

# SUB-SUBMINIATURE MICROSWITCHES - HIGH ACCURACY

## 83141

- › High precision flexible leaf snap-action mechanism with wiping contacts
- › Very small size - Robust construction
- › High resistance to shock and vibration
- › Ratings from 1 mA 4 V $\overline{\text{=}}$  to 5 A 250 V $\sim$
- › Tight tolerance and high repeat accuracy on operating and release positions
- › Low switching hysteresis (short differential travel)
- › Operating temperature -55 °C to +150 °C
- › Long mechanical life
- › Wide choice of actuators on 2 possible fixing positions : flexible, hinged, hinged with added overtravel



### Main specifications

			83141	
			Standard	Dual-current
Function	Connections	Actuators	83141001	83141046
I (changeover)	W2 (solder)	No		
Configurations with actuators		Yes	See page 3	See page 3
<b>Electrical characteristics</b>				
Rating nominal / 250 V AC (A)			5	1*
Rating thermal / 250 V AC (A)			8.5	8.5
<b>Mechanical characteristics</b>				
Maximum operating force (N)			2	2
Min. Release force (N)			0.4	0.4
Maximum total travel force (N)			2.3	2.3
Max. Allowable overtravel force (N)			10	10
Rest position max. (mm)			8.75	8.75
Operating position (mm)			8,4 $\pm$ 0.15	8,4 $\pm$ 0.15
Differential travel (mm)			0.04 $\pm$ 0.02	0.04 $\pm$ 0.02
Min. overtravel (mm)			0.1	0.1
Ambient operating temperature (°C)			-55 $\rightarrow$ +150	-55 $\rightarrow$ +150
Mechanical life (operations)			2 x 10 <sup>6</sup>	2 x 10 <sup>6</sup>
Contact gap (mm)			0.3	0.3
Weight (g)			1	1

### Additional specifications

- Case, Button: PA6T/66 (PPA) GF (UL 94-V0 / GWFI 960 °C)
- Moving blade: beryllium copper
- Contacts: silver, gold-plated silver (dual-current)
- Terminals: gold-plated brass
- Levers: stainless steel, polyamide roller
- Degree of protection: IP40 (mechanism)
- Recommended min actuating speed: 0.01 mm/s
- Repeat accuracy of operating and release positions: <math>\pm 0,01\text{ mm}</math>
- Conformity / Certifications: **EARL CE**

### Product adaptations

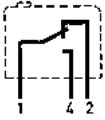


- › High operating temperature: max 200 °C
- › Solid gold contacts for high reliability in critical applications at low energy
- › Special levers: special shapes and lengths
- › Long connections: up to 8 mm
- › 2-pole DPDT high precision switch assembly with adjustable actuator, for synchronized or staggered switchings
- › Applications in irradiated environment
- › cURus approval

## Principles

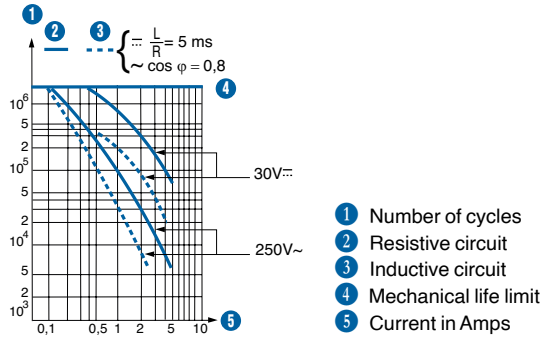
Single break snap-action switch

Changeover - SPDT (form C)



## Curves

Operating curve for type 83141

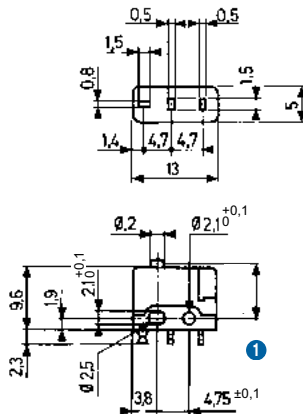


\* Dual-current models are designed to operate equally well on low-current (1 mA 4 V minimum recommended) or medium-current (1 A maximum) circuits. However, a given product should only be used to switch one type of circuit during its working life.

## Dimensions

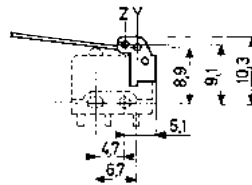
### Product

83141



1 Operating position

### Actuator mounting positions

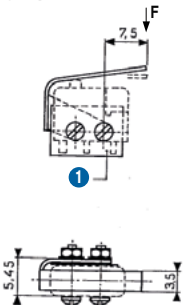


Standard mounting = Z

## Actuators

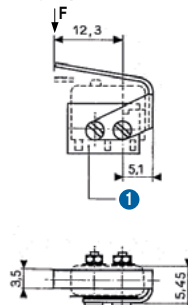
Flexible actuators

55A single pole direct

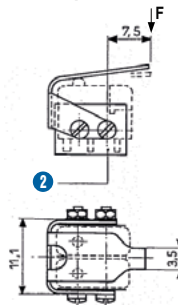


1 Insulating plate

55AS single pole reverse



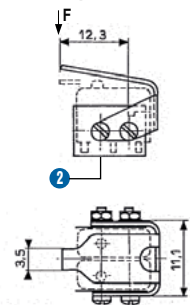
55A2 double pole d



2 3 insulating plates

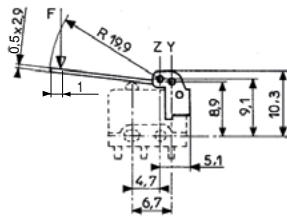
55A2S

pole reverse

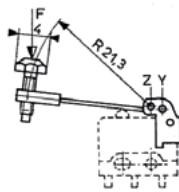


Hinged actuators

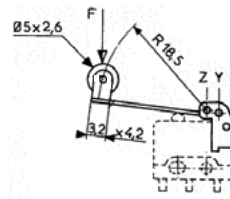
55B flat



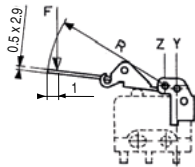
55B2 adjustable



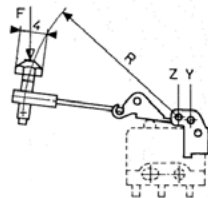
55B3 roller



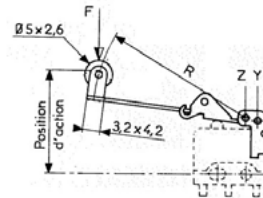
55C large overtravel, flat



55C2 large overtravel, adjustable



55C3 large overtravel, roller



Actuators and mounting accessories

Actuators	Flexible	Hinged				Flat 55B R19.9		Adjustable 55B2 R21.3		Roller 55B3 R18.5	
		Single pole direct 55A	Single pole reverse 55AS	Double pole direct 55A2	Double pole reverse 55A2S	Y	Z	Y	Z	Y	Z
Fixing positions		-	-	-	-						
Operating force max. N		2	2.5	2.5	4	1	0.8	1	0.8	1	0.8
Release force min. N		0.6	0.7	0.7	1	0.2	0.15	0.2	0.15	0.2	0.15
Total travel force max. N		3	4	4	6	2	2	2	2	2	2
Rest position max. mm		-	-	-	-	11	11	14-19	14-19	17	17
Operating position mm		9	8.5	9	8.5	9.4±0.5	9.2±0.7	12.2-17.2±0.6	12-17±0.8	15.4±0.6	15.2±0.8
Differential travel mm		-	-	-	-	0.17±0.09	0.25±0.11	0.2±0.1	0.27±0.12	0.17±0.09	0.25±0.11
Overtravel min. mm		-	-	-	-	0.45	0.6	0.45	0.6	0.45	0.6

Actuators	Hinged, Large overtravel	Flat 55C R19.9		Flat 55C R30		Adjustable 55C2 R21.3		Adjustable 55C2 R31.4		Roller 55C3 R18.5		Roller 55C3 R28.6	
		Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
Fixing positions													
Operating force max. N		1	0.8	0.8	0.6	1	0.8	0.8	0.6	1	0.8	0.8	0.6
Release force min. N		0.2	0.15	0.15	0.1	0.2	0.1	0.15	0.1	0.2	0.15	0.15	0.1
Total travel force max. N		3	3	2	2	3	3	2	2	3	3	2	2
Rest position max. mm		12	12	13.5	13.5	15-20	15-20	16.5-21.5	16.5-21.5	18	18	19.5	19.5
Operating position mm		10.3±0.6	10.1±0.8	10.7±0.8	10.4±1.2	13.1-18.1±0.7	12.9-17.9±0.9	13.5-18.5±0.9	13.2-18.2±1.3	16.3±0.7	16.1±0.9	16.7±0.9	16.4±1.3
Differential travel mm		0.15±0.11	0.22±0.13	0.22±0.16	0.33±0.19	0.18±0.11	0.24±0.13	0.27±0.16	0.36±0.19	0.15±0.11	0.22±0.13	0.22±0.16	0.33±0.19
Overtravel min. mm		1.7	2	4.5	4.9	2.4	2.7	4.6	5	1.7	2	4.5	4.9

Hinged actuators are always factory mounted.  
Unless otherwise requested, hinged actuators are mounted on Z position.

83141 microswitches with referenced actuators

Actuator kits	Flexible actuators				Hinged actuators			Hinged large overtravel actuators							
	55A	55AS	55A2	55A2S	Pos	55B	55B2	55B3	55C		55C2		55C3		
	70515250								70515248				R19.9	R30	R21.3
83141 I W2 Standard	83141004	83141005	•	•	Z	83141015	83141019	83141016	83141014	•	•	•	•	83141023	•
					Y	83141008		83141010		•	•	83141040	•	83141029	•
83141 I W2 DORE Dual-current	•	•	•	•	Z	83141060	•	•	•	•	•	•	•	•	•
					Y	•	•	•	•	•	•	•	•	•	•

Standard product

Product made to order

• Contact us

## Installation recommendations

See "Basic technical concepts"

## How to order

Use the 8 digit part numbers when they are defined

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

\* if needed \*\* if Dual-current, add DORE

Example: 83141 DORE I W2 55C2 R21.3 Y

## Examples of special adaptations



Large overtravel model with prestressed flexible lever (reverse actuation): OT = 5 mm



2-pole DPDT high precision switch assembly with adjustable actuator, for synchronized or staggered switchings

### 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 Automatismes SAS 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.