

Metal Switch Medium Stroke, Switching Voltage up to 250 VAC



### Description

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

### Unique Selling Proposition

- Attractive tactile feedback
- High quality materials
- Long life span
- Homogeneous illumination

### Standards

- DIN EN 61058-1
- UL 1054

### Approvals

- Approval Reference Type: MSM 16
- 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
- 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 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 16](#); [MSM CS 19](#); [MSM CS 22](#)  
Alternative: Other diameter [MSM 19](#); [MSM 22](#); [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 VDC Ring Illumination
Impulse Withstand Voltage (ESD)	4 kV MSM ST / MSM LE 2 kV MSM RI

**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 ring illuminated variants, IK 10 for non-illuminated variants
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**

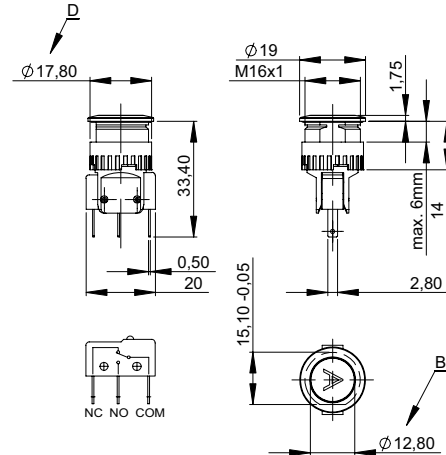
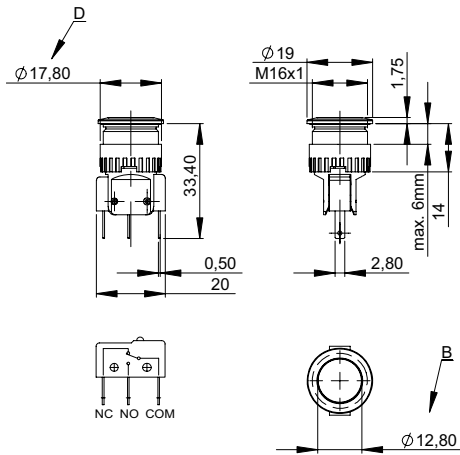
Housings	Stainless Steel
Actuator	Stainless Steel
Light Conductor (Point Illumination)	PC
Illuminated Ring (Ring Illumination)	PMMA
Seal Ring	NBR70
Switcher Collet	PA

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

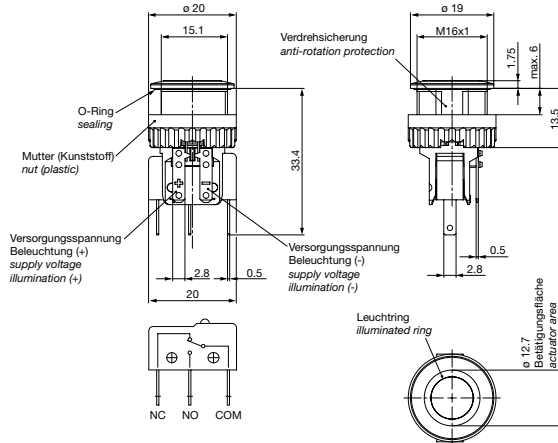
Dimension [mm]

MSM 16 ST

MSM 16 LE



MSM RI

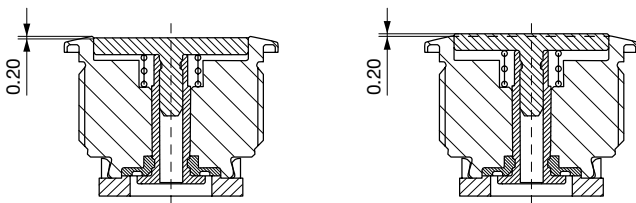


Legend

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

Tolerance Range

Actuator Tolerance Range

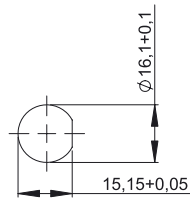
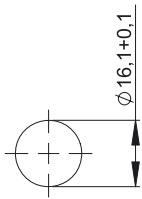


The mounting tolerance range of the actuator varies from 0.2 mm projection length and 0.2 mm short length to the housing edge. The slanting position of the actuator can range within this tolerance.

## Dimension

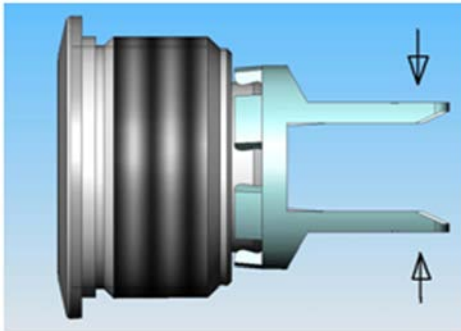
MSM 16 ST

MSM 16 LE, RI

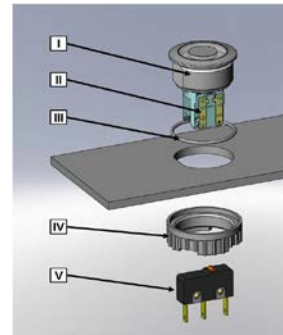


Drilling diagram

## 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:

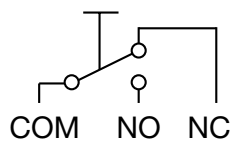
- 1.) Place the gasket accurately on the actuator housing. Then mount the actuator housing assembly into the panel.
- 2.) Tighten the screw nut according to the torque instructions.
- 3.) Clasp the module switching contact into the micro switch holder of the actuator housing.

Installation information:

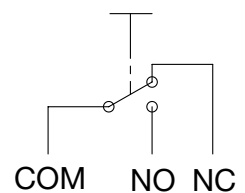
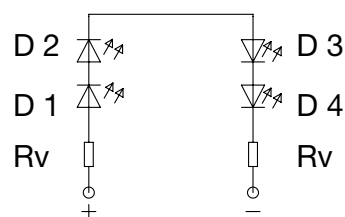
- 1.) The power supply and the configuration of the flat pin terminals have to be installed correctly for the illumination and micro switch function.
- 2.) Insulate the terminals as required. Fully insulated plug-in sleeves are recommended.
- 3.) Installation instructions according to VDE-standard DIN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

## Diagrams

MSM ST / MSM LE



MSM RI



## 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

Diameter	Switching Current	Switching Voltage	Illumination, LED	Housing Material, Torsion Protection	Actuator Material	Config. Code	Order Number
[mm]	[A]	[VAC/ VDC]					
16	100 mA	30 VDC	non-illuminated	Stainless Steel ,no	Stainless Steel	MSM 16 ST	1241.6611.1110000
16	5 / 3 A	125 / 250 VAC	non-illuminated	Stainless Steel ,no	Stainless Steel	MSM 16 ST	1241.6611.1120000
16	10 A	250 VAC	non-illuminated	Stainless Steel ,no	Stainless Steel	MSM 16 ST	1241.6611.1130000
16	100 mA	30 VDC	non-illuminated	Stainless Steel ,yes	Stainless Steel	MSM 16 LE	1241.6612.1110074
16	5 / 3 A	125 / 250 VAC	non-illuminated	Stainless Steel ,yes	Stainless Steel	MSM 16 LE	1241.6612.1120000
16	100 mA	30 VDC	Ring Illumination, red, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 16 RI red	3-102-618
16	10 A	250 VAC	Ring Illumination, red, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 16 RI red	3-102-620
16	100 mA	30 VDC	Ring Illumination, green, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 16 RI green	3-102-621
16	10 A	250 VAC	Ring Illumination, green, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 16 RI green	3-102-623
16	100 mA	30 VDC	Ring Illumination, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 16 RI blue	3-102-624
16	10 A	250 VAC	Ring Illumination, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 16 RI blue	3-102-626
16	100 mA	30 VDC	Ring Illumination, yellow, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 16 RI yellow	3-102-627
16	10 A	250 VAC	Ring Illumination, yellow, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 16 RI yellow	3-102-629
16	100 mA	30 VDC	Ring Illumination, white, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 16 RI white	3-102-630
16	10 A	250 VAC	Ring Illumination, white, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 16 RI white	3-102-632

Legend:  
Type: MSM  
ST = Standard: not lettered  
LE = Lettering: lettered  
RI = Ring Illumination

Diameter	Switching Current	Switching Voltage	Illumination, LED	Housing Material, Torsion Protection	Actuator Material	Config. Code	Order Number
[mm]	[A]	[VAC/ VDC]					

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

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 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



Installation Wrench MSM 16  
Installation Wrench