D4 MINIATURE SWITCH

D4 miniature switch

Versatile miniature snap action microswitch. A wide variety of auxiliary actuators and terminal options are available as standard and the switch fulfils the requirements of IEC 603351: GWFI at 850°C, GWIT at 775°C and GWT 750°C.

- High proof tracking index PTI 600
- High level of repeat accuracy
- High contact stability through application-specific contact materials up to a switching current of 0.1 to 21 A at 250 VAC
- Ambient temperature –40 to +150°C
- Approved according to IEC 61058-1/UL 61058-1



Technical specifications

Series	**D4** ❶
Contact configuration	S.P.D.T., S.P.S.T.-N.O., S.P.S.T.-N.C.
Contact gap	<3 mm (μ)
Switching voltage	250 VAC
Switching current	<0.1 to 21 A, depending on model
Total travel	2.6 mm
Mechanical life	see table on page 12
Electrical life	see table on page 12
Ambient temperature	40T85; 40T125; 40T150
Proof tracking index	PTI 300 (PET)/PTI 600 (PA6)

Materials

Housing/cover		PET/PA6 (UL 94V-0)
Actuator		POM (max. 85°C) alternative PET (UL 94V-0)
Contact materials	**D41**	AuAgPt (Crosspoint)
	D42	Ag
	D43–D48	AgNi
Terminals		CuZn, alternative Cu
Auxiliary actuator		Nickel-plated steel, alternative stainless steel
Approvals		
Degree of protection Switch interior		IP40

Circuitry ❸

Circuitry 40T85	Code
Standard operating force	
S.P.S.T.-N.O.	1
S.P.S.T.-N.C.	2
S.P.D.T.	3
Light operating force	**Code**
S.P.S.T.-N.O.	7
S.P.S.T.-N.C.	8
S.P.D.T.	9

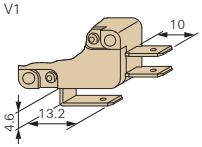
Circuitry 40T125	Code
Standard operating force	
S.P.S.T.-N.O.	G
S.P.S.T.-N.C.	H
S.P.D.T.	M
Light operating force	**Code**
S.P.S.T.-N.O.	N
S.P.S.T.-N.C.	P
S.P.D.T.	R

Circuitry 40T150*	Code
Light operating force	
S.P.S.T.-N.O.	S
S.P.S.T.-N.C.	T
S.P.D.T.	U

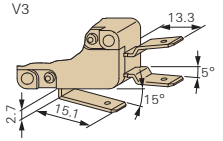
* Not for D48

Terminals

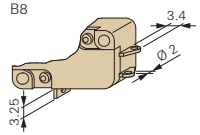
Q.C. terminal 6.3 x 0.8 mm straight
V1



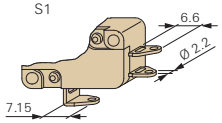
Q.C. terminal 6.3 x 0.8 mm dog leg
V3



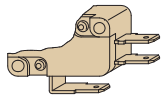
Solder terminal, short
B8



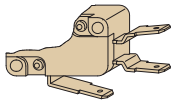
Solder terminal with temperature-stop
S1



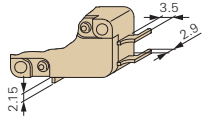
Q.C. terminal 4.8 x 0.8 mm straight
Q1



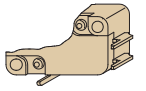
Q.C. terminal 4.8 x 0.8 mm dog leg
Q3



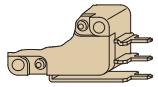
PCB terminal 1.3 x 0.8 mm housing side
PA



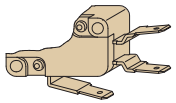
PCB terminal 1.3 x 0.8 mm cover side
PB



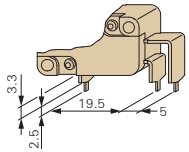
Q.C. terminal RAST 2.5
X5



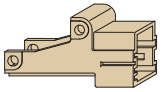
Q.C. terminal 4.8 x 0.5 mm dog leg
R3



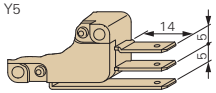
PCB terminal 1.3 x 0.5 mm, underside
P4



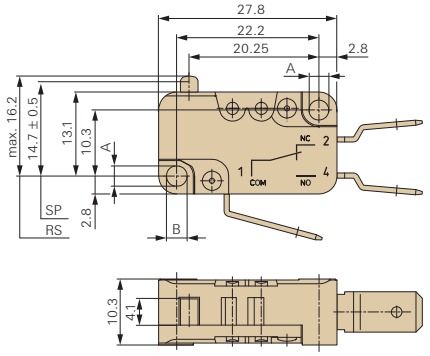
Connector housing for Q.C. terminal 6.3 x 0.8 mm, RAST 5



Q.C. terminal 6.3 x 0.8 mm RAST 5
Y5

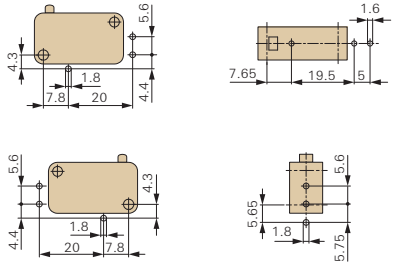


Other terminals available on request.



Dimensions in mm

Drilling patterns for PCB terminals



Mounting holes

Hole dimensions	Measurement „A"	Measurement „B"
	3.1 ±0.15 mm	3.3 ±0.15 mm

For detailed information please note the technical specifications which you can find in the download section of our website **www.switches-sensors.zf.com**.

D4 MINIATURE SWITCH CONTINUED

Electrical rating and operating life ❷

Electrical rating according to***	Electrical life for 40T85* (operations)	Mechanical lifetime actuator material		Operating force	Housing mark	Code
EN/UL 61058-1	acc. to EN/UL	POM	PET	max. (cN)		
Standard operating force						
0.1 (0.05) A, 250 VAC	50,000	10×10^6	1×10^6	170	D4 1 Y	1
3 (1) A, 250 VAC	50,000	10×10^6	1×10^6	170	D4 2 Y	2
6 (2) A, 250 VAC	50,000	5×10^6	25×10^4	170	D4 3 Y	3
10 (3) A, 250 VAC	50,000	1×10^6	1×10^5	285	D4 4 Y	4
16 (4) A, 250 VAC	50,000	2×10^5	1×10^5	400	D4 5 Y	5
Light operating force						
0.1 (0.05) A, 250 VAC	50,000	10×10^6	1×10^6	45**	D4 1 X	1
3 (1) A, 250 VAC	50,000	10×10^6	1×10^6	45**	D4 2 X	2
6 (2) A, 250 VAC	50,000	10×10^6	5×10^5	45	D4 3 X	3
10 (3) A, 250 VAC	50,000	10×10^6	25×10^4	75	D4 4 X	4
16 (4) A, 250 VAC	50,000	10×10^6	25×10^4	100	D4 5 X	5
21 (8) A, 250 VAC	10,000	3×10^6	25×10^4	150	D4 8 X	8

* Operating life 40T125 and 40T150 on request
** Lower operating forces on request
*** Additional electrical ratings according to UL 1054 on request

Terminal type ❹

Terminal type	Code
Q.C. terminal 6.3 x 0.8 mm, straight	V1
Q.C. terminal 6.3 x 0.8 mm, dog leg	V3
Q.C. terminal 6.3 x 0.8 mm, RAST 5	Y5
Q.C. terminal RAST 2.5	X5
Q.C. terminal 4.8 x 0.8 mm, straight*	Q1
Q.C. terminal 4.8 x 0.8 mm, dog leg*	Q3
Q.C. terminal 4.8 x 0.5 mm, straight**	R1
Solder terminal short*	B8
Solder terminal with temperature-stop	S1
Welding terminal	A1
PCB terminal 1.3 x 0.8 mm, housing side*	PA
PCB terminal 1.3 x 0.8 mm, cover side*	PB
PCB terminal 1.3 x 0.5 mm, underside*	P4

* Not for D48
** D45 and D48 not with VDE approval, only UL1054

Auxiliary actuator ❺

Type	Mounting point	Length	Code	Code
Without auxiliary actuator			AA	
Material			Nickel-plated steel	Optional stainless steel
Straight	RM rear	21.2	LA	JA
		35.6	LD	JD
		69.9	LL	JL
	FM front	25.7	MA	KA
		40.1	MD	KD
		74.4	ML	KL
Roller	RM rear	20.6	RA	
		34.1	RD	
	FM front	25.1	TA	
		38.6	TD	
Simulated roller	RM rear	20.6	SA	
	FM front	25.1	UA	

Generation of order code (example)
The order code consists of 5 parameters:

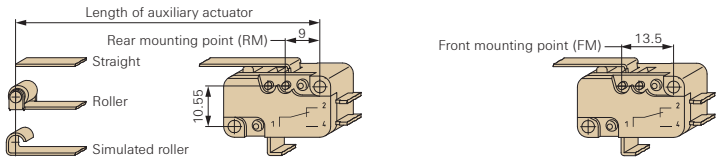
❶	❷	❸	❹	❺
Series	Electrical rating	Circuitry	Terminal type	Auxiliary actuator
D4 = Miniature switch	5 = 16 (4) A, 250 VAC	9 = S.P.D.T.	V3 = Q.C. terminal, dog leg, 6.3 x 0.8 mm	AA = without auxiliary actuator

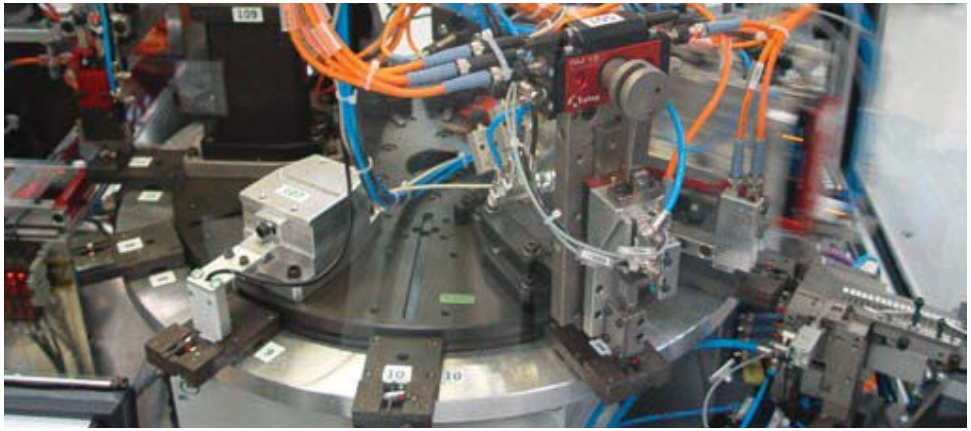
- Not every configurable variant is available for order. Please contact us.
- The final two digits of article numbers on commercial documents refer to the index of the respective drawing.
- Customer-specific models are marked with a G or W as the sixth digit of the article number.

Switching parameters

Model	Type	Max. operating force (cN) Standard	Light	Max. pretravel (mm)	Min. overtravel (mm)	Differential travel max. (mm)	Max. rest position (mm)	Operating point (mm)	Code
Without auxiliary actuator	D41	170	45	1.2	1.3	0.3	16.2	14.7 ± 0.5	
	D42	170	45	1.2	1.3	0.3	16.2	14.7 ± 0.5	
	D43	170	45	1.2	1.3	0.3	16.2	14.7 ± 0.5	AA
	D44	285	75	1.2	1.3	0.3	16.2	14.7 ± 0.5	
	D45	400	100	1.2	1.3	0.3	16.2	14.7 ± 0.5	
	D48	–	150	1.6	1.2	0.3	16.2	14.7 ± 0.5	

Auxiliary actuator





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