

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



Description

- Momentary action switch available in version: Standard (ST), with Let-tering (LE), with Backlighting (BL)
- Single color or multicolor illumination
- Choice from 7 colors for multicolor 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

Approvals

- Low Voltage Directive 2014/35/EU: Low Voltage Directive 2014/35/EU
- 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

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: IP 65 from front side to contact area, Micro-Switch is available in versions IP 40 or IP 67, moving actuator is rated IP 40 to frontside
- for use in harsh environments

References

- Alternative: Standard version [MSM 16](#); [MSM 27](#)
- Alternative: double-pole switch:
- Alternative: switch with latching function: [MSM LA 19](#)
- Alternative: Other diameter [MSM CS 16](#); [MSM CS 19](#)
- Alternative: switch with ring illumination: [MSM 16](#); [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.
Number of Poles	1-pole
Supply Voltage	24 / 12 / 5 VDC Surface backlighting

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
Tightening Torque Plastic Nut	max. 4.5 Nm for thread M19, 3.5 Nm for M22
Tightening Torque Stainless Steel Nut	max. 12 Nm for thread M19, 16 Nm for M22

Climatical Data

Operating Temperature	-25 to +85 °C
Storage Temperature	-25 to +85 °C
IP-Protection	IP 65 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

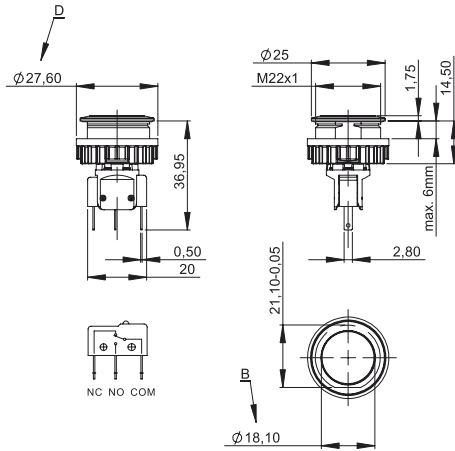
Material

Housings	Stainless Steel
Actuator	Ceramic (Zirconium Dioxide)
Gasket	NBR70
Switcher Collet	PA

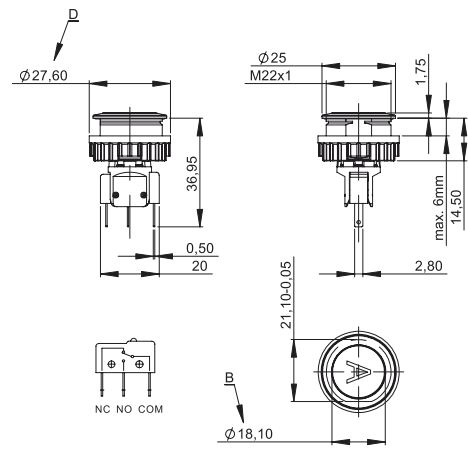
Detailed information on product approvals, code requirements, usage instructions and detailed test conditions can be looked up in [General Product Information](#)

Dimension [mm]

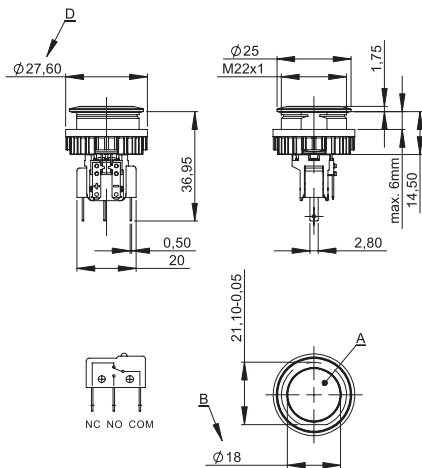
MSM 22 CS ST



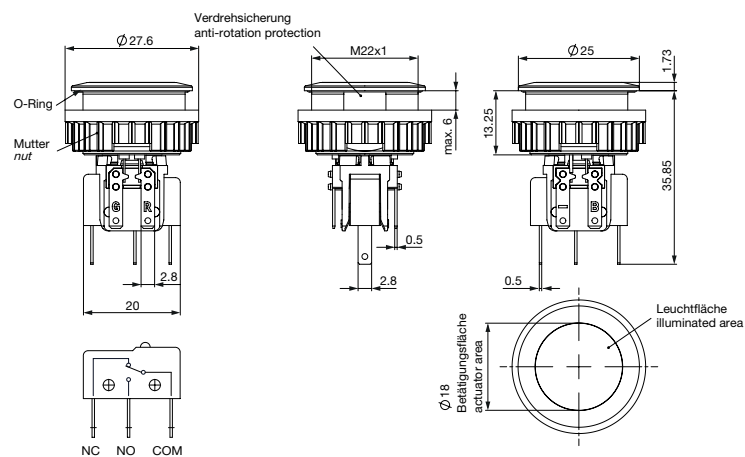
MSM 22 CS LE



MSM 22 CS BL Single color



MSM 22 CS AI Multicolor

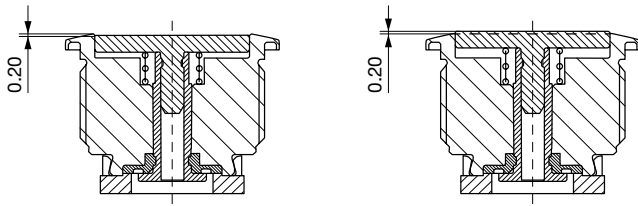


Legend

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

Tolerance Range

Actuator Tolerance Range

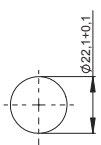


The mounting tolerance range of the actuator varies from 0.2 mm projection length and 0.2 mm short length to the housing edge. The slanting position of the actuator can range within this tolerance.

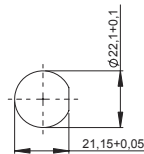
Dimension

MSM 22 CS ST

MSM 22 CS LE / MSM 22 CS BL

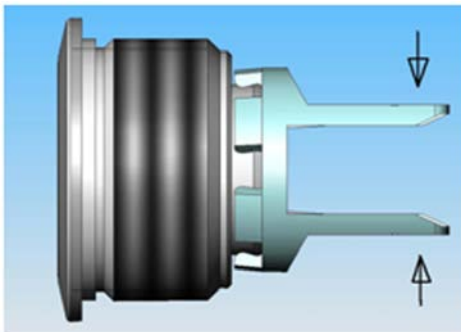


Drilling diagram

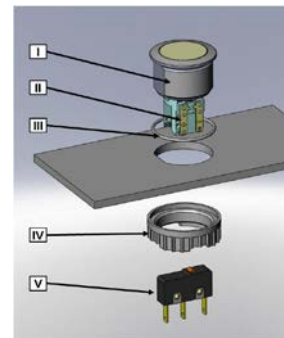


Drilling diagram

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:

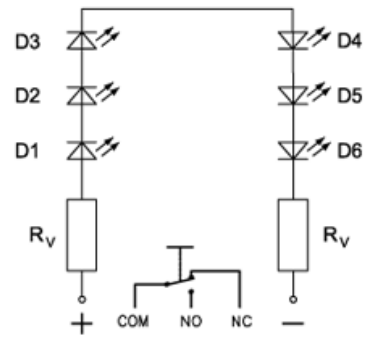
- 1.) The power supply and the configuration of the flat pin terminals have to be installed correctly for the illumination and micro switch function.
- 2.) Insulate the terminals as required. Fully insulated plug-in sleeves are recommended.
- 3.) Installation instructions according to VDE-standard DIN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

Diagrams

MSM CS ST / MSM CS LE

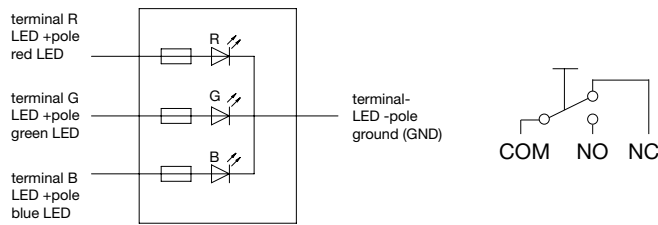


MSM CS BL Single color



MSM RI / 24 V Multicolor

terminal assignment with resistors for 24 VDC



Lighting type	Active terminal R) ●	Active terminal G) ●	Active terminal B) ●	Resulting Color
Multicolor Singlecolor	x			Red ●
Multicolor Singlecolor		x		Green ●
Multicolor Singlecolor			x	Blue ●
Multicolor RGB Additive 2	x	x		Yellow ●
Multicolor RGB Additive 2	x		x	Magenta ●
Multicolor RGB Additive 2		x	x	Cyan ●
Multicolor RGB Additive 3	x	x	x	White ○

Multicolor lighting options

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	Torsion Protection	Housing Material	Config. Code	Order Number
[mm]	[A]	[VAC/ VDC]					
22	0.1 A	30 VDC	Backlighted, bright red, 24 VDC	yes	Stainless Steel	MSM 22 CS BL bright red	1241.8484
22	0.1 A	30 VDC	Backlighted, bright green, 24 VDC	yes	Stainless Steel	MSM 22 CS BL bright green	1241.8485
22	0.1 A	30 VDC	Backlighted, bright blue, 24 VDC	yes	Stainless Steel	MSM 22 CS BL bright blue	1241.8487
22	0.1 A	30 VDC	Backlighted, bright white, 24 VDC	yes	Stainless Steel	MSM 22 CS BL bright white	1241.8488
22	10 A	250 VAC	Backlighted, bright red, 24 VDC	yes	Stainless Steel	MSM 22 CS BL bright red	1241.8520
22	10 A	250 VAC	Backlighted, bright green, 24 VDC	yes	Stainless Steel	MSM 22 CS BL bright green	1241.8521
22	10 A	250 VAC	Backlighted, bright blue, 24 VDC	yes	Stainless Steel	MSM 22 CS BL bright blue	1241.8523
22	10 A	250 VAC	Backlighted, bright white, 24 VDC	yes	Stainless Steel	MSM 22 CS BL bright white	1241.8524
22	0.1 A	30 VDC	non-illuminated	no	Stainless Steel	MSM 22 CS ST	1241.7031.1110000
22	5 / 3 A	125 / 250 VAC	non-illuminated	no	Stainless Steel	MSM 22 CS ST	1241.7031.1120000
22	10 A	250 VAC	non-illuminated	no	Stainless Steel	MSM 22 CS ST	1241.7031.1130000
22	5 A	250 VAC	non-illuminated	no	Stainless Steel	MSM 22 CS ST	1241.7031.1180000
22	0.1 A	30 VDC	non-illuminated	yes	Stainless Steel	MSM 22 CS LE	1241.7032.1110000
22	5 / 3 A	125 / 250 VAC	non-illuminated	yes	Stainless Steel	MSM 22 CS LE	1241.7032.1120000
22	10 A	250 VAC	non-illuminated	yes	Stainless Steel	MSM 22 CS LE	1241.7032.1130000
22	5 A	250 VAC	non-illuminated	yes	Stainless Steel	MSM 22 CS LE	1241.7032.1180000
22	0.1 A	30 VDC	Backlighted, red, 24 VDC	yes	Stainless Steel	MSM 22 CS BL red	1241.7036.1111000
22	0.1 A	30 VDC	Backlighted, green, 24 VDC	yes	Stainless Steel	MSM 22 CS BL green	1241.7036.1112000
22	0.1 A	30 VDC	Backlighted, green, 12 VDC	yes	Stainless Steel	MSM 22 CS BL green	1241.7036.1112074E
22	0.1 A	30 VDC	Backlighted, blue, 24 VDC	yes	Stainless Steel	MSM 22 CS BL blue	1241.7036.1114000
22	0.1 A	30 VDC	Backlighted, blue, 12 VDC	yes	Stainless Steel	MSM 22 CS BL blue	1241.7036.1114000E

Diameter	Switching Current	Switching Voltage	Illumination, LED	Torsion Protection	Housing Material	Config. Code	Order Number
[mm]	[A]	[VAC/ VDC]					
22	0.1 A	30 VDC	Backlighted, white, 5 VDC	yes	Stainless Steel	MSM 22 CS BL white	1241.7036.1115000B
22	5 / 3 A	125 / 250 VAC	Backlighted, red, 24 VDC	yes	Stainless Steel	MSM 22 CS BL red	1241.7036.1121000
22	5 / 3 A	125 / 250 VAC	Backlighted, red, 12 VDC	yes	Stainless Steel	MSM 22 CS BL red	1241.7036.1121000E
22	5 / 3 A	125 / 250 VAC	Backlighted, red, 24 VDC	yes	Stainless Steel	MSM 22 CS BL red	1241.7036.1121074
22	5 / 3 A	125 / 250 VAC	Backlighted, green, 24 VDC	yes	Stainless Steel	MSM 22 CS BL green	1241.7036.1122000
22	5 / 3 A	125 / 250 VAC	Backlighted, green, 5 VDC	yes	Stainless Steel	MSM 22 CS BL green	1241.7036.1122065B
22	5 / 3 A	125 / 250 VAC	Backlighted, blue, 24 VDC	yes	Stainless Steel	MSM 22 CS BL blue	1241.7036.1124000
22	10 A	250 VAC	Backlighted, red, 24 VDC	yes	Stainless Steel	MSM 22 CS BL red	1241.7036.1131000
22	10 A	250 VAC	Backlighted, green, 24 VDC	yes	Stainless Steel	MSM 22 CS BL green	1241.7036.1132000
22	10 A	250 VAC	Backlighted, blue, 24 VDC	yes	Stainless Steel	MSM 22 CS BL blue	1241.7036.1134000
22	5 A	250 VAC	Backlighted, red, 24 VDC	yes	Stainless Steel	MSM 22 CS BL red	1241.7036.1181000
22	5 A	250 VAC	Backlighted, green, 24 VDC	yes	Stainless Steel	MSM 22 CS BL green	1241.7036.1182000
22	5 A	250 VAC	Backlighted, blue, 24 VDC	yes	Stainless Steel	MSM 22 CS BL blue	1241.7036.1184000
22	10 A	250 VAC	Backlighted, bright red, 24 VDC	yes	Stainless Steel	MSM 22 CS BL bright red	3-102-446
22	100 mA	30 VDC	Backlighted, multicolor, 24 VDC	yes	Stainless Steel	MSM 22 CS BL multicolor	3-102-774
22	10 A	250 VAC	Backlighted, multicolor, 24 VDC	yes	Stainless Steel	MSM 22 CS BL multicolor	3-102-776

Legend:

Type: MSM

CS = Ceramic Surface

ST = Standard: not lettered

LE = Lettering: lettered

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

IP 65 degree of protection front side contact area; degree of protection rear side contact area IP 40 or IP 67 optional -> see Technical Data Micro Switch

Backlighting versions: Supply voltage 24 VDC, 12 VDC (E), 5 VDC (B), (further 12 or 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/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



Installation Wrench MSM 22
Installation wrench