

Miniature

→ V3



- Nominal ratings 0.1 A to 20 A/250 VAC
- Operating temperature up to +125°C
- Conforming to EN 61058 and UL 1054
- Choice of actuators with 4 possible fixing positions



Main specifications

		High release force 83 161 1	High-current 83 161 2
Function	Connections		
I (changeover)	W2	83 161 102	●
I (changeover)	W3	83 161 118	●
I (changeover)	W6A5*	83 161 110	●
I (Changeover)	W3R5* - W5 - W6D8* - W7A5 - 2W7A8*	●	●
R (Normally closed)	W2 - W3 - W3R5* - W5 - W6A5* - W6D8* - W7A5 - 2W7A8*	●	●
C (Normally open)	W2 - W3 - W3R5* - W5 - W6A5* - W6D8* - W7A5 - 2W7A8*	●	●
Electrical characteristics			
Rating nominal / 250 V AC (A)		16	20
Rating thermal / 250 V AC (A)		20	22
Mechanical characteristics			
Maximum operating force (N)		3	1
Min. Release force (N)		1	0.2
Maximum total travel force (N)		4.5	2.5
Max. permitted overtravel force (N)		20	20
Maximum rest position (mm)		16.1	16.1
Tripping point (mm)		14.7 ^{±0.4}	14.7 ^{±0.4}
Maximum differential travel (mm)		0.35	0.35
Min. overtravel CRA (mm)		1.1	1.1
Ambient operating temperature (°C)		-20 → +125	-20 → +125
Mechanical life for 2/3 CRA (operations)		10 ⁷	2.5 x 10 ⁵
Contact gap (mm)		0.4	0.4
Weight (g)		5.6	5.6
Comments			
* for 83 161 6 : W6A5 - W6D8 - W3R5 - 2W7A8 : please consult us			

Additional specifications

Components

Material

- Housings : polyamide or polyester
- Button : polyamide
- Contacts : AgNi

Levers

- Flat : stainless steel
- Roller : stainless steel, glass-filled polyamide roller
- Other polyamides

Approvals : NF

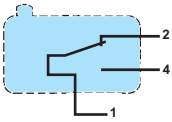
Product adaptations



- Special levers
- Special connections
- Specific fixing
- High operating temperature
- Special operating force
- Approvals : UL - cUL

Principles

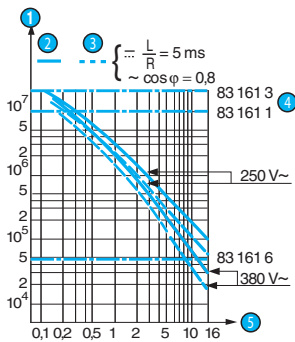
Single break changeover switch



Standard 83 161 3	Low force 83 161 4	Very low force 83 161 5	Very low force 83 161 5 SP 4136	Wide contact gap 83 161 6
83 161 301	•	83 161 502	•	•
83 161 338	•	83 161 501	•	•
83 161 304	•	83 161 503	•	•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
16	10	4	4	12
20	12	5	5	15
0.8	0.5	0.25	0.15	5
0.2	0.1	0.05	0.04	0.5
2	1.5	0.40	0.2	6
20	20	20	20	20
16.2	16.2	16.3	16.3	16.1
14.7 ^{+0.3}	14.7 ^{+0.4}	14.7 ^{+0.4}	14.7 ^{+0.3}	14.5 ^{+0.4}
0.35	0.35	0.35	0.35	0.8
1.2	1.2	1.1	1.2	0.9
-20 → +125	-20 → +125	-20 → +125	-20 → +125	-20 → +125
2 x 10 ⁷	3 x 10 ⁷	5 x 10 ⁷	5 x 10 ⁷	5 x 10 ⁴
0.4	0.4	0.4	0.4	3.2
5.6	5.6	5.6	5.6	5.6

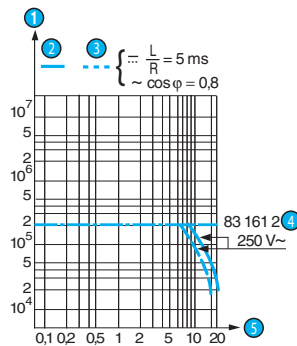
Curves

Operating curve for types 83 161 1 / 83 161 3 / 83 161 6



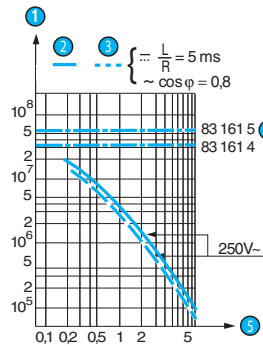
- ① Number of cycles
- ② Resistive circuit
- ③ Inductive circuit
- ④ Mechanical life limit
- ⑤ Current in Amps

Operating curve for type 83 161 2



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

Operating curve for types 83 161 4 / 83 161 5 / 83 161 5 SP 4136

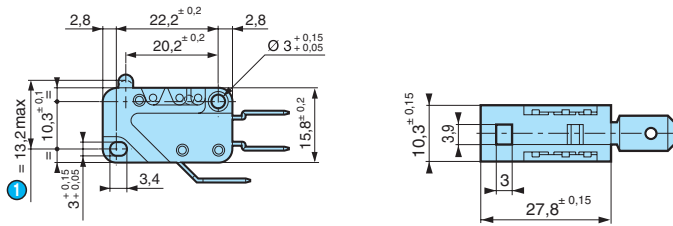


- ① Number of cycles
- ② Resistive circuit
- ③ Inductive circuit
- ④ Mechanical life limit
- ⑤ Current in Amps

Dimensions

→ Product

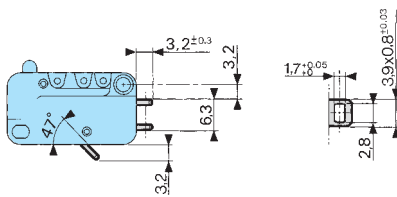
83 161



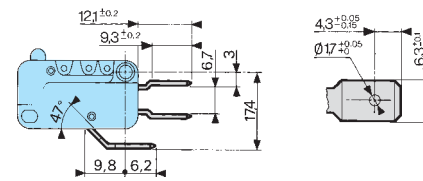
1 OL

→ Connections

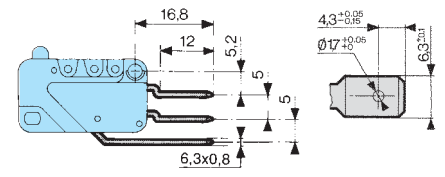
W2 solder



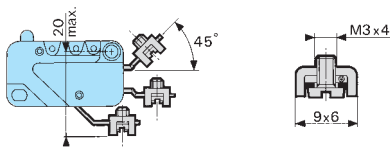
W3 for 6.35 mm clips (6.3 x 0.8)



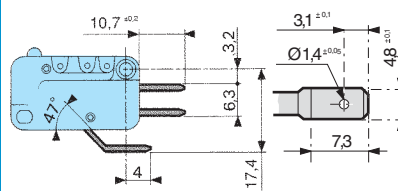
W3R5 for 6.35 mm clips (6.3 x 0.8)



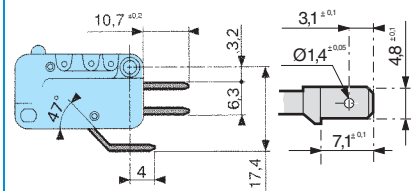
W5 screw



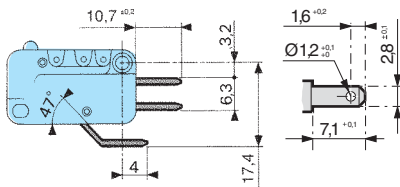
W6A5 for 4.8 mm clips (4.8 x 0.5)



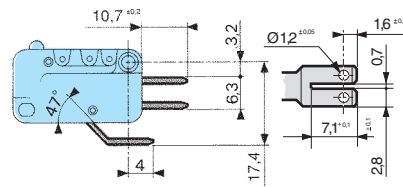
W6D8 for 4.8 mm clips (4.8 x 0.8)



W7A5 for 2.8 mm clips (2.8 x 0.5)

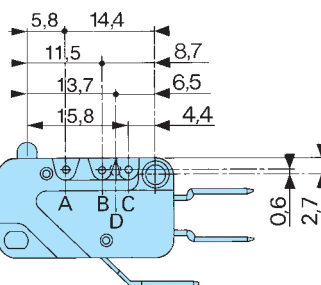
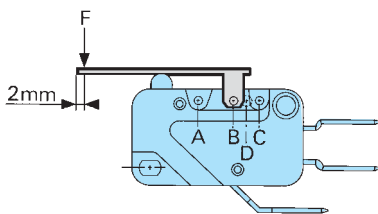


2W7A8 for 2.8 mm clips (2.8 x 0.8)



→ Actuator mounting positions

Levers



To calculate force

Divide the switch force by the coefficient given in the table.

To calculate travel

Multiply the switch travel by the same coefficient.

Example :

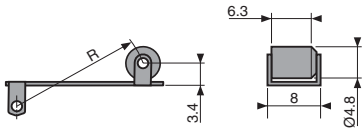
83 161 3 with lever 161 A - R 25.4 position A (coeff. 4)

Operating force : $0.8 : 4 = 0.2 \text{ N}$

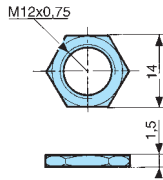
Pre-travel : $1.4 \times 4 = 5.6 \text{ mm}$

→ Actuators

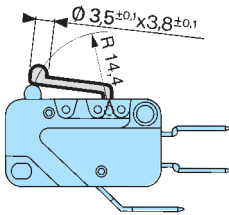
161 E



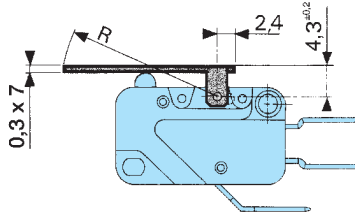
Nut 70 602 118



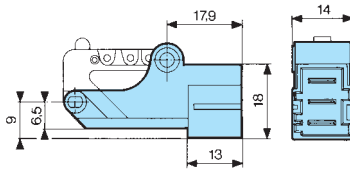
161 V



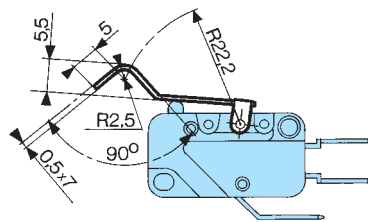
161 A



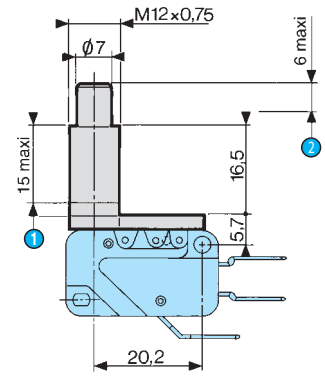
Housing 161 J for connections W3 R5



161 F



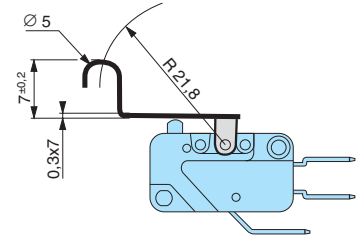
161 L








- ① Thread
- ② Total travel


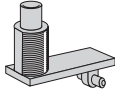

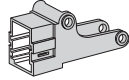


Nut thickness	Max. torque
1,5 mm	5 Cm N
2 mm	7 Cm N
2,5 mm	10 Cm N

161 G



Actuators and fixing positions

Part numbers for standard actuators	79 215 740		70 507 524			79 215 742		79 507 529			79 507 528	
Actuators	Plain 161A R14,2		Plain 161A R25,4			Roller 161E R13,6		Roller 161E R24,1			Dummy roller 161F R22,2	
												
Fixing positions	A	B	A	B	C	A	B	A	B	C	A	B
Coefficient	2	1	4	2	1,5	2	1	4	2	1,5	3	1,8
Tripping point (except 83 161 6)	15,2 ^{±1}	15,2 ^{±0,45}	15,2 ^{±25}	15,2 ^{±1}	15,2 ^{±0,8}	20,5 ^{±1,5}	20,5 ^{±0,8}	20,5 ^{±29}	20,5 ^{±1,5}	20,5 ^{±1,2}	20,4 ^{±2}	20,4 ^{±0,7}
Tripping point 83 161 6	14,8 ^{±1}	15 ^{±0,45}	14,4 ^{±25}	14,8 ^{±1}	14,9 ^{±0,8}	20,1 ^{±1,5}	20,3 ^{±0,8}	19,7 ^{±29}	20,1 ^{±1,5}	20,2 ^{±1,2}	20,2 ^{±2}	20,2 ^{±2}

Part numbers for standard actuators	79 218 651												
Actuators	Dummy roller 161G R21,8		**Telescopic plunger 161 L			Manual action		161V		Housing 161J		Nut for 161L Part no.: 70 602 118	
													
Fixing positions	A	B	D			D		D		D		D	
Coefficient	3	1,8	1			1		1		1		1	
Tripping point (except 83 161 6)	21,7 ^{±2}	21,7 ^{±0,7}	21,5 ^{±1}			18,35 ^{±0,45}		18,35 ^{±0,45}		18,35 ^{±0,45}		18,35 ^{±0,45}	
Tripping point 83 161 6	21,5 ^{±2}	21,5 ^{±0,7}	21,5 ^{±1}			18,35 ^{±0,45}		18,35 ^{±0,45}		18,35 ^{±0,45}		18,35 ^{±0,45}	

Except where otherwise indicated, plain and roller levers are supplied unmounted.

For factory mounting, specify fixing position A, B or C.

** For 83 161 1, 83 161 2, 83 161 3, 83 161 6 mounted in factory (supplied without nut)

Other information

Mounting - Operation

See basic technical concepts