

Metal Switch Medium Stroke, Switching Voltage up to 250 VAC



### Description

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

### Standards

- DIN EN 61058-1
- UL 1054

### Approvals

- Approval Reference Type: MSM 19
- 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
- optional with point or ring illumination
- 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 (see technical data)

### References

Alternative: double-pole switch: [MSM DP 19](#); [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 19](#); [MSM CS 22](#); [MSM LA CS 19](#); [MSM LA CS 22](#)

Alternative: Other diameter

### 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 / 12 / 5 VDC Ring Illumination , Point Illumination without series resistor , LED operating data are listed in separate table
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 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 mounting diameter 19, 22, 30 mm., IK 06 for mounting diameter 16 mm
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

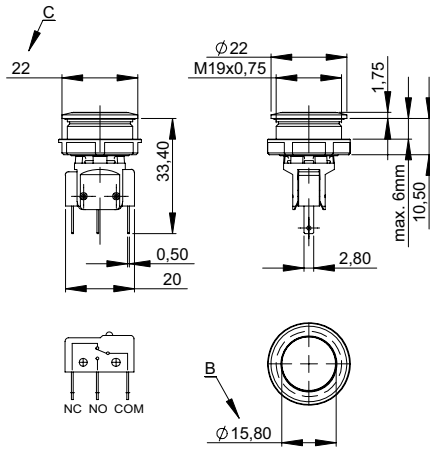
**Material**

Housings	Stainless Steel
Actuator	Stainless Steel
Light Conductor (Point Illumination)	PC
Illuminated Ring (Ring Illumination)	PA for single color variants PMMA for multicolor variants
Seal Ring	NBR70
Switcher Collet	PA

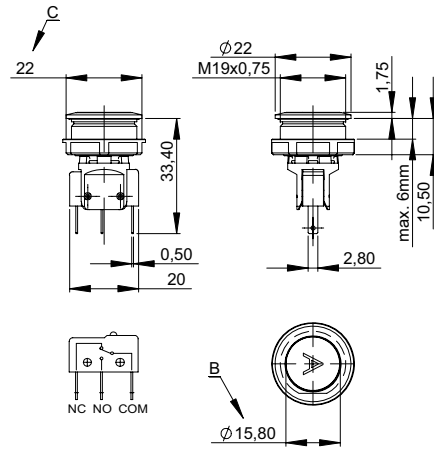
Detailed information on product approvals, code requirements, usage instructions and detailed test conditions can be looked up in [General Product Information](#)

Dimension [mm]

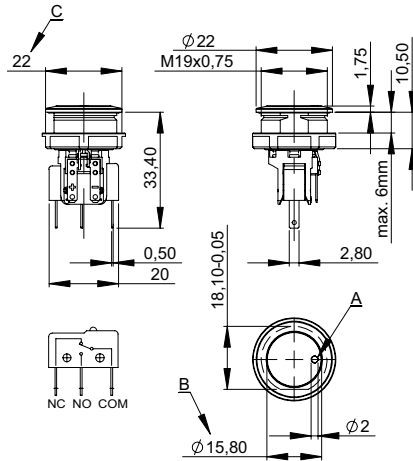
MSM 19 ST



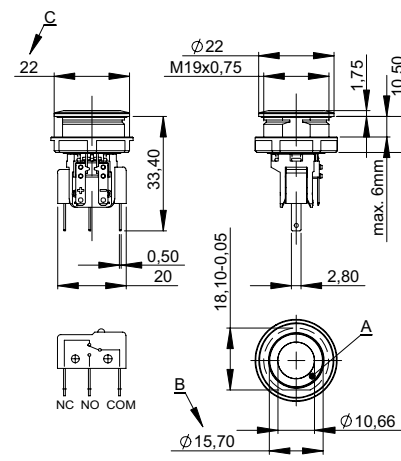
MSM 19 LE



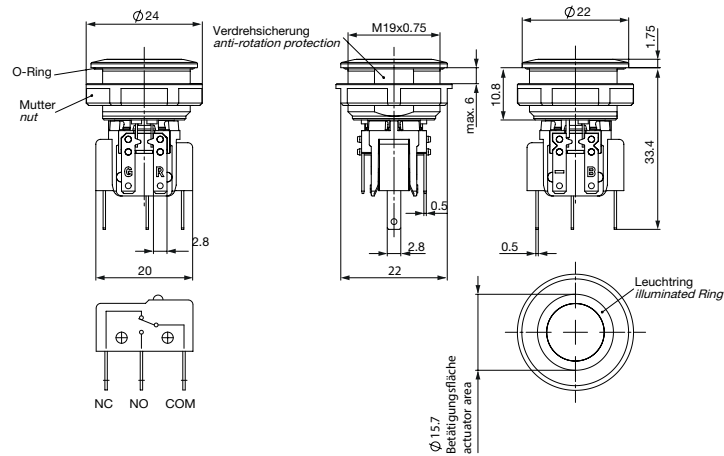
MSM 19 PI



MSM 19 RI Single color



MSM 19 RI Multicolor

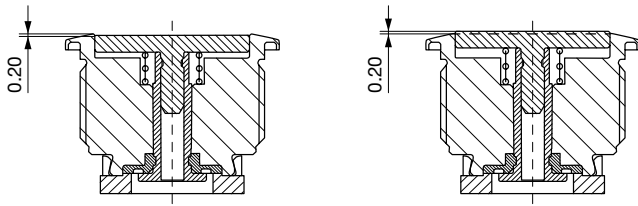


Legend

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

## Tolerance Range

### Actuator Tolerance Range

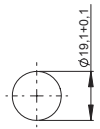


The mounting tolerance range of the actuator varies from 0.2 mm projection length and 0.2 mm short length to the housing edge. The slanting position of the actuator can range within this tolerance.

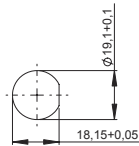
## Dimension

MSM 19 ST / MSM 19 RI

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

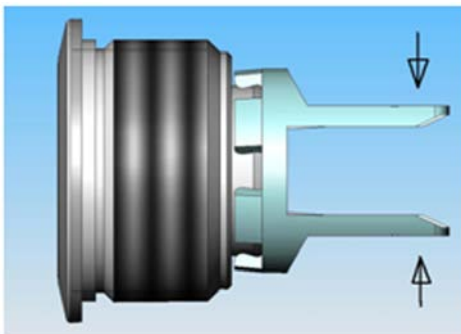


Drilling diagram

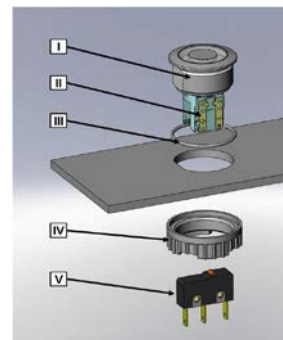


Drilling diagram

## 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:

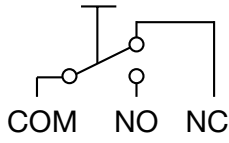
- 1.) Place the gasket accurately on the actuator housing. Then mount the actuator housing assembly into the panel.
- 2.) Tighten the screw nut according to the torque instructions.
- 3.) Clasp the module switching contact into the micro switch holder of the actuator housing.

### Installation information:

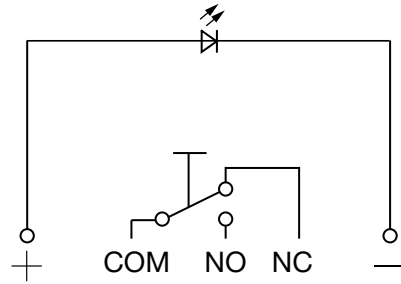
- 1.) The power supply and the configuration of the flat pin terminals have to be installed correctly for the illumination and micro switch function.
- 2.) Insulate the terminals as required. Fully insulated plug-in sleeves are recommended.
- 3.) Installation instructions according to VDE-standard DIN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

Diagrams

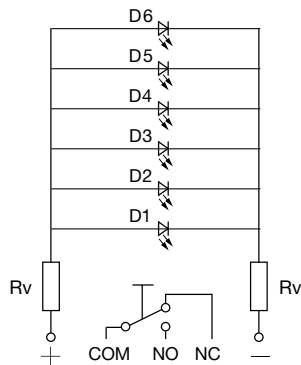
MSM ST / MSM LE



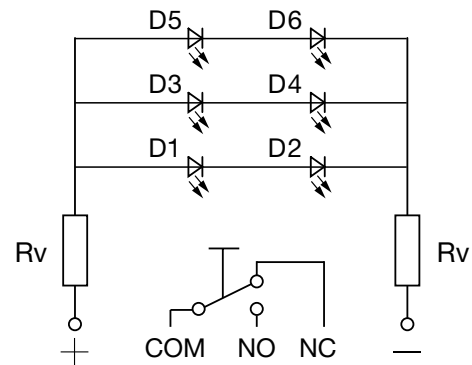
MSM PI



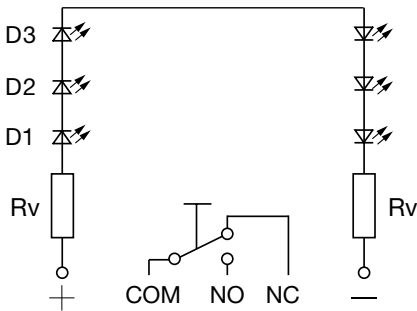
MSM RI / 5 V



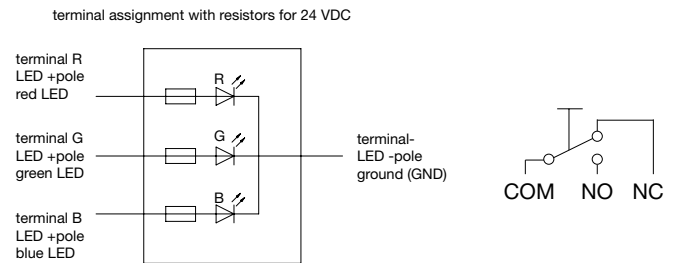
MSM RI / 12 V



MSM RI / 24 V Single color



MSM RI / 24 V Multicolor



Lighting type	Active terminal R) <span style="color:red">●</span>	Active terminal G) <span style="color:green">●</span>	Active terminal B) <span style="color:blue">●</span>	Resulting Color
Multicolor Singlecolor	x			Red <span style="color:red">●</span>
Multicolor Singlecolor		x		Green <span style="color:green">●</span>
Multicolor Singlecolor			x	Blue <span style="color:blue">●</span>
Multicolor RGB Additive 2	x	x		Yellow <span style="color:yellow">●</span>
Multicolor RGB Additive 2	x		x	Magenta <span style="color:magenta">●</span>
Multicolor RGB Additive 2		x	x	Cyan <span style="color:cyan">●</span>
Multicolor RGB Additive 3	x	x	x	White <span style="color:white">○</span>

Multicolor lighting options

**Point Illumination**

Operating Data	Forward Current max.	Forward Voltage at 10 mA	Forward Voltage at 8 mA	Forward Voltage at 20 mA	Forward Voltage max.
LED red	30 mA	1.9 VDC			3.0 VDC
LED green	30 mA	2.1 VDC			3.0 VDC
LED yellow	30 mA	2.1 VDC			3.0 VDC
LED blue	20 mA		3.7 VDC		4.5 VDC
LED white	30 mA			3.6 VDC	4.0 VDC
LED red / green	25 mA			2.0 VDC / 2.2 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

Diameter	Switching Current	Switching Voltage	Illumination, LED	Housing Material, Torsion Protection	Actuator Material	Config. Code	Order Number
[mm]	[A]	[VAC/ VDC]					
19	100 mA	30 VDC	non-illuminated	Stainless Steel ,no	Stainless Steel	MSM 19 ST	1241.6621.1110000
19	5 / 3 A	125 / 250 VAC	non-illuminated	Stainless Steel ,no	Stainless Steel	MSM 19 ST	1241.6621.1120000
19	10 A	250 VAC	non-illuminated	Stainless Steel ,no	Stainless Steel	MSM 19 ST	1241.6621.1130000
19	5 A	250 VAC	non-illuminated	Stainless Steel ,no	Stainless Steel	MSM 19 ST	1241.6621.1180000
19	5 / 3 A	125 / 250 VAC	non-illuminated	Stainless Steel ,yes	Stainless Steel	MSM 19 LE	1241.6622.1120000
19	5 / 3 A	125 / 250 VAC	non-illuminated	Alu red ,yes	Stainless Steel	MSM 19 LE	1241.6622.3120000
19	5 / 3 A	125 / 250 VAC	non-illuminated	Alu red ,yes	Stainless Steel	MSM 19 LE	1241.6622.3120057
19	5 / 3 A	125 / 250 VAC	non-illuminated	Alu red ,yes	Stainless Steel	MSM 19 LE	1241.6622.3120062
19	5 / 3 A	125 / 250 VAC	non-illuminated	Alu red ,yes	Stainless Steel	MSM 19 LE	1241.6622.3120066
19	5 / 3 A	125 / 250 VAC	non-illuminated	Alu green ,yes	Stainless Steel	MSM 19 LE	1241.6622.5120000
19	5 / 3 A	125 / 250 VAC	non-illuminated	Alu green ,yes	Stainless Steel	MSM 19 LE	1241.6622.5120061
19	5 / 3 A	125 / 250 VAC	non-illuminated	Alu green ,yes	Stainless Steel	MSM 19 LE	1241.6622.5120065
19	5 / 3 A	125 / 250 VAC	non-illuminated	Alu green ,yes	Stainless Steel	MSM 19 LE	1241.6622.5120072
19	100 mA	30 VDC	Point Illumination, red	Stainless Steel ,yes	Stainless Steel	MSM 19 PI red	1241.6623.1111000
19	100 mA	30 VDC	Point Illumination, green	Stainless Steel ,yes	Stainless Steel	MSM 19 PI green	1241.6623.1112000
19	5 / 3 A	125 / 250 VAC	Point Illumination, red	Stainless Steel ,yes	Stainless Steel	MSM 19 PI red	1241.6623.1121000
19	5 / 3 A	125 / 250 VAC	Point Illumination, green	Stainless Steel ,yes	Stainless Steel	MSM 19 PI green	1241.6623.1122000
19	5 / 3 A	125 / 250 VAC	Point Illumination, blue	Stainless Steel ,yes	Stainless Steel	MSM 19 PI blue	1241.6623.1124000
19	10 A	250 VAC	Point Illumination, red	Stainless Steel ,yes	Stainless Steel	MSM 19 PI red	1241.6623.1131000
19	10 A	250 VAC	Point Illumination, green	Stainless Steel ,yes	Stainless Steel	MSM 19 PI green	1241.6623.1132000
19	100 mA	30 VDC	Ring Illumination, red, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI red	1241.6624.1111000
19	100 mA	30 VDC	Ring Illumination, green, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI green	1241.6624.1112000
19	100 mA	30 VDC	Ring Illumination, yellow, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI yellow	1241.6624.1113000
19	100 mA	30 VDC	Ring Illumination, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI blue	1241.6624.1114000
19	100 mA	30 VDC	Ring Illumination, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI blue	1241.6624.1114074
19	5 / 3 A	125 / 250 VAC	Ring Illumination, red, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI red	1241.6624.1121000
19	5 / 3 A	125 / 250 VAC	Ring Illumination, green, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI green	1241.6624.1122000
19	5 / 3 A	125 / 250 VAC	Ring Illumination, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI blue	1241.6624.1124000
19	5 / 3 A	125 / 250 VAC	Ring Illumination, white, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI white	1241.6624.1125000
19	10 A	250 VAC	Ring Illumination, red, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI red	1241.6624.1131000
19	10 A	250 VAC	Ring Illumination, green, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI green	1241.6624.1132000
19	10 A	250 VAC	Ring Illumination, blue, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI blue	1241.6624.1134000
19	5 A	250 VAC	Ring Illumination, red, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI red	1241.6624.1181000
19	5 A	250 VAC	Ring Illumination, green, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI green	1241.6624.1182000
19	5 A	250 VAC	Point Illumination, green / yellow	Stainless Steel ,yes	Stainless Steel	MSM 19 PI green / yellow	3-101-515
19	100 mA	30 VDC	Ring Illumination, multicolor, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI multicolor	3-102-708
19	10 A	250 VAC	Ring Illumination, multicolor, 24 VDC	Stainless Steel ,yes	Stainless Steel	MSM 19 RI multicolor	3-102-772

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:<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 (enclosed in the box)
- Micro switches in a bag (enclosed in the box)

## Accessories

### Description



**MSM Cover**  
Protection cover for MSM 19 and MSM 22