MICROSWITCHES SELECTION GUIDE

06/2021

SNAP-ACTION SWITCHES

	SUB-SUBMINIATURE				SUBMINIATURE					MINIATURE									SPECIAL				
Approx. body size (mm)	15x8x5	Ø 8x8	13x10x5	13x10x5	20x10x6	20x10x6	20x10x6	20x10x6	Ø 11x15	28x16x10	28x16x10	28x16x10	28x16x10	29x16x10	31x23x10	33x16x10	24x31x9	30x18x12	50x30x12	32x19x13	40x19x13	49x10x20	43x18x17
SERIES	V5S 8320	83228 83229	83141	V5D 83194	V4 83170	V4D 8327	V4S 8318	83132 83133 83134	83151 83560	V3 83161	V3D 8326	83160	831607 832607	831606 SP3697	V3S 83169	V3DS 8329	83139	83137	PBX 8324	83106 83109 83111/112	83154	83123	83118 83120
TYPE	Sealed	Cylindric adjustable	High accuracy	Standard	Premium	Standard	Sealed	Double break	Hermetic Inox housing	Premium	Standard	Heavy duty	Positive break	High DC rating	Sealed	Sealed Compact	Sealed Double break	Ultra sensitive Rotary	Sealed Separated circuits	Double break	High DC rating	Sealed Rubber housing	High accuracy Sensitive
ELECTRICAL																							
Max. ratings @ 250 V ~	4 A	5 A	5 A	5 A	12 A	12 A	10 A	6 A	5 A	16 A	25 A	16 A	6 A	16 A	8 A	10 A	6 A	6 A	10 A	16 A	16 A	10 A	10 A
@ 24V ⎓	4 A	5 A	5 A	5 A	10 A	10 A	10 A	6 A	7 A	16 A	16 A	16 A	6 A	16 A	8 A	10 A	6 A	6 A	10 A	16 A	16 A	10 A	10 A
@ 250 V ⎓	0.2 A	0.2 A	0.15 A	0.15 A	0.3 A	0.2 A	0.3 A	0.5 A	0.3 A	0.8 A	0.2 A	0.8 A	0.5 A	5 A	0.3 A	0.5 A	0.5 A	0.4 A	0.8 A	0.6 A	5 A	0.3 A	0.3 A
Dual-current version	1 mA → 4 A	1 mA → 5 A	1 mA → 1 A	1 mA → 5 A	1 mA → 5 A		1 mA → 6 A	1 mA → 5 A	1 mA → 1 A	1 mA → 5 A		**	10 mA → 6 A		1 mA → 5 A	1 mA → 3 A	1 mA → 5 A		1 mA → 10 A	10 mA → 5 A			
Low current version						1 → 20 mA					1 → 20 mA							1 → 100 mA					
Circuit diagram **Contact configuration** (for 1 pole changeover/SPDT)	Form C	Form C	Form C	Form C	Form C	Form C	Form C	Form Za	Form C	Form C	Form C	Form C	Form C	Form C	Form C	Form C	Form Za or Form C	Form C	Form Zb (separated contacts)	Form Za	Form Za	Form C	Form C
SPST-NC / SPST-NO versions	✔			✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	
Multipole version								2 ; 3 poles (8331**)	2 poles								2 poles		**	2 → 6 poles (8332)	2 → 6 poles (8332)		
Bistable version (maintained action)								Push/Pull											**	Push/Pull	Push/Pull		
Positive opening operation													(→)						(→)				
Electrical disconnection	μ	μ	μ	μ	μ	μ	μ	μ	μ	μ or Full	μ	μ or Full	μ	Full	μ	μ	μ	μ	Full	μ	μ	μ	μ
Insulation voltage Ui	250 V	250 V	250 V	250 V	250 V	250 V	250 V	250 V	250 V	400 V	250 V	400 V	250 V	250 V	250 V	250 V	250 V	250 V	400 V	250 V	250 V	250 V	250 V
Protection against electric shock (without additional protection)	Class I	Class I	Class I	Class I	Class I	Class I	Class I	Class I	Class I	Class I	Class I	Class I	Class I	Class I	Class I Class II** ⧈	Class I	Class I Class II ⧈	Class I	Class I	Class I	Class I	Class I Class II** ⧈	Class I
ENVIRONMENT																							
Degree of protection	IP67 IP69	IP40	IP40	IP40	IP40	IP40	IP67 IP69	IP40	Hermetic Qk test 10-3 Pa.cm³/s	IP40	IP40	IP40	IP40	IP40	IP67 IP69	IP67	IP66 IP67	IP40	IP40 IP65 IP67	IP40	IP40	IP66 IP67 IP69	IP40
Operating temperature	-40 °C +90 °C	-55 °C +140 °C	-55 °C +150 °C	-40 °C +110 °C	-40 °C +150 °C	-25 °C +150 °C	-40 °C +125 °C	-40 °C +150 °C	-55 °C +250 °C	-60 °C +150 °C	-50 °C +200 °C	-40 °C +150 °C	-40 °C +125 °C	-40 °C +125 °C	-40 °C +105 °C	-40 °C +85 °C	-40 °C +105 °C	-20 °C +125 °C	-50 °C +85 °C	-40 °C +125 °C	-40 °C +125 °C	-40 °C +85 °C	-40 °C +125 °C
Explosive atmospheres									Ex**								II2G Ex d						
Irradiated environment			☢**					☢**	☢**			☢	☢	☢									☢**
MECHANICAL																							
Max. Operating Force	1.5 N	1.7 N	2 N	1.4 N	0.6 → 2.2 N	1.5 N	2.5 N	1.6 N ; 2.6 N	5 → 47 N	0.15 → 5 N	0.25 → 4 N	1 → 5 N	4 N	5 N	4.5 N	0.5 → 4.5N	3 N;4.5 N	1.2 → 2 mN.m	4.5 N;6.5 N	0.45 → 7.5 N	4 N	7.5 N	0.35 → 2.7 N
Min. Overtravel	2 mm	0.15;1.5 mm	0.1 mm	0.25 mm	0.5 mm	0.5 mm	0.6 mm	0.27 mm	0.08 mm	1.2 mm	1.1 mm	1.3 mm	1.3 mm	1 mm	1 mm	1 mm	0.25 mm	12°	3 mm	0.7 mm	0.7 mm	0.25 mm	0.2 → 0.8 mm
Max. Differential Travel	0.06 mm ; 0.10 mm	0.12 mm ; 0.19 mm	0.06 mm	0.13 mm	0.08 mm 0.15 mm	0.15 mm	0.10 mm ; 0.15 mm	0.45 mm	0.05 mm	0.35 mm ; 0.8 mm	0.4 mm	0.3 mm ; 0.7 mm	0.3 mm	0.7 mm	0.07 mm ; 0.35 mm	0.5 mm	0.45 mm	14°	1.3 mm	0.7 mm	0.9 mm	0.2 mm	0.09 mm ; 0.7 mm
Mechanical life (cycles)	1 M	2 M	2 M	10 M	30 M	0.1 M	2 M	10 M	0.2 M	50 M	1 M	10 M	10 M	1 M	5 M	1 M	10 M	10 M	10 M	10 M	10 M	2 M	5 M
Min. actuating speed	0.001 mm/s	0.01 mm/s	0.01 mm/s	0.1 mm/s	0.001 mm/s	0.1 mm/s	0.01 mm/s	0.01 mm/s	0.01 mm/s	0.001 mm/s	0.1 → 3mm/s	0.1 mm/s	0.1 mm/s	0.1 mm/s	0.001 mm/s	0.1 → 3mm/s	0.01 mm/s	1°/s	0.1 mm/s	0.01 mm/s	0.01 mm/s	0.03 mm/s	0.01 mm/s
Operating device	Plunger	Plunger	Plunger	Plunger	Plunger	Plunger	Plunger	Plunger	Plunger	Plunger	Plunger	Plunger	Plunger	Plunger	Plunger	Plunger	Plunger	Inox wire	Plunger	Plunger	Plunger	Plunger	Plunger
Lateral actuation on plunger	✔	Ball (opt)			✔	✔	✔	Ball (opt)		✔	✔	✔	✔	✔	**	**				Ball (opt)	Ball (opt)		
Auxiliary levers (flat, bended, roller...) Hinged			✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔		✔
Flexible	✔		✔				✔		✔	✔	✔	✔		✔	✔								✔
Adjustable			✔		✔		✔	✔		**					**		**			✔	✔		✔
Telescopic plunger (option)		✔			✔	✔	✔	See 8354	See 8377	✔	**	✔		✔	(SP4978/4988)		(SP4257)			See 83513/522	See 83513/522	See 8373	✔
Fixing means Plain holes	Ø 3 (opt)		Ø 2.1	Ø 2.25	Ø 2.2	Ø 2.2 ; 2.35	Ø 2.2	Ø 2.1	Ø 3.2	Ø 3.1	Ø 3.1	Ø 3.2	Ø 3.2	Ø 3.2	Ø 3.1	Ø 3.1	Ø 2.2 ; Ø 3.1	Ø 3.2	Ø 4.1	Ø 2.6	Ø 2.6	Ø 3.2	Ø 4.2
Tapped holes																			M3	M3			
Pins	Ø 2.2				Ø 2.6	Ø 2.6	Ø 2.6																
Threaded barrel		M5 x 0.5;M8 x 0.7			M6 x 0.75	M6 x 0.75		See 8354	See 8377	M10 ; M12	**	M10 ; M12	M10 x 0.75	M10 ; M12	See 83581		M10 x 0.75			(83537**)	(83537**)	See 8373	✔
Others		Flush mount					Snap-in**													Snap-in			
Connections Solder	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔		✔	✔	**	✔
Quick-connect				**	✔	✔	✔	✔		✔	✔	✔	✔	✔		✔		✔	✔	✔	✔		✔
Printed board	✔			**	✔	✔	✔	✔		✔	✔	✔	✔	✔									
Screw					**					✔	✔	✔	✔	✔				✔	✔	✔	✔		✔
Wires	✔						✔		✔						✔	✔	✔		**				
Cable							✔								✔	✔	✔		**			✔	
Approvals ENEC/CE/IECEx	CE	CE	CE	CE	ENEC CE	ENEC CE	ENEC CE	CE	CE	ENEC CE	ENEC CE	ENEC CE	CE	CE	CE	ENEC CE	CE Ex	CE	CE	CE	CE	CE	CE
UL	cULus	cULus	**	cULus	cULus	cULus	cULus	cULus		cULus	cULus	cULus	cULus	**	cULus	cULus	cULus	cULus	cULus	cULus	cULus		cULus
CCC	CCC	**	**	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC	CCC
EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC	EAC

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* Pending   ** Consult us

The features presented in this selection guide represent the extent of performance of each Microswitch Series. Not all combinations of characteristics are feasible at an individual product. Please refer to relevant product sheet or consult our customer service. For more information see also the «Basic technical concepts».

Note: data contained in product sheets dated 2016 and before may differ from the features shown in this selection guide. Update is in progress. Please contact us for confirmation.