

**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] IP 67 [N]	1.6 ± 0.5	1.8 ± 0.4 2.2 ± 0.4	1.8 ± 0.4 2.2 ± 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]	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 LSG, SMS SWITCHES – MOMENTARY ACTION



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 mm / 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:		<p>Dimensions, Gullwing:</p> <p>Dimensions, J-leads:</p>	
Circuit diagram: Solder pads:		<p>Solder pads, Gullwing:</p> <p>Dimensions, J-leads:</p> <p>Overall height h:</p>	

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

## OVERVIEW PMS SWITCHES—MOMENTARY ACTION



PMS

PMS

### FEATURES

Degree of protection

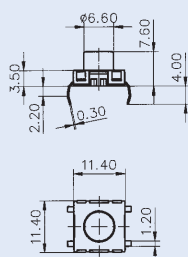
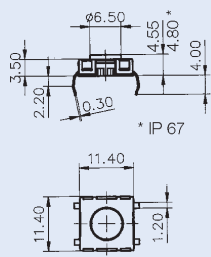
IP 40

IP 67

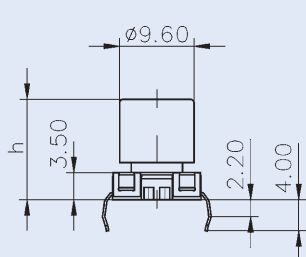
### PART NUMBER \*

Models				
Short actuator	1241.1602		1241.1608	
Long actuator	1241.1614		1241.1620	
Height variable	1241.1624. xx		1241.1625. xx	
<b>Overall height h (with key cap)/Colour</b>				
8.35 mm / yellow	1		1	
9.10 mm / orange	2		2	
9.85 mm / red	3		3	
10.60 mm / blue	4		4	
11.35 mm / green	5		5	
12.10 mm / grey	6		6	
12.85 mm / black	7		7	
13.60 mm / white	8		8	
<b>Additional key cap<sup>1</sup></b>				
<b>Overall height h/Colour</b>				
14.35 mm / yellow + black	11		11	
15.10 mm / orange + black	21		21	
15.85 mm / red + black	31		31	
16.60 mm / blue + black	41		41	
17.35 mm / green + black	51		51	
18.10 mm / grey + black	61		61	
18.85 mm / black + black	71		71	
19.60 mm / white + black	81		81	

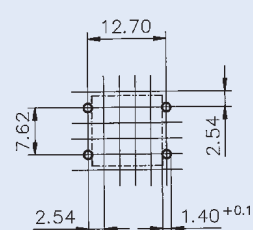
Dimensions through hole mounting:



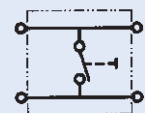
Overall height variable:



Drilling diagram:



Circuit diagram:



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

<sup>1</sup> Starting with 14.35 mm the heights are achieved with an additional (second) key cap of black colour