

# MICROSWITCHES - DOUBLE BREAK, HIGH DC SWITCH RATINGS

## 83154

- › Double-break flexible leaf snap-action mechanism
- › Built-in magnetic blowout for high DC switching capacity :  
5 A 250 V--- - 10 A 250 V---
- › Momentary or maintained action (bistable/reset models)
- › Very long life
- › Operating temperature -40 °C to +125 °C
- › Mounting plates for multi-pole switch assemblies,  
up to 6 SPDT
- › Wide choice of actuators on 2 symmetric fixing positions



### Main specifications

	Standard 831540		Bistable Lever 831544
	Standard	Long Shaft	Standard
<b>Function</b>			
I (changeover)	W3 (QC 6.3 x 0.8)		
R (normally closed)	W3 (QC 6.3 x 0.8)		
C (normally open)	W3 (QC 6.3 x 0.8)		
<b>Electrical characteristics</b>			
Rating nominal / 250 VDC (A)	5	5	5
Rating nominal / 125 VDC (A)	10	10	10
Rating nominal / 250 VAC (A)	10	10	10
Rating thermal / 250 V (A)	17.5	17.5	17.5
<b>Mechanical characteristics</b>			
Max. Operating force (N)	4	4	0.45*
Min. Release force (N)	1	1	-
Max. Allowable overtravel force (N)	20	20	-
Max. Rest position (mm)	12.75	12.75	25.5**
Operating position (mm)	11.45 <sup>+0.2-0.25</sup>	11.45 <sup>+0.2-0.25</sup>	19 <sup>+1.5</sup>
Max. Total travel position	10.65	10.65	14***
Differential travel (mm)	0.65 <sup>+0.25</sup>	0.65 <sup>+0.25</sup>	2 <sup>+1</sup>
Min. Overtravel (mm)	0.7	0.7	-
Ambient operating temperature (°C)	-40 → +125	-40 → +125	-40 → +125
Mechanical life (operations)	10 <sup>7</sup>	10 <sup>7</sup>	10 <sup>6</sup>
Contact gap (mm)	2 x 0.5	2 x 0.5	2 x 0.5
Weight (g)	11	11	12

\* both for actuation and reset (see «Dimensions/Products» for measurement points)

\*\* worst case including lever play (see «Dimensions/Products» for measurement points)

\*\*\* Min. Total travel position : worst case including lever play (see «Dimensions/Products» for measurement points)

### Additional specifications

- Case: PA66 GF (GWFI 960 °C)
- Button: PA66
- Moving blade: beryllium copper
- Contacts: silver alloy
- Terminals: brass
- Fixing hole inserts: brass
- Levers: zinc-plated steel, polyamide roller
- Plates : zinc-plated steel
- Degree of protection: IP40 (mechanism)
- Proof tracking index: PTI 600
- Recommended min actuating speed: 0.01 mm/s
- Protection against electric shock: see «installation recommendations»
- Conformity / Certifications: on request /

### Product adaptations



- › Special levers : special shapes and lengths, two-pole lever with pallet, flexible, plastic, ...
- › Special connections : screw (W5), silver plated (W3/AG), angled, ...
- › Higher operating force : max 7.5 N
- › Specific mounting holes : Ø 2 to 3.4 mm, with metal or plastic inserts
- › Housing with plane upper face (without lever fixing ears)
- › Single and multi-pole versions on metal plates, factory mounted (83321, 83322, 83323, 83324)
- › cURus approved versions

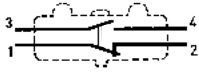
Standard product

Product made to order

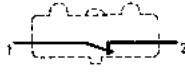
Contact us

## Principles

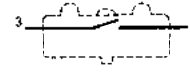
Double break snap-action switch  
Changeover - SPDT (form Za)



Normally closed - SPST-NC (form Y)



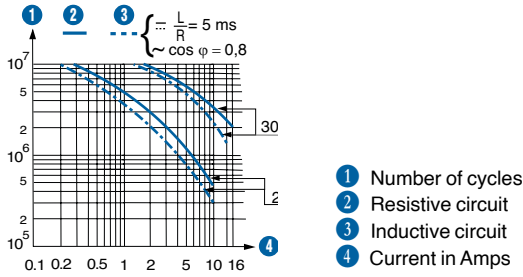
Normally open - SPST-NO (form X)



Both circuits must be used at same polarity

## Curves

Operating curve for types 831540 and 831544



Making & breaking capacities IEC/EN 60947-5-1 (6000 cycles)

AC-12 (resistive load)	16 A 24 V~
	16 A 250 V~
AC-15 (electromagnetic load)	6 A 24 V~
	4 A 250 V~
DC-12 (resistive load)	16 A 24 V---
	4 A 250 V---
	3 A 24 V---
DC-13 (electromagnetic load)	10 A 24 V---
	0.8 A 125 V---
	0.5 A 250 V---

### DC electrical durability

Resistive load	5 A 250 V--- 500 000 cycles
	10 A 125 V--- 500 000 cycles
Inductive load	1.5 A L/R 5 ms 250 V--- > 20 000 cycles

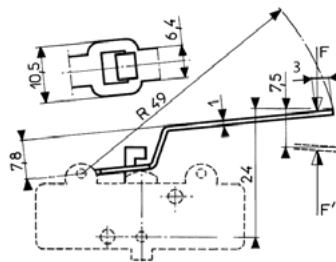
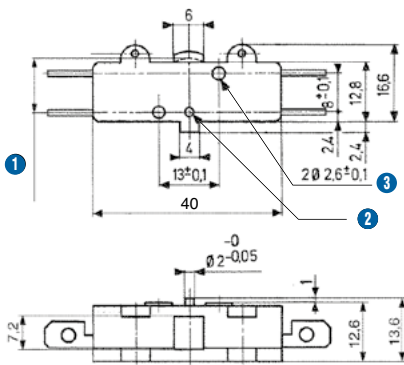
For other ratings please consult us

## Dimensions

### Product

831540

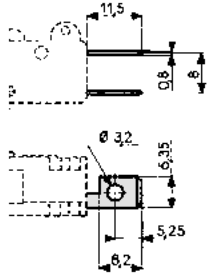
831544



- 1 Operating position
- 2  $\varnothing 2+0.05+0.01$  Depth 1.2
- 3 Metal inserts

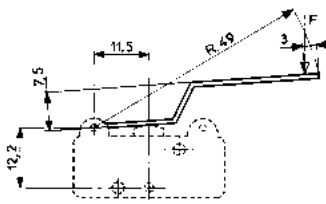
## Connections

### W3 quick-connect 6.3 x 0.8

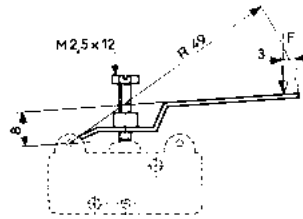


## Actuators

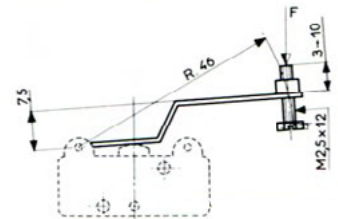
### A flat



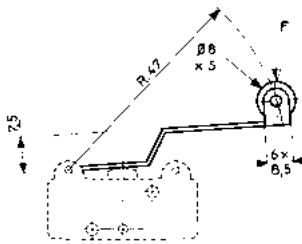
### B flat adjustable



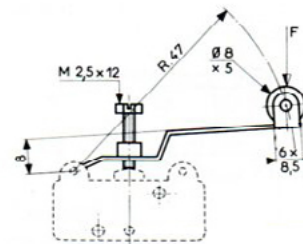
### D adjustable on end



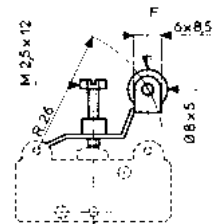
### E R47



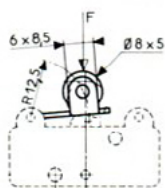
### F roller adjustable



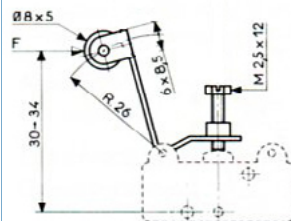
### Q short roller adjustable



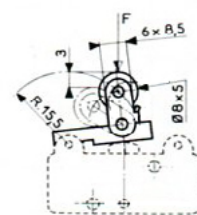
### V extra-short roller



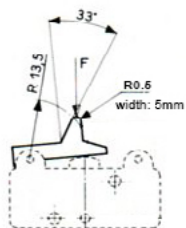
### G side roller adjustable



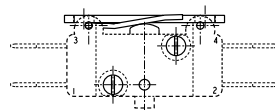
### V3 one-way roller



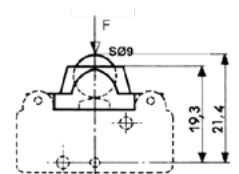
### V4 plastic dummy roller



### M short flat



### B9 ball

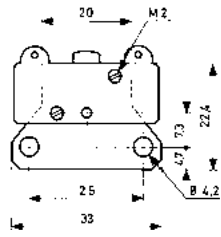


Cross-section of levers A, B, D, E, F, Q, G, M, V : 6.4 x 1 mm

Other shapes and dimensions: please consult us

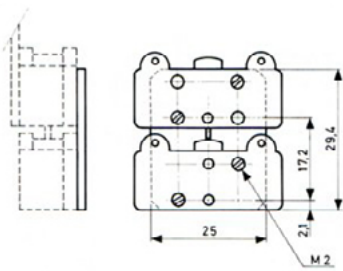
## Mounting accessories

**H horizontal 1-pole, bottom fixing**

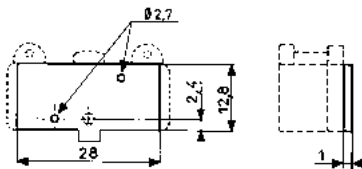


Unless indicated, the thickness of plates is 1.5 mm

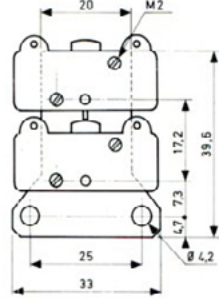
**L horizontal 2-pole, through switch fixing**



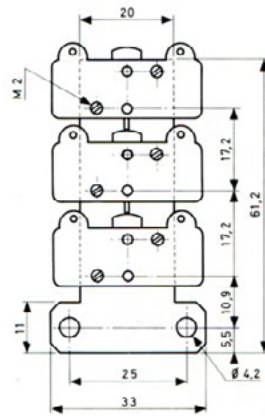
**Y Side plate**



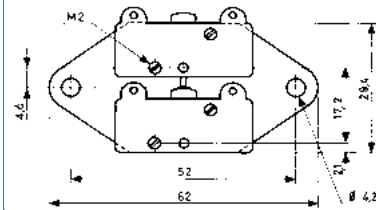
**O horizontal 2-pole, bottom fixing**



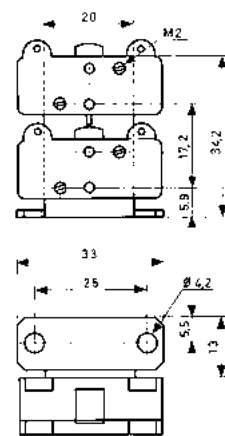
**O3 horizontal 3-pole, bottom fixing**









**O2 horizontal 2-pole, side fixing**









**K vertical 1-pole, bottom fixing  
K2 vertical 2-pole, bottom fixing  
K3 vertical 3-pole, bottom fixing**












**Actuator and mounting accessories**

Part numbers for standard actuators	70500888	70500828	70500809	70500813	70500831	70500840
Actuators	Flat <b>A</b> R49	Flat adjustable <b>B</b> R47	Adjustable on end <b>D</b> R46	Roller <b>E</b> R47	Roller adjustable <b>F</b> R47	Roller adjustable <b>Q</b> R26
						
Operating force - max.	N 1.2	1.2	1.2	1.2	1.2	2.8
Release force - min.	N 0.25	0.25	0.25	0.2	0.2	0.45
Pretravel - max.	mm 6.2	6.2	6.2	6.3	6.3	3.4
Operating position	17.5 ±1.8	18.5-27.5 ±1.8	20.5-27.5 ±1.8	25.9 ±1.8	23.4-32.7 ±1.8	24.5-28.1 ±1.8
Differential travel	mm 2.7 ±1.2	2.7 ±1.2	2.7 ±1.2	2.7 ±1.2	2.7 ±1.2	1.35 ±0.5
Overtravel min.	mm 1.6	2.8	1.6	1.6	2.8	1.5

Part numbers for standard actuators	70500846	70500837	70500870	70500234	70500896	70500170
Actuators	Roller <b>V</b> R412.5	Side roller adjustable <b>G</b> R6	One-way roller <b>V3</b> R15.5	Plastic dummy roller <b>V4</b> R13.5	Flat <b>M</b> R19.5	Ball <b>B9</b>
						
Operating force - max.	N 4	2.8	4	4.6	3	4
Release force - min.	N 1	0.45	0.8	1	0.7	1
Pretravel - max.	mm 1.45	3.4	1.45	1.5		1.35
Operating position	20.75 ±0.4	20.5-29.5 ±1*	26.45 ±0.4	19.65 ±0.4		20.4 ±0.3
Differential travel	mm 0.65 ±0.25	1.4 ±0.65	0.65 ±0.25	0.65 ±0.25	0.9 ±0.4	0.65 ±0.25
Overtravel min.	mm 0.4	1.5	0.4	0.4		0.7

\* measured horizontally from button axis  
Standard mounting of levers as shown in dimensional drawings (= left mounting) . Right mounting on request (/D).

Part numbers for standard accessories	70500208	70500219	70500218	70500207	70500770	70500897
Accessories	Horizontal 1-pole bottom fixing mounting plate <b>H</b>	Horizontal 2-pole bottom fixing mounting plate <b>O</b>	Horizontal 2-pole side fixing mounting plate <b>O2</b>	Horizontal 2-pole through switch fixing mounting plate <b>L</b>	Horizontal 3-pole bottom fixing mounting plate <b>O3</b>	Vertical 1-pole bottom fixing mounting plate <b>K</b>
						

Part numbers for standard accessories	70500216	70500767 *	70500206	70599106	70599102	70599110
Accessories	Vertical 2-pole bottom fixing mounting plate <b>K2</b>	Vertical 3-pole bottom fixing mounting plate <b>K3</b>	Side plate <b>Y</b>	Screw for mounting plate M2 x 14.5 (for 1 switch +1 plate)	Screw for mounting plate M2 x 16 (for 1 switch +2 plates)	Screw for mounting plate M2 x 27.5 (for 2 switches +1 plate)
						

\* Please consult us

**83154 microswitches with referenced actuators**

Actuators		A	E	Q	V	B9
standard mounting (on left)		70500888	70500813	70500840	70500846	70500170
831540	I W3	83154033	83154023	83154022	•	83154021
831540 AXLON (AL)	I W3	•	•	•	•	•

**Installation recommendations**

See "Basic technical concepts"

To ensure protection against electric shock after installation in the application, please consult us when conductive parts are located within 3mm from case bottom face (opposite to button side).

**Caution - Risk of electric shock:** for long shaft models (AXLON) (AL) and for any other concerned variant, please note that the metal shaft protruding from case bottom face is a live part. Appropriate measures to be taken by the user to avoid electric shock.

**How to order**

Use the 8 digit part numbers when they are defined

Other cases, precise: Type of microswitch\*\* - Function - Connection - Approval\* - Actuator\* - Mounting position\* - Adaptation\*

\* if needed \*\* if Long shaft model, add AXLON

Example: 831540 AXLON I W3 UL M/D

 Standard product

 Product made to order

 Contact us
**Warning:**

The product information contained in this catalogue is given purely as information and does not constitute a representation, warranty or any form of contractual commitment. Crouzet and its subsidiaries reserve the right to modify their products without notice. It is imperative that we should be consulted over any particular use or application of our products and it is the responsibility of the buyer to establish, particularly through all the appropriate tests, that the product is suitable for the use or application. Under no circumstances will our warranty apply, nor shall we be held responsible for any application (such as any modification, addition, deletion, use in conjunction with other electrical or electronic components, circuits or assemblies, or any other unsuitable material or substance) which has not been expressly agreed by us prior to the sale of our products.