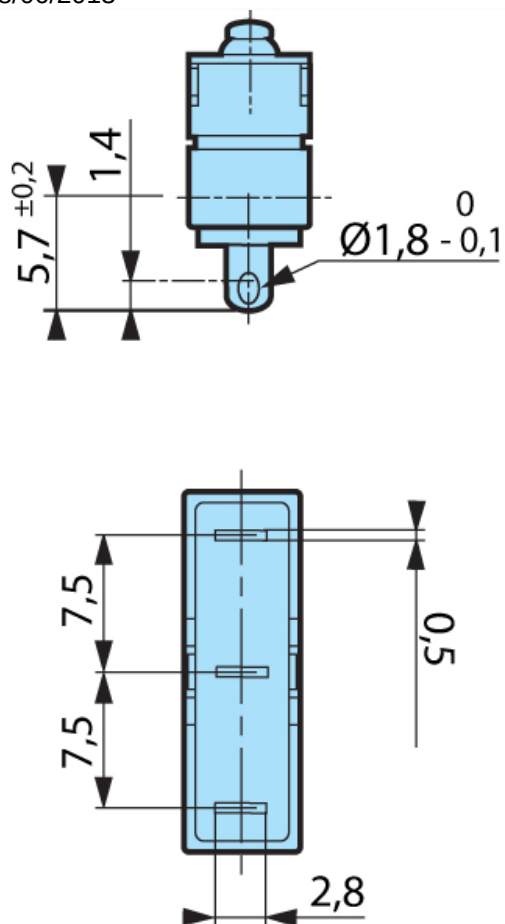
**Asymmetrical version**  
types 83180 / 181 / 183 / 186



Fixed by 2 M2 screws Torque with screw only : 0.2 Nm, with screw + washer : 0.3 Nm

## Connections

W2S  
Solder



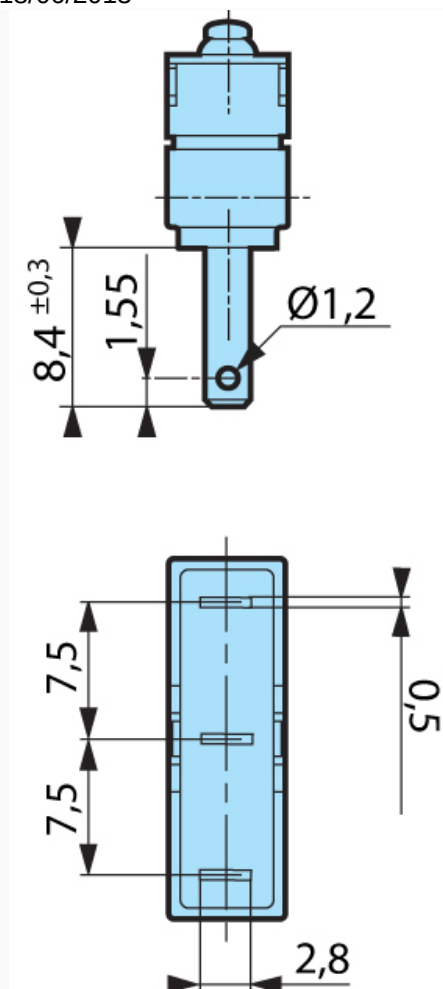
Fixed by 2 M2 screws Torque with screw only : 0.2 Nm, with screw + washer : 0.3 Nm

#### Dimensions (mm)

#### Connections

#### W7S

Faston 2.8 x 0.5

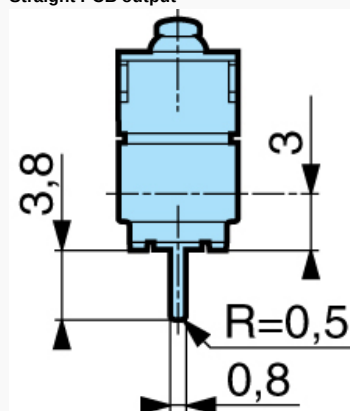


Fixed by 2 M2 screws Torque with screw only : 0.2 Nm, with screw + washer : 0.3 Nm

#### Dimensions (mm)

#### Connections

X1A  
Straight PCB output

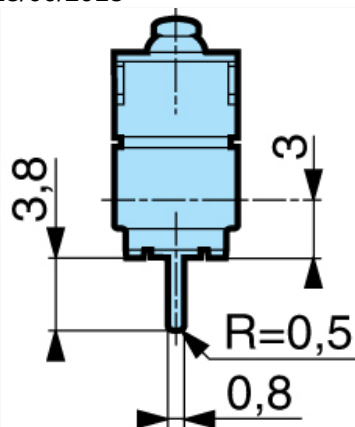


Fixed by 2 M2 screws Torque with screw only : 0.2 Nm, with screw + washer : 0.3 Nm

#### Dimensions (mm)

#### Connections

X1S  
Straight PCB output



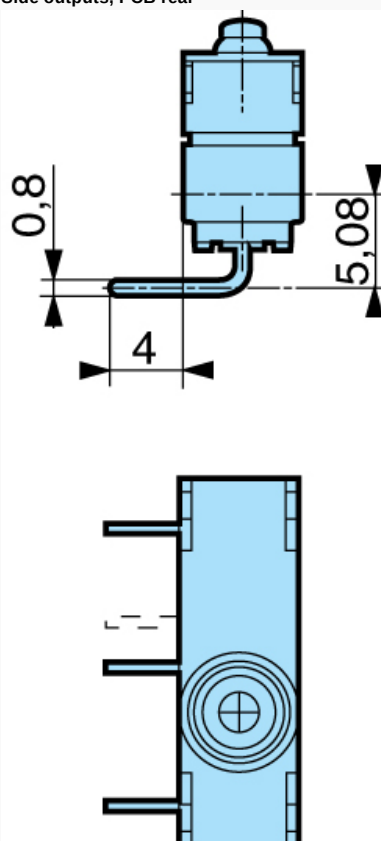
Fixed by 2 M2 screws Torque with screw only : 0.2 Nm, with screw + washer : 0.3 Nm

#### Dimensions (mm)

#### Connections

X2A - X2S

Side outputs, PCB rear



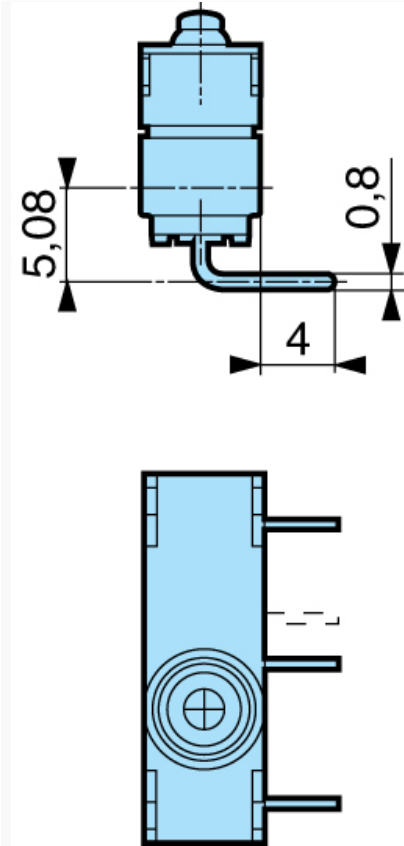
Fixed by 2 M2 screws Torque with screw only : 0.2 Nm, with screw + washer : 0.3 Nm

#### Dimensions (mm)

#### Connections

X3A - X3S

Side outputs, PCB front

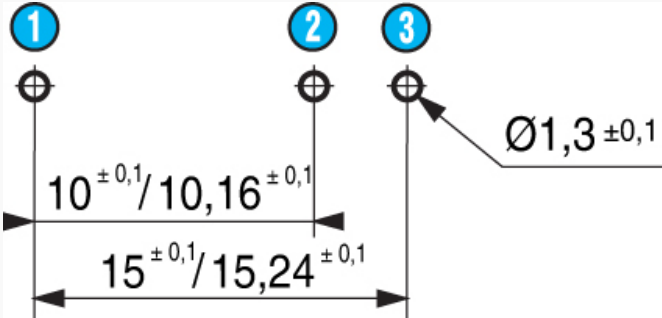


Fixed by 2 M2 screws Torque with screw only : 0.2 Nm, with screw + washer : 0.3 Nm

Dimensions (mm)

Drilling

Printed circuit board mounting  
Asymmetrical  
X1A, X2A, X3A



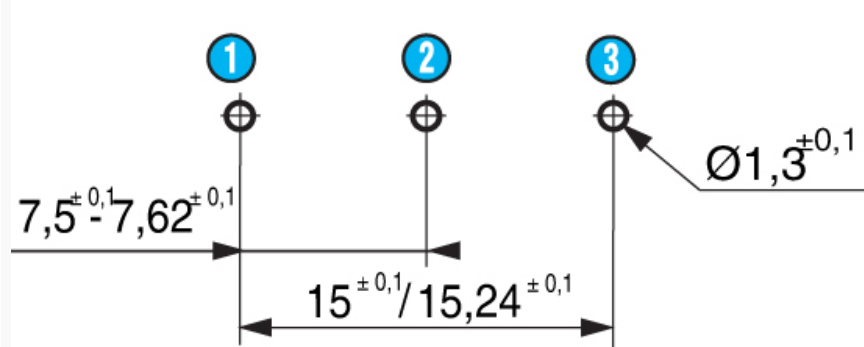
Fixed by 2 M2 screws Torque with screw only : 0.2 Nm, with screw + washer : 0.3 Nm

| N° | Legend |
|----|--------|
| 1  | 1.C    |
| 2  | 4.NO   |
| 3  | 2.NC   |

Dimensions (mm)

Drilling

Printed circuit board mounting  
Symmetrical  
X1S, X2S, X3S



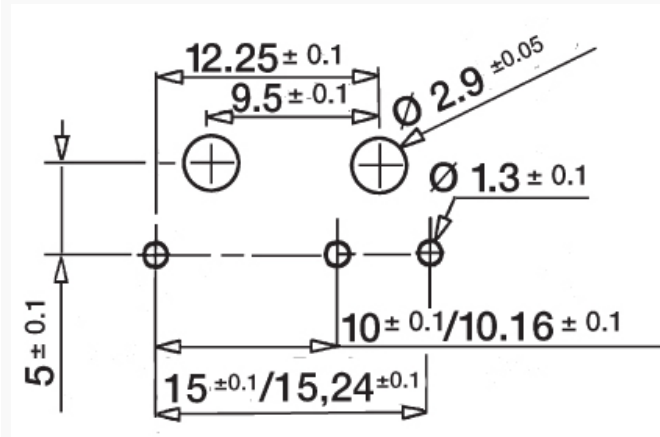
Fixed by 2 M2 screws Torque with screw only : 0.2 Nm, with screw + washer : 0.3 Nm

| N° | Legend |
|----|--------|
| 1  | 1.C    |
| 2  | 4.NO   |
| 3  | 2.NC   |

Dimensions (mm)

Drilling

Mounting on a printed circuit board with fixing pins  
Asymmetrical

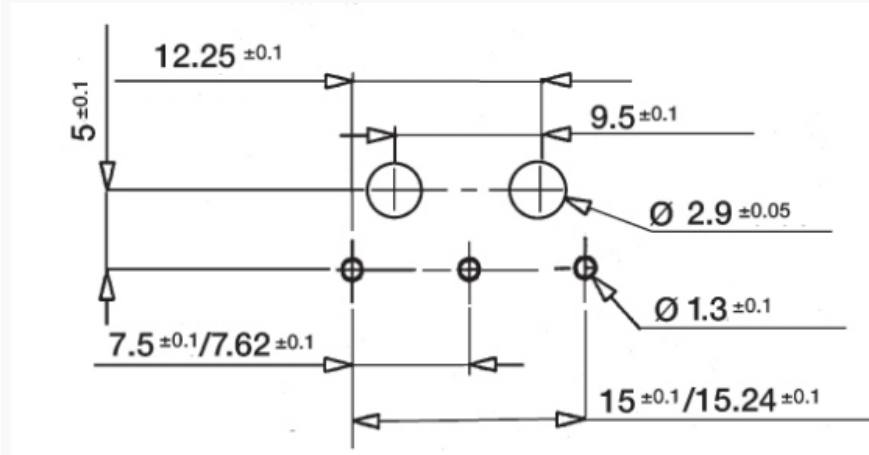


Fixed by 2 M2 screws Torque with screw only : 0.2 Nm, with screw + washer : 0.3 Nm

Dimensions (mm)

Drilling

Mounting on a printed circuit board with fixing pins  
Symmetrical

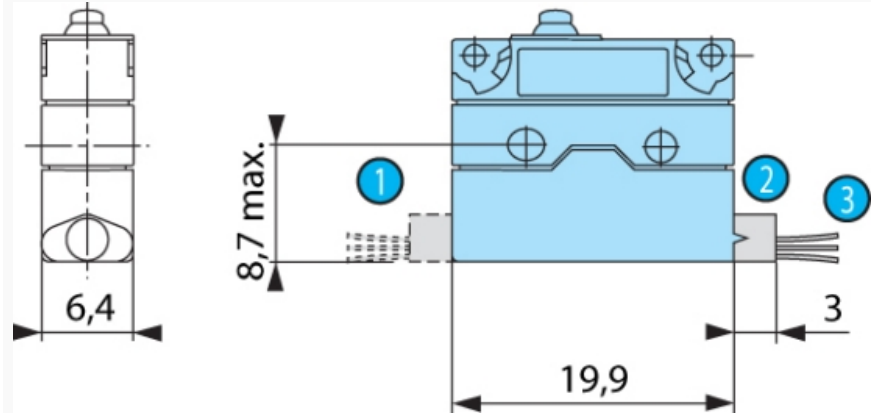


Fixed by 2 M2 screws Torque with screw only : 0.2 Nm, with screw + washer : 0.3 Nm

Dimensions (mm)

Connections

Lead outputs  
FG0 lead output on left - FD0 lead output on right



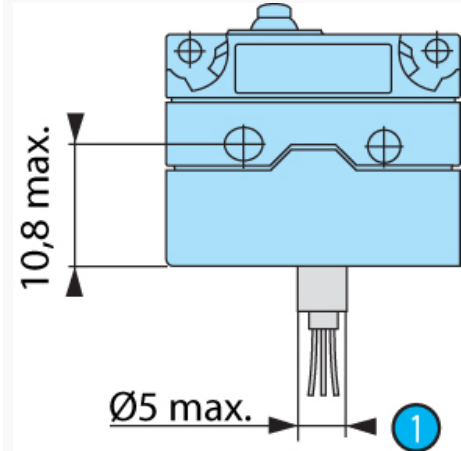
Black = Common Grey = NC Blue = NO Conductor cross-section : 83181 / 83183 / 83186 = 0.5 mm<sup>2</sup> 83180 = 0.75 mm<sup>2</sup>

| N° | Legend          |
|----|-----------------|
| 1  | FG0             |
| 2  | FD0             |
| 3  | Standard 500 mm |

Dimensions (mm)

Connections

Lead/cable output  
CB0 cable output on bottom



Black = Common Grey = NC Blue = NO Conductor cross-section : 83181 / 83183 / 83186 = 0.5 mm<sup>2</sup> 83180 = 0.75 mm<sup>2</sup>

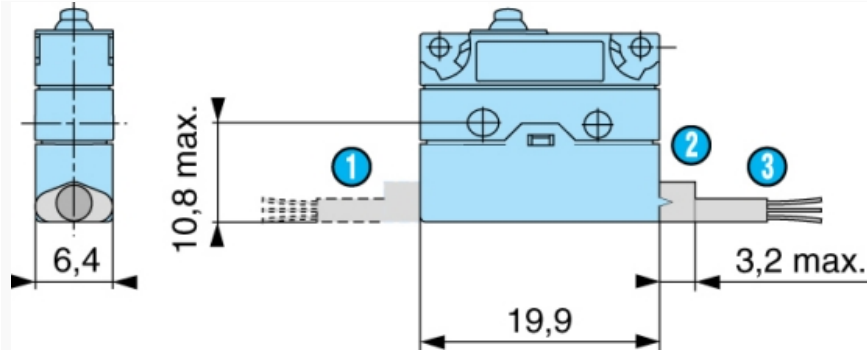
| N° | Legend          |
|----|-----------------|
| 1  | Standard 500 mm |

Dimensions (mm)

Connections

Cable outputs  
CG0 cable output on left - CD0 cable output on right





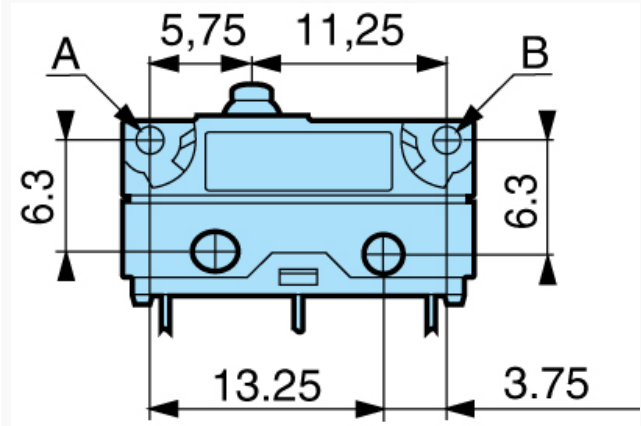
Black = Common Grey = NC Blue = NO Conductor cross-section : 83181 / 83183 / 83186 = 3 x 0.5 mm2

| N° | Legend          |
|----|-----------------|
| 1  | CG0             |
| 2  | CD0             |
| 3  | Standard 500 mm |

Dimensions (mm)

Actuator mounting positions

Fixing position

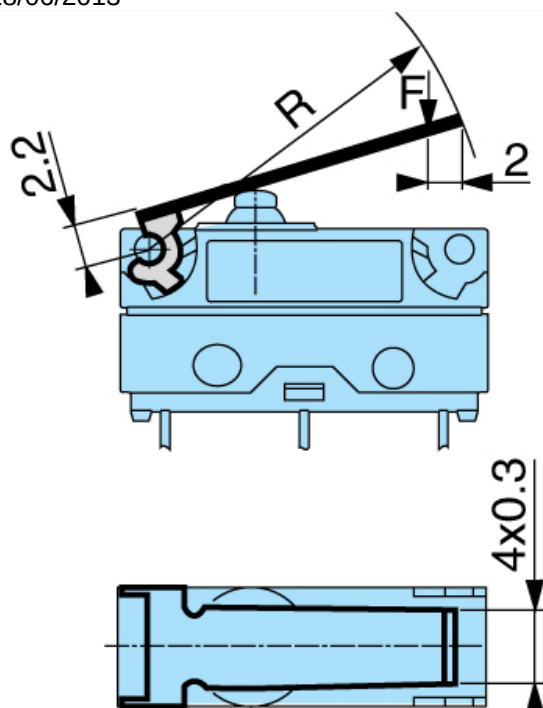


Black = Common Grey = NC Blue = NO Conductor cross-section : 83181 / 83183 / 83186 = 3 x 0.5 mm2

Dimensions (mm)

Actuators

170 A  
Flat

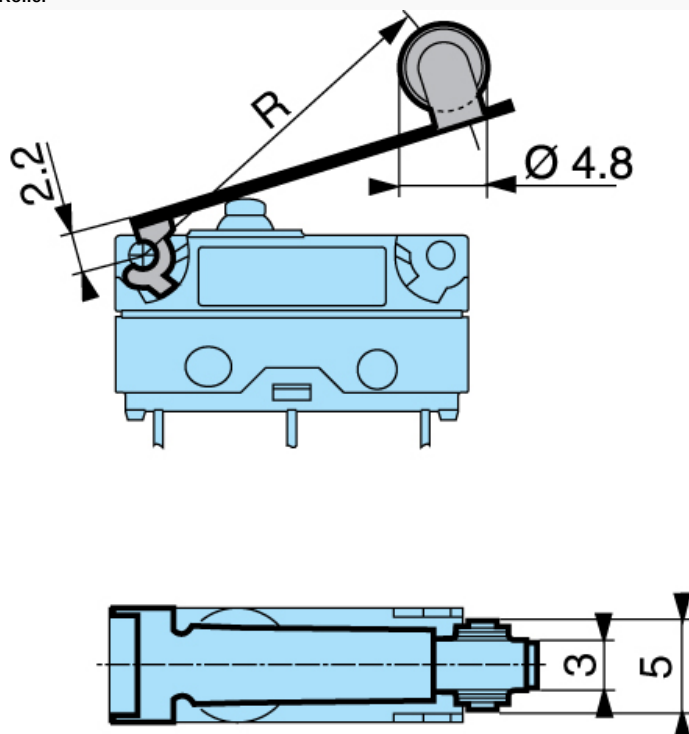


Black = Common Grey = NC Blue = NO Conductor cross-section : 83181 / 83183 / 83186 = 3 x 0.5 mm<sup>2</sup>

#### Dimensions (mm)

##### Actuators

170 E  
Roller

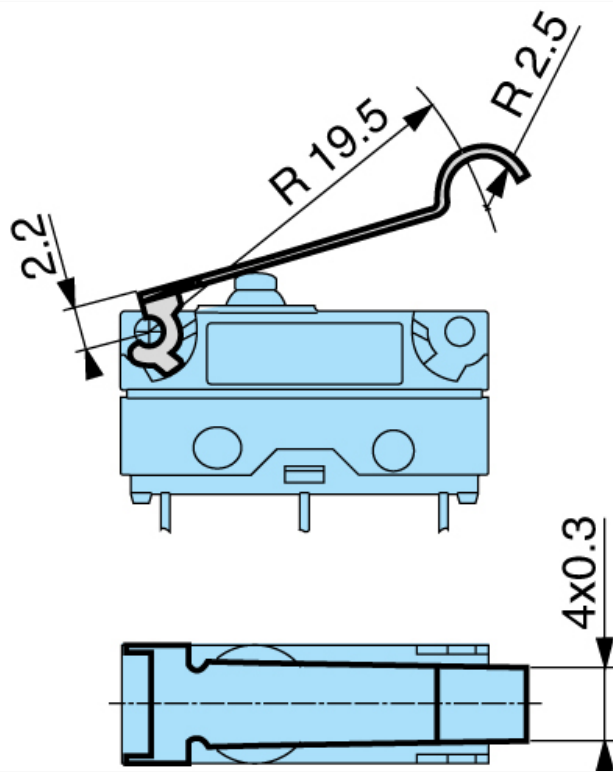


Black = Common Grey = NC Blue = NO Conductor cross-section : 83181 / 83183 / 83186 = 3 x 0.5 mm<sup>2</sup>

#### Dimensions (mm)

##### Actuators

170 F  
Dummy roller

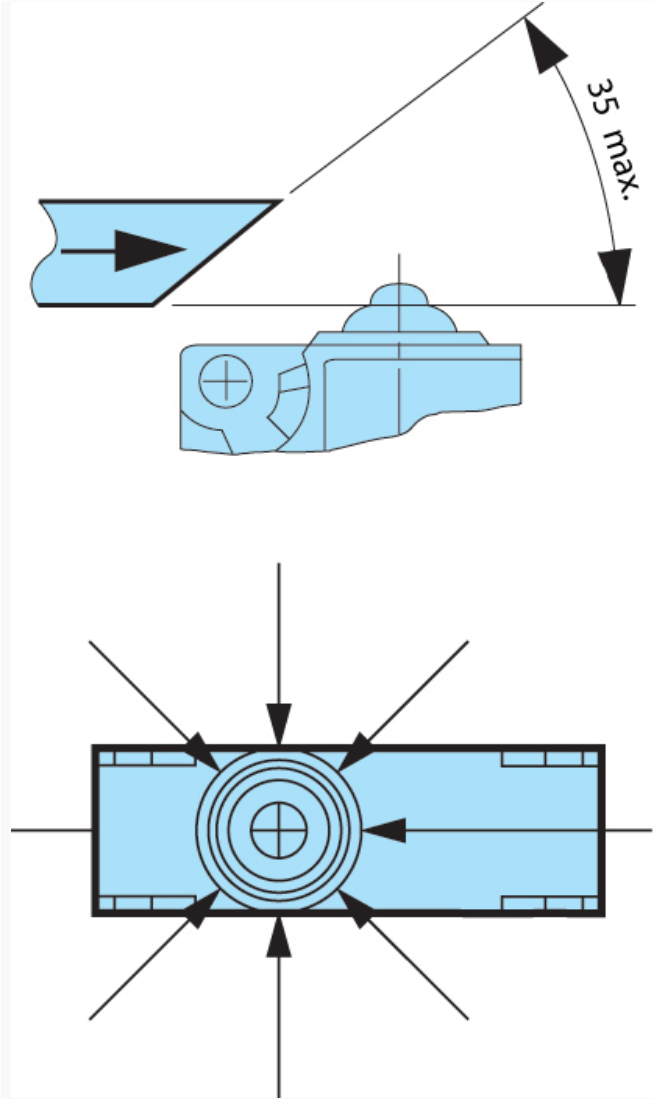


Black = Common Grey = NC Blue = NO Conductor cross-section : 83181 / 83183 / 83186 = 3 x 0.5 mm<sup>2</sup>

#### Dimensions (mm)

#### Actuators

#### Recommendations for operation from the side

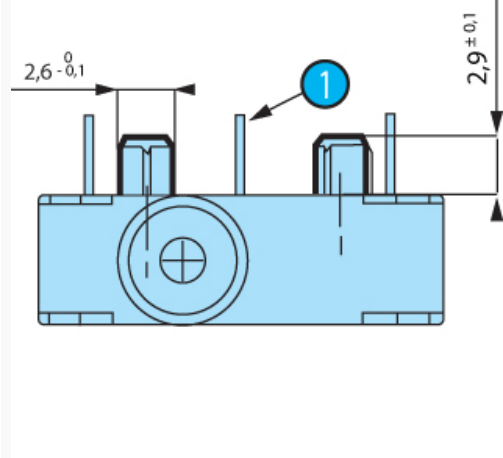


Black = Common Grey = NC Blue = NO Conductor cross-section : 83181 / 83183 / 83186 = 3 x 0.5 mm2

Dimensions (mm)

Mounting accessories

Fixing pins



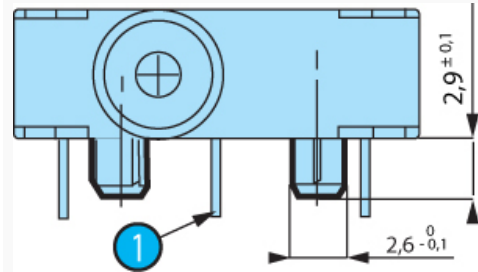
Black = Common Grey = NC Blue = NO Conductor cross-section : 83181 / 83183 / 83186 = 3 x 0.5 mm2

| N° | Legend    |
|----|-----------|
| 1  | X2 output |

Dimensions (mm)

Mounting accessories

Fixing pins

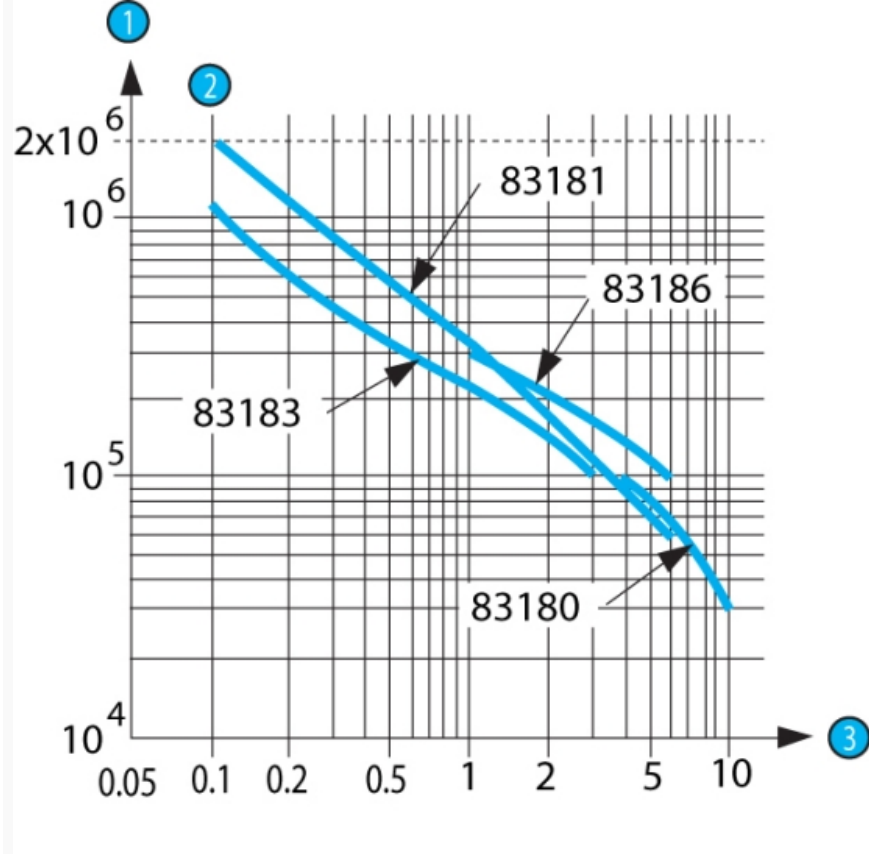


Black = Common Grey = NC Blue = NO Conductor cross-section : 83181 / 83183 / 83186 = 3 x 0.5 mm2

| N° | Legend    |
|----|-----------|
| 1  | X3 output |

Curves

Operating curve 250 VAC



Model 83181 is designed to operate equally well on dual-current (1 mA 4 V minimum) or medium-current (6 A maximum) circuits. However, a given product should only be used to switch one type of circuit during its working life.

| N° | Legend            |
|----|-------------------|
| 1  | Number of cycles  |
| 2  | Resistive circuit |
| 3  | Current in Amps   |

Curves

Switch rating with DC supply

|      |                    | 83180 | 83181 | 83183 | 83186 |
|------|--------------------|-------|-------|-------|-------|
| 12 V | Resistive          | 10 A  | 6 A   | 3 A   | 6 A   |
|      | Inductive L/R 5 ms | 10 A  | 6 A   | 3 A   | 6 A   |
| 24 V | Resistive          | 10 A  | 6 A   | 3 A   | 6 A   |
|      | Inductive L/R 5 ms | 5 A   | 5 A   | 3 A   | 5 A   |

Model 83181 is designed to operate equally well on dual-current (1 mA 4 V minimum) or medium-current (6 A maximum) circuits. However, a given product should only be used to switch one type of circuit during its working life.

Connections

Actuators and fixing positions

|                                                                                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Part numbers for standard actuators                                                                                                             | 79253327                                                                          | 79253326                                                                          |                                                                                   | 79218454                                                                          |
| Actuators                                                                                                                                       | Flat 170A R18.3                                                                   | Flat 170A R24                                                                     | Flat 170A R41                                                                     | Roller 170E R20                                                                   |
|                                                                                                                                                 |  |  |  |  |
| Mounting position                                                                                                                               | A B                                                                               | A B                                                                               | A B                                                                               | A B                                                                               |
| Coefficient                                                                                                                                     | 3 1.5                                                                             | 4 2                                                                               | 7 3.5                                                                             | 3 1.5                                                                             |
| Tripping point                                                                                                                                  | 10 <sup>+1.4</sup> 9.2 <sup>+0.9</sup>                                            | 10.7 <sup>+1.7</sup> 9.6 <sup>+1.1</sup>                                          | 12.7 <sup>+3.3</sup> 10.6 <sup>+1.8</sup>                                         | 15.5 <sup>+1.4</sup> 14.5 <sup>+0.9</sup>                                         |
| 83180                                                                                                                                           |                                                                                   |                                                                                   | 11 <sup>+3</sup> 8.8 <sup>+1.8</sup>                                              |                                                                                   |
| 83181 / 183 / 186                                                                                                                               |                                                                                   |                                                                                   | 11.4 <sup>+3</sup> 9.3 <sup>+1.8</sup>                                            |                                                                                   |
| Part numbers for standard actuators                                                                                                             | 79253329                                                                          |                                                                                   |                                                                                   |                                                                                   |
| Actuators                                                                                                                                       | Dummy roller 170F R19.5                                                           | Screw 170D *                                                                      | Transverse roller 170 EL *                                                        |                                                                                   |
|                                                                                                                                                 |  |  |  |                                                                                   |
| Mounting position                                                                                                                               | A B                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Coefficient                                                                                                                                     | 3 1.5                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Tripping point                                                                                                                                  | 12.9 <sup>+1.3</sup> 11.9 <sup>+1.7</sup>                                         |                                                                                   |                                                                                   |                                                                                   |
| Except where otherwise indicated, levers are supplied unmounted.<br>For factory mounting, specify fixing position A or B.<br>* To special order |                                                                                   |                                                                                   |                                                                                   |                                                                                   |

Other information

Mounting - Operation

See basic technical concepts

Degree of protection

- Tag version :  
→casing = IP67  
→terminals = IP00
- Lead/cable version :  
→output/casing = IP67

To calculate force : divide the switch force by the coefficient in the table.

To calculate travel : multiply the switch travel by the same coefficient.

Product adaptations



- Special levers
- Specific fixings
- Special leads, cables, cable harnesses
- NF - UL - cUL approvals