

Metal Switch Medium Stroke, Switching Voltage up to 250 VAC



MSM 19 RI white



### Description

- Momentary action switch available in version: Standard (ST), with Lettering (LE), from diameter 19 mm with Point Illumination (PI) and with Ring Illumination (RI) Assembly method: clip micro-switch into the saddle, secure switch using mounting nut
- Equipped with flat-pin plugs to permit fast connection

### Standards

- DIN EN 61058-1
- UL 1054

### Approvals

- Low Voltage Directive 2014/35/EU compliant; following certificate numbers apply to micro switch
- VDE / ENEC Certificate Number (Omron): 40008425, 129246, 125256
- UL / CSA File Number (Omron): E41515
- VDE / ENEC Certificate Number (Marquardt): 097550
- UL / CSA File Number (Marquardt): E41791
- KEMA / ENEC File Number (Cherry): 2089323.01
- UL / CSA File Number (Cherry): E23301
- CQC File Number (Marquardt): CQC13005090991

### Characteristics

- Housing and actuator material: high-quality stainless steel
- Variety of design options regarding size, colour, illumination, connection or lettering
- Switching voltage from 30 VDC to 250 VAC, switching current from 0.1 A to 10 A
- optional with point or ring illumination
- IP-Protection: IP 67 from front side to contact area, Micro-Switch is available in versions IP 40 or IP 67
- for use in harsh environments

### References

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

Alternative: switch with latching function: [MSM LA CS 19](#); [MSM LA CS 22](#); [MSM LA 19](#); [MSM LA 22](#)

Alternative: switch with backlighted illumination: [MSM CS 19](#); [MSM CS 22](#); [MSM LA CS 19](#); [MSM LA CS 22](#)

Alternative: Other diameter [MSM 16](#); [MSM 30](#)

### 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., N.C., N.O./N.C.                                                                                                          |
| Number of Poles                 | 1-pole                                                                                                                         |
| Supply Voltage                  | 24 / 12 / 5 VDC Ring Illumination, Point Illumination without series resistor, LED operating data are listed in separate table |
| Impulse Withstand Voltage (ESD) | 4 kV MSM ST / MSM LE                                                                                                           |

**Micro Switch 5 A / 125 VAC or 3 A / 250 VAC, IP40**

|                          |                                                    |
|--------------------------|----------------------------------------------------|
| Contact Material         | Ag                                                 |
| Switching Voltage        | max. 125 / 250 VAC                                 |
| Switching Current        | max. 5 / 3 A                                       |
| Rated Switching Capacity | 750 W                                              |
| Lifetime                 | 0.2 million actuations at Rated Switching Capacity |
| Contact Resistance       | < 30 mΩ                                            |
| Insulation Resistance    | > 100 MΩ                                           |
| Duration of Bounce       | < 5 ms                                             |

**Micro Switch 0,1 A / 30 VDC, IP40**

|                          |                                                    |
|--------------------------|----------------------------------------------------|
| Contact Material         | Au                                                 |
| Switching Voltage        | max. 30 VDC                                        |
| Switching Current        | max. 0.1 A                                         |
| Rated Switching Capacity | 3 W                                                |
| Lifetime                 | 0.2 million actuations at Rated Switching Capacity |
| Contact Resistance       | < 50 mΩ                                            |
| Insulation Resistance    | > 100 MΩ                                           |
| Duration of Bounce       | < 5 ms                                             |

**Micro Switch for Electrical Rating 10 A / 250 VAC (Protection Class IP40)**

|                          |                                                     |
|--------------------------|-----------------------------------------------------|
| Contact Material         | Ag                                                  |
| Switching Voltage        | max. 250 VAC                                        |
| Switching Current        | max. 10 A                                           |
| Rated Switching Capacity | 2500 W                                              |
| Lifetime                 | 0.05 million actuations at Rated Switching Capacity |
| Contact Resistance       | < 30 mΩ                                             |
| Insulation Resistance    | > 100 MΩ                                            |
| Duration of Bounce       | < 5 ms                                              |

**Micro Switch 5 A / 250 VAC, IP67**

|                          |                                                     |
|--------------------------|-----------------------------------------------------|
| Switching Voltage        | max. 250 VAC                                        |
| Switching Current        | max. 5                                              |
| Rated Switching Capacity | 1250 W                                              |
| Lifetime                 | 0.05 million actuations at Rated Switching Capacity |

**Micro Switch 0,1 A / 250 VAC, IP67 - on request**

|                          |                                                     |
|--------------------------|-----------------------------------------------------|
| Switching Voltage        | max. 250 VAC                                        |
| Switching Current        | max. 0.1                                            |
| Rated Switching Capacity | 25 W                                                |
| Lifetime                 | 0.05 million actuations at Rated Switching Capacity |

**Micro Switch 10 A / 250 VAC, IP67 - on request**

|                          |                                                     |
|--------------------------|-----------------------------------------------------|
| Switching Voltage        | max. 250 VAC                                        |
| Switching Current        | max. 10 A                                           |
| Rated Switching Capacity | 2500 W                                              |
| Lifetime                 | 0.01 million actuations at Rated Switching Capacity |

**Mechanical Data**

|                                       |                                                                                |
|---------------------------------------|--------------------------------------------------------------------------------|
| Actuating Force                       | 4.5 N                                                                          |
| Actuating Travel                      | 1.0 mm, for mounting diameter 16, 19, 22 mm 1.2 mm for mounting diameter 30 mm |
| Lifetime                              | 1.5 million actuations                                                         |
| Shock Protection                      | IK 07 for mounting diameter 19, 22, 30 mm, IK 06 for mounting diameter 16 mm   |
| Tightening Torque Plastic Nut         | max. 2 Nm for thread M16, 4.5 Nm for M19, 3.5 Nm for M22, 8 Nm for M30         |
| Tightening Torque Stainless Steel Nut | max. 10 Nm for thread M16, 12 Nm for M19, 16 Nm for M22, 50 Nm for M30         |

**Climatical Data**

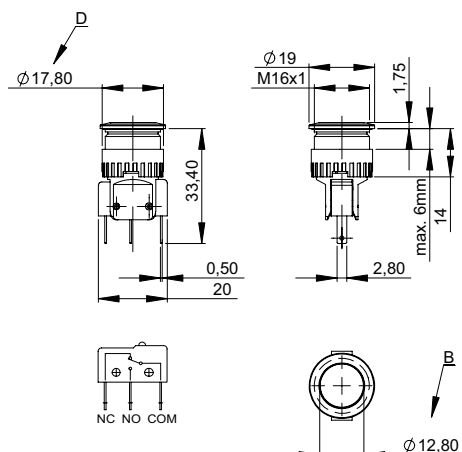
|                                        |                                                                                                           |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Operating Temperature                  | -25 to +85 °C                                                                                             |
| Storage Temperature                    | -25 to +85 °C                                                                                             |
| IP-Protection                          | IP 67 Front Side Contact Area, IP 40 Front Side mechanical, IP 40 / IP 67 Rear Side Contact Area optional |
| Salt Spray Test (acc. to DIN 50021-SS) | 24 h / 48 h / 96 h Residence Time                                                                         |

**Material**

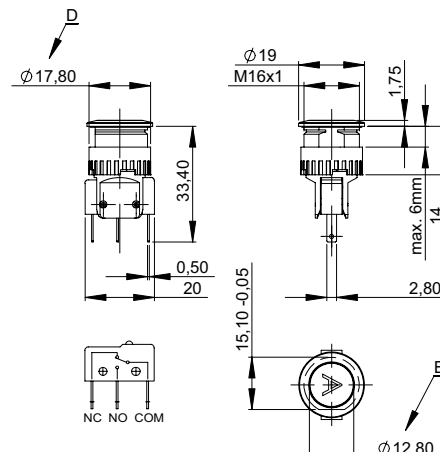
|                                      |                 |
|--------------------------------------|-----------------|
| Housings                             | Stainless Steel |
| Actuator                             | Stainless Steel |
| Light Conductor (Point Illumination) | PC              |
| Illuminated Ring (Ring Illumination) | PA              |
| Gasket                               | NBR70           |
| Switcher Collet                      | PA              |

## Dimension

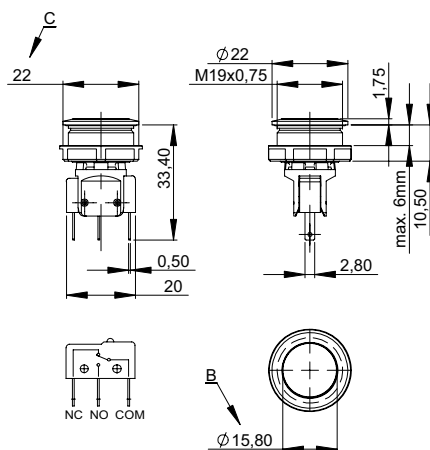
### MSM 16 ST



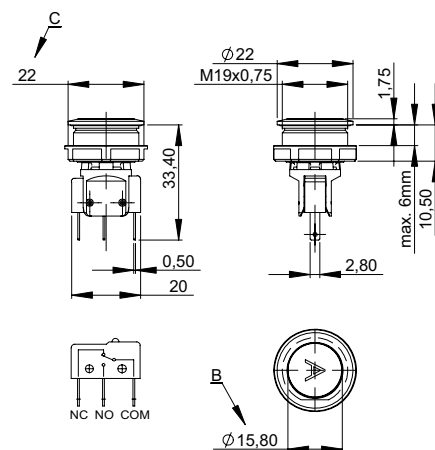
### MSM 16 LE



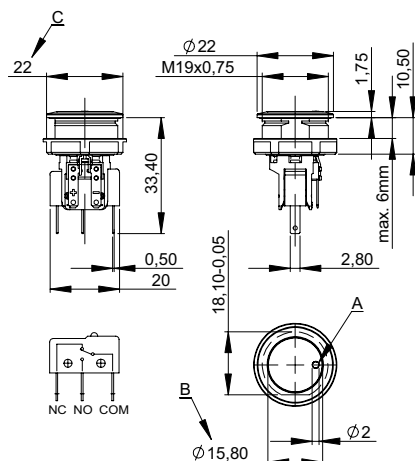
### MSM 19 ST



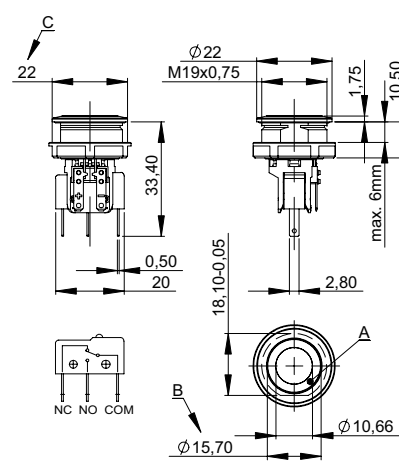
### MSM 19 LE



### MSM 19 PI

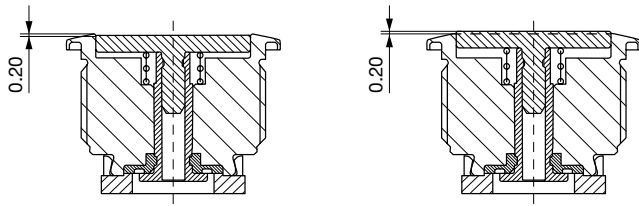


### MSM 19 RI



## Legend

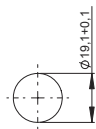
A = Illumination Area  
B = Actuating Area  
C = Width Across Flats  
D = Nut

**Tolerance Range****Actuator Tolerance Range**

The mounting tolerance range of the actuator varies from 0.2 mm projection length and 0.2 mm short length to the housing edge. The slanting position of the actuator can range within this tolerance.

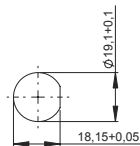
**Dimension**

MSM 19 ST / MSM 19 RI

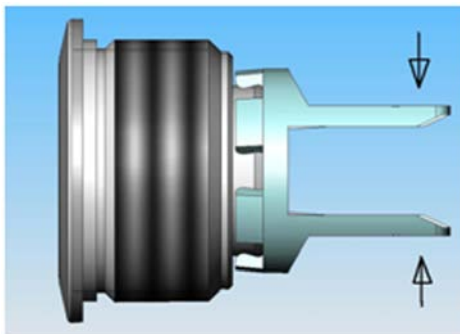


Drilling diagram

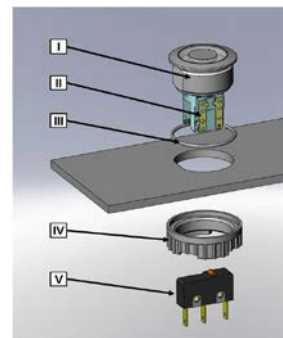
MSM 19 LE / MSM 19 PI / MSM 19 RI optional



Drilling diagram

**Assembly Instructions**

During assembly, the protruding bars of the holder should not be pressed together.



- I Housing
- II Flat Pin Terminal (Illumination)
- III Gasket
- IV Nut (Nut type see Dimensions)
- V Module Switching Contact

**Installation Instruction:**

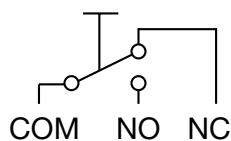
- 1.) Place the gasket accurately on the actuator housing. Then mount the actuator housing assembly into the panel.
- 2.) Tighten the screw nut according to the torque instructions.
- 3.) Clasp the module switching contact into the micro switch holder of the actuator housing.

**Installation information:**

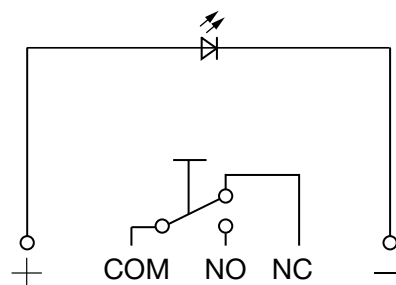
- 1.) The power supply and the configuration of the flat pin terminals have to be installed correctly for the illumination and micro switch function.
- 2.) Insulate the terminals as required. Fully insulated plug-in sleeves are recommended.
- 3.) Installation instructions according to VDE-standard DIN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

## Diagrams

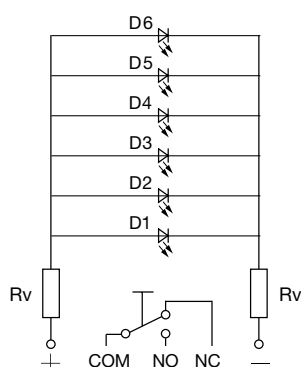
MSM ST / MSM LE



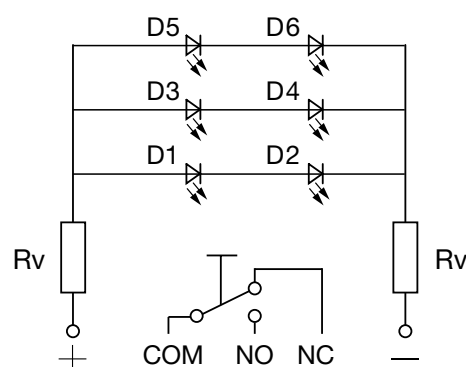
MSM PI



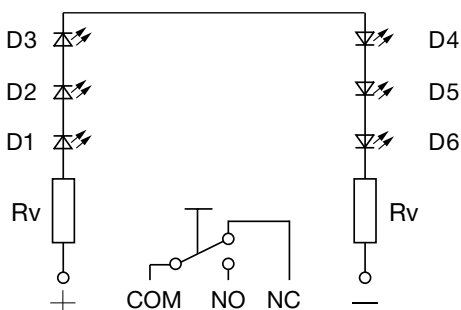
MSM RI / 5 V



MSM RI / 12 V



MSM RI / 24 V



## Point Illumination

| Operating Data | Forward Current max. | Forward Voltage at 10 mA | Forward Voltage at 8 mA | Forward Voltage at 20 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 yellow     | 30 mA                | 2.1 VDC                  |                         |                          | 3.0 VDC              |
| LED blue       | 20 mA                |                          | 3.7 VDC                 |                          | 4.5 VDC              |
| LED white      | 30 mA                |                          |                         | 3.6 VDC                  | 4.0 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 |

For further Lettering details see also weblink:

## 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 | Switching Current | Switching Voltage | Illumination, LED         | Housing Material, Torsion Protection | Actuator Material | Config. Code    | Order Number      |  |
|----------|-------------------|-------------------|---------------------------|--------------------------------------|-------------------|-----------------|-------------------|--|
| [mm]     | [A]               | [VAC/VDC]         |                           |                                      |                   |                 |                   |  |
| 19       | 100 mA            | 30 VDC            | non-illuminated           | Stainless Steel ,no                  | Stainless Steel   | MSM 19 ST       | 1241.6621.1110000 |  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | non-illuminated           | Stainless Steel ,no                  | Stainless Steel   | MSM 19 ST       | 1241.6621.1120000 |  |
| 19       | 10 A              | 250 VAC           | non-illuminated           | Stainless Steel ,no                  | Stainless Steel   | MSM 19 ST       | 1241.6621.1130000 |  |
| 19       | 5 A               | 250 VAC           | non-illuminated           | Stainless Steel ,no                  | Stainless Steel   | MSM 19 ST       | 1241.6621.1180000 |  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | non-illuminated           | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 LE       | 1241.6622.1120000 |  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | non-illuminated           | Alu red ,yes                         | Stainless Steel   | MSM 19 LE       | 1241.6622.3120000 |  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | non-illuminated           | Alu red ,yes                         | Stainless Steel   | MSM 19 LE       | 1241.6622.3120057 |  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | non-illuminated           | Alu red ,yes                         | Stainless Steel   | MSM 19 LE       | 1241.6622.3120062 |  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | non-illuminated           | Alu red ,yes                         | Stainless Steel   | MSM 19 LE       | 1241.6622.3120066 |  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | non-illuminated           | Alu green ,yes                       | Stainless Steel   | MSM 19 LE       | 1241.6622.5120000 |  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | non-illuminated           | Alu green ,yes                       | Stainless Steel   | MSM 19 LE       | 1241.6622.5120061 |  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | non-illuminated           | Alu green ,yes                       | Stainless Steel   | MSM 19 LE       | 1241.6622.5120065 |  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | non-illuminated           | Alu green ,yes                       | Stainless Steel   | MSM 19 LE       | 1241.6622.5120072 |  |
| 19       | 100 mA            | 30 VDC            | Point Illumination, red   | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 PI red   | 1241.6623.1111000 |  |
| 19       | 100 mA            | 30 VDC            | Point Illumination, green | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 PI green | 1241.6623.1112000 |  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | Point Illumination, red   | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 PI red   | 1241.6623.1121000 |  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | Point Illumination, green | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 PI green | 1241.6623.1122000 |  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | Point Illumination, blue  | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 PI blue  | 1241.6623.1124000 |  |
| 19       | 10 A              | 250 VAC           | Point Illumination, red   | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 PI red   | 1241.6623.1131000 |  |
| 19       | 10 A              | 250 VAC           | Point Illumination, green | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 PI green | 1241.6623.1132000 |  |

| Diameter | Switching Current | Switching Voltage | Illumination, LED                 | Housing Material, Torsion Protection | Actuator Material | Config. Code     | Order Number       |
|----------|-------------------|-------------------|-----------------------------------|--------------------------------------|-------------------|------------------|--------------------|
| [mm]     | [A]               | [VAC/ VDC]        |                                   |                                      |                   |                  |                    |
| 19       | 100 mA            | 30 VDC            | Ring Illumination, red, 24 VDC    | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI red    | 1241.6624.1111000  |
| 19       | 100 mA            | 30 VDC            | Ring Illumination, red, 5 VDC     | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI red    | 1241.6624.1111000B |
| 19       | 100 mA            | 30 VDC            | Ring Illumination, green, 24 VDC  | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI green  | 1241.6624.1112000  |
| 19       | 100 mA            | 30 VDC            | Ring Illumination, yellow, 24 VDC | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI yellow | 1241.6624.1113000  |
| 19       | 100 mA            | 30 VDC            | Ring Illumination, blue, 24 VDC   | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI blue   | 1241.6624.1114000  |
| 19       | 100 mA            | 30 VDC            | Ring Illumination, blue, 12 VDC   | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI blue   | 1241.6624.1114000E |
| 19       | 100 mA            | 30 VDC            | Ring Illumination, blue, 24 VDC   | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI blue   | 1241.6624.1114074  |
| 19       | 100 mA            | 30 VDC            | Ring Illumination, blue, 12 VDC   | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI blue   | 1241.6624.1114074E |
| 19       | 5 / 3 A           | 125 / 250 VAC     | Ring Illumination, red, 24 VDC    | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI red    | 1241.6624.1121000  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | Ring Illumination, green, 24 VDC  | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI green  | 1241.6624.1122000  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | Ring Illumination, blue, 24 VDC   | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI blue   | 1241.6624.1124000  |
| 19       | 5 / 3 A           | 125 / 250 VAC     | Ring Illumination, white, 24 VDC  | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI white  | 1241.6624.1125000  |
| 19       | 10 A              | 250 VAC           | Ring Illumination, red, 24 VDC    | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI red    | 1241.6624.1131000  |
| 19       | 10 A              | 250 VAC           | Ring Illumination, green, 24 VDC  | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI green  | 1241.6624.1132000  |
| 19       | 10 A              | 250 VAC           | Ring Illumination, blue, 24 VDC   | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI blue   | 1241.6624.1134000  |
| 19       | 5 A               | 250 VAC           | Ring Illumination, red, 24 VDC    | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI red    | 1241.6624.1181000  |
| 19       | 5 A               | 250 VAC           | Ring Illumination, green, 24 VDC  | Stainless Steel ,yes                 | Stainless Steel   | MSM 19 RI green  | 1241.6624.1182000  |

Legend:

Type: MSM

CS = Ceramic Surface

ST = Standard: not lettered

LE = Lettering: lettered

Al = BL = Full Surface Backlighting: Lettering possible (see Lettering, last 3 digits)

Alu red = red anodized aluminum housing, actuator stainless steel

1241.6622.3120062 -> 3 last numbers (062) see Order Index Lettering

IP-Protection: IP 67 from front side to contact area, Micro-Switch is available in versions IP 40 or IP 67, see Technical Data Micro-Switch

Ring illuminated versions: supply voltage 24 VDC, 12 VDC (E), 5 VDC (B), (further 12 and 5 VDC versions on request)

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 or packed in air cushion bags



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

Accessories

Description



MSM Cover  
Protection cover for MSM 19 and MSM 22