

SUB-SUBMINIATURE MICROSWITCHES - SEALED

V5S - 8320

- › High precision flexible leaf snap-action mechanism
- › Operation without balance-point, even at extremely slow actuating speed
- › Very small size
- › Extra-long plunger stroke: 2 mm overtravel to absorb dispersions in application
- › Suitable for lateral approach from any direction with angle up to 45°
- › Excellent resistance to harsh environments - IP67/IP69 protection
- › Use from 1 mA 4 V_{DC} to 4 A 250 V_{AC}
- › Long mechanical life
- › Various terminal types and pre-wired models - Choice of flexible actuators



Main specifications

Function	Connections / Locating pins	Dual-current 83200
I (changeover)	X1 (PCB, straight) / none	83200003
I (changeover)	X1 (PCB, straight) / CAR (two short, rear)	83200011
I (changeover)	X1 (PCB, straight) / CAV (two short, front)	83200012
I (changeover)	X1 (PCB, straight) / LAV, LAR, 4C, 4L	●
I (changeover)	X1L (PCB, straight, long) / none, CAV, CAR, LAV, LAR, 4C, 4L	●
I (changeover)	X2 (PCB, rear) / CAR (two short, rear)	83200005
I (changeover)	X2 (PCB, rear) / LAR (two long, rear)	83200023
I (changeover)	X2 (PCB, rear) / none, CAV, LAV, 4C, 4L	●
I (changeover)	X3 (PCB, front) / CAV (two short, front)	83200006
I (changeover)	X3 (PCB, front) / LAV (two long, front)	83200024
I (changeover)	X3 (PCB, front) / none, CAR, LAR, 4C, 4L	●
I (changeover)	W2 (solder) / none	83200030
I (changeover)	W2 (solder) / LAR (two long, rear)	83200033
I (changeover)	W2 (solder) / LAV (two long, front)	83200034
I (changeover)	W2 (solder) / 4C (four, short)	83200035
I (changeover)	W2 (solder) / CAV, CAR, 4L	●
I (changeover)	W2ST (solder, no hole) / none, CAV, CAR, LAV, LAR, 4C, 4L	●
I (changeover)	FB0 (wires, bottom) / CAR (two short, rear)	83200051
I (changeover)	FB0 (wires, bottom) / 4C (four, short)	83200055
I (changeover)	FG0 (wires, left) / 4C (four, short)	83200062
I (changeover)	FG0 (wires, left) / 4L (four, long)	83200063
I (changeover)	FD0 (wires, right) / none	83200071
I (changeover)	FD0 (wires, right) / 4C (four, short)	83200069
I (changeover)	FD0 (wires, right) / 4L (four, long)	83200070
I (changeover)	FB0, FG0, FD0 / none, CAV, CAR, LAV, LAR, 4L	●
R (normally closed)	FB0, FG0, FD0 / none, CAV, CAR, LAV, LAR, 4C, 4L	● (83202)
C (normally open)	FB0, FG0, FD0 / none, CAV, CAR, LAV, LAR, 4C, 4L	● (83204)
Electrical characteristics		
Rating nominal / 250 V AC (A)		4*
Rating thermal / 250 V AC (A)		5
Mechanical characteristics		
Max. operating force (N)		1.5
Min. Release force (N)		0.2
Max. total travel force (N)		2.5
Max. Allowable overtravel force (N)		10
Max. rest position (mm)		11.1
Operating position (mm)		10.5±0.2
Max. differential travel (mm)		0.10
Min. overtravel (mm)		2
Ambient operating temperature (°C)		-40 → +90
Mechanical life (operations)		10 ⁶
Contact gap (mm)		0.3
Weight (terminal versions) (g)		0.75

Additional specifications

- Cover: PARA GF
- Base: PA66 (UL 94-V2 / GWFI 850 °C)
- Button: POM
- Membrane: silicone rubber
- Moving blade: silver-plated beryllium copper
- Contacts: gold alloy on silver alloy, crossbar
- Terminals: silver-plated brass
- Wire leads: copper, PVC insulated
- Levers: stainless steel

- Degree of protection: IP67/IP69 (mechanism and wire output)
- Protection against electric shock: button and actuators have reinforced insulation for U_i 250V / U_{imp} 2,5kV / pollution 2
- Recommended min actuating speed: 0.001 mm/s

- Certification marks: on request

Standard product

Product made to order



Contact us

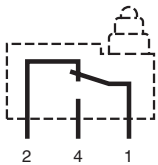
Product adaptations



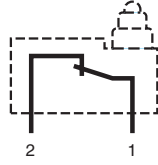
- › Special connections: SMD terminals, special leads, cables, full wiring with custom connector
- › Special levers: special shapes and lengths
- › Fully customized switching modules with integrated connector
- › Integration of resistors for specific electrical diagrams or self-diagnosis function
- › Low switching hysteresis variant: 0.06 mm max differential travel
- › High operating temperature: +125 °C
- › cURus approved versions - ENEC approval

Principles

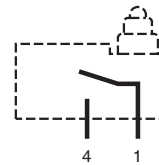
Single break snap-action switch
Changeover - SPDT (form C)



Normally closed - SPST-NC (form B)



Normally open - SPST-NO (form A)



Curves

Electrical life

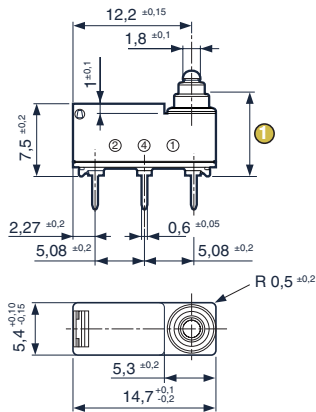
- 250 V~ 4 A resistive > 6 000 cycles
- 14 V= 2 A resistive 200 000 cycles
- 14 V= 10 W lamps 100 000 cycles
- 14 V= 0.5 A L/R = 4 ms 50 000 cycles
- 5 V= 1 mA resistive 500 000 cycles

* These products are designed to operate equally well on low current (1 mA 4 V minimum recommended) or medium-current (4A maximum) circuits. However, a given product should only be used to switch one type of circuit during its working life.

Dimensions

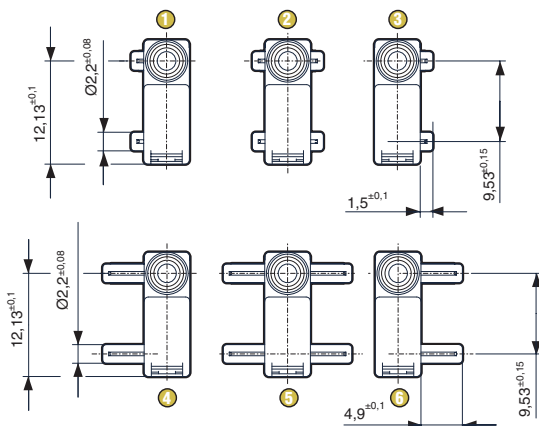
Products

8320
Version without locating pins



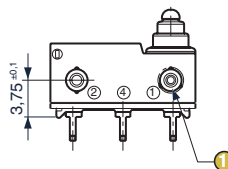
① Total travel position: max 8.5

Locating pins



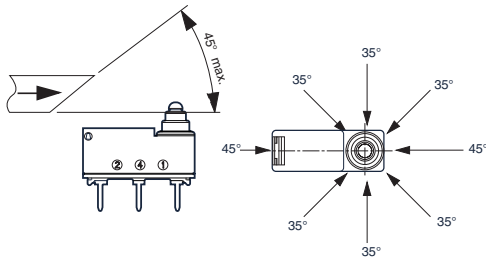
- ① 2 short pins on rear (CAR)
- ② 4 short pins (4C)
- ③ 2 short pins on front (CAV)
- ④ 2 long pins on rear (LAR)
- ⑤ 4 long pins (4L)
- ⑥ 2 long pins on front (LAV)

8320
Version with locating pins



① Ø 2.6 ±0.1 on ribs

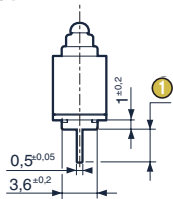
Recommendations for lateral approach



In order to reduce friction and wear, the actuating ramp shall preferably be of PA, POM, PBT or steel, and also be as smooth as possible. As a general rule, the use of any lubricant substance is not needed nor recommended. For particular cases, please consult us.

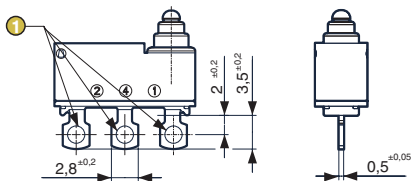
Connections

X1-X1L for printed circuit board, straight output



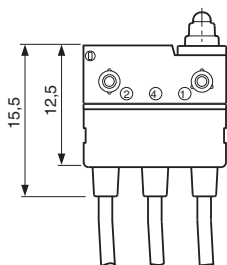
- ① X1 = 3.5 ± 0.2
X1L = 7 ± 0.2

W2 - W2ST solder



- ① With holes: W2 Ø 1.8 ± 0.1
Without holes: W2ST

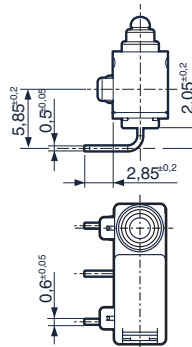
FB0 wire output on bottom



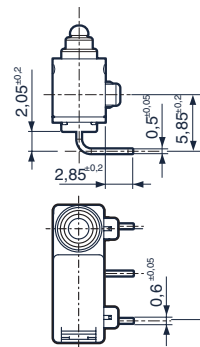
Wire characteristics

- 1: Black
- 2: Grey
- 4: Blue
- Cross-section: 0.35 mm²
- Standard length: 500 mm
- Other lengths on request (length in meters: e.g. 1.5)

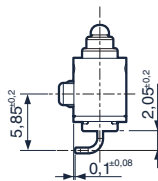
X2 for printed circuit board, rear output



X3 for printed circuit board, front output

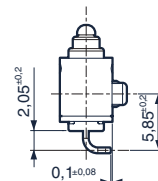


CMS2 for surface mounting, rear output



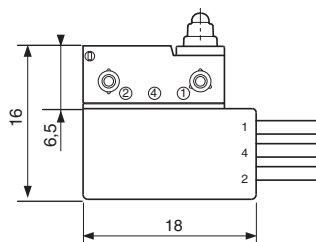
Please contact us

CMS3 for surface mounting, front output

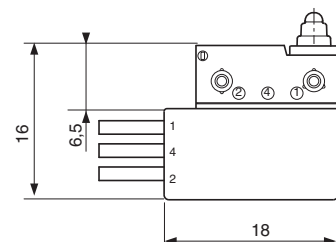


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FD0 wire output on right

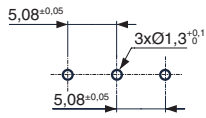


FG0 wire output on left

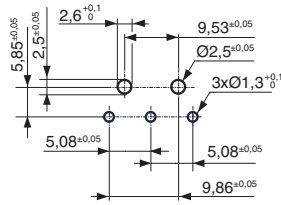


Drilling

Installation on printed circuit board X1-X1L-X2-X3

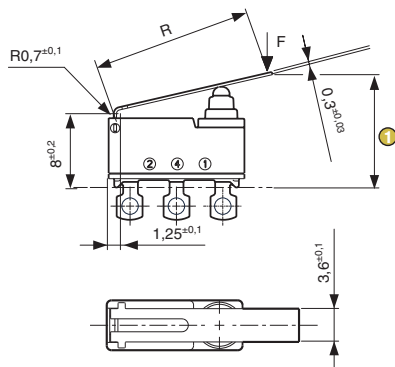


Installation on printed circuit board with locating pins



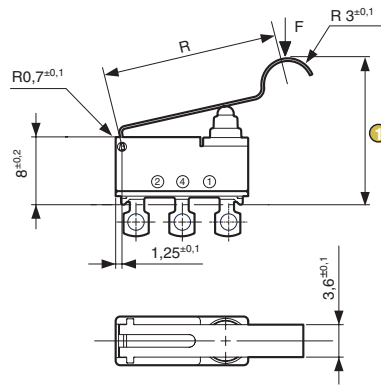
Actuators

200AF flexible flat



① Operating position

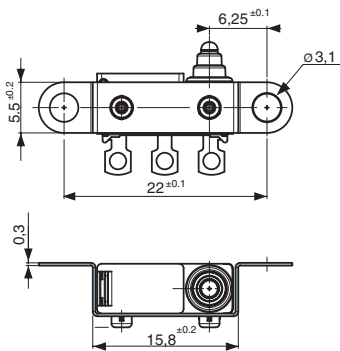
200FF flexible dummy roller



Other shapes and dimensions:
consult us




Mounting accessories

Stainless steel mounting flange



Actuators and mounting accessories

Actuators

Flexibles actuators	Flat 200AF R15	Flat 200AF R20	Dummy roller 200FF R17
			
Max. operating force (N)	1.5	1.3	1.5
Min. release force (N)	0.1	0.05	0.1
Operating position (mm)	11.4 ±0.4	12.2 ±0.4	14.75 ±0.5

Actuators are factory mounted

Mounting accessories

79257491

Stainless steel mounting flange



V5S - 8320 microswitches with referenced actuators

Actuators		200AF R15
83200	X1	83200229
	X2	83200215
	W2 LAR	83200223
	FBO CAR	83200224

Installation recommendations

See "Basic technical concepts"

How to order

Use the 8 digit part numbers when they are defined

Other cases, precise: Type and Function - Connection - Locating pins - Actuator* - Adaptation* + Mounting accessories*
* if needed

Example: 83200 W2 CAV 200AF R15 + 79257491

Examples of special adaptations



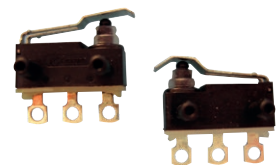
IP67 module with 45° rotary operation, maintained action, integrated connector and quick fastening



IP67 module with integrated connector and quick fastening



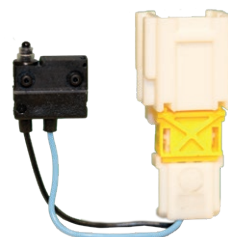
Printed circuit board assembly with connector



Special levers



"V4 size" conversion housing and wire lead or cable output



Customized wiring

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