### Metal Line Switches https://www.schurter.com /PG70

# CDS1

### **Touch Display Switch**



CDS1 unpowered



Example: partial mode pictures



Backside with terminals

### Description

- Capacitive touch technology in combination with an OLED Display
- Four softkeys and one touch button
- Functions: rotating, swiping horizontally or vertically, and tapping
- Upload of own pictures in png format and animated gif videos via USB Interface
- No operation system software necessary for the operation of the CDS1, only the machine simulator runs on MS Windows 7 and higher
- Selection from three interfaces: I2C, SPI, RS232

### **Unique Selling Proposition**

- Configurable Input System
- Full Size Touchscreen
- Round shaped OLED Display
- Plug and Play

### See below: Approvals and Compliances

### Weblinks

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

## CDS1

### **Technical Data**

Electrical Data							
Supply Voltage Vcc	3.3 VDC ± 5%						
Logic Input Low	min. 70% Vcc						
Logic Input High	max. 30% Vcc						
Reverse Polarity Protection1)	yes						
Connector to internal Mass	Micro USB-B 2.0						
Storage							
Connector to Customer Sys-	JST XHP 10, protected against torsion						
tem Control Unit							
Interface to Customer System	I2C (100 kHz or 400 kHz), 4-line SPI or						
Control Unit	RS232						
Current Consumption (Vcc =							
All features off, sleep mode	20 mA						
Only Touch active	20 mA						
Only LED active (white)	110 mA						
Only Display active, full white	210 mA						
All features on, LED and Dis-	260 mA						
play full white							
Display							
Туре	Graphic-PMOLED						
Color Resolution	65k colors						
Resolution	128 x 128 RGB Pixels						
Brightness	90 cd/m2, adjustable in 16 steps						
Contrast	2000:1						
Viewing Angle	160°						
Refresh Rate	25 Pictures per sec.						
Display Life Time <sup>2)3)</sup>	min. 11000 h						
Home Button LED on 6 o'cloc							
Туре	RGB						
Illumination type	constant, blinking 2x per sec., pumping from 0% to 100% within 1 sec and back						
Brightness	adjustable in 16 steps						
Touch Data							
Technology	PCAP						
Touch Pattern	Full X-Y						
Soft Key Positions	3, 6, 9, and 12 o'clock position on the Touch Wheel						
Touch Button Position	Center of the display						
Soft Key / Touch Button short	128 to 500 ms						
Soft Key / Touch Button long	> 500 ms						
Touch Movements	Swipe Left to Right						
	Swipe Right to Left						
	Swipe Top to Bottom						
	Swipe Bottom to Top						
	Rotation Left						
	Rotation Right						
	Tap on Soft Key / Touch Button						

< 150 ms

Media Data						
Mass Storage Size	4 Mbyte					
Picture Format	png					
Picture Size⁴)	128 x 128 pixel					
File Size for Pictures	max. 20 kByte					
Video Format	gif					
Video Picture Size	128 x 128 pixel					
File Size for Videos	max. 128 kByte					
Frame Rate for animated gif videos	min. 60 ms					
Ambient Light Sensor						
Sensitive Wavelength Range	390 - 700 nm					
Resolution	12 Bit					
Mechanical Data						
Shock Protection	IK05 acc. to IEC/EN 62262					
Screw Tightening Torque for	max. 0.2 Nm					
Mounting Ring						
Climatical Data						
Operating Temperature	-20 to 60 °C					
Storage Temperature	-20 to 70 °C					
IP Protection Class Front Side	IP67 when mounted with Seal Ring⁵), IP40 otherwise					
Moisture sensitivity level	MSL 1					
Material						
Housing	PC					
Mounting Ring⁵)	PC					
Seal Ring	NBR70					
Touch Surface	Glass					
Product Tests						
EMC	IEC/EN 61000-4-2   IEC/EN 61000-4-3   IEC/EN 61000-4-4   IEC/EN 61000-4-6   IEC/EN 61000-4-8   IEC/EN 61000-6- 1:2016   IEC/EN 61000-6-2:2016   IEC/ EN 61000-6-3:2011   IEC/EN 61000-6- 4:2011   EN 61326-1:2013   EN 55014- 1:2006 + A1:2009 + A2:2011   EN 55014-2:2015   EN 61058-1-1:2015-05					
Change of temperature	-25°C / +65°C / 50%RH according to IEC 60068-2-14 Test N					
Damp heat, steady state	40°C / 95%RH / 21 days according to IEC 60068-2-78					
Glow wire test	750°C and 850°C according to IEC/EN 60695-2-11:2014 and IEC/EN 60335-1					

1) Mechanical reverse polarity protection made from the combination of the plug and the socket, no internal reverse polarity protection

2) The life time of the display is typically defined as the time it takes for the display to lose half of its brightness and depends on the displayed pictures and animated gif video pictures. The darker the picutes and the lower the brightness, the longer the display life time

3) The display of static images or videos with static image areas over a long period of time may lead to a so-called burn-in effect, in which the static image remains permanently visible on the display

4) Partial pictures are allowed to have smaller size

5) O-Ring is not included in the 10 pcs package

### Approvals and Compliances

System Response Time

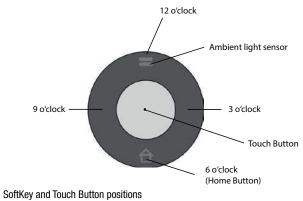
Detailed information on product approvals, code requirements, usage instructions and detailed test conditions can be looked up in Details about Approvals

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.

Suitable for applications acc.       IEC/UL 62368-1       Audio/video, information and communication technology equipment 1: Safety requirements         Compliances       Initiator       Description         Certification       Details       Schurter AG       The CE marking declares that the product complies with the applic requirements laid down in the harmonisation of community legislation at straining in accordance with EU Regulation 765/2008.         Mice       RoHS       Schurter AG       The UKCA marking declares that the product complies with the applic requirements laid down in the British Amendment of Regulation (EC 765/2008.)         Directive RoHS 2011/65/EU, Amendment (EU) 2015/863       Schurter AG       Directive RoHS 2011/65/EU, Amendment (EU) 2015/863         Directive       RoHS       Schurter AG       The law SJ / T 11363-2006 (China RoHS) has been in force since 1 2007, It is similar to the EU directive RoHS.         Directive       REACH       Schurter AG       On 1 June 2007, Regulation (EC) No 1907/2006 on the Registration <th>Organization</th> <th>Design</th> <th>Standard</th> <th>Description</th>	Organization	Design	Standard	Description
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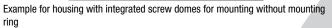
### Assembly Instructions





Mounting of the Design-In-Kit using the mounting ring (with double-sided adhesive tape)





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Example for housing with screws from the panel front for mounting without mounting ring

### Diagrams

Pinout of FST XHP-10			a va lua	Pinout I		Signal				
Pin-Nr.:	Signal		application in SPI I2C RS232		- iri-ivi					
	-	SPI			2	D-	not connected	data line		
1	VCC	x	х	x	3	D- D+	negative differential positive differential	data line		
	GND	x	х	x	4	ID	not connected			
3	IRQ_n <sup>2</sup>	X <sup>1</sup>	X <sup>1</sup>	X1	5	GND	ground			
4	CS_n <sup>2</sup>	x				2.710	3			
5	GND	х	х	х	-					
	SCLK / SCL									
6	(external pull-up	x	х							
	resistance 2.7kΩ)									
	GND	х	х	x						
	MOSI / TX / SDA									
	(external pull-up	x	х	x						
	resistance 2.7kΩ)									
	GND	х	х	x						
10	MISO / RX	x		x						
	nal signal									
	is active low									
- Siyilai	IS ACTIVE IOW									

Packaging unit	Line Connector	Configurations Code	Order Number
10 pack	-	CDS1-00-10-PBKGLS00000-SYRGB-00-X0000-S	3-102-423
Design-In-Kit	EU	CDS1-00-DI-PBKGLS00000-SYRGB-EU-X0000-S	3-102-424
Design-In-Kit	EU / US	CDS1-00-DI-PBKGLS00000-SYRGB-US-X0000-S	3-102-436

### Most Popular.

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



Contents of the Design-In-Kit

Contents of the 10 pack

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