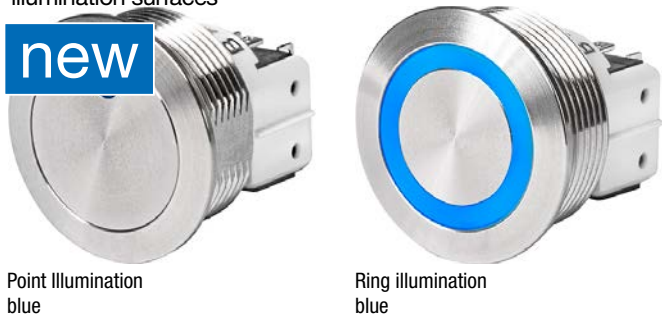


Metal double pole push-button with switching voltage up to 125 VAC and indicator elements with different illumination surfaces



Point Illumination
blue

Ring illumination
blue

See below:

Approvals and Compliances

Description

- Mechanical double pole switch with stroke MO (Momentary)
- With or without illumination
- Small installation depth
- With torsion protection for easier positioning
- Solder terminal
- Indicator elements in identical design as push buttons

Unique Selling Proposition

- Attractive tactile feedback
- High quality materials
- Long life span
- Color marking and variety of design options regarding size, color and illumination

Characteristics

- Housing material in stainless steel
- Actuator in stainless steel or ceramic
- Housing and actuator material of the ring-illuminated RD version in black anodized aluminum
- Switching voltage from 30 VDC to 125 VAC
- Switching current from 0.1 A to 3 A, with gold 100mA
- All laser marked, ring-illuminated and point-illuminated versions have anti-rotation protection for easy mounting

References

Other versions on request

Weblinks

[pdf data sheet](#), [html datasheet](#), [General Product Information](#), [CAD-Drawings](#), [Product News](#), [Detailed request for product](#), [Configurator](#)

Technical Data

Electrical Data

Switching Function	See table of Subminiature and Micro-switch
Supply Voltage LED	5 VDC - 24 VDC, see table of variants
Impulse Withstand Voltage (ESD)	8 kV contact discharge
	15 kV air discharge

Mechanical Data

Actuating Force	4.5 N
Actuating Travel	1.0 mm
Lifetime	1.5 million actuations
Shock Protection	IK08 / IK07 (M30)
Mounting screw torque Plastic Nut	M16: max. 2 Nm
	M19: max. 4.5 Nm
	M22: max. 3.5 Nm
	M30: max. 8 Nm

Climatical Data

Operating Temperature	-40 to 85 °C
Storage Temperature	-40 to 85 °C
Protection Class	IP66 and IP67 Front Side
Salt Spray Test (acc. to IEC 60068-2-11)	24 h / 48 h / 96 h Residence Time

Material

Housing	Aluminium / Stainless Steel
Actuator	Aluminium / Stainless Steel / Ceramics
Seal Ring	NBR70
Plastic Nut	PA, UL94

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.

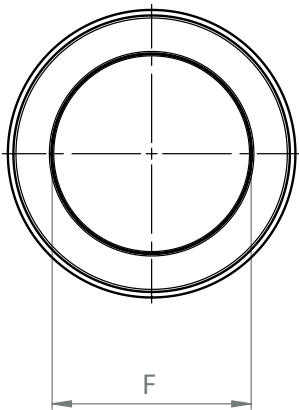
Compliances

The product complies with following Guide Lines

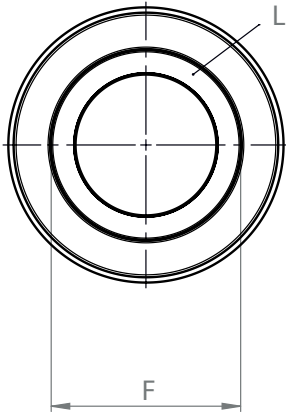
Identification	Details	Initiator	Description
CE	CE declaration of conformity	SCHURTER AG	The CE marking declares that the product complies with the applicable requirements laid down in the harmonisation of Community legislation on its affixing in accordance with EU Regulation 765/2008.
UKCA	UKCA declaration of conformity	SCHURTER AG	The UKCA marking declares that the product complies with the applicable requirements laid down in the British Amendment of Regulation (EC) 765/2008.
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]

Non illuminated push buttons

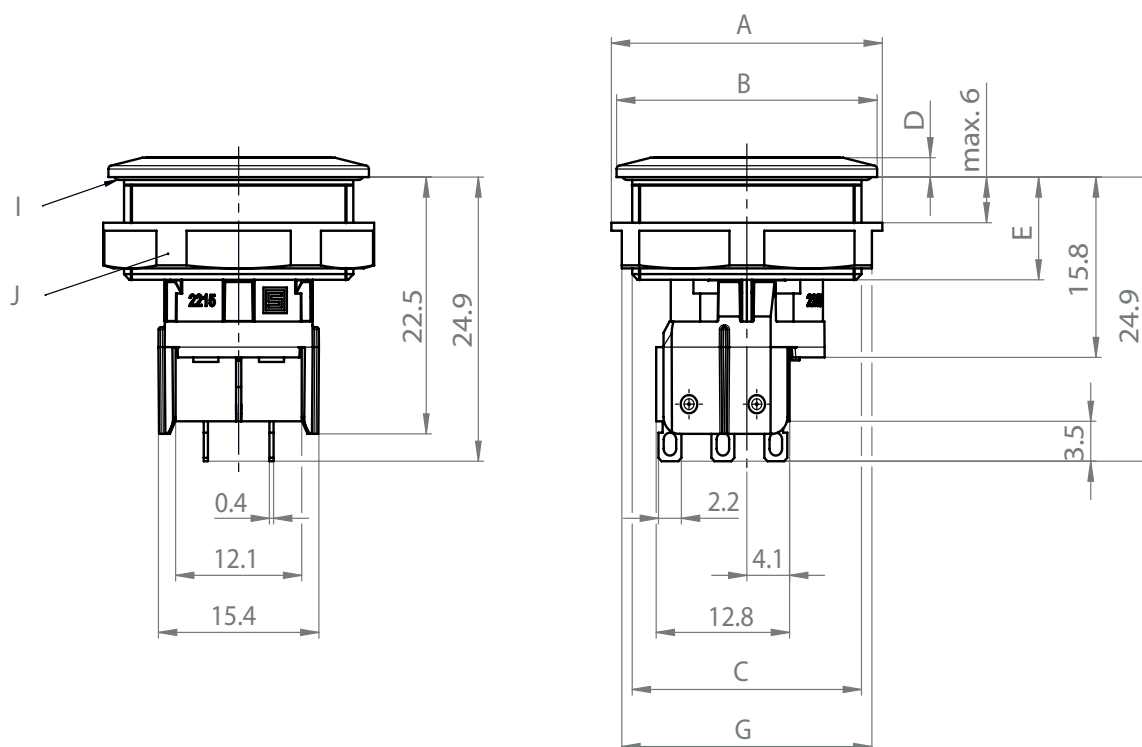


Non illuminated

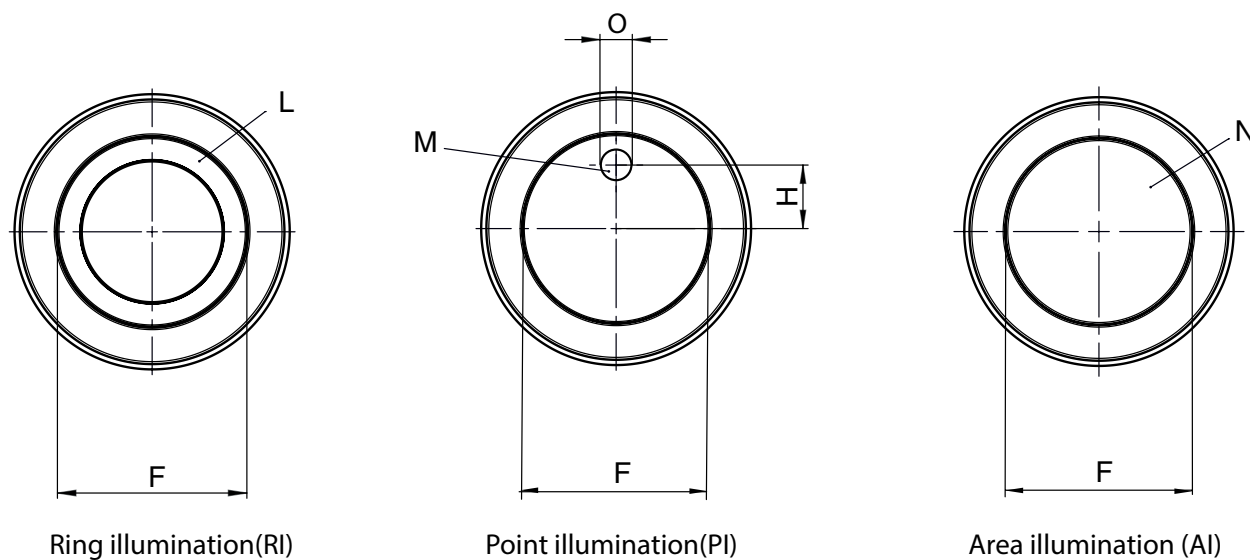


Non illuminated
with color ring (RC)

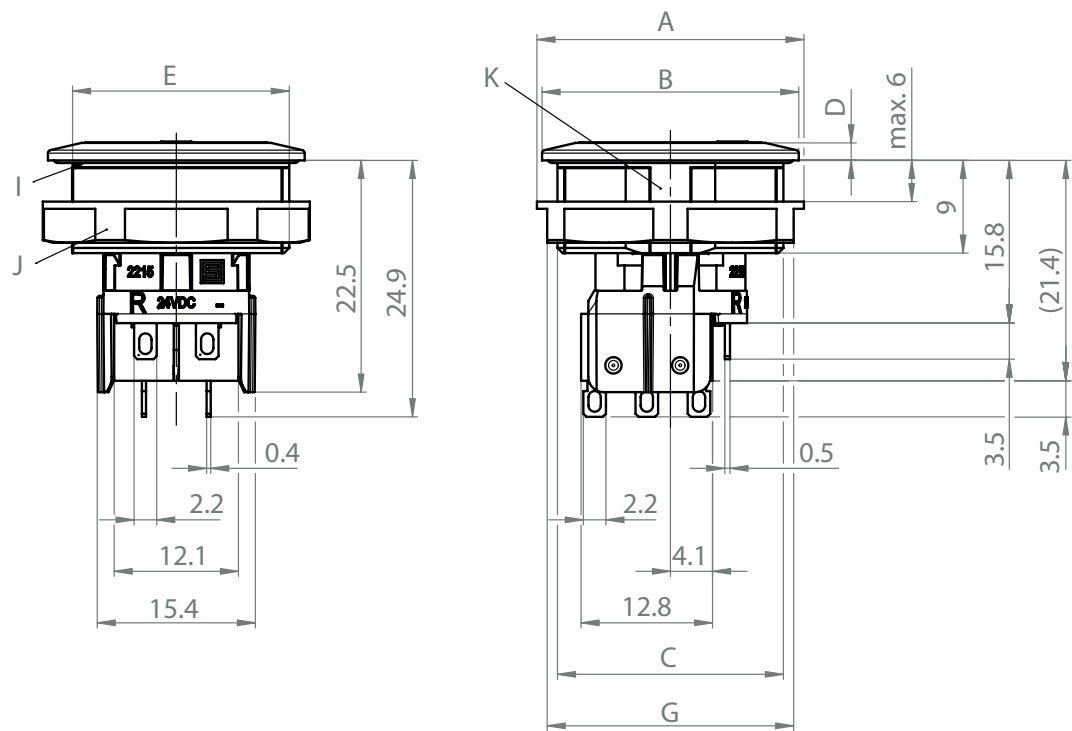
MSM II DPDT Subminiature Microswitch



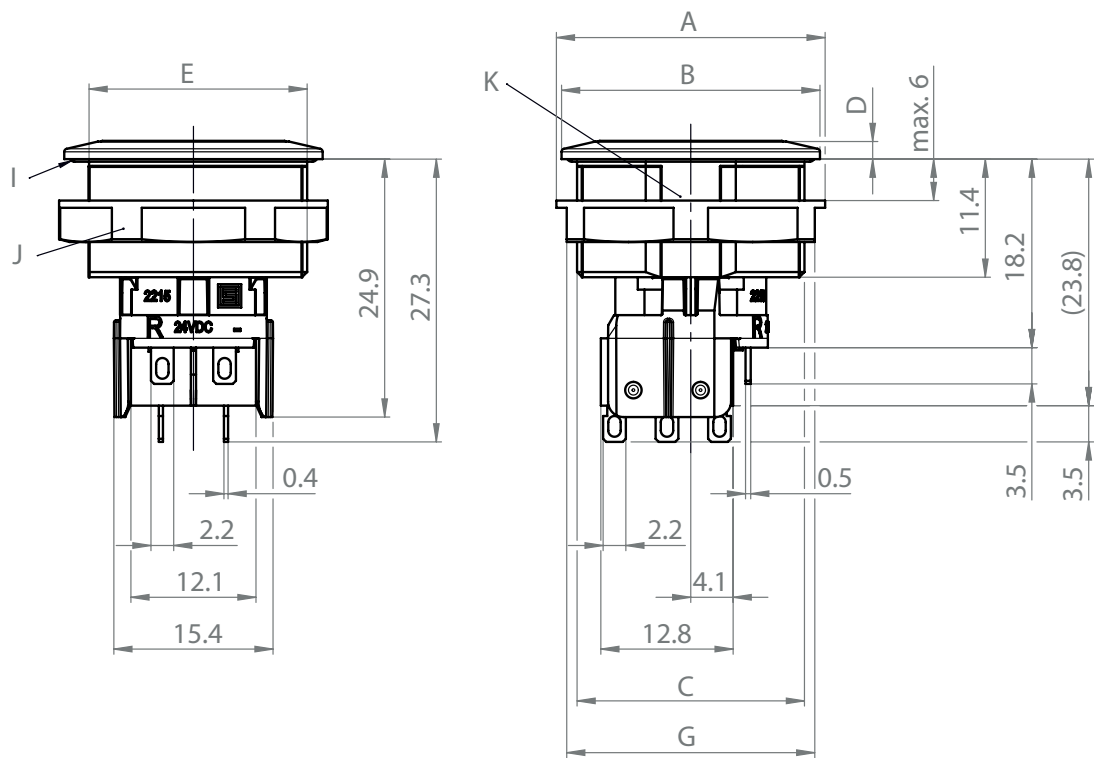
Illuminated push buttons



MSM II PI/RI DPDT with Subminiature Microswitch and Solder Terminal



MSM II AI DPDT with Subminiature Microswitch and Solder Terminal

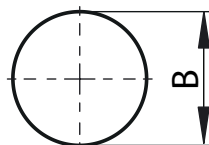
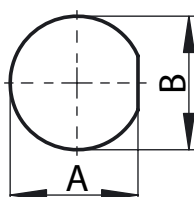


Diameter in mm	16	19	22	30
A	Ø20	Ø24	Ø26	Ø34.5
B	Ø19	Ø22	Ø25	Ø34
C	M16x1	M19x0.75	M22x1	M30x1.5
D	1.7	1.7	1.7	2
E	15.1	18.1	21.1	28.8
F Operating area / illumination area	Ø12.8	Ø15.8	Ø18	Ø25
G	AF19	AF22	AF24	AF32
H	4.3	5.3	6.1	8.4
O	2.2	2.7	3.1	4.3
I	O-Ring			
J	Nut			
K	Anti-rotation lock			
L	Lighting ring			
M	Point illumination			
N	Area illumination			

Dimension

All illuminated products and all non illuminated push buttons with symbols are supplied with anti-rotation protection

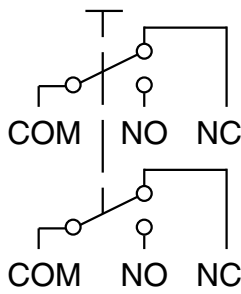
Non-illuminated push-buttons are supplied without anti-rotation protection



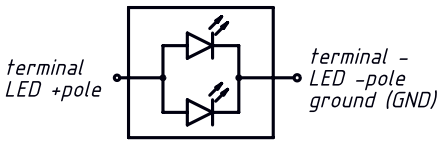
Diameter (mm)	A	B
16	15.15±0.05	16.1 ±0.1
19	18.15±0.05	19.1 ±0.1
22	21.15±0.05	22.1 ±0.1
24	23.50±0.05	24.1 ±0.1
30	28.85±0.05	30.1 ±0.1

Diagrams

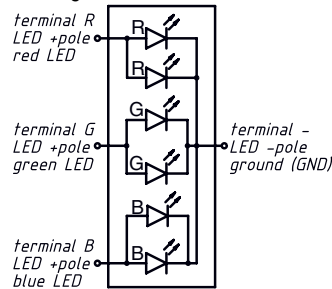
Switching element DPDT



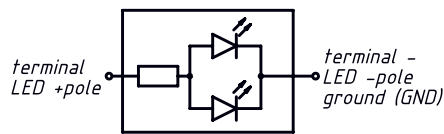
Illumination single color
Terminal assignment without series resistor



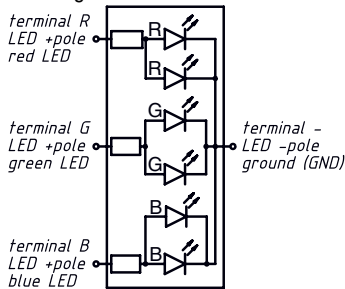
Illumination RGB
Terminal assignment without series resistor



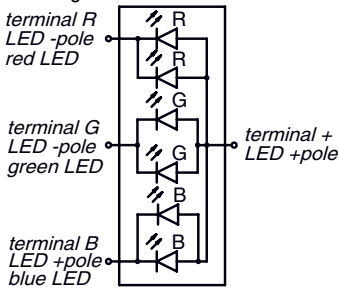
Illumination single color
Terminal assignment with resistors for 5 VDC



Illumination RGB
Terminal assignment with resistors for RGB 5 VDC



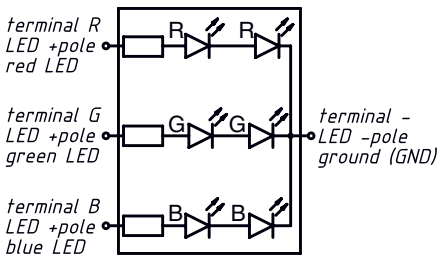
common anode
Terminal assignment without resistors for RGB



Illumination single color
Terminal assignment with resistors for 12 VDC and 24 VDC



Illumination RGB
Terminal assignment with resistors for RGB 12 VDC and 24 VDC



Illumination options for RGB

Lighting type	Wire red	Wire green	Wire blue	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

Illumination

Operating Data	Forward Current max.	Forward Voltage at 10 mA	Forward Voltage max.
LED red	25 mA	1,7 VDC	2,4 VDC
LED green	25 mA	2,6 VDC	3,2 VDC
LED blue	25 mA	2,6 VDC	3,2 VDC

Subminiature Microswitch

Subminiature Microswitch	Contact Material	Switching Voltage	Switching current	Rated Switching Capacity	Lifetime	Contact Resistance	Insulation Resistance	Duration of Bounce
0.1 A, IP40	Au	max. 30 VDC	max. 0.1 A	3 W	0.1 Mio.	< 100 mΩ	> 100 MΩ	< 10 ms
3 A, IP40	Ag	max. 125 VAC	max. 3 A	375 W	0.03 Mio.	< 30 mΩ	> 100 MΩ	< 10 ms

Soldering

- Terminal connection

When soldering, make sure that the temperature of the soldering iron tip is not higher than 300°C, and complete the soldering within 3 seconds. Do not apply any external force for 1 minute after soldering. Soldering at an excessively high temperature or soldering for more than 3 seconds may deteriorate the characteristics of the Switch.

- Connecting to PCB terminal Boards

When using automatic soldering baths, we recommend soldering at 260°C ±5°C within 5 seconds. Make sure that the liquid surface of the solder does not flow over the edge of the board. When soldering terminals manually, perform soldering within 3 seconds at iron tip temperature not higher than 350°C. Do not apply any external force for at least 1 minute after soldering. When applying solder, keep the solder away from the case of the Switch and do not allow solder or flux to flow into the case.

Order number key

M	S	M	II	-	19	-	MO	NX	A10	-	B	1	-	B	A0	-	A	-	PI	0GN	012	C	A0	-	S0	NC	B	-	S0	NC	NF	-	1	074	-	C
					1		*				2								3	4	5	6	*	*	*		7				8	*				

Diameter		1
19 mm	=	19
22 mm	=	22
30 mm ²⁾	=	30

Switch function		*
Switch	=	MONX

Switching current		2
Switch with Subminiature DPDT / solder terminal		
100 mA Gold contact	=	A10-D3-AE0-A
3 A	=	03A-D3-BE0-A

Illumination / Appearance		3
No illumination	=	00
No illumination with colored ring	=	RC
Area illumination	=	AI
Ring illumination	=	RI
Point illumination	=	PI
Ring illumination Discreet/DeadFront	=	RD

Illumination / Color		4
None	=	000
Red	=	0RD
Green	=	0GN
Blue	=	0BL
Yellow	=	0YL
White	=	0WT

Supply voltage illuminatio		5
No illumination	=	000
5 V	=	005
12 V	=	012
24 V	=	024
LED without resistor	=	00R

2) 30 mm diameter not available with Area Illumination

* Values marked with an asterisk depend on the selected properties.

Circuit type illumination		6
None	=	0
Common Cathode	=	C
Common Anode	=	A

Housing material and color		*
Stainless steel 1.4305 (Silver)	=	S0NC
Aluminum EN AW-6082 (3.3215) (Black)	=	A0BK

Actuator material		7
Stainless steel 1.4305 (Silver)	=	S0NC
Ceramic (only with stainless steel) (White)	=	C0WT
Aluminum (only on RD version) (Black)	=	A0BK

Marking type		8
None	=	0000
Laser marking		
STOP	=	1057
ON	=	1065
OFF	=	1066
ON/OFF	=	1071
START	=	1072
	=	1074
	=	1075
	=	1076
	=	1077

further lettering on request

Accessories		*
Hex nut plastic with O-ring	=	C

Stainless steel nut can be ordered additionally

0098.9260	Stainless steel nut M16
0098.9250	Stainless steel nut M19
0098.9253	Stainless steel nut M22
0098.9216	Stainless steel nut M30

Variants

Diameter	Switching current	Electrical contact	Circuit type illumination	IP specification backside	Illumination	Illumination color	Supply Voltage LED	Order Number
19mm	3A	DPDT	none	IP40	none	none	none	3-145-763
19mm	3A	DPDT	none	IP40	none	none	none	3-145-766
19mm	3A	DPDT	none	IP40	point illumination	green	w/o resistors	3-145-768
19mm	3A	DPDT	none	IP40	ring illumination	red	24V DC	3-145-828
19mm	3A	DPDT	none	IP40	ring illumination	green	24V DC	3-145-829
19mm	3A	DPDT	none	IP40	ring illumination	green	24V DC	3-145-830
19mm	3A	DPDT	none	IP40	ring illumination	green	24V DC	3-145-840
19mm	3A	DPDT	none	IP40	ring illumination	blue	24V DC	3-145-870
19mm	3A	DPDT	none	IP40	ring illumination	blue	24V DC	3-145-872
19mm	3A	DPDT	none	IP40	ring illumination	blue	5V DC	3-145-873
19mm	100mA	DPDT	none	IP40	ring illumination	white	5V DC	3-145-874
19mm	3A	DPDT	none	IP40	area illumination	green	24V DC	3-145-875
19mm	3A	DPDT	none	IP40	point illumination	green	w/o resistors	3-146-006
19mm	3A	DPDT	none	IP40	point illumination	blue	w/o resistors	3-146-007
19mm	3A	DPDT	none	IP40	point illumination	red	w/o resistors	3-146-212
19mm	3A	DPDT	none	IP40	ring illumination	blue	24V DC	3-152-044
19mm	3A	DPDT	none	IP40	ring illumination	white	24V DC	3-155-211
22mm	3A	DPDT	none	IP40	none	none	none	3-145-878
22mm	3A	DPDT	none	IP40	none	none	none	3-145-879
22mm	3A	DPDT	none	IP40	none	none	none	3-145-881
22mm	3A	DPDT	none	IP40	ring illumination	red	24V DC	3-145-916
22mm	3A	DPDT	none	IP40	ring illumination	green	24V DC	3-145-917
22mm	3A	DPDT	none	IP40	ring illumination	blue	24V DC	3-145-918
22mm	3A	DPDT	none	IP40	ring illumination	blue	24V DC	3-145-919
22mm	3A	DPDT	none	IP40	ring illumination	white	24V DC	3-145-920
22mm	3A	DPDT	none	IP40	point illumination	red	w/o resistors	3-146-034
22mm	100mA	DPDT	none	IP40	ring illumination	green	12V DC	3-149-122
22mm	3A	DPDT	none	IP40	point illumination	blue	w/o resistors	3-149-292
22mm	3A	DPDT	none	IP40	area illumination	blue	24V DC	3-151-053
22mm	3A	DPDT	none	IP40	area illumination	blue	5V DC	3-153-631
22mm	3A	DPDT	none	IP40	area illumination	blue	w/o resistors	3-153-733
22mm	3A	DPDT	none	IP40	none	none	none	3-156-686
22mm	3A	DPDT	none	IP40	area illumination	yellow	24V DC	3-158-199
22mm	100mA	DPDT	none	IP40	ring illumination	red	12V DC	3-158-460
30mm	3A	DPDT	none	IP40	none	none	none	3-146-036
30mm	3A	DPDT	none	IP40	point illumination	red	w/o resistors	3-146-040
30mm	3A	DPDT	none	IP40	point illumination	green	w/o resistors	3-146-041
30mm	3A	DPDT	none	IP40	point illumination	blue	w/o resistors	3-146-042
30mm	3A	DPDT	none	IP40	ring illumination	red	24V DC	3-146-043
30mm	3A	DPDT	none	IP40	ring illumination	green	24V DC	3-146-044
30mm	3A	DPDT	none	IP40	ring illumination	blue	24V DC	3-146-045
30mm	3A	DPDT	none	IP40	ring illumination	yellow	24V DC	3-146-046

Availability for all products can be searched real-time: <https://www.schurter.com/en/info-center/support-tools/stock-check-distributors>

- 1) Microswitch SPDT / Indicator with quick connect terminals
- 2) Subminiature Switch SPDT / Indicator with solder terminals

Diameter	Switching current	Electrical contact	Circuit type illumination	IP specification backside	Illumination	Illumination color	Supply Voltage LED	Order Number
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3) Subminiature Switch DPDT with solder terminals

Packaging unit	10 pcs.	In box or packed in air cushion bags
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The nut with gasket and micro switch are enclosed in the box.