Metal Switch Medium Stroke, Switching Voltage up to 250 VAC

Single-color

RGB

non-illuminated

See below:
Approvals and Compliances

Description

- Momentary action switch available in version: Standard (ST), with Lettering (LE), with Point Illumination (PI) and with Ring Illumination (RI)
- 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 RGB illumination

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: IP67 from front side to contact area, Micro-Switch is available in versions IP40 or IP67
- For use in harsh environments (see technical data)

References

Alternative: switch with latching function: MSM LA 19
Alternative: switch with backlighted illumination: MSM CS 16; MSM CS 19; MSM CS 22; MSM LA CS 19; MSM LA CS 22
Alternative: Other diameter
Alternative: version for snap-in mounting
Alternative: double-pole switch: MSM DP 19; MSM DP 22; MSM DP 30

Weblinks

pdf data sheet, html datasheet, General Product Information, CAD-Drawings, Product News, Detailed request for product

Technical Data

Electrical Data	
Switching Function	momentary
Number of Poles	SPDT
Supply Voltage	24 VDC Ring Illumination , Point Illumination without series resistor , LED operating data are listed in separate table
	5 VDC and 12 VDC RI variants (except for RGB) on request (MOQ 500 pieces)
Impulse Withstand Voltage (ESD)	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 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 6 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. 3.5 Nm
Mounting screw torque Stainless Steel Nut	max. 16 Nm
Climatical Data	
Operating Temperature	-25 to 85 °C
Storage Temperature	-25 to 85 °C
Protection Class	IP67
Switching Unit	IP40
	IP67 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)	PA for dotted single color variants
	PMMA for RGB and homogeneous single color variants
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
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	IEC 62368-1 includes the basic requirements for safety of audio, video, information technology and office equipment.

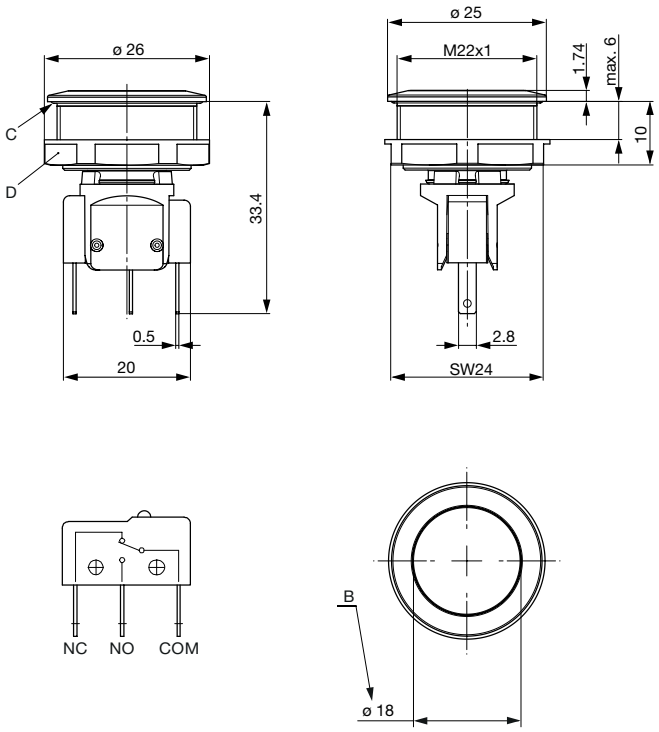
Compliances

The product complies with following Guide Lines

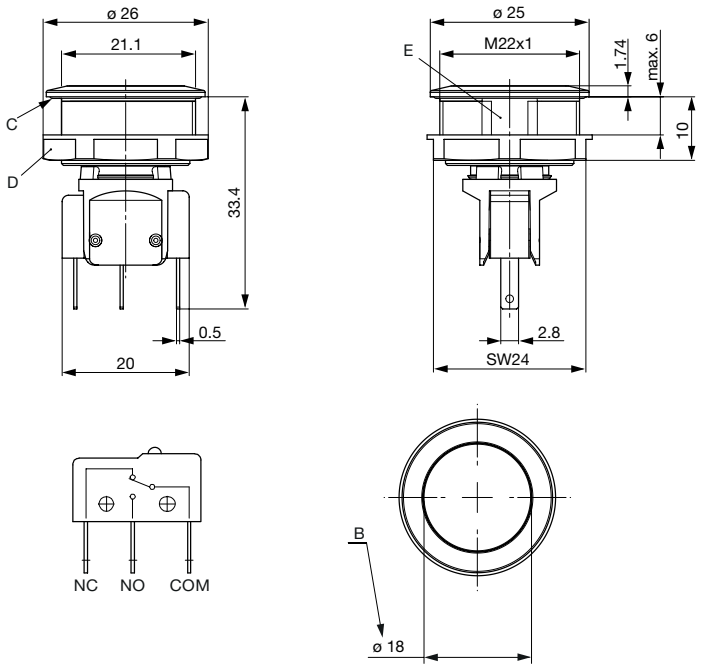
Identification	Details	Initiator	Description
RoHS	RoHS	SCHURTER AG	Directive RoHS 2011/65/EU, Amendment (EU) 2015/863
REACH	REACH	SCHURTER AG	On 1 June 2007, Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals 1 (abbreviated as "REACH") entered into force.

Dimension [mm]

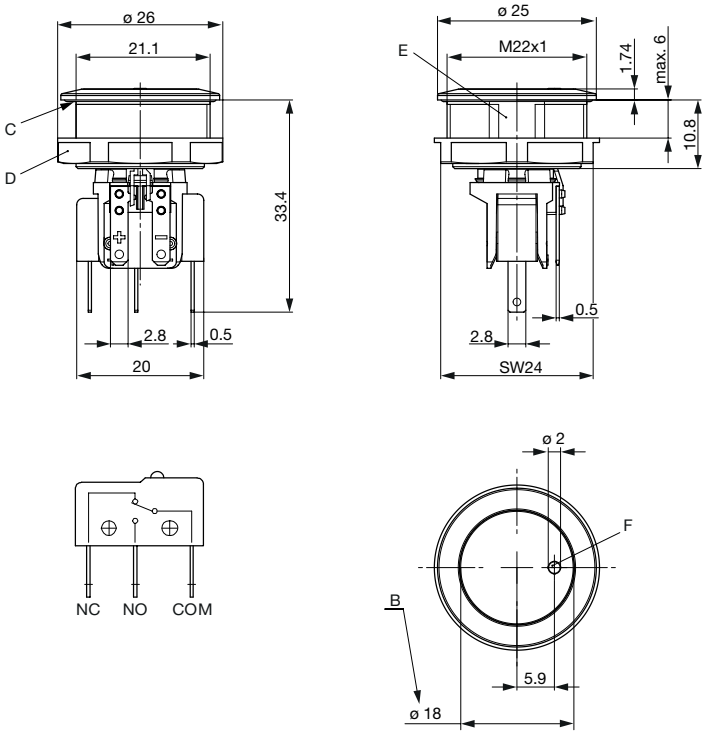
MSM 22 ST

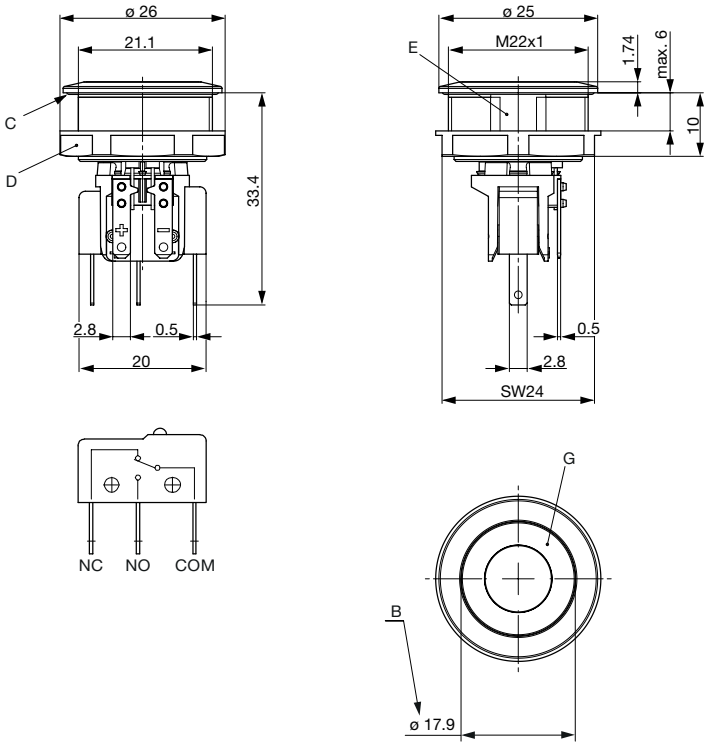


MSM 22 LE

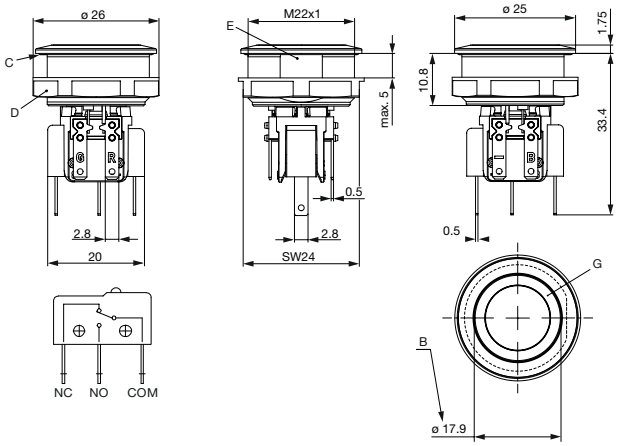


MSM 22 PI





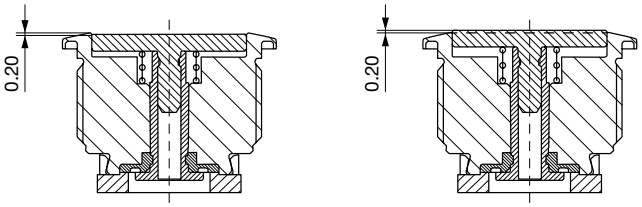
MSM 22 RI RGB



Legend
B = Actuating Area
C = Sealing
D = Nut
E = Anti-rotation protection
F = Point illumination
G = Illumination ring

Tolerance Range

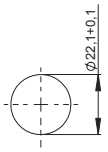
Actuator Tolerance Range



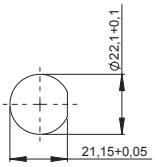
The mounting tolerance range of the actuator varies from 0.2 mm projection length and 0.2 mm short length to the housing edge. The slanting position of the actuator can range within this tolerance.

Dimension

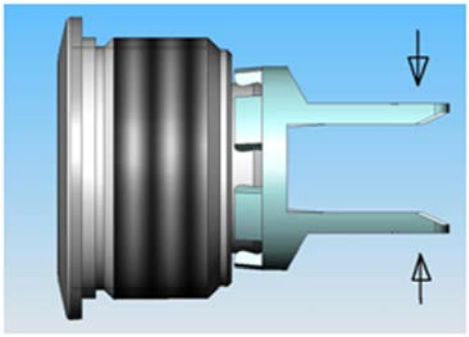
MSM 22 ST / MSM 22 RI



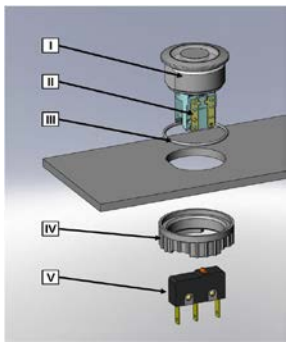
MSM 22 LE / MSM 22 PI / MSM 22 RI optional



Assembly Instructions



During assembly, the protruding bars of the holder should not be pressed together.



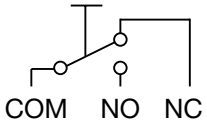
I Housing
II Flat Pin Terminal (Illumination)
III Gasket
IV Nut (Nut type see Dimensions)
V Module Switching Contact

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.

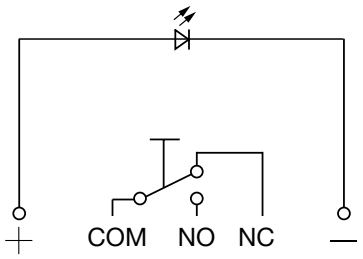
Installation information:
1.) The power supply and the configuration of the flat pin terminals have to be installed correctly for the illumination and micro switch function.
2.) Insulate the terminals as required. Fully insulated plug-in sleeves are recommended.
3.) Installation instructions according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

Diagrams

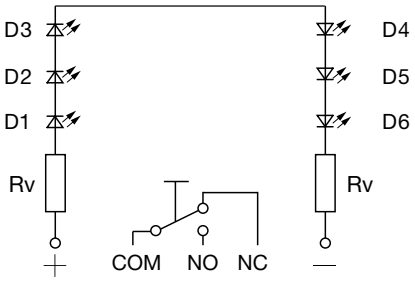
MSM ST / MSM LE



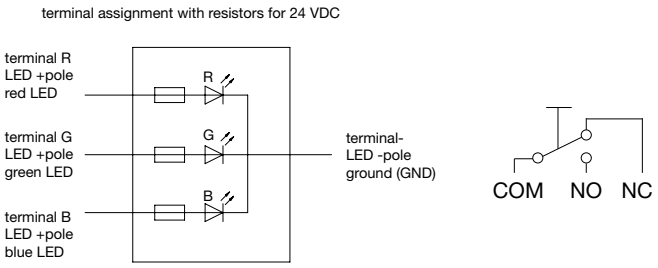
MSM PI



MSM RI / 24 V 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

Point Illumination

Operating Data	Forward Current max.	Forward Voltage at 10 mA	Forward Voltage max.
LED red	30 mA	1.9 VDC	3.0 VDC
LED green	30 mA	2.4 VDC	3.0 VDC
LED yellow	30 mA	2.4 VDC	3.0 VDC
LED blue	20 mA	3.8 VDC	4.5 VDC
LED red/green	25 mA	2.0 VDC	2.5 VDC
Attention: Switches are delivered without series resistor.			

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 =**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

IP Switching Unit	Switching Current	Switching Voltage	Illumination, LED	Housing Material, Torsion Protection	Actuator Material, Torsion Protection	Config. Code	Order Number	
	[A]	[VAC/ VDC]						
IP40	100 mA	30 VDC	non-illuminated	Stainless Steel ,no	Stainless Steel ,no	MSM 22 Pcs	1241.6631.1110000	
IP40	5 / 3 A	125 / 250 VAC	non-illuminated	Stainless Steel ,no	Stainless Steel ,no	MSM 22 Pcs	1241.6631.1120000	
IP40	10 A	250 VAC	non-illuminated	Stainless Steel ,no	Stainless Steel ,no	MSM 22 Pcs	1241.6631.1130000	
IP67	6 A	250 VAC	non-illuminated	Stainless Steel ,no	Stainless Steel ,no	MSM 22 Pcs	1241.6631.1180000	
IP40	100 mA	30 VDC	non-illuminated	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 LE	1241.6632.1110000	
IP40	5 / 3 A	125 / 250 VAC	non-illuminated	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 LE	1241.6632.1120000	
IP40	5 / 3 A	125 / 250 VAC	non-illuminated	Alu red ,yes	Stainless Steel ,yes	MSM 22 LE	1241.6632.3120000	
IP40	5 / 3 A	125 / 250 VAC	non-illuminated	Alu red ,yes	Stainless Steel ,yes	MSM 22 LE	1241.6632.3120057	
IP40	5 / 3 A	125 / 250 VAC	non-illuminated	Alu red ,yes	Stainless Steel ,yes	MSM 22 LE	1241.6632.3120066	
IP40	5 / 3 A	125 / 250 VAC	non-illuminated	Alu green ,yes	Stainless Steel ,yes	MSM 22 LE	1241.6632.5120000	
IP40	5 / 3 A	125 / 250 VAC	non-illuminated	Alu green ,yes	Stainless Steel ,yes	MSM 22 LE	1241.6632.5120061	
IP40	5 / 3 A	125 / 250 VAC	non-illuminated	Alu green ,yes	Stainless Steel ,yes	MSM 22 LE	1241.6632.5120065	
IP40	100 mA	30 VDC	Point Illumination, red	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 PI red	1241.6633.1111000	
IP40	100 mA	30 VDC	Point Illumination, green	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 PI green	1241.6633.1112000	
IP40	100 mA	30 VDC	Point Illumination, blue	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 PI blue	1241.6633.1114000	
IP40	5 / 3 A	125 / 250 VAC	Point Illumination, red	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 PI red	1241.6633.1121000	
IP40	5 / 3 A	125 / 250 VAC	Point Illumination, green	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 PI green	1241.6633.1122000	
IP40	5 / 3 A	125 / 250 VAC	Point Illumination, blue	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 PI blue	1241.6633.1124000	
IP40	5 / 3 A	125 / 250 VAC	Point Illumination, red / green	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 PI red / green	1241.6633.1126000	

IP Switching Unit	Switching Current [A]	Switching Voltage [VAC/ VDC]	Illumination, LED	Housing Material, Torsion Protection	Actuator Material, Torsion Protection	Config. Code	Order Number	
IP40	10 A	250 VAC	Point Illumination, red	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 PI red	1241.6633.1131000	
IP40	10 A	250 VAC	Point Illumination, green	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 PI green	1241.6633.1132000	
IP40	10 A	250 VAC	Point Illumination, blue	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 PI blue	1241.6633.1134000	
IP40	100 mA	30 VDC	RI dotted, red, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI red	1241.6634.1111000	■
IP40	100 mA	30 VDC	RI dotted, green, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI green	1241.6634.1112000	■
IP40	100 mA	30 VDC	RI dotted, yellow, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI yellow	1241.6634.1113000	
IP40	100 mA	30 VDC	RI dotted, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI blue	1241.6634.1114000	■
IP40	5 / 3 A	125 / 250 VAC	RI dotted, red, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI red	1241.6634.1121000	■
IP40	5 / 3 A	125 / 250 VAC	RI dotted, green, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI green	1241.6634.1122000	■
IP40	5 / 3 A	125 / 250 VAC	RI dotted, yellow, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI yellow	1241.6634.1123000	
IP40	5 / 3 A	125 / 250 VAC	RI dotted, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI blue	1241.6634.1124000	■
IP40	5 / 3 A	125 / 250 VAC	RI dotted, white, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI white	1241.6634.1125000	■
IP40	10 A	250 VAC	RI dotted, red, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI red	1241.6634.1131000	■
IP40	10 A	250 VAC	RI dotted, green, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI green	1241.6634.1132000	■
IP67	6 A	250 VAC	RI dotted, red, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI red	1241.6634.1181000	■
IP67	6 A	250 VAC	RI dotted, green, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI green	1241.6634.1182000	
IP67	6 A	250 VAC	RI dotted, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI blue	1241.6634.1184000	
IP40	100 mA	30 VDC	RI homogeneous, RGB, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI RGB	3-102-773	■
IP40	10 A	250 VAC	RI homogeneous, RGB, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI RGB	3-102-784	■
IP40	100 mA	30 VDC	RI homogeneous, red, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI red	3-108-955	■
IP40	5 / 3 A	125 / 250 VAC	RI homogeneous, red, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI red	3-108-956	■
IP40	10 A	250 VAC	RI homogeneous, red, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI red	3-108-957	■
IP40	100 mA	30 VDC	RI homogeneous, green, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI green	3-108-958	■
IP40	5 / 3 A	125 / 250 VAC	RI homogeneous, green, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI green	3-108-959	■
IP40	10 A	250 VAC	RI homogeneous, green, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI green	3-108-960	■
IP40	100 mA	30 VDC	RI homogeneous, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI blue	3-108-961	■
IP40	5 / 3 A	125 / 250 VAC	RI homogeneous, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI blue	3-108-972	■
IP40	10 A	250 VAC	RI homogeneous, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI blue	3-108-973	■
IP67	100 mA	250 VAC	RI homogeneous, RGB, 24 VDC	Stainless Steel ,yes	Stainless Steel ,yes	MSM 22 RI RGB	3-109-580	

IP-Protection: IP67 from front side to contact area, Micro-Switch is available in versions IP40 or IP67, see Technical Data Micro-Switch

Variants with 6 A micro switch have IP67

The MOQ for standard laser lettering on standard variants is a packing unit.

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

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:https://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 (enclosd in the box)
- Micro switches 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

26.06.2020

The specifications, descriptions and illustrations indicated in this document are based on current information. All content is subject to modifications and amendments. Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability and test each product selected for their own applications.