

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	
Electrical data						
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 ⁵	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶
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 ⁸	>10 ⁸	>10 ⁸	>10 ⁸
Contact bounce time	[ms]	typ. 0.1	typ. 0.15	typ. 0.15	typ. 0.1	typ. 0.1
Mechanical data						
Actuating force	IP 40 [N] IP 67 [N]	1.6 ± 0.5	1.6 ± 0.4 1.8 ± 0.4	1.6 ± 0.4 1.8 ± 0.4	2.5 ± 0.5	2.5 ± 0.5
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]	50 N / 3s	>100	>100	> 50	> 50
Lifetime	[operations]	>10 ⁵	>10 ⁶	>10 ⁶	>10 ⁶	>10 ⁶
Other data						
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		
Materials						
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



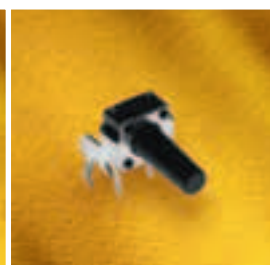
LSH



LPH

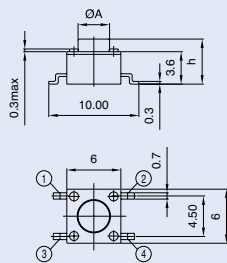
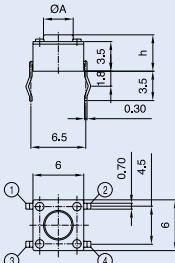
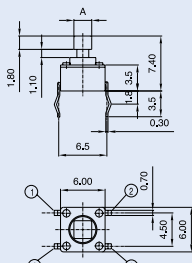
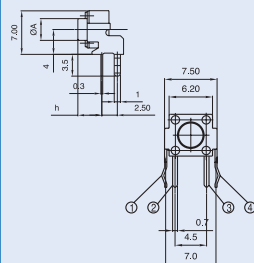
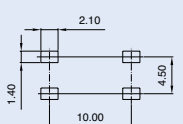
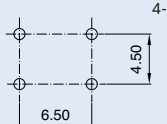
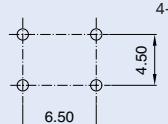
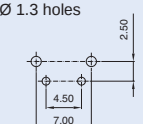
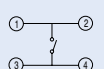
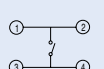
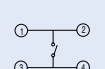
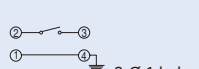


LPS



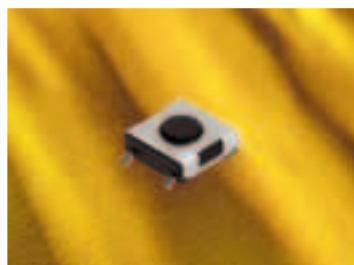
LPV

FEATURES

Degree of protection	IP 40	IP 40	IP 40	IP 40
Models/Leads	Gullwing, height variable	Through hole, height variable	Through hole, square	Through hole, angled
PART NUMBER *				
Actuator dimensions				
2.40 mm x 2.40 mm			1301.9308	
2.80 mm x 2.80 mm			1301.9309	
Actuator ØA/Overall height h				
3.50 mm / 3.85 mm				1301.9501
3.40 mm / 4.30 mm	1301.9314. xx	1301.9301		
3.40 mm / 5.00 mm	1301.9315. xx	1301.9302		
3.30 mm / 6.15 mm				1301.9503
3.20 mm / 7.00 mm	1301.9316. xx	1301.9303		
3.30 mm / 7.30 mm	1301.9317. xx	1301.9304		
3.10 mm / 8.00 mm	1301.9318. xx	1301.9305		
3.20 mm / 9.50 mm	1301.9319. xx	1301.9306		
3.00 mm / 11.35 mm				1301.9502
3.00 mm / 12.50 mm	1301.9320. xx	1301.9307		
Packaging				
loose in boxes				
taped and reeled	24			
Dimensions:				
Solder pads: Drilling diagram:				
Circuit diagram:				

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

OVERVIEW LSG, SMS SWITCHES – MOMENTARY ACTION



LSG



SMS



SMS

FEATURES

Degree of protection	IP 40	IP 40	IP 67
PART NUMBER *			
Leads/Overall height			
Gullwing/2.50 mm	1301.9312.xx		
Gullwing/3.10 mm	1301.9313.xx		
Gullwing, short actuator		1241.1600.xx	1241.1606.xx
J-Leads, short actuator		1241.1601.xx	1241.1607.xx
Gullwing, long actuator		1241.1612.xx	1241.1618.xx
J-Leads, long actuator		1241.1613.xx	1241.1619.xx
Packaging			
loose in boxes		11	11
taped and reeled	25	23	23

BUTTON IN VARIABLE HEIGHTS FOR LONG ACTUATORS SMS **

overall height h = 8.50 mm / yellow		0862.8101
h = 9.25 / orange		0862.8102
h = 10.00 mm / red		0862.8103
h = 10.75 mm / blue		0862.8104
h = 11.50 mm / green		0862.8105
h = 12.25 mm / grey		0862.8106
h = 13.00 mm / black		0862.8107
h = 13.75 mm / white		0862.8108
Second key cap***		0862.8226
Dimensions:		Dimensions, Gullwing: Dimensions, J-leads:
Circuit diagram: Solder pads:		Solder pads, Gullwing: Dimensions, J-leads: Overall height h:

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

** Button in variable heights for long actuators must be ordered separately

***Starting with 14.50 mm, additional (second) key caps for midsizes (h+6mm) are necessary. Order separately.

Circuit diagrams SMS see page 10 PMS