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:
Alternative: Other diameter
Alternative: switch with ring illumination: MSM LA 19;   MSM 19
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 Illumination area

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

Contact Material	Ag
Switching Voltage	max. 125/250VAC
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	IK07
Mounting screw torque Plastic Nut	max. 4.5 Nm
Mounting screw torque Stainless Steel Nut	max. 12 Nm

Climatical Data

Operating Temperature	-25 to 85 °C
Storage Temperature	-25 to 85 °C
IP Protection Class	IP65
Switching Unit	IP40
	IP67 optional
Salt Spray Test (acc. to DIN 50021-SS)	24 h / 48 h / 96 h Residence Time

Material

Housing	Stainless Steel
Actuator	Ceramic (Zirconium Dioxide)
Seal Ring	NBR70
Switcher Collet	PA
Plastic Nut	PA, UL94

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
DIN	Designed according to	DIN EN 61058-1	Switches for appliances. Part 1. General requirements
UL	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
IEC	Designed for applications acc.	IEC/UL 62368-1	Audio/video, information and communication technology equipment - Part 1: Safety requirements

Compliances
The product complies with following Guide Lines

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

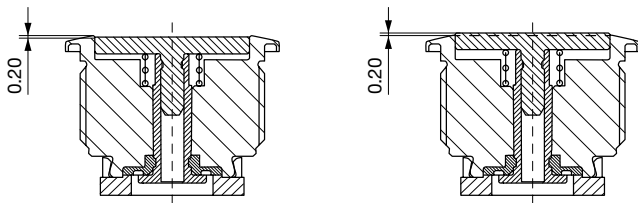MSM 19 CS LE
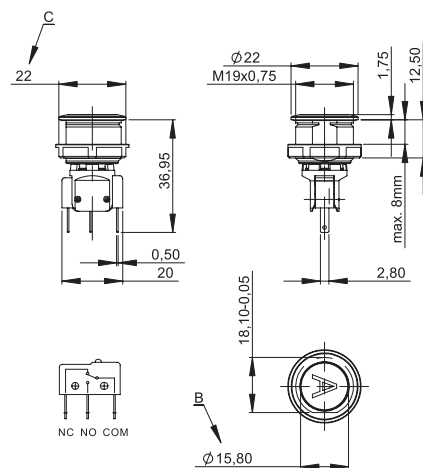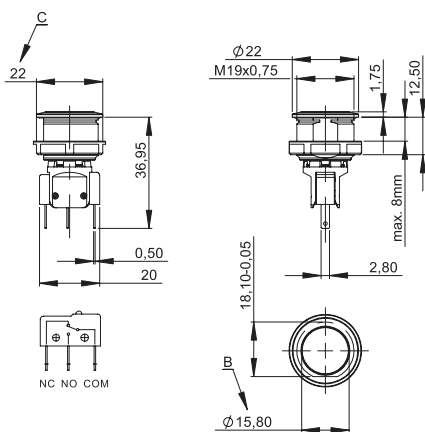
MSM 19 CS BL Single color
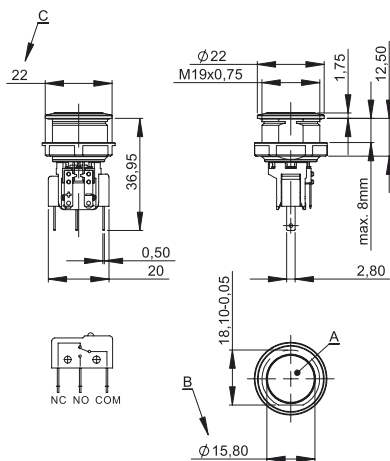
MSM 19 CS AI RGB
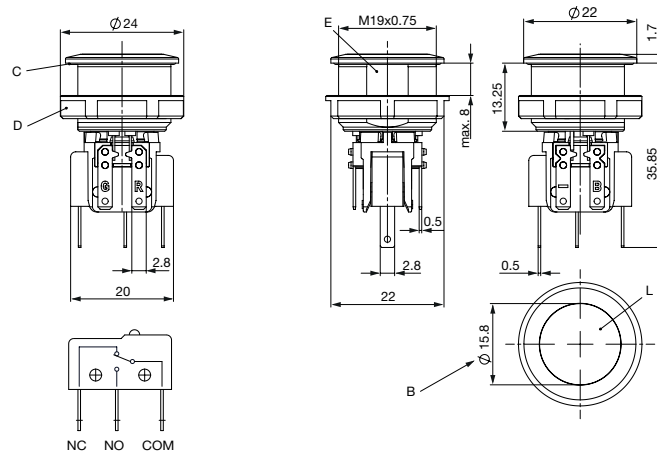
Legend
B = Actuating Area
C = Sealing
D = Nut
E = Anti-rotation protection
L = Illuminated area
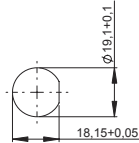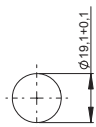
Tolerance Range
Actuator Tolerance Range

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.
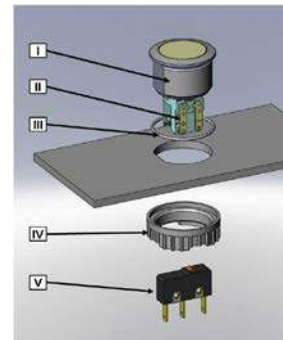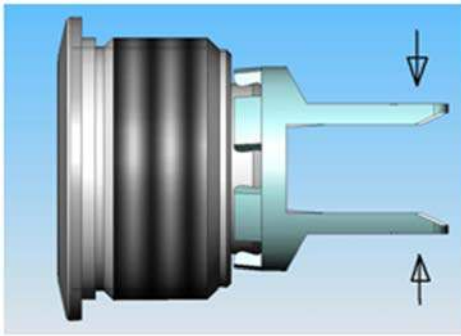
Dimension

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
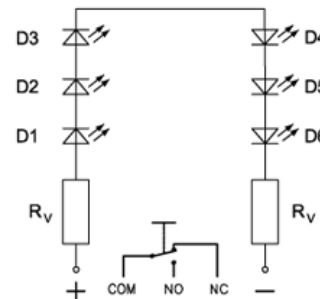
MSM RI / 24 V RGB
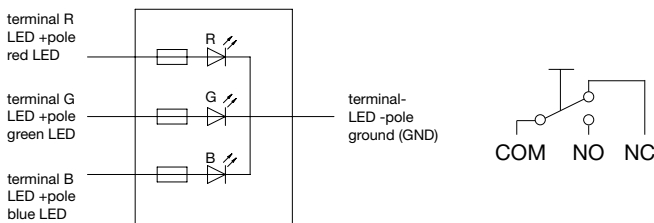
Lighting type	Active terminal R) 🔴	Active terminal G) 🟢	Active terminal B) 🔵	Resulting Color	
Singlecolor	x			Red	🔴
Singlecolor		x		Green	🟢
Singlecolor			x	Blue	🔵
RGB Additive 2	x	x		Yellow	🟡
RGB Additive 2	x		x	Magenta	🟣
RGB Additive 2		x	x	Cyan	🔵
RGB Additive 3	x	x	x	White	⚪

Illumination options for RGB

Marking

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**	

Please note that the font size depends on the number of characters

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	1241.7021.1120000	
19	6	250 VAC	non-illuminated	Stainless Steel	no / yes	MSM 19 CS Pcs	1241.7021.1180000	
19	0.1	30 VDC	Backlighted, red, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL red	1241.8412	▮
19	0.1	30 VDC	Backlighted, green, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL green	1241.8413	▮
19	0.1	30 VDC	Backlighted, blue, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL blue	1241.8415	▮
19	0.1	30 VDC	Backlighted, white, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL white	1241.8416	▮
19	10	250 VAC	Backlighted, red, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL red	1241.8448	▮
19	10	250 VAC	Backlighted, green, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL green	1241.8449	▮
19	10	250 VAC	Backlighted, blue, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL blue	1241.8451	▮
19	10	250 VAC	Backlighted, white, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL white	1241.8452	▮
19	0.1	30 VDC	Backlighted, RGB, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL RGB	3-102-788	▮
19	5 / 3	125/250 VAC	Backlighted, RGB, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL RGB	3-102-789	▮
19	10	250 VAC	Backlighted, RGB, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL RGB	3-102-790	▮
19	5 / 3	125/250 VAC	Backlighted, green, 24 VDC	Stainless Steel	yes / yes	MSM 19 CS BL green	3-120-088	

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 a packing unit.

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 O-ring 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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