

Metal Switch Medium Stroke, Switching Voltage up to 250 VAC



MSM 19 RI white



Description

- Momentary switch available in version: Standard (ST), with Lettering (LE), from diameter 19 mm with Point Illumination (PI) 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

Standards

- DIN EN 61058-1
- UL 1054

Approvals

- Low Voltage Directive 2006/95/EC 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

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
- optional with point or ring illumination
- for use in harsh environments

References

- Alternative: double-pole switch: [MSM DP](#)
 Alternative: switch with latching function: [MSM LA](#)
 Alternative: switch with backlighted illumination: [MSM CS](#)

Weblinks

[html-datasheet](#), [General Product Information](#), [Approvals](#), [CE declaration of conformity](#), [RoHS](#), [CHINA-RoHS](#), [e-Shop](#), [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 / 12 / 5 VDC Ring Illumination, without series resistor Point Illumination, LED operating data are listed in separate table |
| Surge Strength | 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 Breaking Capacity | 750 W |
| Lifetime | 0.2 mill. actuations at Rated Braking 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 Breaking Capacity | 3 W |
| Lifetime | 0.2 mill. actuations at Rated Braking 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 Breaking Capacity | 2500 W |
| Lifetime | 0.05 mill. actuations at Rated Braking 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 Breaking Capacity | 1250 W |
| Lifetime | 0.05 mill. actuations at Rated Braking Capacity |

Micro Switch 0,1 A / 250 VAC, IP67 - on request

| | |
|-------------------------|---|
| Switching Voltage | max. 250 VAC |
| Switching Current | max. 0.1 |
| Rated Breaking Capacity | 25 W |
| Lifetime | 0.05 mill. actuations at Rated Braking Capacity |

Micro Switch 10 A / 250 VAC, IP67 - on request

| | |
|-------------------------|---|
| Switching Voltage | max. 250 VAC |
| Switching Current | max. 10 A |
| Rated Breaking Capacity | 2500 W |
| Lifetime | 0.01 mill. actuations at Rated Braking 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 mill. actuations |
| Shock Protection | IK 07 for mounting diameter 19, 22, 30 mm., IK 06 for mounting diameter 16 mm |
| Starting Torque Plastic Nut | max. 2 Nm for thread M16, 4.5 Nm for M19, 3.5 Nm for M22, 8 Nm for M30 |
| Starting Torque Stainless Steel Nut | max. 10 Nm for thread M16, 12 Nm for M19, 16 Nm for M22, 50 Nm for M30 |

Climatical Data

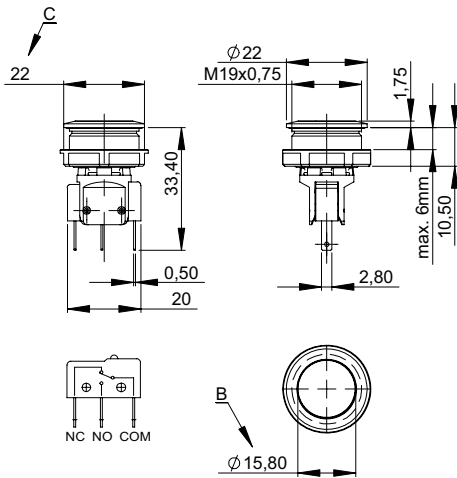
| | |
|--|---|
| Operating Temperature | -25 to +85 °C |
| Storage Temperature | -25 to +85 °C |
| IP-Protection | IP 40 Front Side mechanical, IP 67 Front Side Contact Area, IP 40 / IP 67 Rear Side Contact Area optional |
| Salt Spray Test (acc. to DIN 50021-SS) | 24 h / 48 h / 96 h Residence Time |

Material

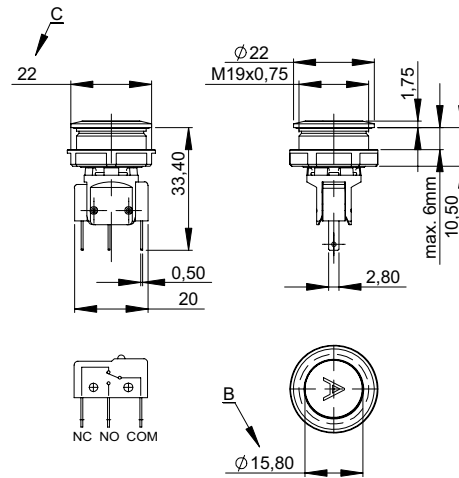
| | |
|--------------------------------------|-----------------|
| Housing | Stainless Steel |
| Actuator | Stainless Steel |
| Light Conductor (Point Illumination) | PC |
| Illuminated Ring (Ring Illumination) | PA |
| Gasket | NBR70 |
| Switcher Collet | PA |

Dimensions

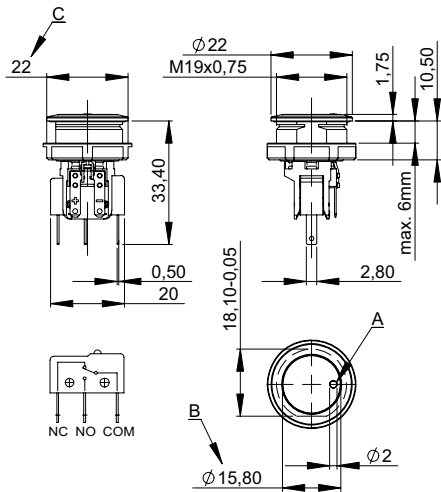
MSM 19 ST



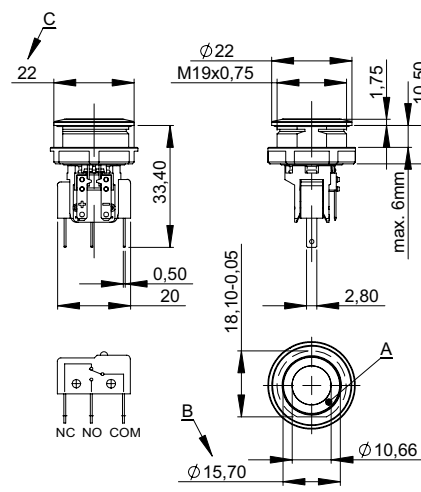
MSM 19 LE



MSM 19 PI



MSM 19 RI

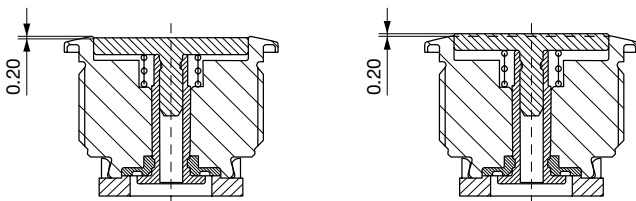


Legend

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

Tolerance Range

Actuator Tolerance Range

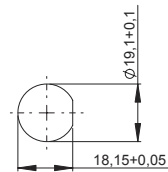
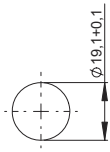


The mounting tolerance range of the actuator varies from 0.2 mm projection length and 0.2 mm short length to the housing edge. The slanting position of the actuator can range within this tolerance.

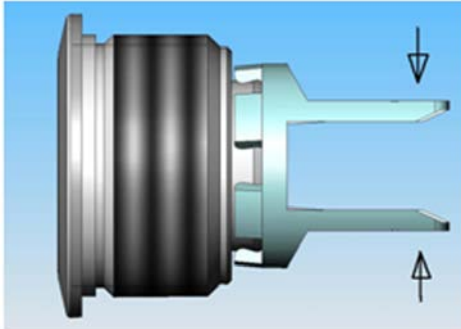
Dimensions

MSM 19 ST / MSM 19 RI

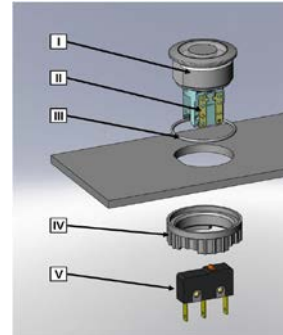
MSM 19 LE / MSM 19 PI / MSM 19 RI optional



Mounting 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:

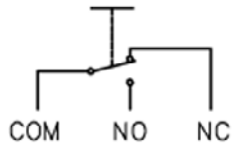
- 1.) Place the gasket accurately on the actuator housing. Then mount the actuator housing assembly into the panel.
- 2.) Tighten the screw nut according to the torque instructions.
- 3.) Clasp the module switching contact into the micro switch holder of the actuator housing.

Installation information:

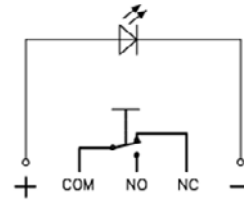
- 1.) The power supply and the configuration of the flat pin terminals have to be installed correctly for the illumination and micro switch function.
- 2.) Insulate the terminals as required. Fully insulated plug-in sleeves are recommended.
- 3.) Installation instructions according to VDE-standard DIN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

Diagrams

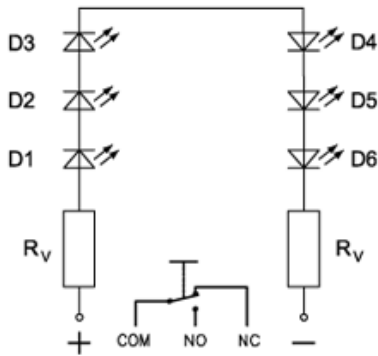
MSM ST / MSM LE



MSM PI



MSM RI



Point Illumination

| Operating Data | Forward Current max. | Forward Voltage at 10 mA | Forward Voltage at 8 mA |
|----------------|----------------------|--------------------------|-------------------------|
| LED red | 30 mA | 1.9 VDC | |
| LED green | 30 mA | 2.1 VDC | |
| LED yellow | 30 mA | 2.1 VDC | |
| LED blue | 20 mA | | 3.7 VDC |
| LED white | 30 mA | | |

Attention: Switches are delivered without series resistor.

Recommendation of series resistors for point illumination

| LED-Color | I _D [mA] | I _{DMax} [mA] | U _V 5 | | | | U _V 12 | | | | U _V 24 | | | |
|-----------|------------------------|---------------------------|-----------------------|--------------------------------------|-------------------------|--|-----------------------|--------------------------------------|-------------------------|--|-----------------------|--------------------------------------|-----------------------|--|
| | | | R _V [Ω] | R _V ^{E24} [Ω] | P _V [W]** | | R _V [Ω] | R _V ^{E24} [Ω] | P _V [W]** | | R _V [Ω] | R _V ^{E24} [Ω] | P _V [W] | |
| red | 10 | --- | 310 | 330 | 0,03 | | 1010 | 1000 | 0,10 | | 2210 | 2200 | 0,22 | |
| | --- | 30 | 67 | 68 | 0,06 | | 300 | 300 | 0,27 | | 700 | 750 | 0,63 | |
| green | 10 | --- | 290 | 300 | 0,03 | | 990 | 1000 | 0,10 | | 2190 | 2200 | 0,22 | |
| | --- | 30 | 67 | 68 | 0,06 | | 300 | 300 | 0,27 | | 700 | 750 | 0,63 | |
| Yellow | 10 | --- | 290 | 300 | 0,03 | | 990 | 1000 | 0,10 | | 2190 | 2200 | 0,22 | |
| | --- | 30 | 67 | 68 | 0,06 | | 300 | 300 | 0,27 | | 700 | 750 | 0,63 | |
| blue | 8 | --- | 163 | 160 | 0,01 | | 1038 | 1100 | 0,07 | | 2538 | 2700 | 0,16 | |
| | --- | 20 | 25 | 27 | 0,01 | | 375 | 390 | 0,15 | | 975 | 1000 | 0,39 | |
| white | 10 | --- | 140 | 150 | 0,01 | | 840 | 820 | 0,08 | | 2040 | 2200 | 0,20 | |
| | --- | 30 | 33 | 33 | 0,03 | | 267 | 270 | 0,24 | | 667 | 680 | 0,60 | |




- I_D LED-Forward Current [8mA/10mA]
- I_{DMax} LED-Forward Current max. [20mA/30mA]
- R_V Series Resistor (calculated)
- R_V^{E24} Series Resistor (regarding E24-Resistor series)
- P_V Power dissipation concerning R_V (calculated)

Lettering

The last three digits in the order number define the lettering:

| | |
|---------|----------------------|
| 000 | No Lettering |
| 001-074 | Standard Lettering |
| 101- | Customized Lettering |

Order Index Lettering

| | | | |
|----------------|----------------|---------------------|---|
| 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 | |
| 018 = R | 038 = - | 058 = ENTER | |
| 019 = S | 039 = . | 059 = BACK | |
| 020 = T | 040 = x | 060 = LINE | |

Lettering Colour of Laser Lettering

| Material | Lettering Colour |
|-----------------|----------------------|
| Stainless Steel | black Filled letters |

For further Lettering details see also weblink:

[General Product Information](#)

Variants

| Diameter | Switching Current | Switching Voltage | Illumination, LED | Housing Material, Twist Protection | IP-Protection Frontside; Microswitch | Config. Code | Order Number |
|----------|-------------------|-------------------|-----------------------------------|------------------------------------|--------------------------------------|------------------|--------------------|
| [mm] | [A] | [VAC/ VDC] | | | | | |
| 19 | 100 mA | 30 VDC | non-illuminated | Stainless Steel ,no | IP 67 / IP 40 ;IP 40 | MSM 19 ST | 1241.6621.1110000 |
| 19 | 5 / 3 A | 125 / 250 VAC | non-illuminated | Stainless Steel ,no | IP 67 / IP 40 ;IP 40 | MSM 19 ST | 1241.6621.1120000 |
| 19 | 10 A | 250 VAC | non-illuminated | Stainless Steel ,no | IP 67 / IP 40 ;IP 40 | MSM 19 ST | 1241.6621.1130000 |
| 19 | 6 A | 250 VAC | non-illuminated | Stainless Steel ,no | IP 67 / IP 40 ;IP 67 | MSM 19 ST | 1241.6621.1180000 |
| 19 | 100 mA | 30 VDC | non-illuminated | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 LE | 1241.6622.1110000 |
| 19 | 5 / 3 A | 125 / 250 VAC | non-illuminated | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 LE | 1241.6622.1120000 |
| 19 | 10 A | 250 VAC | non-illuminated | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 LE | 1241.6622.1130000 |
| 19 | 5 / 3 A | 125 / 250 VAC | non-illuminated | Alu red ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 LE | 1241.6622.3120000 |
| 19 | 5 / 3 A | 125 / 250 VAC | non-illuminated | Alu red ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 LE | 1241.6622.3120057 |
| 19 | 5 / 3 A | 125 / 250 VAC | non-illuminated | Alu red ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 LE | 1241.6622.3120062 |
| 19 | 5 / 3 A | 125 / 250 VAC | non-illuminated | Alu red ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 LE | 1241.6622.3120066 |
| 19 | 5 / 3 A | 125 / 250 VAC | non-illuminated | Alu green ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 ST | 1241.6622.5120000 |
| 19 | 5 / 3 A | 125 / 250 VAC | non-illuminated | Alu green ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 ST | 1241.6622.5120061 |
| 19 | 5 / 3 A | 125 / 250 VAC | non-illuminated | Alu green ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 ST | 1241.6622.5120065 |
| 19 | 5 / 3 A | 125 / 250 VAC | non-illuminated | Alu green ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 ST | 1241.6622.5120072 |
| 19 | 100 mA | 30 VDC | Point Illumination, red | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 PI red | 1241.6623.1111000 |
| 19 | 100 mA | 30 VDC | Point Illumination, green | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 PI green | 1241.6623.1112000 |
| 19 | 100 mA | 30 VDC | Point Illumination, blue | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 PI blue | 1241.6623.1114000 |
| 19 | 5 / 3 A | 125 / 250 VAC | Point Illumination, red | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 PI red | 1241.6623.1121000 |
| 19 | 5 / 3 A | 125 / 250 VAC | Point Illumination, green | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 PI green | 1241.6623.1122000 |
| 19 | 5 / 3 A | 125 / 250 VAC | Point Illumination, yellow | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 PI yellow | 1241.6623.1123000 |
| 19 | 5 / 3 A | 125 / 250 VAC | Point Illumination, blue | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 PI blue | 1241.6623.1124000 |
| 19 | 10 A | 250 VAC | Point Illumination, red | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 PI red | 1241.6623.1131000 |
| 19 | 10 A | 250 VAC | Point Illumination, green | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 PI green | 1241.6623.1132000 |
| 19 | 10 A | 250 VAC | Point Illumination, blue | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 PI blue | 1241.6623.1134000 |
| 19 | 100 mA | 30 VDC | Ring Illumination, red, 24 VDC | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 RI red | 1241.6624.1111000 |
| 19 | 100 mA | 30 VDC | Ring Illumination, green, 24 VDC | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 RI green | 1241.6624.1112000 |
| 19 | 100 mA | 30 VDC | Ring Illumination, blue, 24 VDC | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 RI blue | 1241.6624.1114000 |
| 19 | 100 mA | 30 VDC | Ring Illumination, blue, 12 VDC | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 RI blue | 1241.6624.1114000E |
| 19 | 5 / 3 A | 125 / 250 VAC | Ring Illumination, red, 24 VDC | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 RI red | 1241.6624.1121000 |
| 19 | 5 / 3 A | 125 / 250 VAC | Ring Illumination, green, 24 VDC | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 RI green | 1241.6624.1122000 |
| 19 | 5 / 3 A | 125 / 250 VAC | Ring Illumination, blue, 24 VDC | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 RI blue | 1241.6624.1124000 |
| 19 | 5 / 3 A | 125 / 250 VAC | Ring Illumination, white, 24 VDC | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 RI white | 1241.6624.1125000 |
| 19 | 10 A | 250 VAC | Ring Illumination, red, 24 VDC | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 RI red | 1241.6624.1131000 |
| 19 | 10 A | 250 VAC | Ring Illumination, green, 24 VDC | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 RI green | 1241.6624.1132000 |
| 19 | 10 A | 250 VAC | Ring Illumination, yellow, 24 VDC | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 RI yellow | 1241.6624.1133000 |
| 19 | 10 A | 250 VAC | Ring Illumination, blue, 24 VDC | Stainless Steel ,yes | IP 67 / IP 40 ;IP 40 | MSM 19 RI blue | 1241.6624.1134000 |
| 19 | 6 A | 250 VAC | Ring Illumination, red, 24 VDC | Stainless Steel ,yes | IP 67 / IP 40 ;IP 67 | MSM 19 RI red | 1241.6624.1181000 |
| 19 | 6 A | 250 VAC | Ring Illumination, green, 24 VDC | Stainless Steel ,yes | IP 67 / IP 40 ;IP 67 | MSM 19 RI green | 1241.6624.1182000 |

Legend:

Type:

SI = Snap-in mounting versions

ST = Standard: not lettered

LE = Lettering: lettered

PI = Point Illumination: Lettering possible

RI = Ring Illumination: Lettering possible

BL = Full Surface Backlighting: Lettering possible

Alu red = red anodized aluminum housing, actuator stainless steel

1241.6622.3120062 -> 3 last numbers (062) see Order Index Lettering

| Diameter | Switching Current | Switching Voltage | Illumination, LED | Housing Material, Twist Protection | IP-Protection Frontside; Microswitch | Config. Code | Order Number |
|----------|-------------------|-------------------|-------------------|------------------------------------|--------------------------------------|--------------|--------------|
| [mm] | [A] | [VAC/ VDC] | | | | | |

IP67 / IP40 ; IP40 = degree of protection front side contact area / degree of protection front side movable actuator ; degree of protection rear side contact area

Ring illuminated versions: 24 VDC supply voltage (12 and 5 VDC on request)

Customer-specific versions on request.

The nut with gasket and micro switch are enclosed in the box.

Packaging unit 10 blistered in boxes (10 pcs.)

Accessories

Description

[Installation Wrench MSM 16](#)
Installation Wrench

[Installation Wrench MSM 22](#)
Installation wrench