



SERIES 1045 - SUBMINIATURE SNAP-ACTION SWITCH IP 67

TO 10(3) A 250 V AC 1E4



PRODUCT FEATURES

- Dust and water protected switching system according IP 67
- Rating from low DC signal currents to ratings of 10 (3)A 250 VAC
- Versions for high motor rating up to 6 (6) A 250 VAC
- Versions with integrated mechanism for breaking contact weldings
- IEC 60335 Chapter 30 approved for household appliances
- More than 10 million switching cycles

ON REQUEST

- Versions with reduced difference travel
- Versions with mounting pegs to the side
- With asymmetric pinning
- With customized wiring

Design	DIN 41635 B
Mechanical life endurance	10E6, tightness up to 1.5E6 cycles 1E6 (versions with auxiliary actuator)
Contact resistance (new condition)	< 100 mOhm (1 A 12 V DC)
Insulation resistance (new condition)	> 100 MOhm (500 V DC)
Proof tracking	250 PTI
Protection type	IP 00 terminal side basic types 1045 and 1046 IP 40 actuator side basic type 1046 IP 67 actuator side basic type 1045, terminal and actuator side basic type 1048
Ambient temperature	-40 °C ... +100 °C
Flammability	UL 94 V-0
Glow wire test temperature	850 °C
Material additional actuator housing terminals	stainless steel spring steel PA Latamid glass fiber-reinforced tinned / faston terminals blank
Bounce time	< 5 ms
Approval marks	 /  (61058)
Suitable for appliances of protection class II under compliance with the installation conditions required on the equipment side	

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

[illegible]



SERIES 1045 - SUBMINIATURE SNAP-ACTION SWITCH IP 67

TO 10(3) A 250 V AC 1E4

	Changeover switch (SPDT momentary)													
5 (5) A 250 V AC 10E3														1045.3151
1 A 250 V AC 100E3	o													1045.4102
3 (3) A 250 V AC 30E3														1045.4151
6 (1) A 250 V AC 30E3														1045.5102
2 (1) A 250 V AC 100E3														1045.5112
3 A 250 V AC 100E3														1045.5502
10 (3) A 250 V AC 10E3														1045.5512
6 (6) A 250 V AC 30E3														1045.6102
Terminal type														1045.6502
Terminal description	sealed	sealed	sealed	sealed	sealed	sealed	sealed	sealed	2.8 x 0.5 sealed	2.8 x 0.5 sealed	sealed cranked	sealed cranked	sealed	1045.7102
Contact material	Au	Ag	Au	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	Ag	1045.7502
Operating force (N)	≤ 1.9	≤ 2.6	≤ 1.9	≤ 0.7	≤ 2.0	≤ 0.7	≤ 2.0	≤ 0.9	≤ 0.9	≤ 0.9	≤ 0.9	≤ 0.9	≤ 2.8	1046.0104
Operating position (OP) (mm)	8.4 ±0.3	8.4 ±0.3	8.4 ±0.3	11.1 ±1.5	9.5 ± 1.0	16.2 ±1.5	15 ±1	11.1 ±1.5	16.2 ±1.5	11.1 ±1.5	16.2 ±1.5	8.4 ±0.3	8.4 ±0.3	1046.1103
Difference travel max. (mm)	0.2	0.2	0.2	0.8	0.7	0.7	0.7	1.0	1.0	1.0	1.0	0.2	0.2	1046.2904
Free position (FP) max. (mm)	9.3	9.3	9.3	15	12	20	17	15	20	15	20	9.3	9.3	1048.0151
Permissible total travel position (TP) (mm)	7.6	7.6	7.6	7.6	8	13	13.6	7.6	13	7.6	13	7.6	7.6	
Actuator	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67	IP 67	IP 40	IP 40	
Actuator description														
Lever drawing				L02	L02	L22	L22	L02	L22	L02	L22			
Miscellaneous					lever on NC side mounted		lever on NC side mounted						with positive action on NC side	
Stock version	o	o	o	o	o	o	o	o	o	o	o	o	o	o

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH N DRIVE



SERIES 1045 - SUBMINIATURE SNAP-ACTION SWITCH IP 67

TO 10(3) A 250 V AC 1E4

	Changeover switch (SPDT momentary)		
5 (5) A 250 V AC 10E3		1048.1102	
1 A 250 V AC 100E3		1048.2151	
3 (3) A 250 V AC 30E3	o		
6 (1) A 250 V AC 30E3			
2 (1) A 250 V AC 100E3			
3 A 250 V AC 100E3			
10 (3) A 250 V AC 10E3			o
6 (6) A 250 V AC 30E3			
Terminal type	⇕	⇕	⇕
Terminal description			
Contact material	Ag	Au	Ag
Operating force (N)	≤ 2.6	≤ 1.9	≤ 2.0
Operating position (OP) (mm)	8.4 ±0.3	8.4 ±0.3	15 ±1
Difference travel max. (mm)	0.2	0.2	0.7
Free position (FP) max. (mm)	9.3	9.3	17
Permissible total travel position (TP) (mm)	7.6	7.6	13.6
Actuator	IP 67	IP 67	IP 67
Actuator description	□	□	
Lever drawing			L22
Miscellaneous	cable outlet on actuator side	cable outlet down	lever on NC side mounted
Stock version	o	o	o

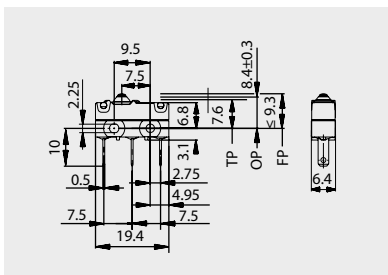


SERIES 1045 - SUBMINIATURE SNAP-ACTION SWITCH IP 67

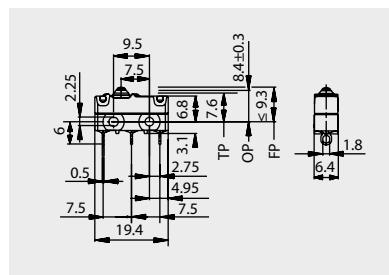
TO 10(3) A 250 V AC 1E4



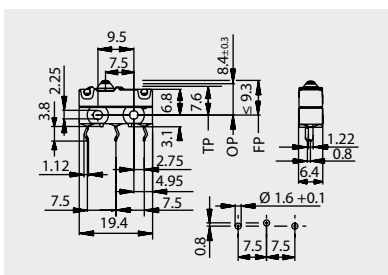
Basic type 1045



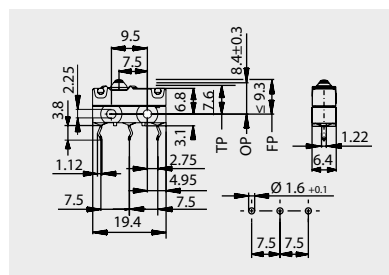
Quick-connect terminal 2.8 x 0.5 sealed



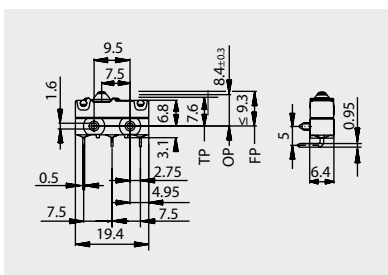
Solder terminal sealed



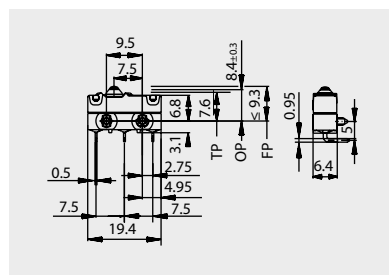
PCB terminal sealed, coded, cranked



PCB terminal sealed, cranked



PCB terminal sealed, left angled



PCB terminal sealed, right angled

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH 'N' DRIVE

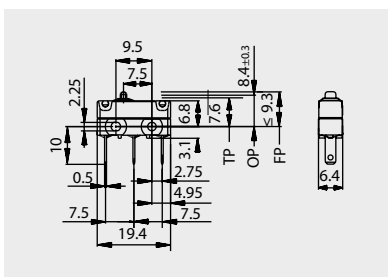


SERIES 1045 - SUBMINIATURE SNAP-ACTION SWITCH IP 67

TO 10(3) A 250 V AC 1E4



Basic type 1046

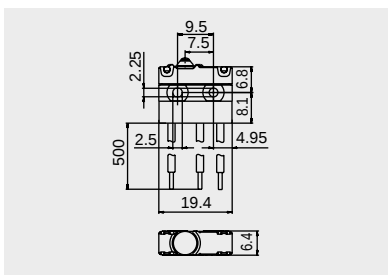


Quick-connect terminal 2.8 x 0.5 sealed

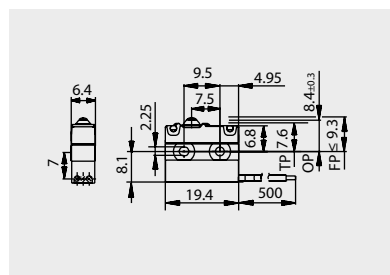


Basic type 1048

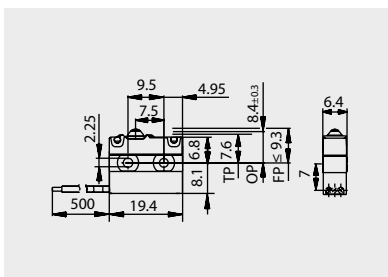
Wires potted with switch,
wire ends tinned



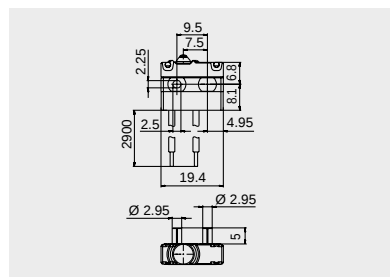
Cable, outlet down



Cable, outlet NC side



Cable, outlet C side



Cable, outlet down, normally
open contact, mounting pegs

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

SENSORS

ECO

PUSH'N'DRIVE



SERIES 1045 - SUBMINIATURE SNAP-ACTION SWITCH IP 67

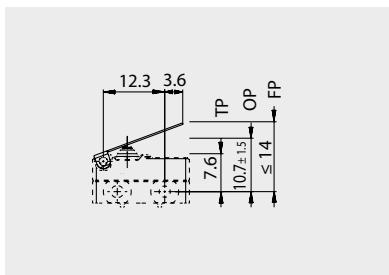
TO 10(3) A 250 V AC 1E4



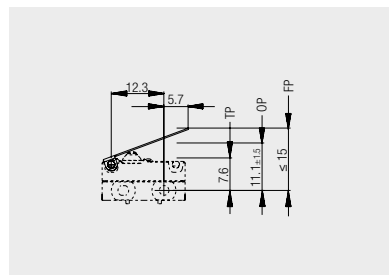
Auxiliary actuators

The auxiliary actuators are available as additional parts for later assembly or are already pre-assembled depending on the product. In the adjustable versions the operating position can be set application-specifically by the set screw.

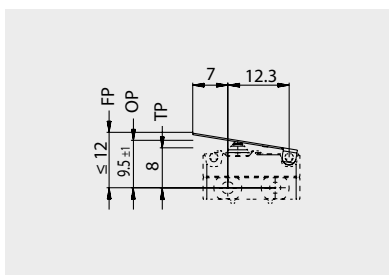
Switch versions without positive action feature a lever mounting point on the C and NC side, those with positive action only on the C side.



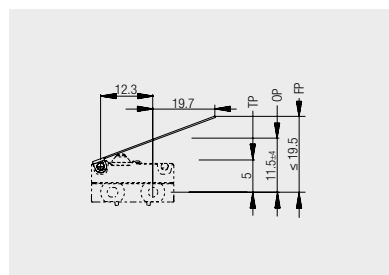
L01: straight lever
191.071.011



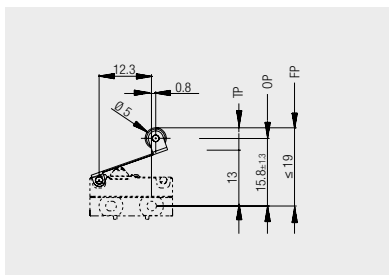
L02: straight lever
191.071.021



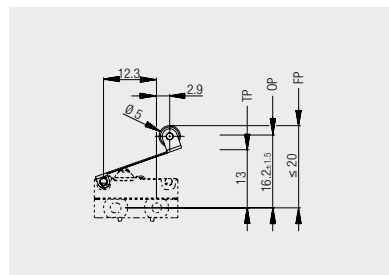
L02: straight lever, mounted on NC side
191.071.021



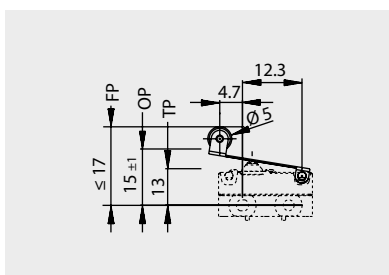
L03: straight lever
191.071.101



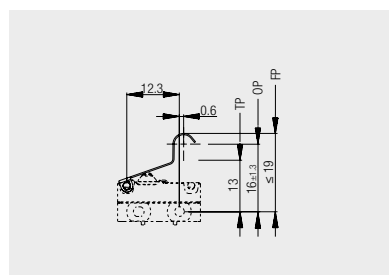
L11: roller lever
191.078.023



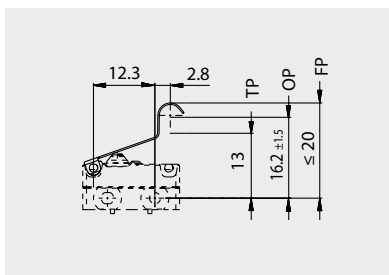
L12: roller lever
191.078.023



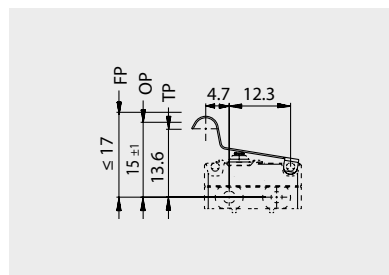
L12: roller lever, mounted on NC side
191.078.023



L21: simulated roller
191.071.041



L22: simulated roller
191.071.051



L22: simulated roller, mounted on NC side
191.071.051

ROCKER SWITCHES

PUSHBUTTON SWITCHES

TOGGLE SWITCHES

SLIDE SWITCHES

ROTARY SWITCHES

FOOT SWITCHES

TACT AND KEY SWITCHES

SNAP-ACTION SWITCHES

MICRO-SIGNAL SWITCHES

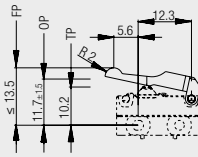
SENSORS

ECO

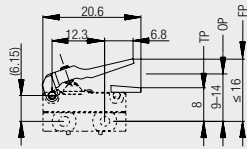
PUSH 'N' DRIVE



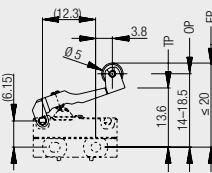
Auxiliary actuators
(continue from page 195)



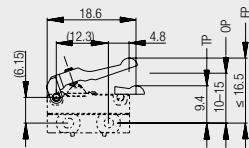
L32: simulated roller, mounted on NC side
190.372.041



L41: adjustable plastic lever
190.075.013



L43: adjustable roller lever
190.072.013



L45: adjustable simulated roller
190.074.013

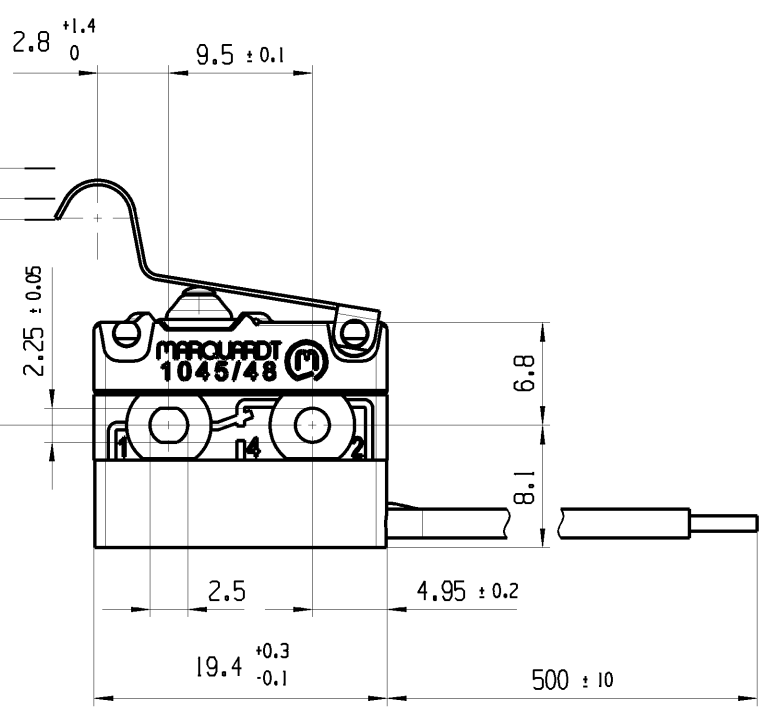
Further information under

WWW.MARQUARDT-SWITCHES.COM

Ruhestellung
free position

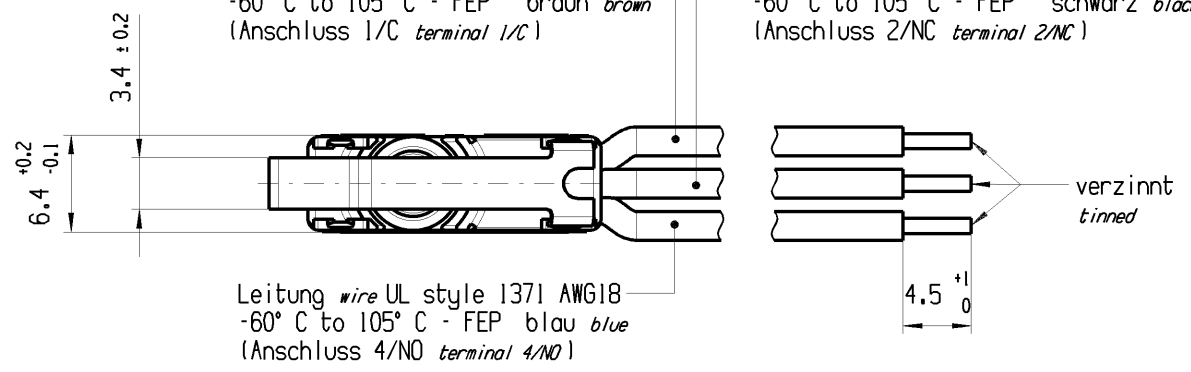
Schaltpunkt
operating position

zul. Endstellung
total travel position allowed

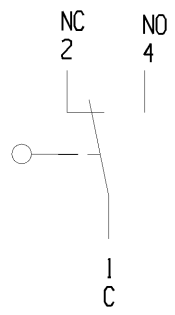
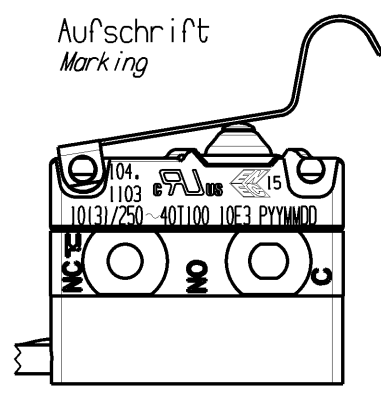


Leitung *wire* UL style 1371 AWG18
-60° C to 105° C - FEP braun *brown*
(Anschluss 1/C *terminal 1/C*)

Leitung *wire* UL style 1371 AWG18
-60° C to 105° C - FEP schwarz *black*
(Anschluss 2/NC *terminal 2/NC*)



Aufschrift
Marking



Wechsler 1-polig
single pole changeover

Schaltbetaetigungskraft
actuating force ≤ 2.0 N

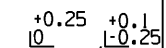
Rueckschaltkraft
release force ≥ 0.5 N

Differenzweg
movement differential ≤ 0.7 mm

IP Schutzklasse nach EN 60529 IP 67
protection class acc to EN 60529

G: Konform nach IEC 60335-1:2001 Kap. 30
G: matching IEC 60335-1:2001 clause 30

Auf Verpackung *on box* : G

fuer Form und Lage FOR SHAPE AND LOC.		⊙ = 0.1	Allgemeintoleranzen UNTOLERANCED DIMENSIONS						Pause COPY	Blatt SHEET		TYP	Zeichn./DRAWING NO.	Index
										01				
fuer Winkel FOR ANGLE ± 2			PROJEKTION	Abmasse und Nennmassbereiche Angaben in mm		Laenge LENGTH	Radien RADII	Original Din A4	Massstab SCALE 2:1 30mm	K	10486113	c		
c		83472	14.05.13	BRC				CAD: NX V6.0		SCHNAPPSCHALTER				
b		80327	14.03.13	BRC				gez./DRAWN BY 30.07.12 BRC		snap action switch				
a		82481	22.01.13	BRC				gepr./CHECKED BY		 MARQUARDT				
79871		05.09.12	BRC				Ersatz fuer/REPLACEMENT OF							
Ausg. ISSUE		Aenderung REVISION		gez. DRAWN BY		Ausg. ISSUE		Aenderung REVISION		gez. DRAWN BY				