Metal Switch Medium Stroke, Switching Voltage up to 250 VAC



MSM 30 RI red

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

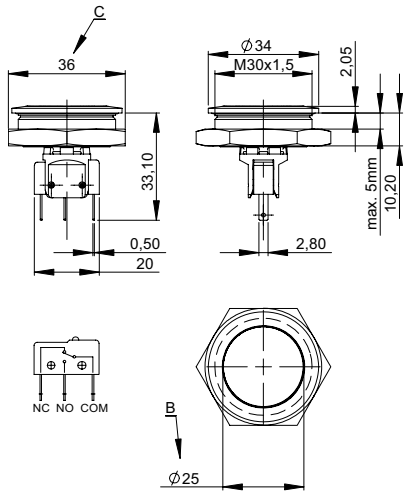
Technical Data

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	1250 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	1500 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

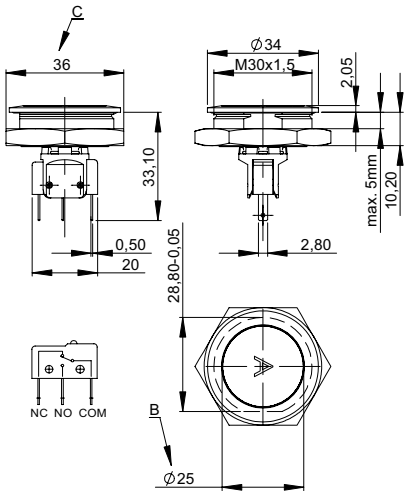
Mechanical Data	
Actuating Force	4.5 N
Actuating Travel	1.0 mm, for mounting diameter 16, 19, 22 mm 1.2 mm for mounting diameter 30 mm
Lifetime	1.5 mill. actuations
Shock Protection	IK 07 for mounting diameter 19, 22, 30 mm,, IK 06 for mounting diameter 16 mm
Starting Torque Plastic Nut	max. 2 Nm for 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

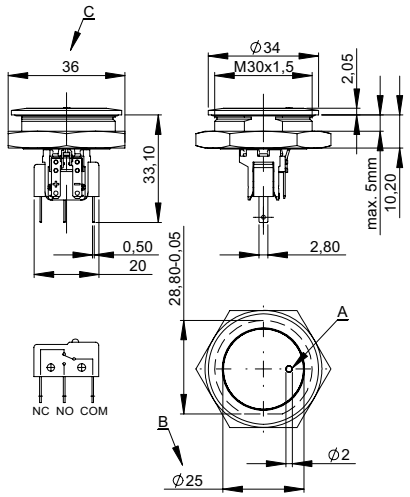
MSM 30 ST



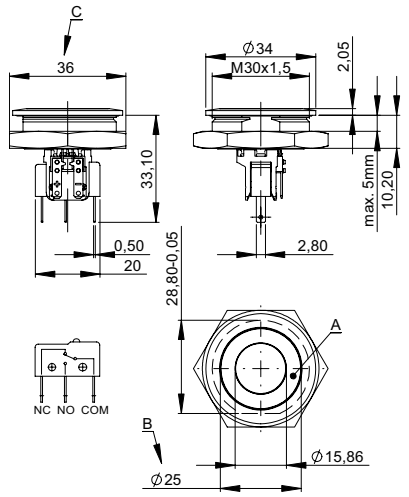
MSM 30 LE



MSM 30 PI



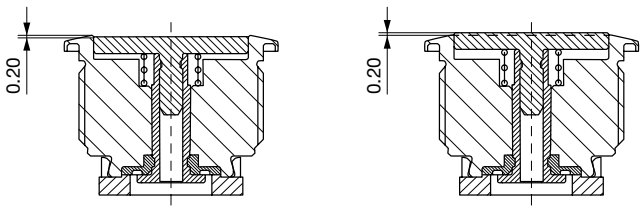
MSM 30 RI



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

Tolerance Range

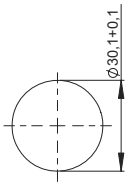
Actuator Tolerance Range



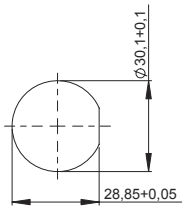
The mounting tolerance range of the actuator varies from 0.2 mm projection length and 0.2 mm short length to the housing edge. The slanting position of the actuator can range within this tolerance.

Dimensions

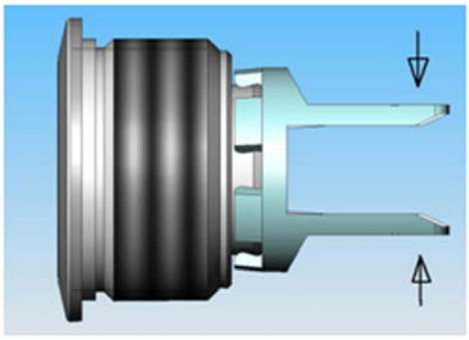
MSM 30 ST / MSM 30 RI



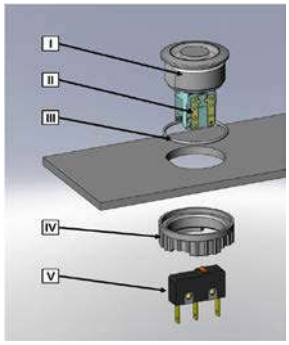
MSM 30 LE / MSM 30 PI / MSM 30 RI optional



Mounting instructions



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

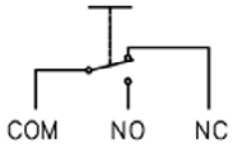


I Housing
II Flat Pin Terminal (Illumination)
III Gasket
IV Nut (Nut type see Dimensions)
V Module Switching Contact

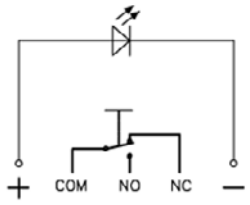
Installation Instruction:
1.) Place the gasket accurately on the actuator housing. Then mount the actuator housing assembly into the panel.
2.) Tighten the screw nut according to the torque instructions.
3.) Clasp the module switching contact into the micro switch holder of the actuator housing.
Installation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

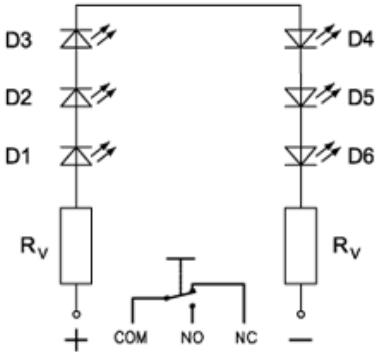
MSM ST / MSM LE



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 [V] 5 R_V [Ω]	R_V^{E24} [Ω]	P_V [W]**	U_V [V] 12 R_V [Ω]	R_V^{E24} [Ω]	P_V [W]**	U_V [V] 24 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 [mm]	Switching Current [A]	Switching Voltage [VAC/ VDC]	Illumination, LED	Torsion Protection	IP-Protection Frontside; Microswitch	Config. Code	Order Number
30	100 mA	30 VDC	non-illuminated	no	IP 67 / IP 40 ;IP 40	MSM 30 ST	1241.6661.1110000
30	5 / 3 A	125 / 250 VAC	non-illuminated	no	IP 67 / IP 40 ;IP 40	MSM 30 ST	1241.6661.1120000
30	10 A	250 VAC	non-illuminated	no	IP 67 / IP 40 ;IP 40	MSM 30 ST	1241.6661.1130000
30	100 mA	30 VDC	Ring Illumination, red, 24 VDC	yes	IP 67 / IP 40 ;IP 40	MSM 30 RI red	1241.6664.1111000
30	100 mA	30 VDC	Ring Illumination, green, 24 VDC	yes	IP 67 / IP 40 ;IP 40	MSM 30 RI green	1241.6664.1112000
30	100 mA	30 VDC	Ring Illumination, blue, 24 VDC	yes	IP 67 / IP 40 ;IP 40	MSM 30 RI blue	1241.6664.1114000
30	5 / 3 A	125 / 250 VAC	Ring Illumination, red, 24 VDC	yes	IP 67 / IP 40 ;IP 40	MSM 30 RI red	1241.6664.1121000
30	5 / 3 A	125 / 250 VAC	Ring Illumination, green, 24 VDC	yes	IP 67 / IP 40 ;IP 40	MSM 30 RI green	1241.6664.1122000
30	5 / 3 A	125 / 250 VAC	Ring Illumination, blue, 24 VDC	yes	IP 67 / IP 40 ;IP 40	MSM 30 RI blue	1241.6664.1124000
30	10 A	250 VAC	Ring Illumination, red, 24 VDC	yes	IP 67 / IP 40 ;IP 40	MSM 30 RI red	1241.6664.1131000
30	10 A	250 VAC	Ring Illumination, green, 24 VDC	yes	IP 67 / IP 40 ;IP 40	MSM 30 RI green	1241.6664.1132000
30	10 A	250 VAC	Ring Illumination, blue, 24 VDC	yes	IP 67 / IP 40 ;IP 40	MSM 30 RI blue	1241.6664.1134000

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 possilbe

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

28.05.2013

The specifications, descriptions and illustrations indicated in this document are based on current information. All content is subject to modifications and amendments.