

Application

Subminiature Microswitch for severe environment: shocks and vibrations, temperature...

- Operating temperature: -55 °C ... +150 °C
- Rated breaking capacity: from few mA up to 4 A.
- Degree of protection: IP40 ; IP54 (except terminals).
- Mechanical service life: 500 000 cycles

Description

Snap action switch - unsealed.

- Plastic casing : PPS Ryton®
- Gold plated contacts.
- Mounting holes for M2 screws.
- Dimensions compliant with **DIN 41635** standard – size "D".
- Terminals: solder terminals.
- Pin actuator, integral actuator (factory assembled) or auxiliary actuator (accessory)

Approvals and Compliance to Standards

Z3ANS Microswitches are designed to replace **Z5661-1** and **Z5667** Microswitches approved by French Air Ministry as per letters 39.974/STAE/EQ2 dated July 24, 1975 and 42.893/STAE/EQ2 dated December 28, 1970 (AIR equipment sheets No 6.551.225 and 6.551.220).

Main compliance or performance equivalences with **MIL-PRF-8805** standard requirements.

Environmental characteristics

(For other test results, please contact us)

Salt spray resistance	96 h
Humidity	93% relative humidity, +40°C duration 168h (7 days)
Mechanical shocks resistance	40 g - duration 11 ms (pulse shape = saw tooth) 18 shocks (3/direction, both of 3 orthogonal axis)
Sinusoidal vibrations resistance	5 _ 2000 Hz, 50 g in each of 3 orthogonal axis
Random vibrations	10 _ 2000 Hz, 0.30 g ² / Hz in each of 3 orthogonal axis

Mechanical characteristics

Characteristics according to the actuating point (arrow) indicated on dimension drawings.

Microswitches Types	Without accessory		With flexible levers (accessories)		Z3ANS + L13Z Z3ANS + L13GZ	
	Z3ANS		I	II	I	II
Actuating lever pivot point						
Max. operating force	N	2.50	2.00	2.50	2.50	3.60
Min. release force	N	0.70	0.60	0.80	0.70	1.0
Pretravel	mm	0.17 ... 0.42	–	–	–	–
Max. differential movement	mm	0.06	–	–	–	–
Min. overtravel (1)	mm	0.10	–	–	–	–

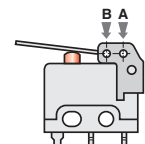
(1) Do not exceed this value in use

Microswitches Types	Microswitches with integral lever (factory assembled)				Z3ANS-L61 Z3ANS-L61G	
	Z3ANS-L20 Z3ANS-L20G Z3ANS-L20V		Z3ANS-L60 Z3ANS-L60G		A	B
Actuating lever pivot point	A	B	A	B		
Max. operating force	N	0.90	0.60	0.70	0.45	0.90
Min. release force	N	0.27	0.19	0.18	0.12	0.27
Pretravel	mm	1.35	1.85	2.20	2.90	1.35
Max. differential movement	mm	0.30	0.40	0.50	0.75	0.30
Min. overtravel (1)	mm	0.35	0.65	2.60	3.20	1.30

(1) Do not exceed this value in use

Actuating lever pivot point : **A** or **B**..

Due to factory mounting, actuating **lever pivot point** must be defined for Microswitches with integral levers. See Mechanical characteristics tables for required travel and/or force


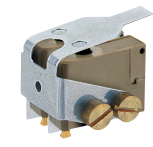
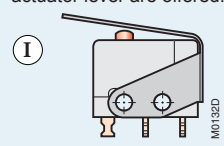
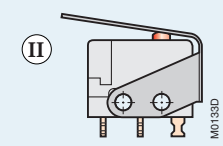


Z3 Subminiature Microswitches

Electrical characteristics


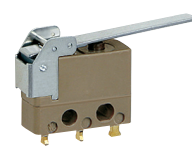
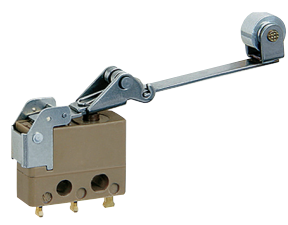



Ratings (electrical load on one throw only)	30 mV ... 5 V d.c.	30 V d.c.	115 V d.c. 400 Hz	220 V a.c. - 50 Hz
Version 5 A – resistive load A	10 mA	4 A	1 A	1 A
– inductive load A	0.025 (L/R ≤ 5 ms)	0.5 (L/R φ ≥ 5ms)	–	0.5 (Cos φ ≥ 0.5)
Electrical service life cycles	100 000	100 000	100 000	100 000
Changeover time ms	≤ 10	≤ 10	≤ 10	≤ 10
Contact resistance mΩ	≤ 25 mΩ under 6 V d.c. - 100 mA according to MIL-PRF-8805 (As new, wires or cable not included)			
Dielectric strength (50 Hz - 1 mn)				
– between terminals V a.c.	500			
– between all terminals and earth (ground) V a.c.	1500			
Insulation resistance MΩ	≥ 100 MΩ under 500 V d.c. (at 23 °C with < 80 % relative humidity)			

Ordering details - Accessories

Accessories	P/N	Weight (1 piece) kg	
Flexible levers			
Simple lever (for 1 microswitch)	L11Z	0.001	 Microswitch Z3ANS type + lever L11GZ type + insulating plate IBCZ type
Tandem lever (for 2 microswitches)	L13Z	0.002	
Flexible roller levers			
Simple lever (for 1 microswitch)	L11GZ	0.002	 2 Microswitches Z3ANS type + lever L13Z type + insulating plates IBCZ type
Tandem lever (for 2 microswitches)	L13GZ	0.003	
Insulating plate-			
The use of an insulating plate is recommended if the microswitch is to be fitted against a metallic face. 12.75 x 9 x 0.2	IB CZ	NS	<p>Lever mounting position According to required performance, 2 mounting positions of the actuator lever are offered.</p>  

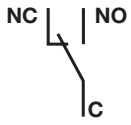
Nota : Accessories in packs of 10. Screws are not included with the accessories.

Ordering details

Lever length mm	Actuating lever pivot point	P/N (1piece) kg	Weight	
Microswitch with pin actuator				
–	–	Z3ANS	0.001	 Z3ANS
Microswitch with integral lever actuator				
20	A	Z3ANS-L20A	0.002	 Z3ANS - L20A
	B	Z3ANS-L20B	0.002	
Microswitch with integral roller lever actuator				
20	A	Z3ANS-L20GA	0.002	 Z3ANS - L20GB
	B	Z3ANS-L20GB	0.002	
Microswitch with added overtravel lever actuator				
30	A	Z3ANS-L60A	0.002	 Z3ANS - L60GB
	B	Z3ANS-L60B	0.002	
20	A	Z3ANS-L61A	0.002	
	B	3ANS-L61B	0.002	
Microswitch with added overtravel roller lever actuator				
30	A	Z3ANS-L60GA	0.003	 Z3ANS - L60GB
	B	Z3ANS-L60GB	0.003	
20	A	Z3ANS-L61GA	0.002	
	B	Z3ANS-L61GB	0.002	
Microswitch with adjustable lever actuator				
20	A	Z3ANS-L20VA	0.002	 Z3ANS - L20VB
	B	Z3ANS-L20VB	0.002	

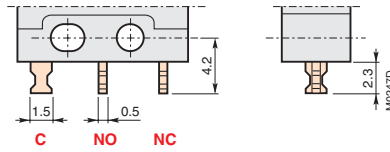
Z3 Subminiature Microswitches

Circuit diagram



Connection

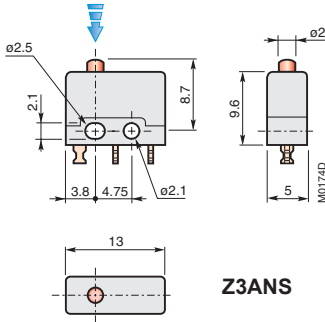
Solder terminals



Dimensions

M2 screws recommended tightening torque: 0.18 to 0.2 Nm

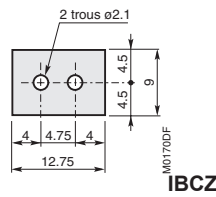
Microswitches without accessory



Z3ANS

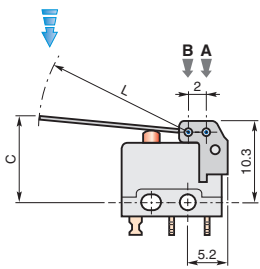
Insulating plate
(Thickness 0.2 mm)

The use of an insulating plate is recommended if the Microswitch is to be fitted against a metallic face.

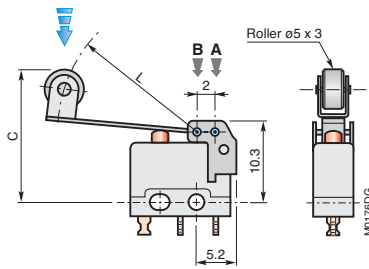


IBCZ

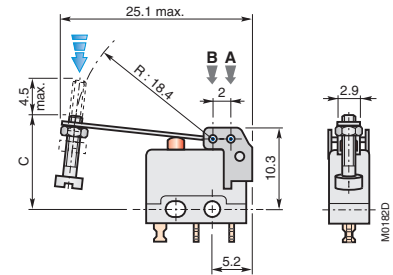
Microswitches with integral lever (factory assembled)



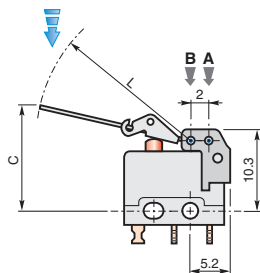
Z3ANS-L20...



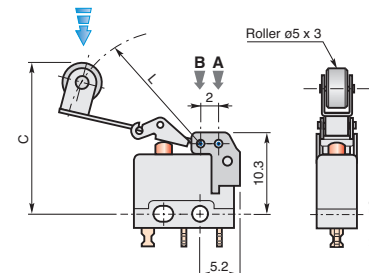
Z3ANS-L20G...



Z3ANS-L20G...



Z3ANS-L60...
Z3ANS-L61...

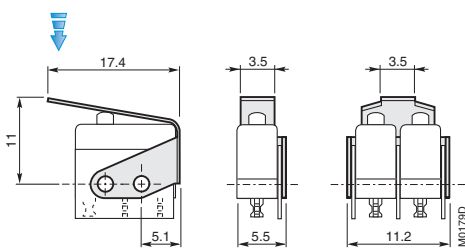


Z3ANS-L60G...
Z3ANS-L61G...

Levers	Dimensions mm - L	Actuating lever pivot point	Dimensions mm - C
L20	20	A	10.6
		B	10.9
L20G	18.5	A	16.4
		B	16.7
L61	20	A	11.4
		B	11.7
L60	30	A	12.7
		B	12.9
L61G	18.55	A	17.2
		B	17.4
L60G	28.65	A	18.5
		B	18.7
L20V	18.4	A	12.5
		B	13.0

Accessories

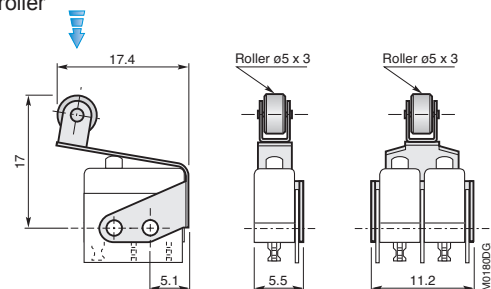
Flexible levers



L11Z

L13Z

Flexible roller levers



L11GZ

L13GZ