Miniature Snap Switch

Single Pole

D4 Series

Features

- Precise snap action switch
- Long life coil spring mechanism
- Switching current 0.1 to 21 A at 250 VAC
- Temperature range: -40 °C to 85 °C/125°C/150 °C
- Protection class: IP40
- Standard and light force operating mechanism
- Various aux actuators
- Various terminal types

Standard Parts[1]

D413-R1LD	D413-V3RD	D413-V3AA	D413-R1LA	D413-R1AA	D419-R1AA	D433-R1AA
D433-R1RD	D439-R1AA	D439-R1LD	D439-V1ML	D443-R1LD	D443-R1RA	D443-R1RD
D449-R1AA	D449-R1LD	D449-R1ML	D449-V3AA	D449-R1RA	D453-V1AA	D453-B8AA
D459-V3RA	D459-V3LL	D459-V3LD	D459-V3AA	D459-V3RD	D453-B8AA	D489-V3AA

[1]The part number configuration matrix below provides details to the part numbers above.
For configurable part numbers that are not listed above, not listed in your region, or for custom part numbers, contact the factory or your distributor: switches-sensors@zf.com

Order Code Matrix

Numbering Matrix Switch Series D4

D 4 1 3 - V 3 A A

Code	Electrical Rating according to IEC / UL 61058-1
1	0.1(0.05) A, 125/250 VAC
2	3(1) A, 125-250 VAC
3	6(2) A, 125-250 VAC
4	10(3) A, 125/250 VAC
5	16(4) A, 125/250 VAC
8	21(8) A, 125/250 VAC

Code			Operating Force	Temperature Rating
Contact Configuration				
SPST NO	SPST NC	SPDT		
1	2	3	Standard "Y"	40T85
7	8	9	Light "X"	
G	H	M	Standard "Y"	40T125
N	P	R	Light "X"	
S	T	U	Light "X"	40T150

Standard Terminal Combinations
A1, B8, P4, PA, PB, Q1, Q3
R1, S1, V1, V3, X5, Y5

Code	Terminal Type
A	Welding
B	Solder short
P	PCB
Q	Tab 4.8x0.8
R	Ta. 4.8x0.5
S	Solder with Temp. Stop
V	Tab 6.3x0.8
X	RAST 2.5
Y	Tab 6.3x0.8 RAST 5

Code	Terminal Configuration
1	
3	
4	
5	
8	
A	
B	
G	Special designs

Code	Auxiliary Actuator				
	Length in mm			Pivot Position	Auxiliary actuator version
	A	D	L		
AA					without
L	21,2	35,6	69,9	HE	straight, steel
M	25,7	40,1	74,4	VE	straight, steel
J	21,2	35,6	69,9	HE	straight, stainless steel
K	25,7	40,1	74,4	VE	straight, stainless steel
R	20,6	34,1		HE	with roller
T	25,1	38,6		VE	with roller
S	20,6			HE	with simulated roller
U	25,1			VE	with simulated roller

Special designs G: The last two digits are identified from AA, AB, etc. to ZZ.

Electrical Specifications – Contact Ratings

Contact	IEC 61058-1 / UL 61058-1	Electrical life 40T85	Electrical life 40T125/40T150
D41	0.1 (0.05) A, 125/250 VAC	50,000	50,000
D42	3 (1) A, 125/250 VAC	50,000	50,000
D43	6 (2) A, 125/250 VAC	50,000	50,000
D44	10 (3) A, 125/250 VAC	50,000	50,000
D45	16 (4) A, 125/250 VAC	50,000	10,000
D48	21 (8) A, 125/250 VAC	10,000	10,000

UL file number E314201

[4]D45 with R1 terminals are not IEC / UL 61058-1 certified

Environmental and Mechanical Specifications

Operating force	45 – 400 cN (model dependent, without actuator, lower forces possible)
Mechanical life	up to 10 M cycles (button material POM) / up to 500 K cycles (button material PET)
Temperature range	-40 °C to 85 °C/125°C/150 °C
Protection class	IP40

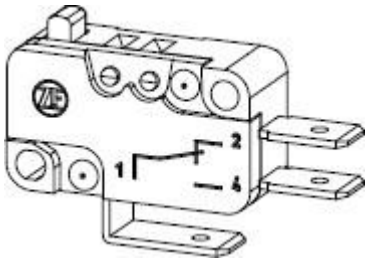
Material Specifications

Housing / Cover	PA6 (UL 94 V-0) 85 °C, PET (UL 94 V-0) 125 °C / 150 °C)
Actuator	POM (UL 94 HB) 85 °C, PET (UL 94 V-0) 125°C / 150 °C)
Contacts	AuAgPt (Crosspoint), Ag, AgNi
Terminals	CuZn, Cu
Auxiliary Actuator	Nickel-plated steel, stainless steel

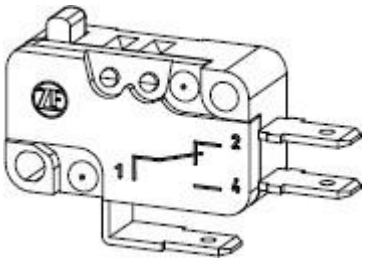
Dimensions (mm) and terminal configurations

Terminals

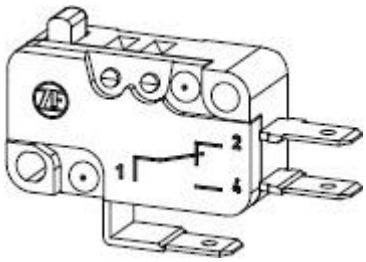
V1



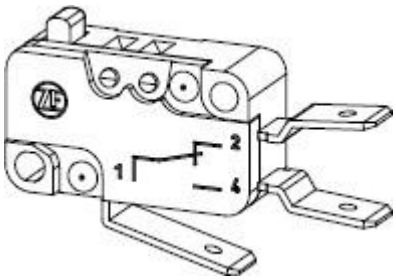
Q1



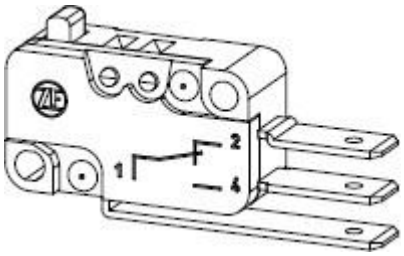
R1



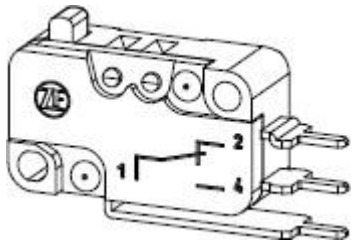
V3



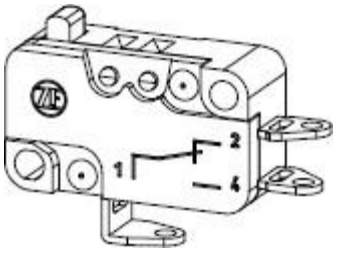
Y5



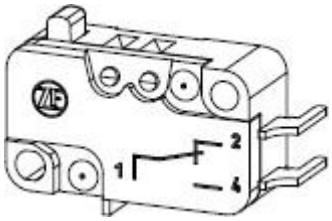
X5



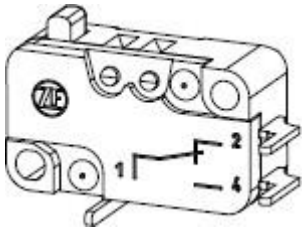
S1



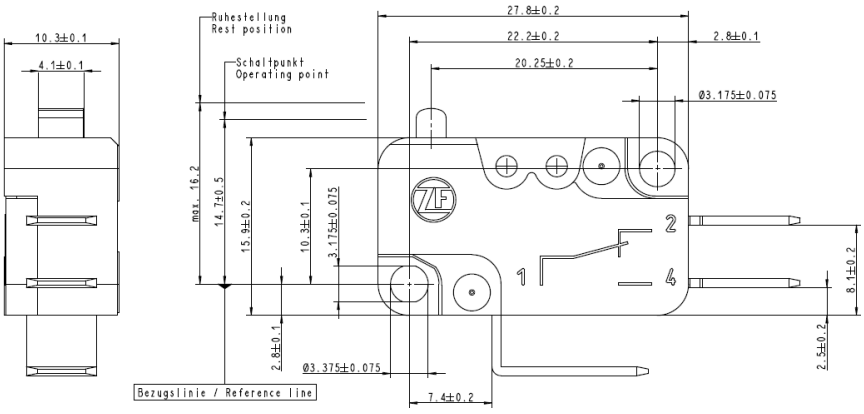
PA



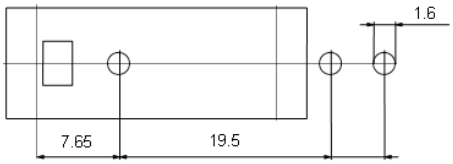
PB



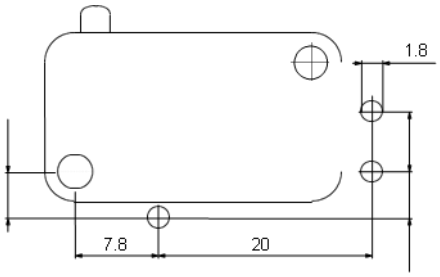
Dimensions



Drilling Pattern



PCB bottom side 1.3 x 0.5 mm



PCB case side 1.3 x 0.8 mm
PCB cover side (mirror-inverted) 1.3 x 0.8 mm