

Metal Switch with Ceramic Actuator, Switching Voltage up to 30 VDC / 250 VAC



See below:

#### Approvals and Compliances

#### Description

- Momentary action switch available in version: Standard (ST), with Lettering (LE), with Backlighting (BL)
- 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 multicolor illumination

#### Characteristics

- Housing material: high-quality stainless steel, actuator material: highly durable ceramic
- 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
- Backlighting optional, this means the complete actuator surface is fully illuminated
- IP-Protection: IP65 from front side to contact area, Micro-Switch is available in versions IP40 or IP67, moving actuator is rated IP40 to frontside
- For use in harsh environments (see technical data)

#### References

Alternative: double-pole switch:

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

Alternative: Other diameter

Alternative: switch with ring illumination: [MSM 16](#); [MSM 16 vm-Test](#); [MSM 19](#); [MSM 22](#); [MSM 30](#)

Alternative: Standard version [MSM CS 22](#)

#### Weblinks

[pdf data sheet](#), [html datasheet](#), [General Product Information](#), [CAD-Drawings](#), [Product News](#), [Detailed request for product](#), [Video](#)

**Technical Data****Electrical Data**

Switching Function	momentary
Number of Poles	SPDT
Supply Voltage	24 VDC Surface backlighting 5 VDC and 12 VDC variants (except for RGB) on request (MOQ 500 pieces)

**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
Lifetime	1.5 million actuations
Shock Protection	IK 07
Mounting screw torque Plastic Nut	max. 4.5 Nm

Mounting screw torque Stainless Steel Nut	max. 12 Nm
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**Climatical Data**

Operating Temperature	-25 to 85 °C
Storage Temperature	-25 to 85 °C
IP Protection Class	IP65
Switching Unit	IP40

Salt Spray Test (acc. to DIN 50021-SS)	24 h / 48 h / 96 h Residence Time
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**Material**

Housings	Stainless Steel
Actuator	Ceramic (Zirconium Dioxide)
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](#)

SCHURTER products are designed for use in industrial environments. They have approvals from independent testing bodies according to national and international standards. Products with specific characteristics and requirements such as required in the automotive sector according to IATF 16949, medical technology according to ISO 13485 or in the aerospace industry can be offered exclusively with customer-specific, individual agreements by SCHURTER.

## 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 62368-1	IEC 62368-1 includes the basic requirements for safety of audio, video, information technology and office equipment.

## Compliances

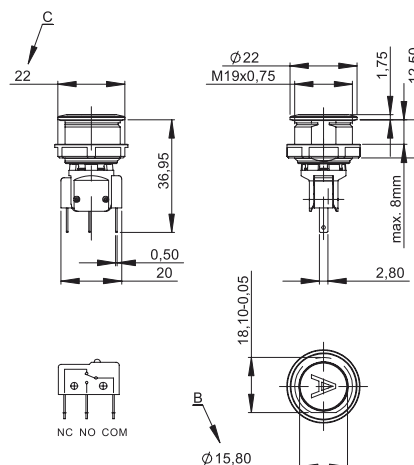
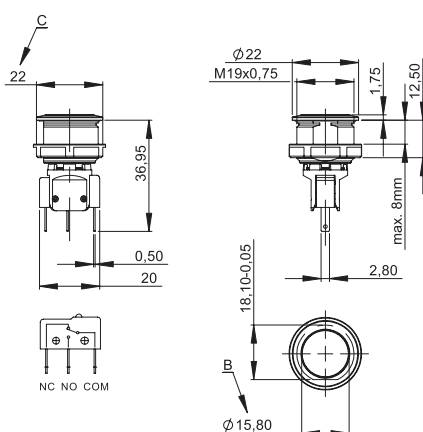
The product complies with following Guide Lines

Identification	Details	Initiator	Description
	RoHS	SCHURTER AG	Directive RoHS 2011/65/EU, Amendment (EU) 2015/863
	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.

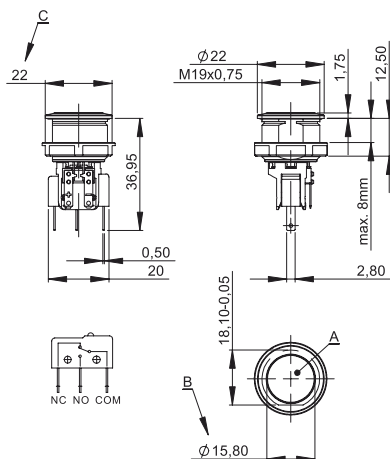
## Dimension [mm]

MSM 19 CS ST

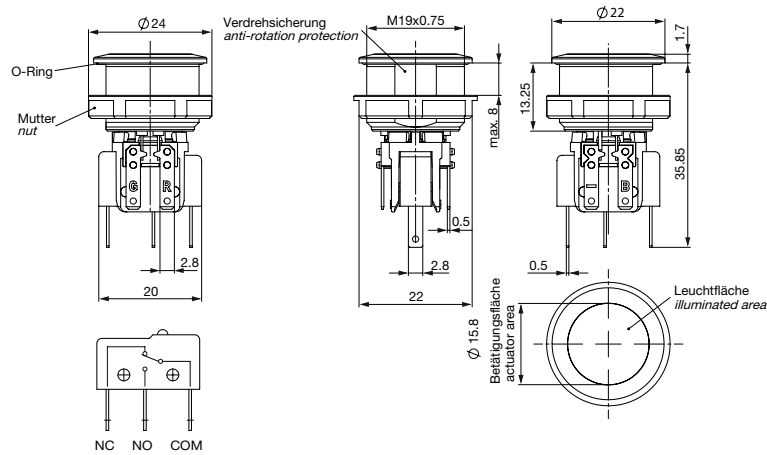
MSM 19 CS LE



MSM 19 CS BL Single color

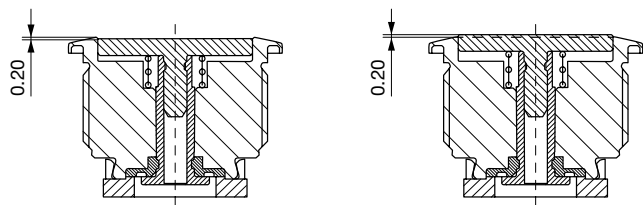


MSM 19 CS AI RGB



- Legend**
- A = Illumination Area
  - B = Actuating Area
  - C = Sealing
  - D = Nut
  - E = Anti-rotation protection
  - F = Point illumination
  - G = Illumination ring
  - H = Case
  - I = Illumination ring
  - J = Optional Order: plug with strands
  - K = Flexible wire
  - L = Illuminated area

**Tolerance Range**  
Actuator Tolerance Range

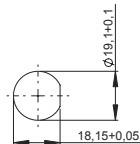
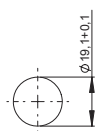


The mounting tolerance range of the actuator varies from 0.2 mm projection length and 0.2 mm short length to the housing edge. The slanting position of the actuator can range within this tolerance.

**Dimension**

MSM 19 CS ST

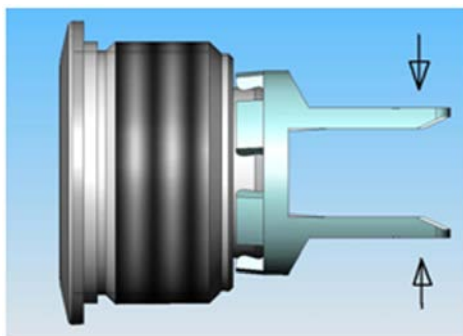
MSM 19 CS LE / MSM 19 CS BL



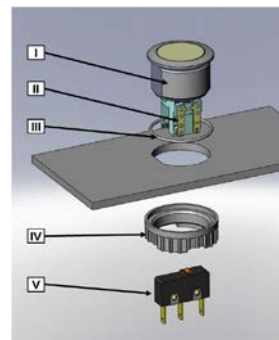
Drilling diagram

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:

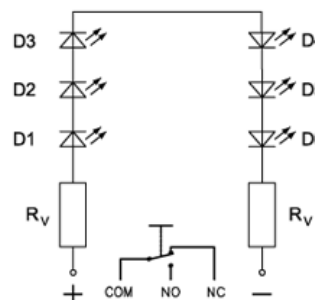
- 1.) The power supply and the configuration of the flat pin terminals have to be installed correctly for the illumination and micro switch function.
- 2.) Insulate the terminals as required. Fully insulated plug-in sleeves are recommended.
- 3.) Installation instructions according to VDE-standard DIN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

## Diagrams

### MSM CS ST / MSM CS LE

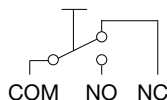
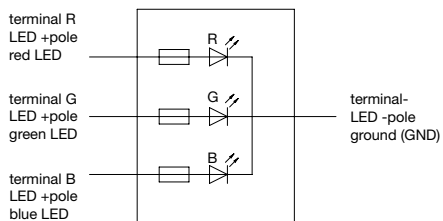


### MSM CS BL Single color



### 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
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

## 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 =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	Switching Current	Switching Voltage	Illumination, LED	Housing Material	Torsion Protection Housing/Actuator	Config. Code	Order Number
[mm]	[A]	[VAC/ VDC]					
19	5 / 3	125 / 250 VAC	non-illuminated	Stainless Steel	no / yes	MSM 19 CS Pcs	<a href="#">1241.7021.1120000</a>
19	6	250 VAC	non-illuminated	Stainless Steel	no / yes	MSM 19 CS Pcs	<a href="#">1241.7021.1180000</a>
19	0.1	30 VDC	Backlighted, red, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL red	<a href="#">1241.8412</a>
19	0.1	30 VDC	Backlighted, green, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL green	<a href="#">1241.8413</a>
19	0.1	30 VDC	Backlighted, blue, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL blue	<a href="#">1241.8415</a>
19	0.1	30 VDC	Backlighted, white, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL white	<a href="#">1241.8416</a>
19	10	250 VAC	Backlighted, red, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL red	<a href="#">1241.8448</a>
19	10	250 VAC	Backlighted, green, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL green	<a href="#">1241.8449</a>
19	10	250 VAC	Backlighted, blue, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL blue	<a href="#">1241.8451</a>
19	10	250 VAC	Backlighted, white, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL white	<a href="#">1241.8452</a>
19	0.1	30 VDC	Backlighted, RGB, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL RGB	<a href="#">3-102-788</a>
19	5 / 3	125 / 250 VAC	Backlighted, RGB, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL RGB	<a href="#">3-102-789</a>
19	10	250 VAC	Backlighted, RGB, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL RGB	<a href="#">3-102-790</a>
19	5 / 3	125 / 250 VAC	Backlighted, green, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL green	<a href="#">3-120-088</a>

Diameter	Switching Current	Switching Voltage	Illumination, LED	Housing Material	Torsion Protection Housing/Actuator	Config. Code	Order Number
[mm]	[A]	[VAC/ VDC]					
19	5 / 3	125 / 250 VAC	Backlighted, blue, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL blue	3-120-089
19	5 / 3	125 / 250 VAC	Backlighted, red, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL red	3-120-103
19	6	250 VAC	Backlighted, red, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL red	3-120-115

Legend:

Type:

MSMCS = Ceramic Surface

ST = Standard: not lettered

LE = Lettering: lettered

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

IP65 degree of protection front side contact areadegree of protection rear side contact area IP40 or IP67 optional -> see Technical Data Micro Switch

Customer-specific versions available on request.

Special materials for use in salt and chlorinated environment on request.

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

5 VDC and 12 VDC variants (except for RGB) on request (MOQ 500 pieces)

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



- Actuating elements in ESD safe packaging
- Screw nuts and sealing rings 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



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