

## DATA LSG, LSH, LPH, LPS, LPV, SMS, PMS, MTG SWITCHES – MOMENTARY ACTION



## BENEFITS

- Simple assembly, long life time, short lead time
- Reliable tactile feedback
- Various designs with 1/4 and 1/2 inch are possible with different heights
- Variable colour design and lettering
- Available for through hole and SMD assembly
- Tested to degree of protection IP 40 and IP 67

	LSG/LSH/LPH LPS//LPV	SMS	PMS	MTG	
<b>Electrical data</b>					
Contact material				gold	silver
Switching voltage max. [V]	12 DC	30 AC / 42 DC	30 AC / 42 DC	max. 24 DC	max. 48 DC
Switching current max. [mA]	50	50	50	max. 50	max. 125
Rated breaking capacity [W]		0.12	0.12	0.48	2.40
Lifetime (at rated breaking capacity)	> 10 <sup>5</sup>	> 10 <sup>6</sup>	> 10 <sup>6</sup>	> 10 <sup>6</sup>	> 10 <sup>6</sup>
Initial contact resistance, new [mΩ]	max. 100	< 50	< 50	< 50	< 50
Initial contact resistance, after lifetime [mΩ]	max. 100	< 150	< 150	< 50	< 50
Insulation resistance [mΩ]		> 10 <sup>8</sup>	> 10 <sup>8</sup>	> 10 <sup>8</sup>	> 10 <sup>8</sup>
Contact bounce time [ms]	typ. 0.1	typ. 0.15	typ. 0.15	typ. 0.1	typ. 0.1
<b>Mechanical data</b>					
Actuating force IP 40 [N]	1.6 ± 0.5	1.6 ± 0.4	1.6 ± 0.4	2.5 ± 0.5	2.5 ± 0.5
IP 67 [N]		1.8 ± 0.4	1.8 ± 0.4		
Contact travel [mm]	0.25 + 0.2/-0.1	0.35 ± 0.1	0.35 ± 0.1	0.45 ± 0.1	0.45 ± 0.1
End stop strength [N]	50N/3s	> 100	> 100	> 50	> 50
Lifetime [operations]	> 10 <sup>5</sup>	> 10 <sup>6</sup>	> 10 <sup>6</sup>	> 10 <sup>6</sup>	> 10 <sup>6</sup>
<b>Other data</b>					
Degree of protection	IP 40	IP 40/IP 67	IP 40/IP 67	IP 40	IP 40
Soldering method	IR-Reflow	IR-Reflow	Wave	Wave	Wave
Soldering heat resistance (LSH/LSG) IR Reflow [°C/s]	240/20				
(LPV/LPS/LPH) [°C/s]	260/3				
Jedec J-STD-020C		245/5			
			248,5/1	248,5/1	248,5/1
Ambient temperature [°C]	-20 – +70	-40 – +85	-40 – +85	-25 – +85	-25 – +85
Storage temperature [°C]	-30 – +85	-40 – +85	-40 – +85	-25 – +85	-25 – +85
Cleaning agent proof		Zestron	Zestron		
Flux - proof		IP67	IP67		
<b>Materials</b>					
Sealing membrane IP 67		VMQ		VMQ	
Contact material gold		CuZn37 Ni + Au		CuZn -3µm Ni +2µm Au	
Contact material silver	*			CuZn -2.5µm Ag passivated	
Terminals	*	CuZn37 - Sn			
Socket	*	Thermoplast PA 4.6		Thermoplast PES	
Actuator	*	Thermoplast PPS		Thermoplast PC	
Cover plate	*	X 12CrNi177			

\* on request

## OVERVIEW LSH, LPH, LPS, LPV SWITCHES—MOMENTARY ACTION



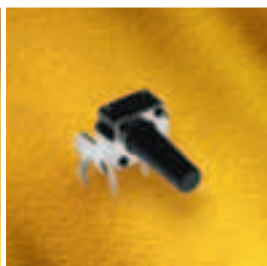
LSH



LPH



LPS



LPV

### FEATURES

<b>Degree of protection</b>	IP 40	IP 40	IP 40	IP 40
<b>Models/Leads</b>	Gullwing, height variable	Through hole, height variable	Through hole, square	Through hole, angled

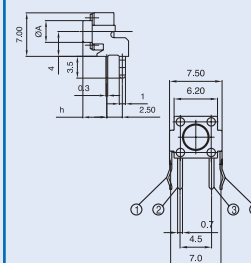
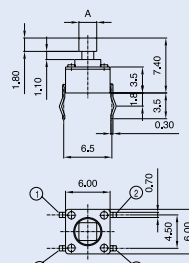
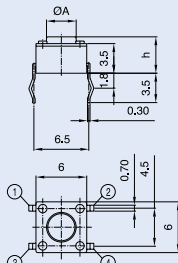
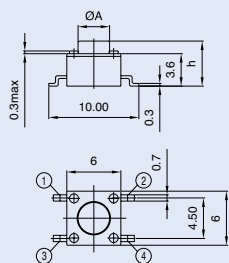
### PART NUMBER \*

Actuator dimensions				
2.40 mm x 2.40 mm			<b>1301.9308</b>	
2.80 mm x 2.80 mm			<b>1301.9309</b>	
Actuator $\varnothing A$ / Overall height h				
3.50 mm / 3.85 mm				<b>1301.9501</b>
3.40 mm / 4.30 mm	<b>1301.9314.xx</b>	<b>1301.9301</b>		
3.40 mm / 5.00 mm	<b>1301.9315.xx</b>	<b>1301.9302</b>		
3.30 mm / 6.15 mm				<b>1301.9503</b>
3.20 mm / 7.00 mm	<b>1301.9316.xx</b>	<b>1301.9303</b>		
3.30 mm / 7.30 mm	<b>1301.9317.xx</b>	<b>1301.9304</b>		
3.10 mm / 8.00 mm	<b>1301.9318.xx</b>	<b>1301.9305</b>		
3.20 mm / 9.50 mm	<b>1301.9319.xx</b>	<b>1301.9306</b>		
3.00 mm / 11.35 mm				<b>1301.9502</b>
3.00 mm / 12.50 mm	<b>1301.9320.xx</b>	<b>1301.9307</b>		

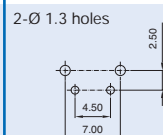
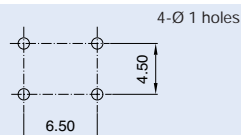
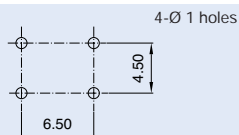
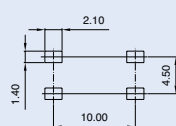
### Packaging

<b>loose in boxes</b>				
<b>taped and reeled</b>	<b>24</b>			

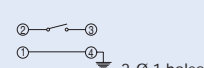
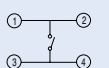
### Dimensions:



### Solder pads: Drilling diagram:



### Circuit diagram:



\* X in the Part No. must be replaced by the desired version