

Metal Switch Medium Stroke, Switching Voltage up to 250 VAC



Single-color



RGB



RGB

See below:

### Approvals and Compliances

#### Description

- Momentary action switch available in version: Standard (ST), with Lettering (LE), with Point Illumination (PI) and with Ring Illumination (RI)
- Single color or RGB illumination
- Choice from 7 colors for RGB variants
- Assembly method: clip micro-switch into the saddle, secure switch using mounting nut
- Equipped with flat-pin plugs to permit fast connection

#### Unique Selling Proposition

- Attractive tactile feedback
- High quality materials
- Long life span
- Single color or homogeneous RGB illumination

#### 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
- 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 (see technical data)

#### 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](#), [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 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 6 A / 250 VAC, IP67**

Switching Voltage	max. 250 VAC
Switching Current	max. 6
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

\* 5 V or 12 V variants (except for multicolor) on request

**Mechanical Data**

Actuating Force	4.5 N
Actuating Travel	1.0 mm
Lifetime	1.5 million actuations
Shock Protection	IK 07
Tightening Torque Plastic Nut	max. 4.5 Nm
Tightening Torque Stainless Steel Nut	max. 12 Nm

**Climatical Data**

Operating Temperature	-25 to +85 °C
Storage Temperature	-25 to +85 °C
Protection Class	IP 67
Switching Unit	IP 40 IP 67 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 for dotted single color variants PMMA for RGB and homogeneous single color variants
Seal Ring	NBR70
Switcher Collet	PA

**Approvals and Compliances**Detailed information on product approvals, code requirements, usage instructions and detailed test conditions can be looked up in [Details about Approvals](#)**Approvals**

Approval Reference Type: MSM 19

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

**Product standards**

Product standards that are referenced

Organization	Design	Standard	Description
	Designed according to	DIN EN 61058-1	Switches for appliances. Part 1. General requirements
	Designed according to	UL 1054	UL standard for safety special-use switches

**Application standards**

Application standards where the product can be used

Organization	Design	Standard	Description
	Designed for applications acc.	IEC/UL 60950	IEC 60950-1 includes the basic requirements for the safety of information technology equipment.

**Compliances**

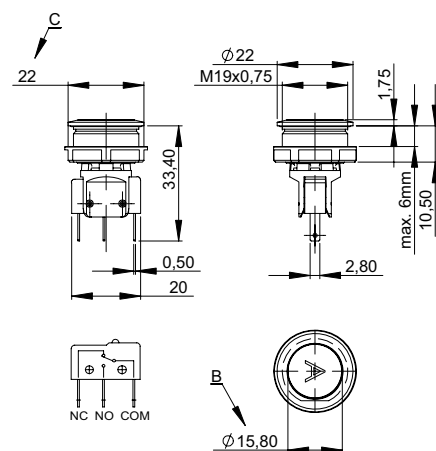
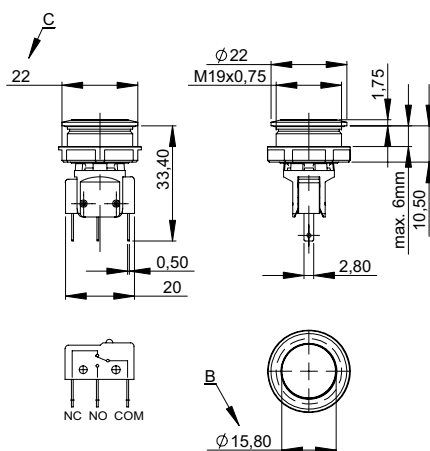
The product complies with following Guide Lines

Identification	Details	Initiator	Description
	RoHS	SCHURTER AG	EU Directive RoHS 2011/65/EU
	REACH	SCHURTER AG	On 1 June 2007, Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals 1 (abbreviated as "REACH") entered into force.

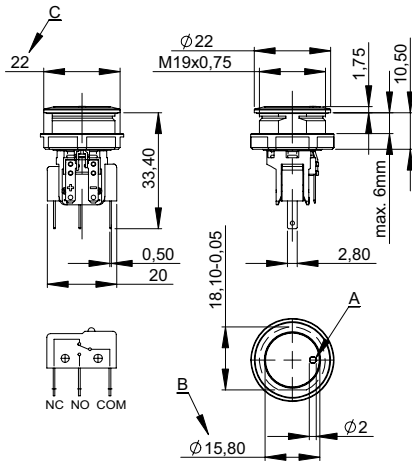
**Dimension [mm]**

MSM 19 ST

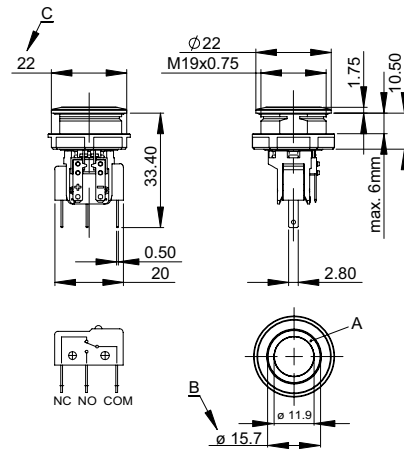
MSM 19 LE



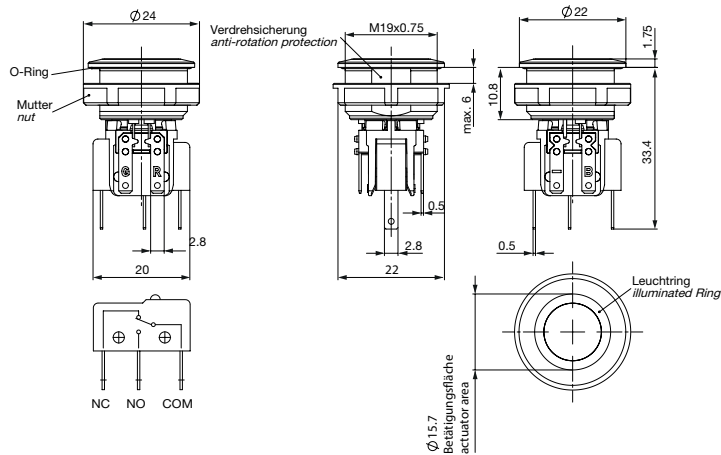
## MSM 19 PI



## MSM 19 RI Single color



## MSM 19 RI RGB

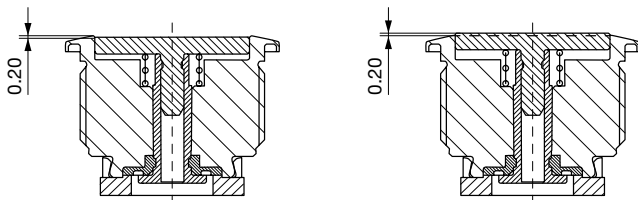


### Legend

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

### Tolerance Range

#### Actuator Tolerance Range

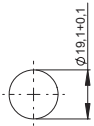


The mounting tolerance range of the actuator varies from 0.2 mm projection length and 0.2 mm short length to the housing edge. The slanting position of the actuator can range within this tolerance.

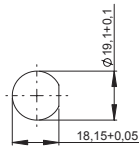
**Dimension**

MSM 19 ST / MSM 19 RI

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

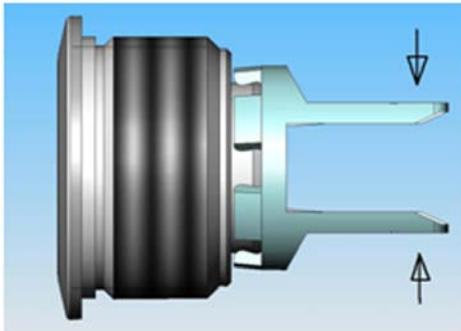


Drilling diagram

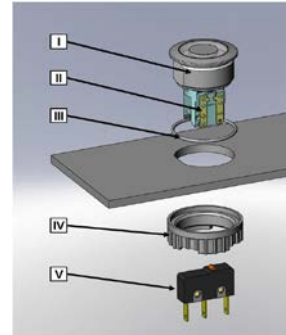


Drilling diagram

**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:

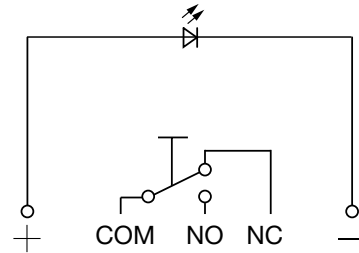
- 1.) The power supply and the configuration of the flat pin terminals have to be installed correctly for the illumination and micro switch function.
- 2.) Insulate the terminals as required. Fully insulated plug-in sleeves are recommended.
- 3.) Installation instructions according to VDE-standard DIN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

## Diagrams

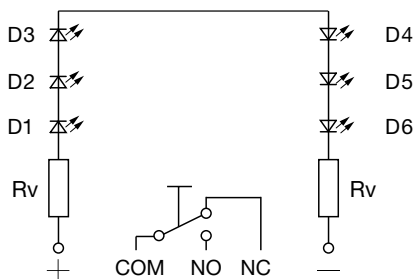
MSM ST / MSM LE



MSM PI



MSM RI / 24 V Single color



MSM RI / 24 V RGB

terminal assignment with resistors for 24 VDC



Lighting type	Active terminal R) <span style="color:red">●</span>	Active terminal G) <span style="color:green">●</span>	Active terminal B) <span style="color:blue">●</span>	Resulting Color <span style="color:red">●</span> <span style="color:green">●</span> <span style="color:blue">●</span>
Singlecolor	x			Red <span style="color:red">●</span>
Singlecolor		x		Green <span style="color:green">●</span>
Singlecolor			x	Blue <span style="color:blue">●</span>
RGB Additive 2	x	x		Yellow <span style="color:yellow">●</span>
RGB Additive 2	x		x	Magenta <span style="color:magenta">●</span>
RGB Additive 2		x	x	Cyan <span style="color:cyan">●</span>
RGB Additive 3	x	x	x	White <span style="color:white">○</span>

### Illumination options for RGB

## 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
LED red / green	25 mA			2.0 VDC / 2.2 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 = <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

IP Switching Unit	Switching Current [A]	Switching Voltage [VAC/ VDC]	Illumination, LED	Housing Material, Torsion Protection	Actuator Material, Torsion Protection	Config. Code	Order Number
IP 40	100 mA	30 VDC	non-illuminated	Stainless Steel ,no	Stainless Steel ,no	MSM 19 ST	1241.6621.1110000
IP 40	5 / 3 A	125 / 250 VAC	non-illuminated	Stainless Steel ,no	Stainless Steel ,no	MSM 19 ST	1241.6621.1120000
IP 40	10 A	250 VAC	non-illuminated	Stainless Steel ,no	Stainless Steel ,no	MSM 19 ST	1241.6621.1130000
IP 67	6 A	250 VAC	non-illuminated	Stainless Steel ,no	Stainless Steel ,no	MSM 19 ST	1241.6621.1180000
IP 40	5 / 3 A	125 / 250 VAC	non-illuminated	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 LE	1241.6622.1120000
IP 40	5 / 3 A	125 / 250 VAC	non-illuminated	Alu red ,yes	Alu red ,yes	MSM 19 LE	1241.6622.3120000
IP 40	5 / 3 A	125 / 250 VAC	non-illuminated	Alu red ,yes	Alu red ,yes	MSM 19 LE	1241.6622.3120057
IP 40	5 / 3 A	125 / 250 VAC	non-illuminated	Alu red ,yes	Alu red ,yes	MSM 19 LE	1241.6622.3120062
IP 40	5 / 3 A	125 / 250 VAC	non-illuminated	Alu red ,yes	Alu red ,yes	MSM 19 LE	1241.6622.3120066
IP 40	5 / 3 A	125 / 250 VAC	non-illuminated	Alu green ,yes	Alu green ,yes	MSM 19 LE	1241.6622.5120000
IP 40	5 / 3 A	125 / 250 VAC	non-illuminated	Alu green ,yes	Alu green ,yes	MSM 19 LE	1241.6622.5120061
IP 40	5 / 3 A	125 / 250 VAC	non-illuminated	Alu green ,yes	Alu green ,yes	MSM 19 LE	1241.6622.5120065
IP 40	5 / 3 A	125 / 250 VAC	non-illuminated	Alu green ,yes	Alu green ,yes	MSM 19 LE	1241.6622.5120072
IP 40	100 mA	30 VDC	Point Illumination, red	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 PI red	1241.6623.1111000
IP 40	100 mA	30 VDC	Point Illumination, green	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 PI green	1241.6623.1112000
IP 40	5 / 3 A	125 / 250 VAC	Point Illumination, red	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 PI red	1241.6623.1121000
IP 40	5 / 3 A	125 / 250 VAC	Point Illumination, green	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 PI green	1241.6623.1122000
IP 40	5 / 3 A	125 / 250 VAC	Point Illumination, blue	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 PI blue	1241.6623.1124000
IP 40	10 A	250 VAC	Point Illumination, red	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 PI red	1241.6623.1131000

IP Switching Unit	Switching Current [A]	Switching Voltage [VAC/ VDC]	Illumination, LED	Housing Material, Torsion Protection	Actuator Material, Torsion Protection	Config. Code	Order Number
IP 40	10 A	250 VAC	Point Illumination, green	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 PI green	1241.6623.1132000
IP 40	100 mA	30 VDC	Ring dotted, red, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI red	1241.6624.1111000
IP 40	100 mA	30 VDC	Ring dotted, green, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI green	1241.6624.1112000
IP 40	100 mA	30 VDC	Ring dotted, yellow, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI yellow	1241.6624.1113000
IP 40	100 mA	30 VDC	Ring dotted, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI blue	1241.6624.1114000
IP 40	100 mA	30 VDC	Ring dotted, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI blue	1241.6624.1114074
IP 40	5 / 3 A	125 / 250 VAC	Ring dotted, red, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI red	1241.6624.1121000
IP 40	5 / 3 A	125 / 250 VAC	Ring dotted, green, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI green	1241.6624.1122000
IP 40	5 / 3 A	125 / 250 VAC	Ring dotted, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI blue	1241.6624.1124000
IP 40	5 / 3 A	125 / 250 VAC	Ring dotted, white, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI white	1241.6624.1125000
IP 40	10 A	250 VAC	Ring dotted, red, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI red	1241.6624.1131000
IP 40	10 A	250 VAC	Ring dotted, green, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI green	1241.6624.1132000
IP 40	10 A	250 VAC	Ring dotted, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI blue	1241.6624.1134000
IP 67	6 A	250 VAC	Ring dotted, red, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI red	1241.6624.1181000
IP 67	6 A	250 VAC	Ring dotted, green, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI green	1241.6624.1182000
IP 40	5 A	250 VAC	Point Illumination, green / yellow	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 PI green / yellow	3-101-515
IP 40	100 mA	30 VDC	Ring homogeneous, RGB, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI RGB	3-102-708
IP 40	10 A	250 VAC	Ring homogeneous, RGB, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI RGB	3-102-772
IP 40	100 mA	30 VDC	Ring homogeneous, green, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI green	3-108-945
IP 40	5 / 3 A	125 / 250 VAC	Ring homogeneous, green, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI green	3-108-946
IP 40	10 A	250 VAC	Ring homogeneous, green, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI green	3-108-947
IP 40	100 mA	30 VDC	Ring homogeneous, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI blue	3-108-948
IP 40	5 / 3 A	125 / 250 VAC	Ring homogeneous, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI blue	3-108-949
IP 40	10 A	250 VAC	Ring homogeneous, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI blue	3-108-950
IP 40	100 mA	30 VDC	Ring homogeneous, red, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI red	3-108-952
IP 40	5 / 3 A	125 / 250 VAC	Ring homogeneous, red, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI red	3-108-953
IP 40	10 A	250 VAC	Ring homogeneous, red, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 19 RI red	3-108-954

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

Variants with 6 A micro switch have IP67

The MOQ for standard laser lettering on standard variants is 10 pieces.

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: <https://www.schurter.com/en/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



**Power Supply**  
Power Supply IP42 for LED- and Illumination applications indoor 90~264 VAC => 24 VDC 0.34 A 8 W