

# 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)
		83141001	83141046
Function	Connections		
I (changeover)	W2 (solder)		
Electrical characteristics			
Rating nominal / 250 V AC (A)		5	1*
Rating thermal / 250 V AC (A)		8.5	8.5
Mechanical characteristics			
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

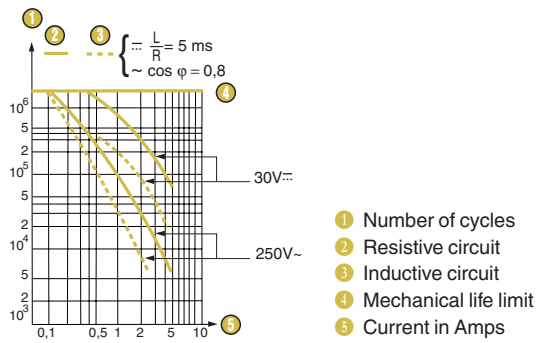
Product made to order



Contact us

Curves

Operating curve for type 83141

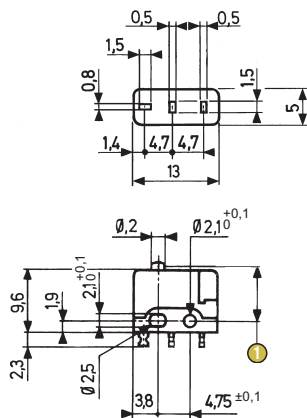


\* Dual-current models are designed to operate equally well on low-current (1 mA 4 V minimum recommended) or medium-current (1 A maximum) circuits. However, a given product should only be used to switch one type of circuit during its working life.

Dimensions

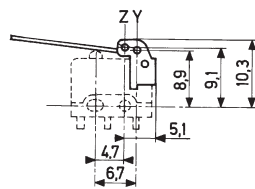
Product

83141



1 Operating position

Actuator mounting positions

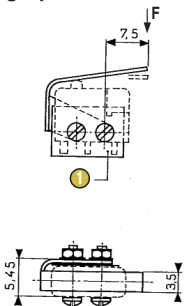


Standard mounting = Z

Actuators

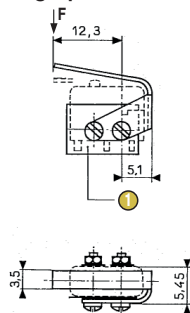
Flexible actuators

55A single pole direct

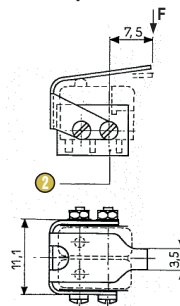


1 Insulating plate

55AS single pole reverse

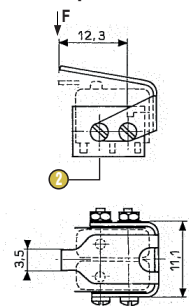


55A2 double pole direct



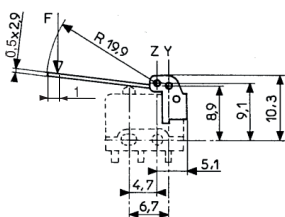
2 3 insulating plates

55A2S double pole reverse

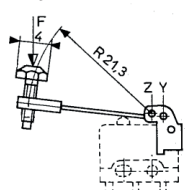


Hinged actuators

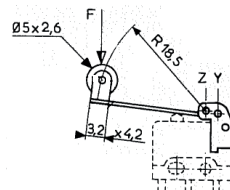
55B flat



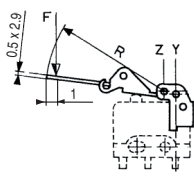
55B2 adjustable



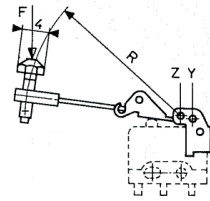
55B3 roller



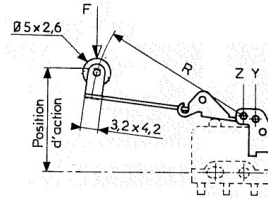
55C large overtravel, flat



55C2 large overtravel, adjustable



55C3 large overtravel, roller



Actuators and mounting accessories

Actuators	Flexible				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	-	-	-	-			Y	Z	Y	Z	Y	Z
Operating force max. N	2	2.5	2.5	4	N	N	1	0.8	1	0.8	1	0.8
Release force min. N	0.6	0.7	0.7	1	N	N	0.2	0.15	0.2	0.15	0.2	0.15
Total travel force max. N	3	4	4	6	N	N	2	2	2	2	2	2
Rest position max. mm	-	-	-	-	mm	mm	11	11	14-19	14-19	17	17
Operating position mm	9	8.5	9	8.5	mm	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>	15.4 <sup>±0.6</sup>	15.2 <sup>±0.8</sup>
Differential travel mm	-	-	-	-	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>	0.17 <sup>±0.09</sup>	0.25 <sup>±0.11</sup>
Overtravel min. mm	-	-	-	-	mm	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			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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