

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



MSM 19 LA LE RI blue



### Description

- Switch available in version: Standard (ST), with Lettering (LE), with Point Illumination (PI), with Ring Illumination (RI)
- 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
- CQC File Number (Marquardt): CQC03002004102

### Characteristics

- Housing and actuator material: high-quality stainless steel
- Variety of design options regarding size, colour, illumination, connection or lettering
- Switching voltage up to 125 VDC respectively 250 VAC, switching current up to 16 A
- optional with point or ring illumination
- 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: Standard version [MSM LA 22](#); [MSM 16](#); [MSM 27](#)
- Alternative: double-pole switch: [MSM DP 19](#); [MSM DP 22](#); [MSM DP 30](#)
- Alternative: switch with backlighted illumination: [MSM CS 19](#); [MSM CS 22](#); [MSM LA CS 19](#); [MSM LA CS 22](#)
- 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 Ring Illumination, Point Illumination without series resistor, LED operating data are listed in a separate table     |
| Impulse Withstand Voltage (ESD) | 4 kV MSM ST / MSM LE  |
| 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   |

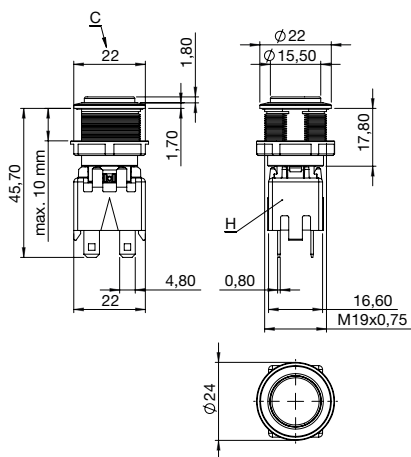
#### Material

|  |                                      |
|--|--------------------------------------|
| Housings                                       | Stainless Steel                      |
| Actuator (disc, outside housing)               | Stainless Steel                      |
| Illuminated Ring (die-casting, inside housing) | PC                                   |
| 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) |

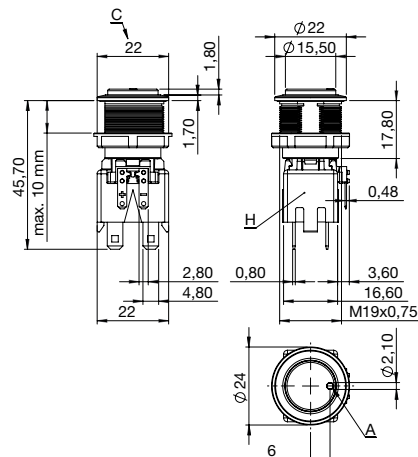
Detailed information on product approvals, code requirements, usage instructions and detailed test conditions can be looked up in [General Product Information](#)

## Dimension

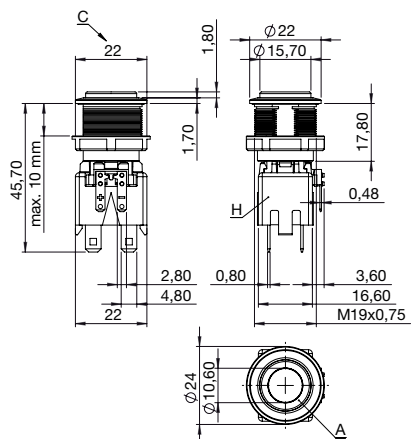
MSM 19 LA ST / LE double-pole



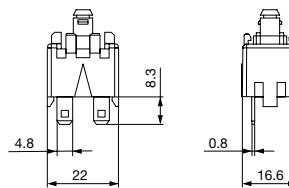
MSM 19 LA PI double-pole



MSM 19 LA RI double-pole



Switching Element single-pole with Push Button Holder

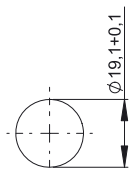


## Legend

- A = Illumination Area
- C = Width Across Flats
- D = Nut
- H = Switching Element

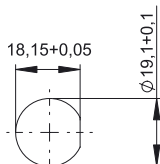
## Dimension

MSM 19 LA ST / MSM 19 LA RI



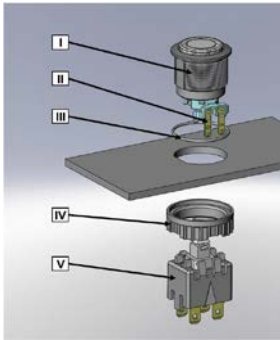
Drilling diagram

MSM 19 LA LE / MSM 19 LA PI / MSM 19 LA RI optional



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:

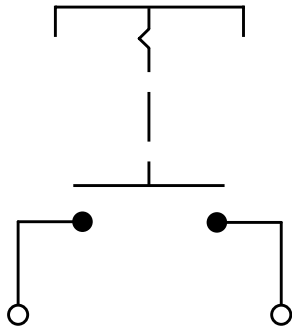
- 1.) Place the gasket accurately on the actuator housing. Then mount the actuator housing assembly into the panel.
- 2.) Tighten the screw nut according to the torque instructions.
- 3.) Clasp the module switching contact into the actuator housing.

Installation information:

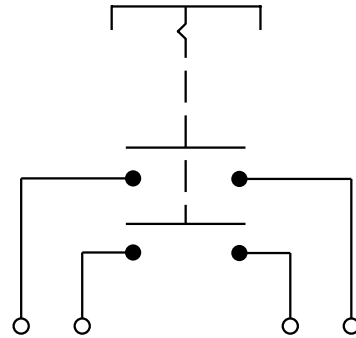
- 1.) The power supply and the configuration of the flat pin terminals have to be installed correctly for the illumination and micro switch function.
- 2.) Insulate the terminals as required. Fully insulated plug-in sleeves are recommended.
- 3.) Installation instructions according to VDE-standard DIN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

## Diagrams

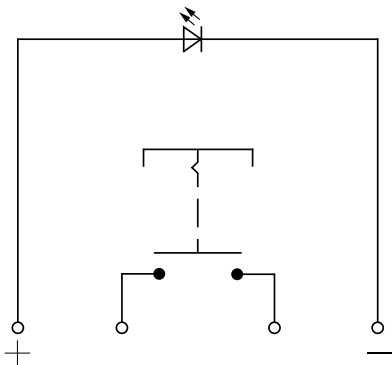
MSM LA ST / LE single-pole



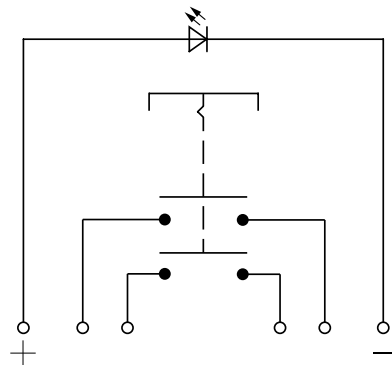
MSM LA ST / LE double-pole



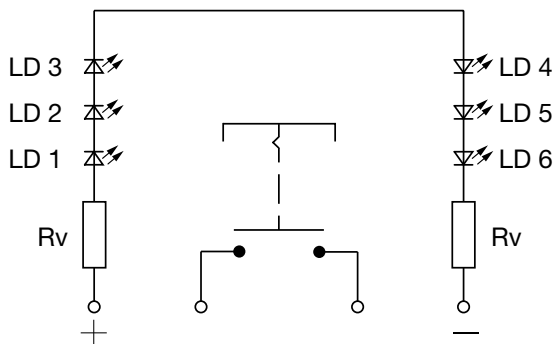
MSM LA PI single-pole



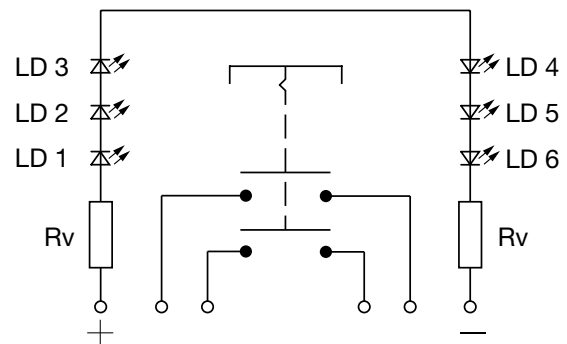
MSM LA PI double-pole



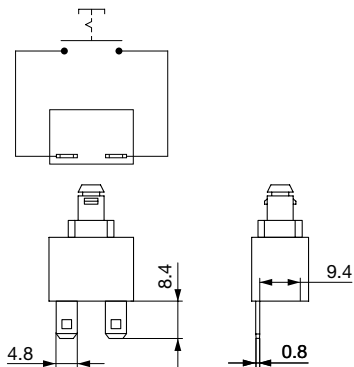
MSM LA RI single-pole



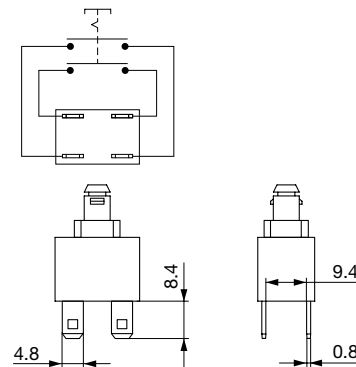
MSM LA RI double-pole



Contact Layout single-pole



Contact Layout double-pole



### Point Illumination

| Operating Data | Forward Current max. | Forward Voltage at 10 mA | Forward Voltage at 8 mA | Forward Voltage max. |
|----------------|----------------------|--------------------------|-------------------------|----------------------|
| LED red        | 30 mA                | 1,9 VDC                  |                         | 3,0 VDC              |
| LED green      | 30 mA                | 2,1 VDC                  |                         | 3,0 VDC              |
| LED blue       | 20 mA                |                          | 3,7 VDC                 | 4,5 VDC              |

Attention: Switches are delivered without series resistor.

### 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 |                |
|-----------------|------------------|----------------|
| Stainless Steel | black            | Filled letters |

### Order Index Lettering

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

### 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 ST       | 1241.6821.1110000 |
| 19       | 1-pole          | 12 A              | Point Illumination, red          | yes                | MSM 19 LA PI red   | 1241.6823.1111000 |
| 19       | 1-pole          | 12 A              | Point Illumination, green        | yes                | MSM 19 LA PI green | 1241.6823.1112000 |
| 19       | 1-pole          | 12 A              | Point Illumination, blue         | yes                | MSM 19 LA PI blue  | 1241.6823.1114000 |
| 19       | 1-pole          | 12 A              | Ring Illumination, red, 24 VDC   | yes                | MSM 19 LA RI red   | 1241.6824.1111000 |
| 19       | 1-pole          | 12 A              | Ring Illumination, green, 24 VDC | yes                | MSM 19 LA RI green | 1241.6824.1112000 |

| Diameter | Number of Poles | Switching Current | Illumination, LED                | Torsion Protection | Config. Code       | Order Number      |
|----------|-----------------|-------------------|----------------------------------|--------------------|--------------------|-------------------|
| [mm]     |                 |                   |                                  |                    |                    |                   |
| 19       | 1-pole          | 12 A              | Ring Illumination, blue, 24 VDC  | yes                | MSM 19 LA RI blue  | 1241.6824.1114000 |
| 19       | 1-pole          | 12 A              | Ring Illumination, white, 24 VDC | yes                | MSM 19 LA RI white | 1241.6824.1115000 |
| 19       | 2-pole          | 12 A              | non-illuminated                  | yes                | MSM 19 LA ST       | 1241.6821.1120000 |
| 19       | 2-pole          | 12 A              | non-illuminated                  | yes                | MSM 19 LA LE       | 1241.6822.1120000 |
| 19       | 2-pole          | 12 A              | Point Illumination, red          | yes                | MSM 19 LA PI red   | 1241.6823.1121000 |
| 19       | 2-pole          | 12 A              | Point Illumination, green        | yes                | MSM 19 LA PI green | 1241.6823.1122000 |
| 19       | 2-pole          | 12 A              | Point Illumination, blue         | yes                | MSM 19 LA PI blue  | 1241.6823.1124000 |
| 19       | 2-pole          | 12 A              | Ring Illumination, red, 24 VDC   | yes                | MSM 19 LA RI red   | 1241.6824.1121000 |
| 19       | 2-pole          | 12 A              | Ring Illumination, green, 24 VDC | yes                | MSM 19 LA RI green | 1241.6824.1122000 |
| 19       | 2-pole          | 12 A              | Ring Illumination, blue, 24 VDC  | yes                | MSM 19 LA RI blue  | 1241.6824.1124000 |
| 19       | 1-pole          | 16 A              | non-illuminated                  | yes                | MSM 19 LA ST       | 3-100-987         |
| 19       | 1-pole          | 16 A              | Ring Illumination, red, 24 VDC   | yes                | MSM 19 LA RI red   | 3-100-990         |
| 19       | 1-pole          | 16 A              | Ring Illumination, green, 24 VDC | yes                | MSM 19 LA RI green | 3-100-991         |
| 19       | 1-pole          | 16 A              | Ring Illumination, blue, 24 VDC  | yes                | MSM 19 LA RI blue  | 3-101-002         |
| 19       | 2-pole          | 16 A              | non-illuminated                  | yes                | MSM 19 LA ST       | 3-100-989         |
| 19       | 2-pole          | 16 A              | Ring Illumination, blue, 24 VDC  | yes                | MSM 19 LA RI blue  | 3-100-999         |
| 19       | 2-pole          | 16 A              | Ring Illumination, red, 24 VDC   | yes                | MSM 19 LA RI red   | 3-101-003         |
| 19       | 2-pole          | 16 A              | Ring Illumination, green, 24 VDC | yes                | MSM 19 LA RI green | 3-101-004         |

## 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/en/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)