

Metal Switch, Latching Action, Switching Voltage up to 125 VDC / 250 VAC

**new**



Newly available with bright illumination



### Description

- Switch available in version: Standard (ST), with Lettering (LE), with area illumination (AI)
- Available with bright illumination
- Available with 12 A and 16 A switching current
- Assembly by mounting with nut and subsequent clipping of the switching element
- Equipped with flat-pin plugs to permit fast connection

### Standards

- DIN EN 61058-1
- UL 1054

### Approvals

- Low Voltage Directive 2014/35/EU Low Voltage Directive 2014/35/EU
- KEMA / ENEC File Number (Marquardt): 2181991.01
- UL / CSA File Number (Marquardt): E41791

### Characteristics

- Housing material: high-quality stainless steel, actuator material: highly durable ceramic
- with or without surface backlighting in different colours
- Switching voltage up to 125 VDC respectively 250 VAC, switching current up to 16 A
- available with single-pole and double-pole switching system, switching status is easy to discern by looking at or feeling the resting position of the actuator
- for use in harsh environments

### References

Alternative: switch with latching function:

Alternative: Standard version [MSM 16](#); [MSM 27](#)

Alternative: double-pole switch: [MSM DP 19](#); [MSM DP 22](#); [MSM DP 30](#)

Alternative: Other diameter

### Weblinks

[html-datasheet](#), [General Product Information](#), [CE declaration of conformity](#), [RoHS](#), [CHINA-RoHS](#), [CAD-Drawings](#), [Product News](#), [Detailed request for product](#)

### Technical Data

#### Electrical Data

|                                 |                                                                                                                             |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Switching Function              | N.O.                                                                                                                        |
| Number of Poles                 | 1-pole and 2-pole                                                                                                           |
| Supply Voltage                  | 24 VDC Surface backlighting                                                                                                 |
| Impulse Withstand Voltage (ESD) | 4 kV MSM LA CS ST                                                                                                           |
| Switching Voltage               | max. 250 VAC, 30 VDC (125 VDC at 0.5 A)                                                                                     |
| Switching Current               | 12 A AC / 16 A AC                                                                                                           |
| Rated Switching Capacity        | 3000 W                                                                                                                      |
| Lifetime                        | 0.05 million actuations (250 VAC / 8 A), 0.1 million actuations (125 VDC / 0,5 A), 0.02 million actuations (250 VAC / 16 A) |
| Contact Resistance              | < 100 mΩ (12 VDC / 1 A)                                                                                                     |
| Insulation Resistance           | > 100 MΩ 500 VDC                                                                                                            |

#### Mechanical Data

|                                       |                                       |
|---------------------------------------|---------------------------------------|
| Actuating Force                       | 10 N                                  |
| Actuating Travel                      | 5.2 mm,                               |
| Lifetime                              | 0.1 million actuations                |
| Contact Gap                           | 3 mm                                  |
| Shock Protection                      | IK 07                                 |
| Tightening Torque Plastic Nut         | 4.5 Nm for thread M19, 3.5 Nm for M22 |
| Tightening Torque Stainless Steel Nut | 12 Nm for thread M19, 16 Nm for M22   |

#### Climatical Data

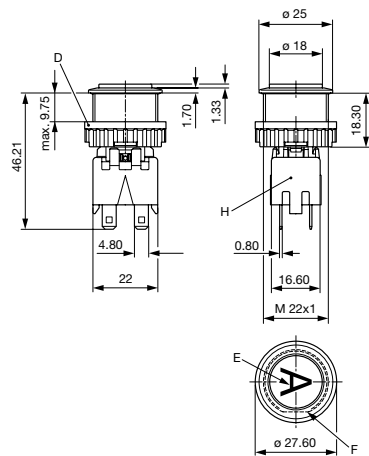
|                                        |                                                                             |
|----------------------------------------|-----------------------------------------------------------------------------|
| Operating Temperature                  | -20 to +85 °C                                                               |
| Storage Temperature                    | -20 to +85 °C                                                               |
| IP-Protection                          | IP 64 Front Side Contact Area, IP 40 Front Side mechanical, IP 00 Rear Side |
| Salt Spray Test (acc. to DIN 50021-SS) | 24 h / 48 h / 96 h Residence Time                                           |

#### Material

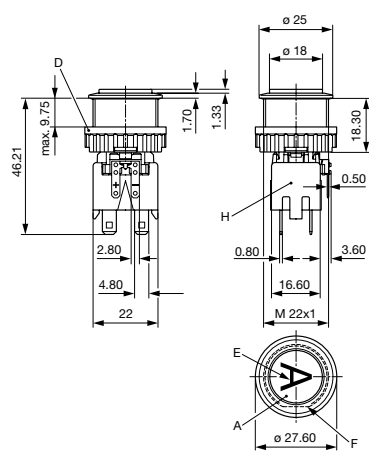
|                                  |                                      |
|----------------------------------|--------------------------------------|
| Housings                         | Stainless Steel                      |
| Actuator (disc, outside housing) | Ceramic                              |
| Gasket                           | NBR70                                |
| Switcher Collet                  | PA66 (UL94-V0 related to d ≥ 1.6 mm) |
| Intermediate Connector           | PA66 (UL94-V0 related to d ≥ 1.6 mm) |
| Contact Pin Adapter              | PA66 (UL94-V0 related to d ≥ 1.6 mm) |

Dimension

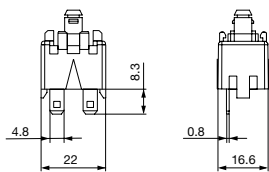
MSM 22 LA CS ST / double-pole



MSM 22 LA CS AI / double-pole



Switching Element single-pole with Push Button Holder

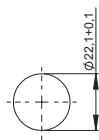


Legend

- A = Illumination Area
- C = Width Across Flats
- D = Knurled Nut
- E = Lettering
- F = Anti-Rotation
- H = Switching Element

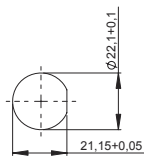
Dimension

MSM 22 LA CS (without torsion protection)



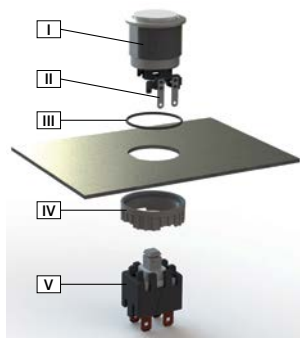
Drilling diagram

MSM 22 LA CS (with torsion protection)



Drilling diagram

## Assembly Instructions



I Housing

II Flat Pin Terminal (Illumination)

III Gasket

IV Nut (Nut type see Dimensions)

V Module Switching Contact

Installation Instruction:

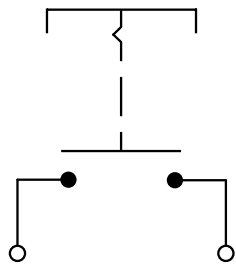
- 1.) Place the gasket accurately on the actuator housing. Then mount the actuator housing assembly into the panel.
- 2.) Tighten the screw nut according to the torque instructions.
- 3.) Clasp the module switching contact into the actuator housing.

Installation information:

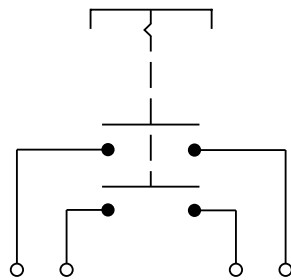
- 1.) The power supply and the configuration of the flat pin terminals have to be installed correctly for the illumination and micro switch function.
- 2.) Insulate the terminals as required. Fully insulated plug-in sleeves are recommended.
- 3.) Installation instructions according to VDE-standard DIN VDE 0100-100 or alternatively IEC 60354 standard

Diagrams

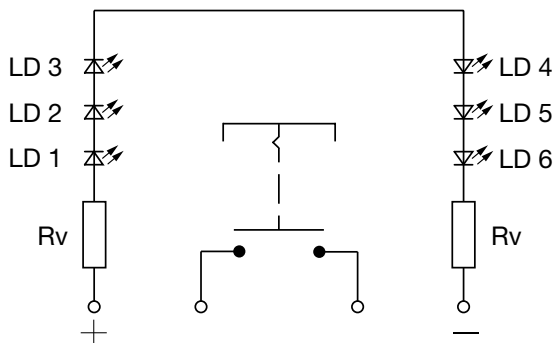
MSM LA CS ST / single-pole



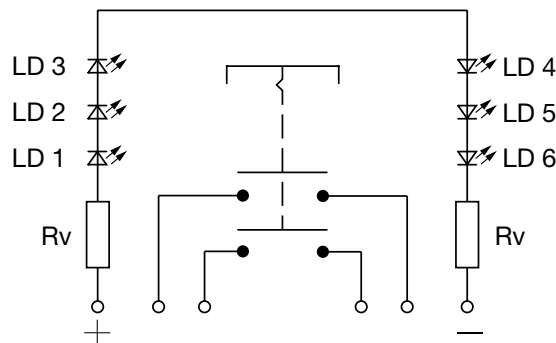
MSM LA CS ST / double-pole



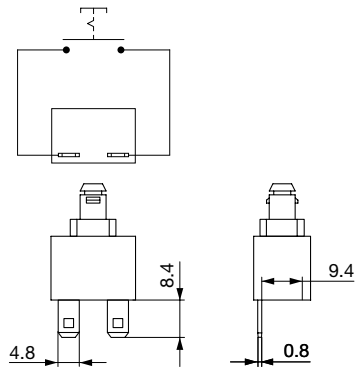
MSM LA CS AI / single-pole



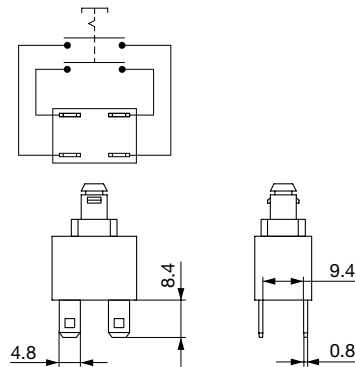
MSM LA CS AI / double-pole



Contact Layout single-pole



Contact Layout double-pole



Lettering

|                                                                 |                      |
|-----------------------------------------------------------------|----------------------|
| The last three digits in the order number define the lettering: |                      |
| 000                                                             | No Lettering         |
| 001-074                                                         | Standard Lettering   |
| 101-                                                            | Customized Lettering |

Lettering Colour of Laser Lettering

| Material | Lettering Colour |                |
|----------|------------------|----------------|
| Ceramic  | black            | Filled letters |

## Order Index Lettering

| Laser Marking  |                |                     |                                                                                         |
|----------------|----------------|---------------------|-----------------------------------------------------------------------------------------|
| 001 = <b>A</b> | 021 = <b>U</b> | 041 = ÷             | 061 = <b>EIN</b>                                                                        |
| 002 = <b>B</b> | 022 = <b>V</b> | 042 = *             | 062 = <b>AUS</b>                                                                        |
| 003 = <b>C</b> | 023 = <b>W</b> | 043 = =             | 063 = <b>AUF</b>                                                                        |
| 004 = <b>D</b> | 024 = <b>X</b> | 044 = #             | 064 = <b>AB</b>                                                                         |
| 005 = <b>E</b> | 025 = <b>Y</b> | 045 = ↔             | 065 = <b>ON</b>                                                                         |
| 006 = <b>F</b> | 026 = <b>Z</b> | 046 = †             | 066 = <b>OFF</b>                                                                        |
| 007 = <b>G</b> | 027 = <b>0</b> | 047 = →             | 067 = <b>UP</b>                                                                         |
| 008 = <b>H</b> | 028 = <b>1</b> | 048 = ←             | 068 = <b>DOWN</b>                                                                       |
| 009 = <b>I</b> | 029 = <b>2</b> | 049 = ↓             | 069 = <b>HIGH</b>                                                                       |
| 010 = <b>J</b> | 030 = <b>3</b> | 050 = ↑             | 070 = <b>LOW</b>                                                                        |
| 011 = <b>K</b> | 031 = <b>4</b> | 051 = %             | 071 = <b>ON/OFF</b>                                                                     |
| 012 = <b>L</b> | 032 = <b>5</b> | 052 = √             | 072 = <b>START</b>                                                                      |
| 013 = <b>M</b> | 033 = <b>6</b> | 053 = <b>CTRL</b>   | 073 = <b>RESET</b>                                                                      |
| 014 = <b>N</b> | 034 = <b>7</b> | 054 = <b>RETURN</b> | 074 =  |
| 015 = <b>O</b> | 035 = <b>8</b> | 055 = <b>SHIFT</b>  | 075 =  |
| 016 = <b>P</b> | 036 = <b>9</b> | 056 = <b>LOCK</b>   | 076 =  |
| 017 = <b>Q</b> | 037 = <b>+</b> | 057 = <b>STOP</b>   | 077 =  |
| 018 = <b>R</b> | 038 = <b>-</b> | 058 = <b>ENTER</b>  |                                                                                         |
| 019 = <b>S</b> | 039 = <b>.</b> | 059 = <b>BACK</b>   |                                                                                         |
| 020 = <b>T</b> | 040 = <b>x</b> | 060 = <b>LINE</b>   |                                                                                         |

## All Variants

| Diameter | Number of Poles | Switching Current | Illumination, LED                 | Torsion Protection | Config. Code                 | Order Number      |
|----------|-----------------|-------------------|-----------------------------------|--------------------|------------------------------|-------------------|
| [mm]     |                 |                   |                                   |                    |                              |                   |
| 19       | 1-pole          | 12 A              | non-illuminated                   | yes                | MSM 19 LA CS ST              | 1241.7221.1110000 |
| 19       | 1-pole          | 12 A              | Backlighted, red, 24 VDC          | yes                | MSM 19 LA CS AI red          | 1241.7226.1111000 |
| 19       | 1-pole          | 12 A              | Backlighted, green, 24 VDC        | yes                | MSM 19 LA CS AI green        | 1241.7226.1112000 |
| 19       | 1-pole          | 12 A              | Backlighted, yellow, 24 VDC       | yes                | MSM 19 LA CS AI yellow       | 1241.7226.1113000 |
| 19       | 1-pole          | 12 A              | Backlighted, blue, 24 VDC         | yes                | MSM 19 LA CS AI blue         | 1241.7226.1114000 |
| 19       | 1-pole          | 12 A              | Backlighted, white, 24 VDC        | yes                | MSM 19 LA CS AI white        | 1241.7226.1115000 |
| 19       | 1-pole          | 12 A              | Backlighted, orange, 24 VDC       | yes                | MSM 19 LA CS AI orange       | 1241.7226.1117000 |
| 19       | 1-pole          | 12 A              | Backlighted, bright red, 24 VDC   | yes                | MSM 19 LA CS AI bright red   | 1241.8544         |
| 19       | 1-pole          | 12 A              | Backlighted, bright green, 24 VDC | yes                | MSM 19 LA CS AI bright green | 1241.8545         |
| 19       | 1-pole          | 12 A              | Backlighted, bright blue, 24 VDC  | yes                | MSM 19 LA CS AI bright blue  | 1241.8547         |
| 19       | 1-pole          | 12 A              | Backlighted, bright white, 24 VDC | yes                | MSM 19 LA CS AI bright white | 1241.8548         |
| 19       | 2-pole          | 12 A              | non-illuminated                   | yes                | MSM 19 LA CS ST              | 1241.7221.1120000 |
| 19       | 2-pole          | 12 A              | Backlighted, red, 24 VDC          | yes                | MSM 19 LA CS AI red          | 1241.7226.1121000 |
| 19       | 2-pole          | 12 A              | Backlighted, green, 24 VDC        | yes                | MSM 19 LA CS AI green        | 1241.7226.1122000 |
| 19       | 2-pole          | 12 A              | Backlighted, yellow, 24 VDC       | yes                | MSM 19 LA CS AI yellow       | 1241.7226.1123000 |
| 19       | 2-pole          | 12 A              | Backlighted, blue, 24 VDC         | yes                | MSM 19 LA CS AI blue         | 1241.7226.1124000 |
| 19       | 2-pole          | 12 A              | Backlighted, white, 24 VDC        | yes                | MSM 19 LA CS AI white        | 1241.7226.1125000 |
| 19       | 2-pole          | 12 A              | Backlighted, orange, 24 VDC       | yes                | MSM 19 LA CS AI orange       | 1241.7226.1127000 |
| 19       | 2-pole          | 12 A              | Backlighted, bright red, 24 VDC   | yes                | MSM 19 LA CS AI bright red   | 1241.8550         |
| 19       | 2-pole          | 12 A              | Backlighted, bright green, 24 VDC | yes                | MSM 19 LA CS AI bright green | 1241.8551         |
| 19       | 2-pole          | 12 A              | Backlighted, bright blue, 24 VDC  | yes                | MSM 19 LA CS AI bright blue  | 1241.8553         |
| 19       | 2-pole          | 12 A              | Backlighted, bright white, 24 VDC | yes                | MSM 19 LA CS AI bright white | 1241.8554         |
| 19       | 1-pole          | 16 A              | Backlighted, bright red, 24 VDC   | yes                | MSM 19 LA CS AI bright red   | 3-101-005         |
| 19       | 1-pole          | 16 A              | Backlighted, bright green, 24 VDC | yes                | MSM 19 LA CS AI bright green | 3-101-007         |
| 19       | 1-pole          | 16 A              | Backlighted, bright blue, 24 VDC  | yes                | MSM 19 LA CS AI bright blue  | 3-101-009         |
| 19       | 1-pole          | 16 A              | Backlighted, bright white, 24 VDC | yes                | MSM 19 LA CS AI bright white | 3-101-022         |

| Diameter | Number of Poles | Switching Current | Illumination, LED                 | Torsion Protection | Config. Code                 | Order Number |
|----------|-----------------|-------------------|-----------------------------------|--------------------|------------------------------|--------------|
| [mm]     |                 |                   |                                   |                    |                              |              |
| 19       | 2-pole          | 16 A              | Backlighted, bright blue, 24 VDC  | yes                | MSM 19 LA CS AI bright blue  | 3-101-010    |
| 19       | 2-pole          | 16 A              | Backlighted, bright white, 24 VDC | yes                | MSM 19 LA CS AI bright white | 3-101-011    |
| 19       | 2-pole          | 16 A              | Backlighted, bright red, 24 VDC   | yes                | MSM 19 LA CS AI bright red   | 3-101-023    |
| 19       | 2-pole          | 16 A              | Backlighted, bright green, 24 VDC | yes                | MSM 19 LA CS AI bright green | 3-101-024    |

Legend:  
Type: MSM  
CS = Ceramic Surface  
ST = Standard: not lettered  
LE = Lettering: lettered  
AI = BL = Full Surface Backlighting: Lettering possible (see Lettering, last 3 digits)

Customer-specific versions available on request.  
Special materials for use in salt and chlorinated environment on request.  
The nut with gasket and micro switch are enclosed in the box.

Most Popular.

Availability for all products can be searched real-time:<http://www.schurter.com/Stock-Check/Stock-Check-SCHURTER>

**Packaging unit**      10 in box with insert



- Actuating elements in ESD safe packaging
- Screw nuts and sealing rings in a bag (enclosed in the box)
- Micro switches (enclosed in the box)