

# 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<sub>DC</sub> to 5 A 250 V<sub>AC</sub>
- › 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 (DORE)
Function	Connections	83141001	83141046
I (changeover)	W2 (solder)		
<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±0.15	8.4±0.15
Differential travel (mm)		0.04±0.02	0.04±0.02
Min. overtravel (mm)		0.1	0.1
Ambient operating temperature (°C)		-55 → +150	-55 → +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: < ±0,01 mm
- Certification marks: **ERC**

### Product adaptations

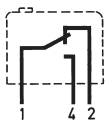


- › High operating temperature: max 200 °C
- › Solid gold contacts for high reliability in critical applications at low energy
- › Special levers: special shapes and lengths
- › 2-pole DPDT high precision switch assembly with adjustable actuator, for synchronized or staggered switchings
- › Applications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

### Principles

Single break snap-action switch

Changeover - SPDT (form C)



Standard product

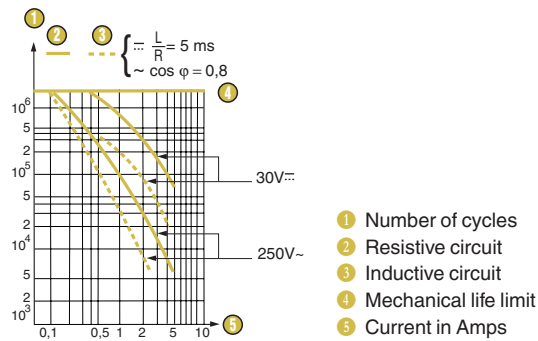
Product made to order



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## Curves

### Operating curve for type 83141

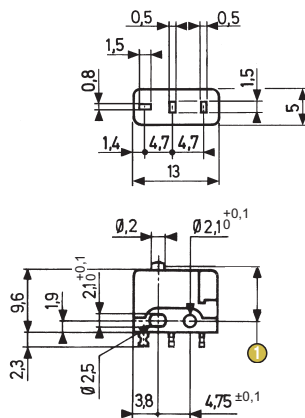


\* Dual-current models are designed to operate equally well on low-current (1 mA 4 V minimum recommended) or medium-current (1 A maximum) circuits. However, a given product should only be used to switch one type of circuit during its working life.

## Dimensions

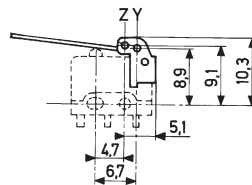
### Product

83141



1 Operating position

### Actuator mounting positions

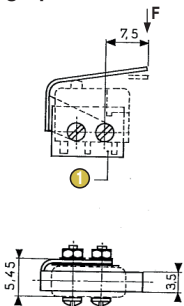


Standard mounting = Z

### Actuators

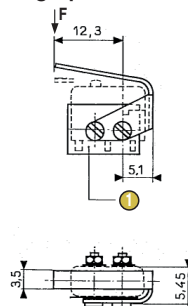
#### Flexible actuators

##### 55A single pole direct

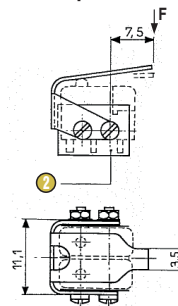


1 Insulating plate

##### 55AS single pole reverse

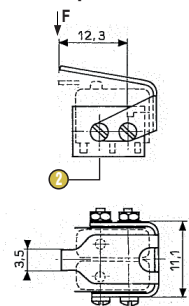


##### 55A2 double pole direct



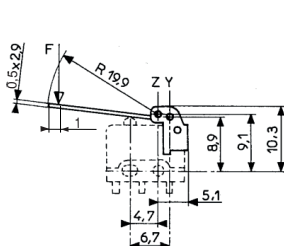
2 3 insulating plates

##### 55A2S double pole reverse

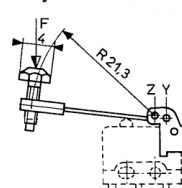


#### Hinged actuators

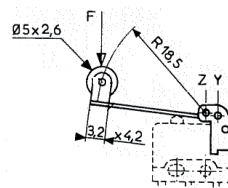
##### 55B flat

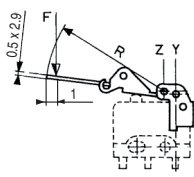
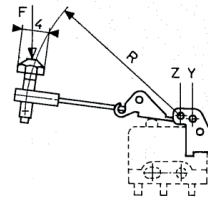
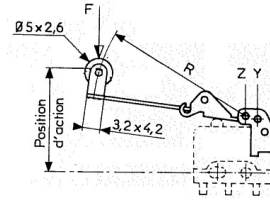









##### 55B2 adjustable









##### 55B3 roller



**55C large overtravel, flat****55C2 large overtravel, adjustable****55C3 large overtravel, roller****Actuators and mounting accessories**

Actuators	Flexible	Single pole direct	Single pole reverse	Double pole direct	Double pole reverse	Hinged	Flat	Adjustable	Roller	
		55A	55AS	55A2	55A2S		55B R19.9	55B2 R21.3	55B3 R18.5	
										
Fixing positions		-	-	-	-		Y	Z	Y	Z
Operating force max.	N	2	2.5	2.5	4	N	1	0.8	1	0.8
Release force min.	N	0.6	0.7	0.7	1	N	0.2	0.15	0.2	0.15
Total travel force max.	N	3	4	4	6	N	2	2	2	2
Rest position max.	mm	-	-	-	-	mm	11	11	14-19	14-19
Operating position	mm	9	8.5	9	8.5	mm	9.4 <sup>±0.5</sup>	9.2 <sup>±0.7</sup>	12.2-17.2 <sup>±0.6</sup>	12-17 <sup>±0.8</sup>
Differential travel	mm	-	-	-	-	mm	0.17 <sup>±0.09</sup>	0.25 <sup>±0.11</sup>	0.2 <sup>±0.1</sup>	0.27 <sup>±0.12</sup>
Overtravel min.	mm	-	-	-	-	mm	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	
													
Fixing positions		Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
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 <sup>±0.6</sup>	10.1 <sup>±0.8</sup>	10.7 <sup>±0.8</sup>	10.4 <sup>±1.2</sup>	13.1-18.1 <sup>±0.7</sup>	12.9-17.9 <sup>±0.9</sup>	13.5-18.5 <sup>±0.9</sup>	13.2-18.2 <sup>±1.3</sup>	16.3 <sup>±0.7</sup>	16.1 <sup>±0.9</sup>	16.7 <sup>±0.9</sup>	16.4 <sup>±1.3</sup>
Differential travel	mm	0.15 <sup>±0.11</sup>	0.22 <sup>±0.13</sup>	0.22 <sup>±0.16</sup>	0.33 <sup>±0.19</sup>	0.18 <sup>±0.11</sup>	0.24 <sup>±0.13</sup>	0.27 <sup>±0.16</sup>	0.36 <sup>±0.19</sup>	0.15 <sup>±0.11</sup>	0.22 <sup>±0.13</sup>	0.22 <sup>±0.16</sup>	0.33 <sup>±0.19</sup>
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	
									R19.9	R30	R21.3	R31.4	R18.5	R28.6
	70515250		70515248			-	-	-	-	-	-	-	-	-
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	•	•	•	•	•	•	•	•	•

**Installation recommendations**

See "Basic technical concepts"

**How to order**

Use the 8 digit part numbers when they are defined

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

\* if needed

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

Standard product

Product made to order



Contact us

## 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:

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