## Protected

## 83106



## Main specifications

|  | $\begin{aligned} & \text { Standard } \\ & 831060 \end{aligned}$ | 2 stable lever positions $831064$ | 2 stable plunger positions 831067 |
| :---: | :---: | :---: | :---: |
| Function Connections |  |  |  |
| I (changeover) W3 | 83106022 | 83106411 | 83106701 |
| I (changeover) W1 - W2 | - | $\bullet$ | $\bullet$ |
| R (normally closed) ${ }^{\text {W }}$ - W2 - W3 | $\bullet$ | - | $\bullet$ |
| C (normally open) W1-W2 - W3 | $\bullet$ | $\bullet$ | $\bullet$ |
| Electrical characteristics |  |  |  |
| Rating nominal / 250 V AC (A) | 5 | 5 | 5 |
| Rating thermal / 250 V AC (A) | 17.5 | 17.5 | 17.5 |
| Mechanical characteristics |  |  |  |
| Maximum operating force ( N ) | 4 | 0.45 | 2 |
| Min. Release force ( N ) | 1 | - | - |
| Tripping point (mm) | $11.45{ }^{+0.2-0.25}$ | - | - |
| Min. overtravel (mm) | 0.7 | - | - |
| Mechanical life (operations) | $10^{7}$ | $10^{6}$ | $10^{6}$ |
| Max. permitted overtravel force (N) | 20 | - | - |
| Rest position max. (mm) | 12.75 | - | - |
| Differential travel (mm) | $0.5^{ \pm 0.2}$ | - | - |
| Ambient operating temperature ( ${ }^{\circ} \mathrm{C}$ ) | $-40 \rightarrow+85$ | $-40 \rightarrow+85$ | $-40 \rightarrow+85$ |
| Contact gap (mm) | $0.4 \times 2$ | $0.4 \times 2$ | $0.4 \times 2$ |
| Weight (g) | 8 | 9 | 8 |

## Additional specifications

## Components

Material

- Case : polyamide UL94V2 (83 106)
- Contacts : nickel silver

Levers

- Mild steel (zinc)
- Roller : polyamide
- Adjusting screws : self-retaining
- Plates : iridescent passivated mild steel (zinc)

NB : Fixing holes for these microswitches have metal ferrules.

## Product adaptations



- Special levers
- Reinforced spring
- Special contacts
$\square$ High operating temperature: $125{ }^{\circ} \mathrm{C}$
- Approvals : UL - cUL


## Principles

Double break changeover snap-action switch


## Curves

Operating curve for types 831060 / 4 / 7


[^0]
## Dimensions

$\rightarrow$ Product
83106

(1) $\mathrm{OL}=10.65$
(2) $\oslash 2^{+0.01+0.65}$ Depth 1.2

## $\rightarrow$ Connections

W1 screw


831064


831067


W3 for 6.35 mm clips


## $\rightarrow$ Actuators


Lever cross-section $1 \times 6.4 \mathrm{~mm}$ Q

Lever cross-section $1 \times 6.4 \mathrm{~mm}$
B

B9



Mounting accessories
02
2-pole side mounting plate


2-pole vertical mounting plate


Side plate


H
Horizontal single-pole mounting plate


Unless indicated, the thickness of plates is 1.5 mm

## Actuators and mounting accessories

| Actuators |  | 70500888 | 70500828 | 70500813 | 70500840 | 70500870 | 70500170 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | AR49 | BR49 | ER47 | Q | V3 R15.5 | B9 |
|  |  | $\cdots$ | $3$ | an | $88$ | Ni | 옹N |
| Operating force - max. | N | 1.2 | 1.2 | 1.2 | 2.8 | 4 | 4 |
| Pelease force - min. | N | 0.25 | 0.25 | 0.2 | 0.45 | 0.8 | 1 |
| Pre-travel - max. | mm | 6.2 | 6.2 | 6.2 | 3.2 | 1.45 | 1.5 |
| Differential travel | mm | $2.1 \pm 0.9$ | $2.1 \pm 0.9$ | $2.1 \pm 0.9$ | $1.05{ }^{ \pm 0.4}$ | $0.5 \pm 02$ | $0.5 \pm 0.2$ |
| Total travel max. | mm | 7.5 | 8.4 | 7.5 | 4.5 | 1.9 | 1.9 |

Except where otherwise indicated, the flat and roller levers are mounted as shown in the dimensional drawings (mounted on the left).

| Mounting accessories |  |  | 70500206 | 70500208 | 70500218 | 70500216 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Y Side plate | H Horizontal single-pole mounting plate | O2 2-pole side mounting plate | K2 2-pole vertical mounting plate |
|  |  |  |  |  |  |  |
| Screws: Length | $\begin{aligned} & 14.5 \\ & 16 \\ & 27.5 \end{aligned}$ | $\begin{aligned} & 70599106 \\ & 70599102 \\ & 70599110 \end{aligned}$ |  |  |  |  |

## Other information

Mounting - Operation
See basic technical concepts
To ensure protection against electric shock after installation in the application, please consult us when conductive parts are located less than 3 mm from case/cover rear mating surfaces, opposite to button side.

## Protected

## 83109

Double break switching
Front connections
Options for operation in stable positions
Choice of actuators and mounting accessories


## Main specifications

|  | Outputs on front face $831090$ |
| :---: | :---: |
| Function Connections |  |
| I (changeover) W2 | 83109004 |
| R (normally closed) W2 | $\bullet$ |
| C (normally open) W2 | $\bullet$ |
| Electrical characteristics |  |
| Rating nominal / 250 V AC (A) | 5 |
| Rating thermal / 250 V AC (A) | 17.5 |
| Mechanical characteristics |  |
| Maximum operating force ( N ) | 4 |
| Min. Release force ( N ) | 1 |
| Tripping point (mm) | $11.45^{+0.2 \cdot 0.25}$ |
| Min. overtravel (mm) | 0.7 |
| Mechanical life (operations) | $10^{7}$ |
| Max. permitted overtravel force (N) | 20 |
| Rest position max. (mm) | 12.75 |
| differential travel (mm) | $0.5^{ \pm 0.2}$ |
| Ambient operating temperature ( ${ }^{\circ} \mathrm{C}$ ) | $-40 \rightarrow+85$ |
| Contact gap (mm) | $0.4 \times 2$ |
| Weight (g) | 8 |

## Additional specifications

## Components

## Material

- Case : polyamide UL94V2
- Contacts : nickel silver

Levers

- Mild steel (zinc)
- Roller : polyamide
- Adjusting screws : self-retaining
- Plates : iridescent passivated mild steel (zinc)

NB : Fixing holes for these microswitches have metal ferrules.

## Product adaptations


$\square$ Special levers

- Reinforced spring
- Special contacts
- Approvals : UL - cUL


## Principles

Double break changeover snap-action switch


## Curves

Operating curve for type 831090


[^1]
## Dimensions

$\rightarrow$ Product
831090


$$
\begin{aligned}
& \text { (1) } O L=10.65 \\
& \text { (2) } \varnothing 2^{+0.01+0.65} \text { Depth } 1.2
\end{aligned}
$$

$\rightarrow$ Actuators


Lever cross-section $1 \times 6.4 \mathrm{~mm}$

## $\rightarrow$ Connections

W2 solder


B


Lever cross-section $1 \times 6.4 \mathrm{~mm}$

E


Lever cross-section $1 \times 6.4$ mm


Lever cross-section $1 \times 6.4 \mathrm{~mm}$

B9


## K2

2-pole vertical mounting plate


V3


Lever cross-section $1 \times 6.4 \mathrm{~mm}$

H
Horizontal single-pole mounting plate


Unless indicated, the thickness of plates is 1.5 mm

Actuators and mounting accessories

| Actuators |  | 70500888 | 70500828 | 70500813 | 70500840 | 70500870 | 70500170 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | AR49 | BR49 | ER47 | Q | V3 R15,5 | B9 |
|  |  | $\cdots$ | $+\infty$ | $\leftrightarrow 3$ | $83$ | त® | On |
| Operating force - max. | N | 1.2 | 1.2 | 1.2 | 2.8 | 4 | 4 |
| Pelease force - min. | N | 0.25 | 0.25 | 0.2 | 0.45 | 0.8 | 1 |
| Pre-travel - max. | mm | 6.2 | 6.2 | 6.2 | 3.2 | 1.45 | 1.5 |
| Differential travel | mm | $2.1 \pm 0.9$ | $2.1{ }^{ \pm 0.9}$ | $2.1 \pm 0.9$ | $1.05 \pm 0.4$ | $0.5 \pm 02$ | $0.5 \pm 02$ |
| Total travel max. | mm | 7.5 | 8.4 | 7.5 | 4.5 | 1.9 | 1.9 |

Except where otherwise indicated, the flat and roller levers are mounted as shown in the dimensional drawings (mounted on the left)..


## Other information

Mounting - Operation
See basic technical concepts
To ensure protection against electric shock after installation in the application, please consult us when conductive parts are located less than 3 mm from case/cover rear mating surfaces, opposite to button side.

## Protected

## 83111



## Main specifications

|  | Rear-fixing by nuts $831110$ | Rear-fixing by clips $831115$ |
| :---: | :---: | :---: |
| Function Connections |  |  |
| I (changeover) W3 | 83111001 | 83111525 |
| 1 (changeover) W1-W2 | $\bullet$ | - |
| R (normally closed) W1-W2 - W3 | - | $\bullet$ |
| C (normally open) W1-W2 - W3 | $\bullet$ | $\bullet$ |
| Electrical characteristics |  |  |
| Rating nominal / 250 V AC (A) | 5 | 5 |
| Rating thermal / 250 V AC (A) | 17.5 | 17.5 |
| Mechanical characteristics |  |  |
| Maximum operating force ( N ) | 4 | 4 |
| Min. Release force ( N ) | 1 | 1 |
| Tripping point (mm) | $11.45{ }^{+0.2-0.25}$ | $11.45+0.2-0.25$ |
| Min. overtravel (mm) | 0.7 | 0.7 |
| Mechanical life (operations) | $10^{7}$ | $10^{7}$ |
| Max. permitted overtravel force (N) | 20 | 20 |
| Rest position max. (mm) | - | - |
| Maximum differential travel (mm) | $0.5^{ \pm 0.2}$ | $0.5^{ \pm 0.2}$ |
| Ambient operating temperature ( ${ }^{\circ} \mathrm{C}$ ) | $-40 \rightarrow+85$ | $-40 \rightarrow+85$ |
| Contact gap (mm) | $0.4 \times 2$ | $0.4 \times 2$ |
| Weight (g) | 8 | 8 |

## Additional specifications

## Components

Material

- Case : polyamide UL94V2
- Contacts : nickel silver

Levers

- Mild steel (zinc)
- Roller : polyamide
- Adjusting screws : self-retaining
- Plates : iridescent passivated mild steel (zinc)

NB : Fixing holes for these microswitches have metal ferrules.

## Product adaptations



## Principles

Double break changeover snap-action switch


## Curves

Operating curve for types $831110-831115$


[^2]
## Dimensions

$\rightarrow$ Product
831110


831115

$\rightarrow$ Connections

W1 screw


W2 solder


W3 for 6.35 mm clips


## $\rightarrow$ Actuators



Actuators and mounting accessories


Except where otherwise indicated, the flat and roller levers are mounted as shown in the dimensional drawings (mounted on the left)..

## Protected

## 83112

## - Double break switching <br> B Built-in screw connections <br> - Options for operation in stable positions <br> - Choice of actuators and mouniting accessories



## Main specifications

|  | Built-in screw connections 831120 |
| :---: | :---: |
| Function Connections |  |
| I (changeover) W1 | 83112001 |
| Electrical characteristics |  |
| Rating nominal / 250 V AC (A) | 5 |
| Rating thermal / 250 V AC (A) | 17.5 |
| Mechanical characteristics |  |
| Maximum operating force ( N ) | 4 |
| Min. Release force (N) | 1 |
| Tripping point (mm) | $11.45^{+0.2-0.25}$ |
| Min. overtravel (mm) | 0.7 |
| Mechanical life (operations) | $10^{7}$ |
| Max. permitted overtravel force (N) | 20 |
| Rest position max. (mm) | 12.75 |
| differential travel (mm) | $0.5^{ \pm 0.2}$ |
| Ambient operating temperature ( ${ }^{\circ} \mathrm{C}$ ) | $-40 \rightarrow+85$ |
| Contact gap (mm) | $0.4 \times 2$ |
| Weight (g) | 14.5 |

## Additional specifications

## Components

Material

- Case : polyamide UL94V2
- Contacts : nickel silver

Levers

- Mild steel (zinc)
- Roller : polyamid
- Adjusting screws : self-retaining
- Plates : iridescent passivated mild steel (zinc)

NB : Fixing holes for these microswitches have metal ferrules.

## Product adaptations



- Approvals : UL - cUL


## Principles

Double break changeover snap-action switch


## Curves

Operating curve for type 831120

(1) Number of cycles
2 Resistive circuit
3 Inductive circuit
(4) Mechanical life limit
(5) Current in Amps

## Dimensions

$\rightarrow$ Product
831120

$\rightarrow$ Actuators


Lever cross-section $1 \times 6.4 \mathrm{~mm}$ Q


Lever cross-section $1 \times 6.4 \mathrm{~mm}$

B


Lever cross-section $1 \times 6.4 \mathrm{~mm}$
B9


E


Lever cross-section $1 \times 6.4 \mathrm{~mm}$
V3


Lever cross-section $1 \times 6.4 \mathrm{~mm}$

## $\rightarrow$ Mounting accessories

## 02 <br> 2-pole side mounting plate



K2
2-pole vertical mounting plate


H
Horizontal single-pole mounting plate


Unless indicated, the thickness of plates is 1.5 mm

Actuators and mounting accessories

| Actuators |  | 70500888 | 70500828 | 70500813 | 70500840 | 70500870 | 70500170 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | A R49 | BR47 | ER47 | Q | V3 R15,5 | B9 |
|  |  | $\cdots$ | $\infty$ | 43 | $88$ | A | On |
| Operating force - max. | N | 1.2 | 1.2 | 1.2 | 2.8 | 4 | 4 |
| Pelease force - min. | N | 0.25 | 0.25 | 0.2 | 0.45 | 0.8 | 1 |
| Pre-travel - max. | mm | 6.2 | 6.2 | 6.2 | 3.2 | 1.45 | 1.5 |
| Differential travel | mm | $2.1 \pm 0.9$ | $2.1{ }^{ \pm 0.9}$ | $2.1 \pm 0.9$ | $1.05 \pm 0.4$ | $0.5 \pm 02$ | $0.5 \pm 02$ |
| Total travel max. | mm | 7.5 | 8.4 | 7.5 | 4.5 | 1.9 | 1.9 |

Except where otherwise indicated, the flat and roller levers are mounted as shown in the dimensional drawings (mounted on the left)..

| Mounting accessories |  |  | 70500208 | 70500218 | 70500216 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | H Horizontal single-pole mounting plate | O2 2-pole side mounting plate | K2 2-pole vertical mounting plate |
| Screws: Length | 14.5 | 70599106 | $\begin{aligned} & \pi+\pi \\ & 0-3 \\ & 0-3 \end{aligned}$ |  |  |

## Other information

## Mounting - Operation

See basic technical concepts
To ensure protection against electric shock after installation in the application, please consult us when conductive parts are located less than 3 mm from case/cover rear mating surfaces, opposite to button side.

## Warning:

## X-ON Electronics

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MIL30126AB6BBMD4A12XAU ML-1155 ML-1376 831010C3.0 831090C2.EL 83131904 84212012 8AS239 8HM73-3 8SX26-H33
914CE1-6G PL-100 11SM1077-H4 11SM1077-H58 11SM1-TN107 11SM405 11SM8423-H2 11SX37-T 11SX48-H58 11SM2442-T
11SM76-T 11SM77-H58 11SM77-T 11SM863-T 11SM866 A7CN-1M-1-LEFT A831700C7.0 121EN188-R $\underline{1245.0120}$


[^0]:    (1) Number of cycles
    (2) Resistive circuit

    3 Inductive circuit
    (4) Mechanical life limit
    (5) Current in Amps

[^1]:    (1) Number of cycles
    (2) Resistive circuit
    (3) Inductive circuit
    (4) Mechanical life limit
    (5) Current in Amps

[^2]:    (1) Number of cycles
    (2) Resistive circuit

    3 Inductive circuit
    (4) Mechanical life limit
    (3) Current in Amps

