

## Capacitive switch



CPS  
Ring illumination  
green



CPS  
Surface backlighting  
red



CPS  
Ring illumination  
blue

See below:

### Approvals and Compliances

#### Description

- Capacitive touch sensor as momentary push button (NO or NC) or as latching switch (LA)
- Protection against unintended switching
- Multicolor illumination
- Floating switch connections
- Laser lettering possible
- Vandal resistant
- Wires (8 wires for Multicolor, 4 wires otherwise)<sup>2</sup>

#### Unique Selling Proposition

- Variable supply voltage
- Constant LED intensity
- Inputs protected against overvoltage
- Galvanic separated outputs

#### Important information

- The CPS is not suitable for use in sanitary or other applications exposed to water or other liquids.
- The housing is connected to gnd.

#### Characteristics

- Housing made from stainless steel
- Various illumination colors and color combinations possible
- Touch surface made from scratch-resistant ceramics with area illumination or made from stainless steel with ring illumination
- Ring or area illumination
- Wearless, no moving parts
- Attractive design with or without finger guide available

#### Weblinks

[html datasheet](#), [General Product Information](#), [CAD-Drawings](#), [Product News](#), [Detailed request for product](#), [Microsite](#)

#### Technical Data

##### Electrical Data

Switching Function	momentary (NO <sup>1</sup> ) or latching
Switching Voltage	max. 42 VAC / 60 VDC
Switching Current	max. 100 mA
Electrical Rating	1 W
Switch Resistance OFF	> 10 MΩ
Switch Resistance ON	< 16 Ω
Supply Voltage	5 - 28 VDC
Current Consumption all LEDs off	2.5 mA (switch is open)
	8.5 mA (switch is closed)
Current Consumption 1 LED on	8.0 mA (switch is open)
	14.0 mA (switch is closed)
Current Consumption 2 LED on	14.0 mA (switch is open)
	20.0 mA (switch is closed)
Current Consumption 3 LED on	19.0 mA (switch is open)
	25.0 mA (switch is closed)
Reverse Polarity Protection	yes
Short Circuit Protection	yes
Output Type	OptoMOS Relay
Lifetime	5 million actuations
connection type	Wires (8 wires for Multicolor, 4 wires otherwise) <sup>2</sup>

##### Mechanical Data

Actuation Type	capacitive
Actuating Force	none
Shock Protection	IK 09
Mounting Depth	with Finger Guide: 30.3 mm
	without Finger Guide: 30 mm
Tightening Torque Plastic Nut	2.5 Nm

##### Climatical Data

Operating Temperature	-40 to 60 °C
Storage Temperature	-40 to 85 °C
IP Protection Class Front Side	IP67 acc. to IEC 60529
Salt Spray Test (acc. to DIN 50021-SS)	24 h / 48 h / 96 h Residence Time

##### Material

Housings	Stainless Steel
Actuator	Area Illumination: Ceramics
	Ring Illumination: Stainless steel
Illuminated Ring (Ring Illumination)	PMMA
Seal Ring	NBR70

<sup>1</sup> on request also available as NC / <sup>2</sup> on request also available with cable or connector

#### 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.

Application standards

Application standards where the product can be used

Organization	Design	Standard	Description
	Designed for applications acc.	IEC/UL 60950	IEC 60950-1 includes the basic requirements for the safety of information technology equipment.

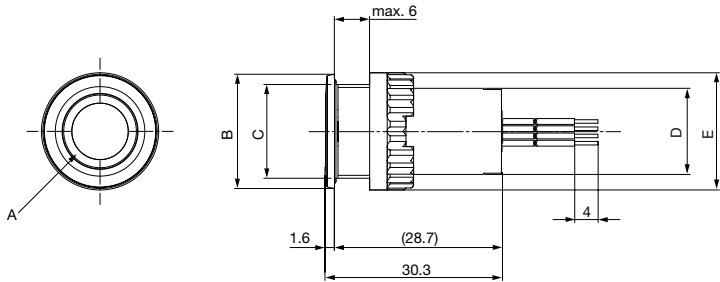
Compliances

The product complies with following Guide Lines

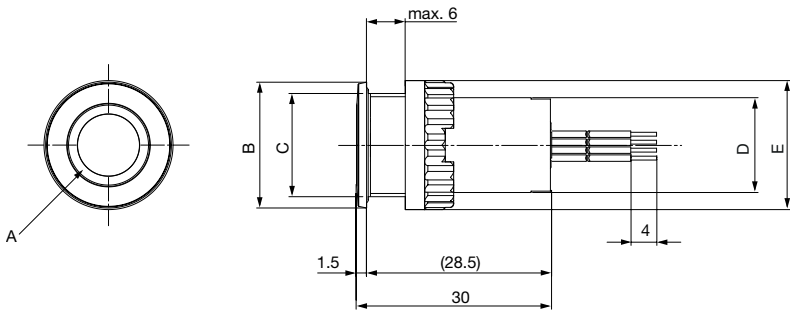
Identification	Details	Initiator	Description
	RoHS	SCHURTER AG	Directive RoHS 2011/65/EU, Amendment (EU) 2015/836
	REACH	SCHURTER AG	On 1 June 2007, Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorization and Restriction of Chemicals 1 (abbreviated as "REACH") entered into force.

Dimension [mm]

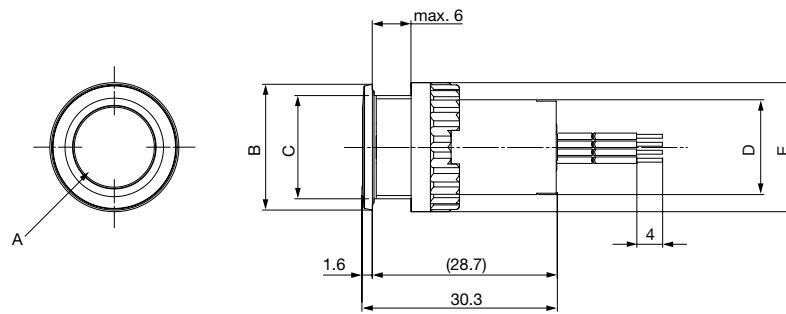
CPS with ring illuminating, with finger guide



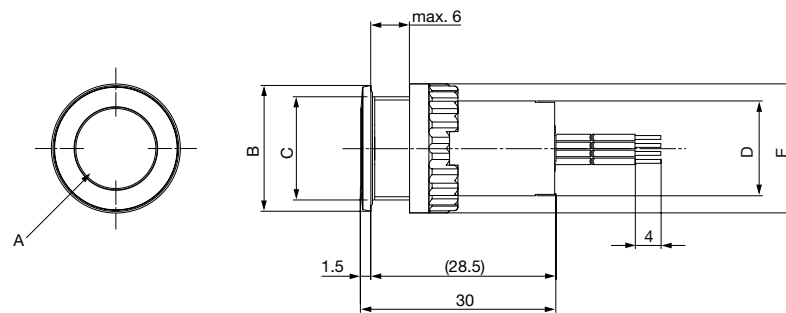
CPS with ring illuminating, no finger guide



CPS with area illuminating, with finger guide



CPS with area illuminating, no finger guide



A= illuminating area

B= CPS16: 19.5 mm  
 CPS19: 23.0 mm  
 CPS22: 25.5 mm

C= CPS16: M16x1  
 CPS19: M19x0.75  
 CPS22: M22x1

D= CPS16: 14.7 mm  
 CPS19: 14.5 mm  
 CPS22: 14.5 mm

E= CPS16: ø20 mm  
 CPS19: ø24 mm  
 CPS22: ø27.6 mm

For multicolor configurations

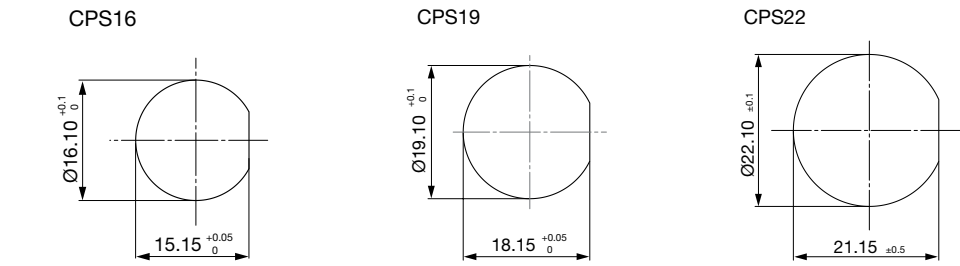
Connection wire assignment		
Wire-number	Wire color	function
Wire 1	brown	Vin = 5 VDC...28 VDC
Wire 2	black	GND
Wire 3	white	OUT1
Wire 4	white	OUT2
Wire 5	red	LED red GND = ON Open* = OFF
Wire 6	green	LED green GND = ON Open* = OFF
Wire 7	blue	LED blue GND = ON Open* = OFF
Wire 8	black	GND

For all other configurations

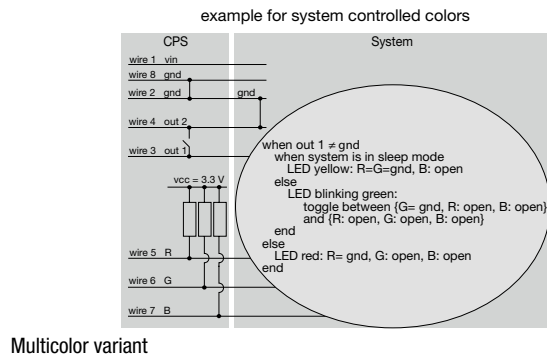
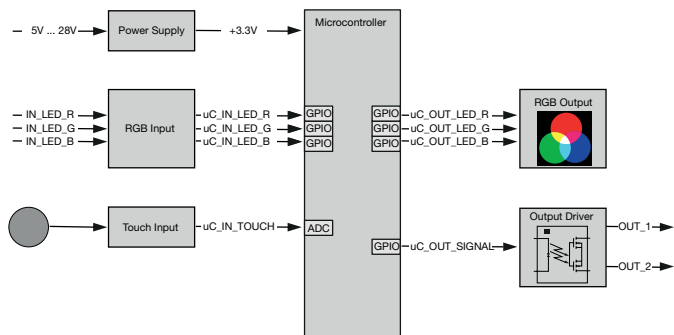
Connection wire assignment		
Wire-number	Wire color	function
Wire 1	brown	Vin = 5 VDC...28 VDC
Wire 2	black	GND
Wire 3	white	OUT1
Wire 4	white	OUT2

\* internal pull-up resistor to vcc = 3.3 V

Dimension



## Diagrams







## 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

## Lettering Colour of Laser Lettering

Material	Lettering Colour	
Stainless Steel	black	Filled letters
Ceramic	black	Filled letters

## Order Index Lettering

Laser Marking			
001 = <b>A</b>	021 = <b>U</b>	041 = ÷	061 = <b>EIN</b>
002 = <b>B</b>	022 = <b>V</b>	042 = *	062 = <b>AUS</b>
003 = <b>C</b>	023 = <b>W</b>	043 = =	063 = <b>AUF</b>
004 = <b>D</b>	024 = <b>X</b>	044 = #	064 = <b>AB</b>
005 = <b>E</b>	025 = <b>Y</b>	045 = ↔	065 = <b>ON</b>
006 = <b>F</b>	026 = <b>Z</b>	046 = †	066 = <b>OFF</b>
007 = <b>G</b>	027 = <b>0</b>	047 = →	067 = <b>UP</b>
008 = <b>H</b>	028 = <b>1</b>	048 = ←	068 = <b>DOWN</b>
009 = <b>I</b>	029 = <b>2</b>	049 = ↓	069 = <b>HIGH</b>
010 = <b>J</b>	030 = <b>3</b>	050 = ↑	070 = <b>LOW</b>
011 = <b>K</b>	031 = <b>4</b>	051 = %	071 = <b>ON/OFF</b>
012 = <b>L</b>	032 = <b>5</b>	052 = √	072 = <b>START</b>
013 = <b>M</b>	033 = <b>6</b>	053 = <b>CTRL</b>	073 = <b>RESET</b>
014 = <b>N</b>	034 = <b>7</b>	054 = <b>RETURN</b>	074 = 
015 = <b>O</b>	035 = <b>8</b>	055 = <b>SHIFT</b>	075 = 
016 = <b>P</b>	036 = <b>9</b>	056 = <b>LOCK</b>	076 = 
017 = <b>Q</b>	037 = <b>+</b>	057 = <b>STOP</b>	077 = 
018 = <b>R</b>	038 = <b>-</b>	058 = <b>ENTER</b>	
019 = <b>S</b>	039 = <b>.</b>	059 = <b>BACK</b>	
020 = <b>T</b>	040 = <b>x</b>	060 = <b>LINE</b>	

### Configuration code for configuring customized variants (example)

For customized variants a minimum order quantity of 100 pieces has to be fulfilled.

Type					
CPS22	-NO00A10	-SNCSNCF	-RI0GNVAR	-W1077	-S
		<b>Illumination Type</b> RI = Ring Illumination AI = Area Illumination	<b>single</b> ORD = Red OGN = Green OBL = Blue OCY = Cyan OMA = Magenta OYL = Yellow OWT = White	<b>Symbol</b> 000 = None 001 - 077 (see table for laser lettering) please contact us for customer specific laser lettering	
		<b>Actuator Style</b> WF = With fingerguide NF = No fingerguide	<b>tricolour</b> RGB = Multicolour	<b>Lettering</b> 0 = No lettering (Symbol Code must be 000) 1 = Laser lettering	
		<b>Actuator material</b> SNC = For ring illumination CWT = For area illumination			
		<b>Switching Function</b> NO = Normally Open NC = Normally Closed LA = Latching	<b>bicolour (active color / inactive color)</b> ORG = Red/Green ORB = Red/Blue ORC = Red/Cyan ORM = Red/Magenta ORY = Red/Yellow ORW = Red/White OGR = Green/Red OGB = Green/Blue OGC = Green/Cyan OGM = Green/Magenta OGY = Green/Yellow OGW = Green/White OBR = Blue/Red OBG = Blue/Green OBC = Blue/Cyan OBM = Blue/Magenta OBY = Blue/Yellow OBW = Blue/White OCR = Cyan/Red OCG = Cyan/Green OCB = Cyan/Blue OCM = Cyan/Magenta OCE = Cyan/Yellow OCW = Cyan/White OMR = Magenta/Red OMG = Magenta/Green OMB = Magenta/Blue OMC = Magenta/Cyan OMY = Magenta/Yellow OMW = Magenta/White OYR = Yellow/Red OYG = Yellow/Green OYB = Yellow/Blue OYC = Yellow/Cyan OYM = Yellow/Magenta OYW = Yellow/White OWR = White/Red OWG = White/Green OWB = White/Blue OWC = White/Cyan OWM = White/Magenta OWY = White/Yellow		
		<b>Diameter</b> 16 = 16 mm 19 = 19 mm 22 = 22 mm			

## All Variants

Diameter [mm]	Illumination	Illumination Color active / inactive	Finger Guide	Function	Actuator Material	Accessories	Order Number	
16	Backlighted	red / green	with	latching	Ceramic	Knurled nut	3-101-398	■
16	Backlighted	red / green	without	latching	Ceramic	Knurled nut	3-101-395	■
16	Backlighted	multicolor	without	latching	Ceramic	Knurled nut	3-101-394	■
16	Ring Illumination	red / green	with	latching	Stainless Steel	Knurled nut	3-101-413	■
16	Ring Illumination	red / green	without	latching	Stainless Steel	Knurled nut	3-101-401	■
16	Ring Illumination	multicolor	without	latching	Stainless Steel	Knurled nut	3-101-400	■
16	Backlighted	multicolor	with	momentary (NO)	Ceramic	Knurled nut	3-101-397	■
16	Backlighted	multicolor	without	momentary (NO)	Ceramic	Knurled nut	3-101-403	■
16	Ring Illumination	multicolor	with	momentary (NO)	Stainless Steel	Knurled nut	3-101-412	■
16	Ring Illumination	multicolor	without	momentary (NO)	Stainless Steel	Knurled nut	3-101-399	■
19	Backlighted	red / green	with	latching	Ceramic	Hexnut	3-101-418	■
19	Backlighted	red / green	without	latching	Ceramic	Hexnut	3-101-416	■
19	Backlighted	multicolor	without	latching	Ceramic	Hexnut	3-101-415	■
19	Ring Illumination	red / green	with	latching	Stainless Steel	Hexnut	3-101-423	■
19	Ring Illumination	red / green	without	latching	Stainless Steel	Hexnut	3-101-421	■
19	Ring Illumination	multicolor	without	latching	Stainless Steel	Hexnut	3-101-420	■
19	Backlighted	multicolor	with	momentary (NO)	Ceramic	Hexnut	3-101-417	■
19	Backlighted	multicolor	without	momentary (NO)	Ceramic	Hexnut	3-101-414	■
19	Ring Illumination	multicolor	with	momentary (NO)	Stainless Steel	Hexnut	3-101-422	■
19	Ring Illumination	multicolor	without	momentary (NO)	Stainless Steel	Hexnut	3-101-419	■
22	Backlighted	red / green	with	latching	Ceramic	Knurled nut	3-101-428	■
22	Backlighted	red / green	without	latching	Ceramic	Knurled nut	3-101-426	■
22	Backlighted	multicolor	without	latching	Ceramic	Knurled nut	3-101-425	■
22	Ring Illumination	red / green	with	latching	Stainless Steel	Knurled nut	3-101-405	■
22	Ring Illumination	red / green	without	latching	Stainless Steel	Knurled nut	3-101-431	■
22	Ring Illumination	multicolor	without	latching	Stainless Steel	Knurled nut	3-101-430	■
22	Backlighted	multicolor	with	momentary (NO)	Ceramic	Knurled nut	3-101-427	■
22	Backlighted	multicolor	without	momentary (NO)	Ceramic	Knurled nut	3-101-424	■
22	Ring Illumination	multicolor	with	momentary (NO)	Stainless Steel	Knurled nut	3-101-404	■
22	Ring Illumination	multicolor	without	momentary (NO)	Stainless Steel	Knurled nut	3-101-429	■

Common parameters for all standard variants:

- Housing material: stainless steel
- Switching current: 100 mA
- Illumination supply voltage: 5 V - 28 V (variable)
- IP protection: IP67- IK protection: IK09
- Terminal connection: wires (8 wires for RGB, 4 wires otherwise), standard wire length is 200 mm

Latching and momentary NO switch are open after power-up (protection against unintended switching)

NO: normally open

■ Most Popular.

Availability for all products can be searched real-time: <https://www.schurter.com/en/Stock-Check/Stock-Check-SCHURTER>

Minimum order quantity for standard variants with or without laser marking is 10 pieces.

Configurations which are not listed as standard in the table above can be requested as customized variants. The configuration code can be used for customizing this product. Please contact us in case more detail information is needed.

**Packaging unit** 10 ST