#### Touchless Switch







#### See below:

#### **Approvals and Compliances**

#### **Description**

- Touchless momentary push button (MO1) or as latching switch (LA)
- Protection against unintended switching
- Precise operating
- Potential free output contactsLaser lettering possible
- Vandal resistant

# **Unique Selling Proposition**

- Variable supply voltage, RGB with integrated series resistor
- High reliability
- Wiping and cleaning the surface does not trigger a switching operation

#### **Characteristics**

- Housing made from stainless steel
- With ring illumination
- Wearless, no moving parts
- Attractive design

**Mechanical Data** 

- Insensitive to water and rain

#### Weblinks

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

#### **Technical Data**

| Momentary (MO1) or latching (LA)   |
|--|
| max. 42 VAC / 60 VDC   |
| max. 100 mA  |
| 1 W  |
| > 10 MΩ  |
| < 16Ω  |
| 5 - 28 VDC   |
| 6.0 mA (typ) / 13.0 mA (max)<br>Peak: 29 mA (switch is closed)<br>8.0 mA (typ) / 15.0 mA (max) |
| Peak: 34 mA (switch is open)   |
| 10.0 mA (typ) / 17.0 mA (max)<br>Peak: 34 mA (switch is closed)                                |
| 11.0 mA (typ) / 19.0 mA (max)<br>Peak: 38 mA (switch is open)                                  |
| 14.0 mA (typ) / 21.0 mA (max)<br>Peak: 38 mA (switch is closed)                                |
| 16.0 mA (typ) / 22.0 mA (max)<br>Peak: 43 mA (switch is open)                                  |
| 19.0 mA (typ) / 25.0 mA (max)  |
| Peak: 43 mA (switch is closed)   |
| yes  |
| OptoMOS Relay  |
| >20 million actuations   |
| TTS Bi-Color 4 Litzen, 26AWG, 0.128 mm <sup>2</sup>  |
| TTS RGB 6 Litzen, 26AWG, 0.128 mm <sup>2</sup>   |
|  |

| Actuation Type                 | optical                |
|--------------------------------|------------------------|
| Actuating Force                | none                   |
| Shock Protection               | IK06                   |
| Mounting Depth                 | 16.5 mm                |
| Tightening Torque Plastic Nut  | 2.5 Nm                 |
| Climatical Data                |                        |
| Operating Temperature          | -30 to 85 °C           |
| Storage Temperature            | -40 to 85 °C           |
| IP Protection Class Front Side | IP67 acc. to IEC 60529 |
| Material                       |                        |
| Housing                        | Stainless Steel        |
| Illuminated Ring (Ring Illumi- | PMMA                   |
| nation)                        |                        |
| Sensor Window                  | PC                     |
| Seal Ring                      | NBR70                  |
|                                |                        |

#### **Approvals and Compliances**

 $<sup>^{\</sup>rm 1}$  on request also available as NC /  $^{\rm 2}$  on request also available with cable or connector

Detailed information on product approvals, code requirements, usage instructions and detailed test conditions can be looked up in Details about Approvals

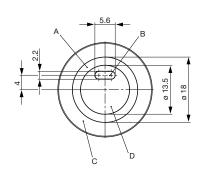
SCHURTER products are designed for use in industrial environments. They have approvals from independent testing bodies according to national and international standards. Products with specific characteristics and requirements such as required in the automotive sector according to IATF 16949, medical technology according to ISO 13485 or in the aerospace industry can be offered exclusively with customer-specific, individual agreements by SCHURTER.

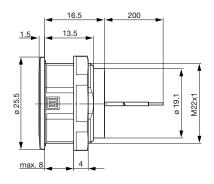
#### Compliances

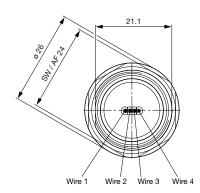
The product complies with following Guide Lines

| Identification | Details                        | Initiator   | Description   |
|----------------|--------------------------------|-------------|---|
| C€             | 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. |
| UK<br>CA       | 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]

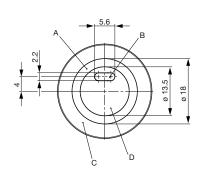


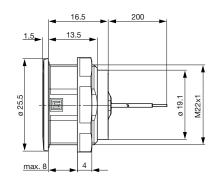


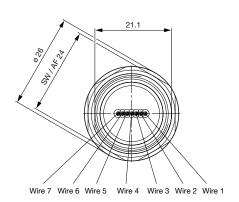


A ring illumination
B sensor window
C housing
D actuator

# Dimension for RGB Variants



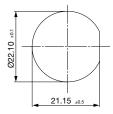




A ring illumination
B sensor window
C housing
D actuator

# Dimension

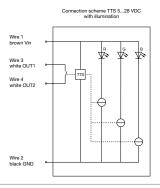
Mounting hole



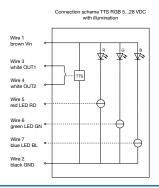
# **Diagrams**

Connection diagram

| TTS Bicolor Connection wire assignment |            |                   |  |  |  |
|--|------------|-------------------|--|--|--|
| Wire-number                            | Wire color | function          |  |  |  |
| Wire 1                                 | brown      | Vin = 5 VDC28 VDC |  |  |  |
| Wire 2                                 | black      | GND               |  |  |  |
| Wire 3                                 | white      | OUT1              |  |  |  |
| Wire 4                                 | white      | OUT2              |  |  |  |



| TTS RGB Connection wire assignment |            |                   |  |  |
|------------------------------------|------------|-------------------|--|--|
| Wire-number                        | Wire color | function          |  |  |
| Wire 1                             | brown      | Vin = 5 VDC28 VDC |  |  |
| Wire 2                             | black      | GND               |  |  |
| Wire 3                             | white      | OUT1              |  |  |
| Wire 4                             | white      | OUT2              |  |  |
| Wire 5                             | red        | LED red           |  |  |
| Wire 6                             | green      | LED green         |  |  |
| Wire 7                             | blue       | LED blue          |  |  |



# **Lettering Colour of Laser Lettering**

| Material        | Lettering Colour |                |
|-----------------|------------------|----------------|
| Stainless Steel | 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 = <b>=</b>      | 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 = CTRL          | 073 = <b>RESET</b>  |
| 014 = <b>N</b>                    | 034 = <b>7</b>                  | 054 = <b>RETURN</b> | 074 = (1)           |
| 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 =+                          | 057 = <b>STOP</b>   | 077 =               |
| 018 = <b>R</b>                    | 038 =-                          | 058 = <b>ENTER</b>  |                     |
| 019 = <b>S</b>                    | 039 =.                          | 059 = <b>BACK</b>   |                     |
| 020 = <b>T</b>                    | 040 = x                         | 060 = <b>LINE</b>   |                     |
| Please note that the font size de | epends on the number of charact | ers                 |                     |

# Order number key

| TTS - 22 - LA NO                |   | F0 - RI ( | ORG<br>7 | <b>VAR F0</b> 8 9 | SO NC |                             | SO NC NF<br>14 15 16 | _ | 000<br>7 18 | C 19 |
|---------------------------------|---|-----------|----------|-------------------|-------|-----------------------------|----------------------|---|-------------|------|
| Diameter                        |   | Q         | 1        |                   |       | Housing color               |                      |   | Q           | 11   |
| 22 mm                           | = | 22        | Ċ        |                   |       | Natural                     |                      | = | NC          |      |
| Switch type                     |   | Q         | 2        |                   |       | Mounting                    |                      |   | Q           | 12   |
| Latching<br>Momentary           | = | LA<br>MO  |          |                   |       | Thread (M) W/ an protection | ti-rotation          | = | В           |      |
| Switch function                 |   | Q         | 3        |                   |       | <b>Detection distan</b>     | ce *                 |   | Q           | 13   |
| Normally open                   | = | NO        |          |                   |       | 6 cm                        |                      | = | 06          |      |
| Rated current                   |   | Q         | 4        |                   |       | Actuator materia            | d                    |   | Q           | 14   |
| 100mA                           | = | A10       |          |                   |       | Stainless steel             |                      | = | S0          |      |
| Terminal s witch                |   | Q         | 5        |                   |       | Actuator color              |                      |   | Q           | 15   |
| Flexible wires                  | = | F0        |          |                   |       | Natural                     |                      | = | NC          |      |
| Illumination /                  |   | Q         | 6        |                   |       | Actuator style              |                      |   | Q           | 16   |
| appearance                      |   |           |          |                   |       | No Finger guided            |                      | = | NF          |      |
| Ring illumination               | = | RI        |          |                   |       | Lettering type              |                      |   | Q           | 17   |
| Illumination / appearance color |   | Q,        | 7        |                   |       | None                        |                      | = | 0           |      |
| Red-green                       | = | 0RG       |          |                   |       | Marking type                |                      |   | Q           | 18   |
| RGB                             | = | RGB       |          |                   |       | None                        |                      | = | 000         |      |
| Supply voltage                  |   | Q         | 8        |                   |       | Accessories                 |                      |   | Q           | 19   |
| illumination                    |   |           |          |                   |       | Hex nut plastic w           | /                    | = | С           |      |
| 5-28V                           | = | VAR       |          |                   |       | O-Ring                      |                      |   |             |      |
| Terminal illuminatio            |   | Q         | 9        |                   |       |                             |                      |   |             |      |
| Flexible wires                  | = | F0        |          |                   |       |                             |                      |   |             |      |
| Housing material                |   | Q         | 10       |                   |       |                             |                      |   |             |      |
| Stainless                       | = | S0        |          |                   |       |                             |                      |   |             |      |

<sup>\*</sup> Distance can be changed at the production site. MOQ > 100 pcs.

# **All Variants**

| Diameter [mm] | Illumination      | Illumination Color inactive / active | Function       | Accessories     | Order Number |
|---------------|-------------------|--------------------------------------|----------------|-----------------|--------------|
| 22            | Ring Illumination | multicolor                           | latching (LA)  | Hex nut plastic | 3-135-364    |
| 22            | Ring Illumination | multicolor                           | momentary (M0) | Hex nut plastic | 3-135-363    |
| 22            | Ring Illumination | bi-colored<br>green / red            | latching (LA)  | Hex nut plastic | 3-131-913    |
| 22            | Ring Illumination | bi-colored<br>green / red            | momentary (MO) | Hex nut plastic | 3-131-894    |

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

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.

| Packa  | aina | unit  |  |
|--------|------|-------|--|
| i acka | мпм  | ullit |  |

10 Pcs

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.

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MML21KA3ABK MML23KA3AC05K-001 MML23KW3AA01W 8418K2 8442K3 8450K1 860K11911T01A 861901 861K11911T01A07
861K13810T00A14 861K13911 8646AB6X718UL 9533CD4+U574+U4922 99-453.837 A2PMA1X03EC56 A3A-7310 A3A-7340
12037A2ULCSA 1203A2UL ABGW410-R ABN400-R 121382 1213C3 HE3B-M2 121194 1212MRA 1241.1183.7047 121489
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