

# MICROSWITCHES - SEALED, POSITIVE BREAK

## PBX - 8324

- › Double-break snap-action mechanism with electrically separated circuits (form Zb)
- › Positive opening action according to IEC 60947-5-1 Annex K
- › Long overtravel, also after the positive opening position
- › Protection of mechanism: IP67/IP65, or IP40 with sealed plunger
- › Operating temperature -50 °C to +85 °C
- › Ratings from 1 mA 4 V<sub>DC</sub> to 6 A 250 V<sub>AC</sub> - Rating codes: A300, Q150
- › Very long mechanical life
- › Choice of connections - Mounting plates and roller lever (pre-assembled or retrofittable)
- › cURus and CCC approved - Meet applicable railway standards



### Main specifications

		Standard 83240	High force 83242	Dual-current 83244	Dual-current High force 83245
<b>Degree of protection</b>	<b>Connections</b>				
IP40	W3 (QC 6.3x0.8)	83240000	83242000	83244000	83245000
IP40	W3/90B (QC 6.3x0.8, folded)	83240010	83242010	●	●
IP40	W5 (screw + clamp)	83240020	83242020	83244020	83245020
IP40	W5/IP20 (screw + clamp, protected)	83240030	83242030	83244030	83245030
IP40	W1 (screw + washer)	●	●	●	●
IP67	W3 (QC 6.3x0.8)	83240200	83242200	83244200	83245200
IP67	W3/90B (QC 6.3x0.8, folded)	83240210	●	83244210	●
IP67	W5 (screw + clamp)	83240220	83242220	83244220	83245220
IP67	W5/IP20 (screw + clamp, protected)	83240230	83242230	83244230	83245230
IP 67	W1 (screw + washer)	●	●	●	●
<b>Electrical characteristics</b>					
Positive opening action		⤵	⤵	⤵	⤵
Rating nominal / 250 V <sub>AC</sub> (A)		6	6	6*	6*
Rating nominal / 250 V <sub>DC</sub> (A)		0.6	0.6	0.6*	0.6*
Rating thermal (A)		10	10	10	10
<b>Mechanical characteristics</b>					
Maximum operating force (N)		4.5	6.5	4.5	6.5
Minimum release force (N)		0.6	2.5	0.6	2.5
Minimum positive opening force (N)		28	28	28	28
Maximum rest position (mm)		8.9	8.9	8.9	8.9
Operating position (mm)		6.6 ±0.25	6.6 ±0.25	6.6 ±0.25	6.6 ±0.25
Positive opening position (mm)		4.4	4.4	4.4	4.4
Maximum total travel position (mm)		3.4	3.4	3.4	3.4
Differential travel (mm)		1 ±0.3	1 ±0.3	1 ±0.3	1 ±0.3
Operating temperature (°C)		-50 → +85	-50 → +85	-50 → +85	-50 → +85
Mechanical life - IP40 versions (operations)		10 <sup>7</sup>	10 <sup>7</sup>	10 <sup>7</sup>	10 <sup>7</sup>
Mechanical life - IP67 versions (operations)		4x10 <sup>6</sup>	4 x 10 <sup>6</sup>	4 x 10 <sup>6</sup>	4 x 10 <sup>6</sup>
Contact gap (mm)		2 x 1	2 x 1	2 x 1	2 x 1
Weight (g)		22	22	22	22

### Additional specifications

- Case: PC GF (UL 94-V2 / GWFI 960 °C / GWIT 775 °C)
- Button: PBT GF (UL 94-V0 / GWFI 960 °C)
- Membrane: silicone rubber
- Contacts: silver alloy, micro-profile  
gold alloy on silver alloy, micro-profile (dual-current)
- Terminals: brass (silver-plated brass : on request)
- Screws: stainless steel
- Levers: stainless steel, polyamide roller
- Degree of protection: IP65/IP67 or IP40 (mechanism)
- Recommended min actuating speed: 0.1 mm/s
- Rated insulation voltage U<sub>i</sub>: 400 V
- Impulse withstand voltage U<sub>imp</sub>: 4 kV
- Pollution degree: 3
- Protection against electric shock: Button and actuators of IP67 versions have reinforced insulation
- Dimensional conformity: DIN 41636 F
- Fire/smoke resistance: EN 45545
- Certification marks: (A300, Q150) /

### Product adaptations



- › IP67 wire lead or cable outputs, EN 50306 halogen-free versions
- › Special connections: W3 QC tabs with specific folding angles, double QC tabs, W5 without screws, ...
- › Special levers: special shapes and lengths
- › AgPd contacts for infrequent switching in corrosive atmospheres up to 1A (83241/83243)
- › Maintained action variant (bistable reset switch), with plunger or lever
- › Two-pole DPDT assemblies with common lever
- › IP40 protective cover/housing on connections

Standard product

Product made to order

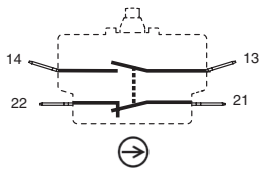


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## Principles

Double break snap-action switch with electrically separated circuits and with positive opening action on NC contacts (21-22) according to IEC 60947-5-1 Annex K

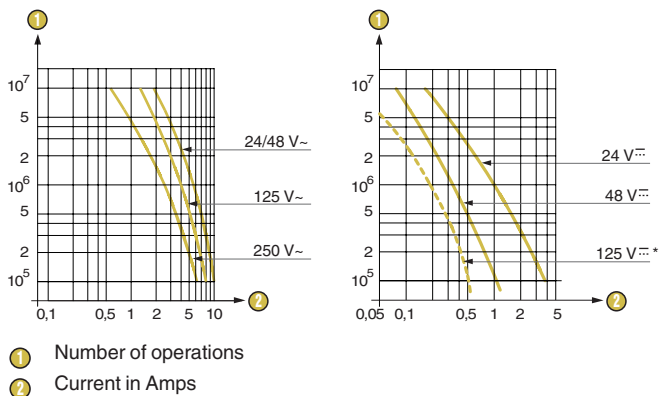
### Changeover - SPDT (form Zb)



Both circuits can be used at opposite polarities

## Curves

### Operating curve for category AC15 Operating curve for category DC13



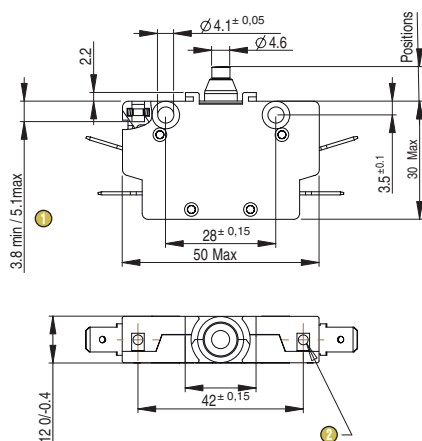
For IP67 versions used in 125 V DC, please consult us.

\* Models 83244 and 83245 are designed to operate equally well on low-current (1 mA 4 V minimum recommended) or medium to high current circuits. However, a given product should only be used to switch one type of circuit during its working life.

## Dimensions

### Product

#### 8324

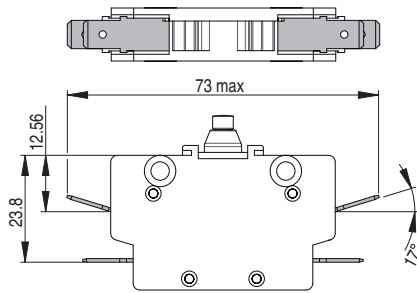


- 1 Fixing screw threaded length
- 2 Fixing nuts 2 x M3

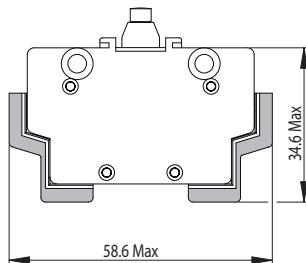
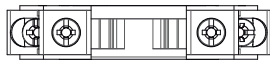
Max. tightening torque of fixing screws: 1.3 N.m on  $\varnothing 4.1$  holes  
0.9 N.m on M3 nuts

## Connections

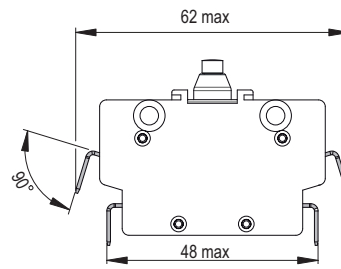
### W3 quick-connect 6.3 x 0.8



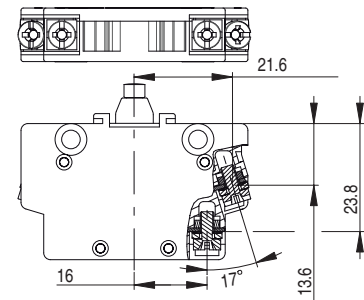
### W5/IP20 screw with clamp and IP20 protection



### W3/90B quick-connect 6.3x0.8, 90° downward folding



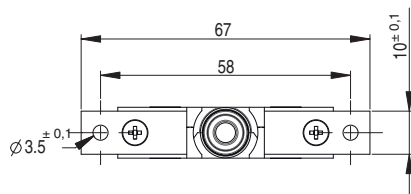
### W5 screw with clamp W1 screw with washer



4 x M3 screws - PZ1 type

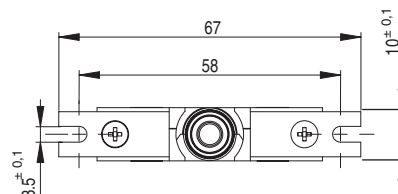
## Mounting accessories

### PT mounting plates with holes



Thickness: 1 mm

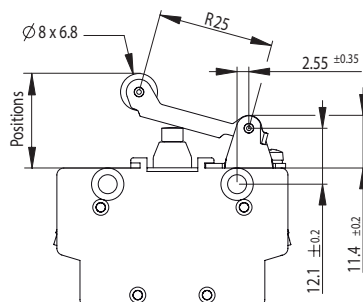
### PE mounting plates with notches



Thickness: 1 mm

## Actuators

### LG roller lever



### Mechanical characteristics on roller

	83240/83244	83242/83245
Maximum operating force (N)	3	4
Minimum release force (N)	0.3	1.3
Min. positive opening force (N)	19	19
Maximum rest position (mm)	21	21
Operating position (mm)	16,6±0,5	16,6±0,5
Positive opening position (mm)	13,2	13,2
Maximum total travel position (mm)	12	12
Differential travel (mm)	1,8±0,55	1,8±0,55

## Actuators and mounting accessories

### PBX 8324 with referenced accessories

Roller lever Mounting plates Accessory kit			LG	LG	LG	-	-
			-	PT	PE	PT	PE
			79552456	79552457	79552458	79552459	79552460
83240	IP40	W3	83240003	83240004	83240005	•	•
		W3/90B	83240013	83240014	83240015	•	•
		W5	83240023	83240024	•	83240021	•
		W5/IP20	83240033	83240034	•	•	•
	IP67	W3	83240203	•	•	•	•
		W3/90B	83240213	83240214	•	•	•
		W5	83240223	83240224	83240225	83240221	•
		W5/IP20	•	•	•	•	•
	IP40	W3	83242003	83242004	83242005	•	•
		W3/90B	•	83242014	•	83242011	•
		W5	83242023	83242024	•	83242021	•
		W5/IP20	•	•	•	•	•
	IP67	W3	•	•	•	•	•
		W3/90B	•	•	•	•	•
		W5	83242223	83242224	•	•	•
		W5/IP20	•	•	•	•	•
83244	IP40	W3	83244003	83244004	•	•	•
		W3/90B	83244013	83244014	•	•	•
		W5	83244023	83244024	•	•	•
		W5/IP20	83244033	83244034	•	•	•
	IP67	W3	83244203	•	•	•	•
		W3/90B	83244213	•	•	•	•
		W5	83244223	83244224	•	•	•
		W5/IP20	•	•	•	•	•

## Installation recommendations

See "Basic technical concepts".

To observe the required clearances and creepage distances in the connection area :

- above 100 V: an insulating plate is needed when the switch is mounted on an uninsulated surface.
- above 250 V: insulating plates are needed between switches when ganging

## How to order

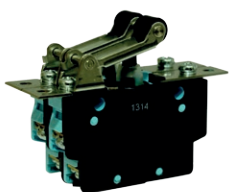
Use the 8 digit part numbers when they are defined

Other cases, precise: Type of microswitch - Degree of protection - Connection - Actuator\* - Mounting accessories\* - Adaptation\*

\* if needed

Example: 83240 IP67 W3/90B LG PE

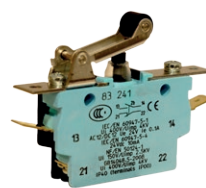
## Examples of special adaptations



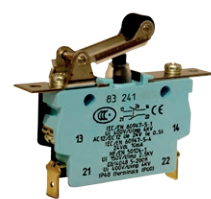
Two-pole DPDT assembly with linked levers



Short roller lever



Mixed connections: NO quick-connect 6.3 x 0.8 / NC screw with clamp



Mixed connections: NO screw with clamp / NC quick-connect 6.3 x 0.8, 90° downward folding



In-line quick-connect terminals



Economic version (839930): SPDT form Za without positive opening, Ø 3.2 mounting holes on top face, screw terminals

Standard product

Product made to order



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#### Warning:

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