LIMIT SWITCHES SELECTION GUIDE

10/2019

		STANDARD					SPECIAL				HARSH ENVIRONMENT				PANEL MOUNT / DOOR SWITCHES				SEAT SWITCHES
	SNAP-ACTION SWITCHES																	
	Approx. body size (mm)	49x30x16	49x39x16	60x27x25	73x56x36	51x87x33	64x25x25	49x41x22	25x31x12	32x24x13	min. Ø 17x40	min. Ø 14x34	min. 100x30x30	Depending on type	38x35x11	27x17x12	40x29x15	43x32x17	Depending on type
	SERIES	**8387**	**8388**	**8380**	**8384**	**8383**	**83589**	**83731 83732 83733**	**83581**	**83139 SP4257**	**83777 83778**	**83770 83771**	**8399 Ex**	**8399 Nuc**	**83523 83528**	**83161 SP9603/SP9604 + variants**	**83513 83522**	**83576**	**839921****
	TYPE	**Prewired "EN" size**	**Prewired "US" size**	**Plastic housing**	**Standard**	**Adjustable fixing**	**Premium Plastic housing**	**Low profile housing**	**Sub miniature**	**Miniature Double break**	**Sealed**	**Hermetic**	**Explosive atmospheres**	**Nuclear applications**	**Latching + Auto reset**	**Extensive range**	**Double break Heavy duty**	**Self adjustable Large travel**	**Tilting actuator Customizable sensitivity**
ELECTRICAL	**Max. ratings** @ 250 V ~	10 A	10 A	6 A	10 A	10 A	8 A	10 A	8 A	6 A	4 A	4 A	1 A	1 A	16 A	25 A	16 A	10 A	4 A
	@ 24 V ⎓	10 A	10 A	6 A	10 A	10 A	8 A	10 A	8 A	6 A	4 A	4 A	3 A	3 A	16 A	16 A	16 A	10 A	4 A
	@ 250 V ⎓	0.8 A	0.8 A	0.5 A	0.6 A	0.6 A	0.3 A	0.3 A	0.3 A	0.5 A	0.15 A	0.3 A	4 mA 137 V ⎓	0,2 A 137 V ⎓	5 A	5 A	5 A	0.3 A	0.2 A
	Assigned caracteristics AC15	A300	A300	B300	A300	A300	B300	B300	B300	B300	C300	C300	C300	C300	A300	A300	A300	B300	C300
	DC13	Q150	Q150	R300	Q150	Q150	R300	R300	R300	R300					R300	Q300	Q300	R300	R300
	Dual-current version	1 mA → 5 A	1 mA → 5 A	1 mA → 5 A			1 mA → 5 A		1 mA → 5 A	1 mA → 5 A	1 mA → 1 A	1 mA → 1 A	1 mA → 1 A	1 mA → 1 A	1 mA → 5 A	1 mA → 5 A	10 mA → 5 A	1 mA → 5 A	1 mA → 4 A
	Thermal rating Ithe	10 A	10 A	10 A	10 A	10 A	10 A	12 A	10 A	11 A	4 A	4 A	3 A	3 A	17 A	25 A	17 A	12 A	5 A
	Insulation voltage Ui	500 V	500 V	250 V	500 V	500 V	250 V	250 V	250 V	250 V	250 V	250 V	250 V	250 V	250 V	250 V	250 V	250 V	250 V
	Impulse withstand voltage Uimp	2.5 kV	2.5 kV	2.5 kV	4 kV	4 kV	2.5 kV	2.5 kV	2.5 kV	2.5 kV	2.5 kV	2.5 kV	2.5 kV	2.5 kV	2.5 kV	2.5 kV	2.5 kV	2.5 kV	2.5 kV
	Circuit diagram Contact configuration (for 1 pole changeover/SPDT)	13 21 14 22 Form Zb (separated contacts)	13 21 14 22 Form Zb (separated contacts)	3 1 4 2 Form Za	3 1 4 2 Form Za	3 1 4 2 Form Za	2 1 4 Form C	2 1 4 Form C	2 1 4 Form C	3 1 4 2 Form Za 2 1 4 or Form C	2 1 4 Form C	2 1 4 Form C	2 1 4 Form C	2 1 4 Form C	3 1 4 2 Form Za	2 1 4 Form C	3 1 4 2 Form Za	2 1 4 Form C	2 1 4 Form C
	SPST-NC / SPST-NO versions	✔	✔				✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Multipole version			2 poles**			2 poles**		2 poles**	2 poles**	2 ; 3 poles	2 poles		2 poles	2 ; 3 poles	2 poles**	2 ; 3 poles		
	Positive opening operation	⊖	⊖		⊖	⊖**										⊖			
	Housing material	Zamak	Zamak	Plastic	Zamak	Zamak	Plastic	Steel	Metal + Plastic	Metal + Plastic	Aluminium	Inox steel	Aluminium ; Bronze or Inox steel	Aluminium ; Bronze or Inox steel	Metal + Plastic	Metal + Plastic	Metal + Plastic	Plastic	Plastic
	Protection against electric shock	Class I	Class I	Class II ⧈	Class I	Class I	Class II ⧈	Class I	Class I Class II ⧈	Class I Class II ⧈	Class I	Class I	Class I	Class I	Class I	Class I	Class I	Class II ⧈ (front side)	Class I Class II ⧈
ENVIRONMENT	**Degree of protection**	IP66	IP66	IP65	IP66	IP66	IP66	IP66	IP67	IP66	IP66	IP66	IP66	IP66	IP40	IP40	IP40	IP40	IP67
	Solid objects + water	IP67 IP69	IP67 IP69				IP67 IP69	IP69	IP69	IP67	IP68 (4 m) IP69	IP68 (18 m) IP69	IP67 IP69	IP68 (18 m) IP69					
	Mechanical impact	IK07	IK07	**	**	**	IK04/06	**	**	**	**	**	**	**	**	**	**	IK04	**
	Operating temperature	-40 °C +70 °C	-40 °C +70 °C	-30 °C +70 °C	-40 °C +70 °C	-40 °C +70 °C	-40 °C +85 °C	-40 °C +70 °C	-40 °C +105 °C	-40 °C +105 °C	-55 °C +125 °C	-55 °C +250 °C	-40 °C +200 °C	-55 °C +250 °C	-40 °C +125 °C	-60 °C +200 °C	-40 °C +125 °C	-40 °C +70 °C	-40 °C +85 °C
	Mud / salt /dust / ice environment	✔	✔				✔				✔	✔	✔	✔					
	Explosive atmospheres									II2G Ex d		Ex **	II2G Ex d						
	Irradiated environment										**	**				**			
	High pressure environment											max. 6 bar	max. 6 bar	max. 6 bar					
MECHANICAL	**Min. Operating Force** Linear	10 N	10 N	10 N	1.5 → 15 N	1.5 → 15 N	10 N	6N ; 15 N	5 N	3.5 N	60 N	12 → 30 N	20 N	8 → 30 N	6 → 30 N	0.8 → 5 N	4 → 12 N	10 N	3 → 10 N
	Rotary	0.15 Nm	0.15 Nm	0.07 Nm	0.2 Nm	0.2 Nm							0.4 Nm	1.1 Nm					
	Total Travel Linear	5 mm	5 mm	5 mm	6 → 11 mm	6 → 11 mm	4.5 mm	4mm ; 6 mm	4mm ; 6 mm	4mm ; 6 mm	4.4 mm ; 6.7 mm	1.3 → 5,5 mm	5.5 mm	2 → 4 mm	6 mm	4 mm ; 6 mm	6 mm	10 → 25 mm	3 mm
	Rotary	70°	70°	60°	60°	60°							60°	80°					
	Min. Overtravel	3 mm 35°	3 mm 35°	3.5 mm 45°	3,5 → 5 mm 35°	3,5 → 5 mm 35°	3.5 mm	2,5 mm ; 4 mm	2,5 mm ; 4 mm	2,5 mm ; 4 mm	3.2 mm ; 5.5 mm	1 → 5 mm	4 mm 40° → 50°	0.5 → 3 mm 70°	3 mm ; 3.5 mm	2.5 → 4 mm	4.5 mm	8 → 23 mm	2 mm
	Min. Positive Overtravel	1 mm 10°	1 mm 10°		1,5 → 2 mm 15°											0.3 mm			
	Max. Differential Travel	0.7 ; 1.3 mm 9° ; 17°	0.7 ; 1.3 mm 9° ; 17°	0.5 mm 8°	0.8 → 2 mm 10°	0.8 → 2 mm 10°	0.2 mm	0.25 mm	1 mm	1 mm	0.2 mm ; 0.5 mm	0.05 mm ; 0.15 mm	0.05 mm 2°	0.05 → 1 mm 2°	1 mm	0.4 → 1.2 mm	0.9 mm	1 mm	0.06 → 0.20mm
	Mechanical life (cycles)	10 M	10 M	10 M	10 M	10 M	10 M	1 M	0.1 M	0.1 M	0.05 M	0.1 M	0.1 M	0.1 M	10 M	0.1 M	1 M	0.1 M	1 M
	Operating device Plunger	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	For linear mvt Plunger with roller	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔		✔			
	Lever with roller				✔	✔								✔					
	Adjustable lever with roller				✔	✔													
	Adjustable lever + idle-return roller				✔	✔													
	For rotary mvt Roller lever	✔	✔	✔	✔	✔							✔	✔					
	Multi-direction Flexible rod			✔	✔	✔													
	Plunger with ball	✔	✔				✔		✔	✔	✔	✔				✔			
	Fixing means Plain holes	Ø 4	Ø 5	Ø 4	Ø 5								Ø 3 - 3.5 - 4 M5	Ø 3 M5	Ø 3 M3				✔
	Non-adjustable Tapped holes																M3		
	Snap-in																	28 x 14 cut - out	✔
	Adjustable Elongated holes Threaded barrel	M12 x 0.75	M12 x 0.75	M16 x 1		6 x 21 mm	M16 x 1	M16 x 1	M10 x 0.75	M10 x 0.75	M12 x 0.75 ; M16 x 1	M8/M12/M14 x 0.75		M12 x 0.75		M10 x 0.75	M12 x 0.75		
	Connections Screw			✔	✔	✔									✔	✔	✔		
	Terminals Solder			✔								✔			✔	✔	✔		
	Fast-on														✔	✔	✔	✔	
	Pre-wired Wires	**	**	**			**		✔	✔	✔	✔	✔						✔
	Cable	✔	✔	**			✔	✔	✔	✔	✔	✔	✔	✔					✔
	Integral connector	✔	✔	✔							✔	✔	✔	✔					
	Approvals UL	cULus LISTED	cULus LISTED	cULus LISTED					cULus	cULus					cULus	cULus	cULus	**	
	CCC/EAC	CCC EAC	CCC EAC	CCC EAC	CCC EAC	CCC EAC	CCC EAC	CCC EAC	CCC EAC	CCC EAC	** / EAC	CCC EAC	CCC	CCC	CCC	CCC EAC	CCC	CCC	
	CE/IECEx/ATEX	CE	CE	CE	CE	CE	CE	CE	CE	CE Ex	CE	CE	CE Ex	CE	CE	CE	CE	CE	CE

* Pending ** Consult us

The features presented in this selection guide represent the extent of performance of each Limit switch 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.