

# DATA 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

|                                            |                                                                    | LSH/LPH<br>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 <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          |
| Mechanical data                            |                                                                    |                    |                        |                        |                           |                   |
| Actuating force                            | IP 40 [N]<br>IP 67 [N]                                             | 1.6 ± 0.5          | 1.6 ± 0.4<br>1.8 ± 0.4 | 1.6 ± 0.4<br>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 <sup>5</sup>  | > 10 <sup>6</sup>      | > 10 <sup>6</sup>      | > 10 <sup>6</sup>         | > 10 <sup>6</sup> |
| 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) IR Reflow [°C/s]<br>(LPV/LPS/LPH) [°C/s]<br>Jedec J-STD-020C | 240/20<br>260/3    | 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                                  | CuZn+Cu+Ag 0,7µm                                                   |                    | CuZn37 - Sn            |                        |                           |                   |
| Socket                                     |                                                                    |                    | Thermoplast PA 4.6     |                        | Thermoplast PES           |                   |
| Actuator                                   |                                                                    |                    | Thermoplast PPS        |                        | Thermoplast PC            |                   |
| Cover plate                                |                                                                    |                    | X 12CrNi177            |                        |                           |                   |



LPV

② ———— ③  
① ———— ④

2-Ø 1 holes

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