

2 Product Bulletins

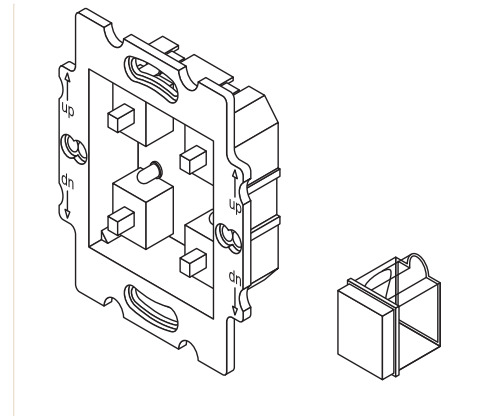
2.1 Switches

2.1.2 24 Volt + LED Push Buttons

GENERAL DESCRIPTION

The Lithoss 24V pushbuttons + LED are very similar to the versions without LED. The LED's are meant as indication and are standard orange. Other colours can be delivered on request.

The LED's are common anode (+) soldered.



TECHNICAL SPECIFICATIONS

Switching function	SPST (ON) - OFF			
Maximum load	All buttons are combined on 1 common contact			
Dielectric strength	9 W AC - 6 W DC Max. 250 mA / 120 V			
Contact material	1000 V RMS			
Lifecycle	Silver			
Protection value	+ 1.500.000 cycles			
Connection method	IP41		LED's	
	Pushbuttons		PCB mounted screw terminal	
	LED's		Pin-connector	
LED	Orange (standard)	White	Blue	Red
Uf	2,1 VDC	3,4 VDC	3,65 VDC	2,5 VDC
If (max)	30 mA	20mA	20mA	30mA
Advised wallbox type	Depth	45mm or deeper, with screws		
	Size	internal Ø60mm or 50x50mm		

APPROVAL

CE	Conform
RoHS	RoHS compatible

INCLUDED PARTS

Cover plate, Frame with pushbuttons, Mounting frame, Buttons, Hook (removal tool), Installation manual
LED-connector with resistor (24VDC), LED-spacer

AVAILABILITY

Switches	SB1T	SB2T	SB3T	SB4T
	SB11T	SB22T	SB44T	SB42T
Switches & module	SB1TMG	SB2TMGL	SB2TMGR	SB4TMG

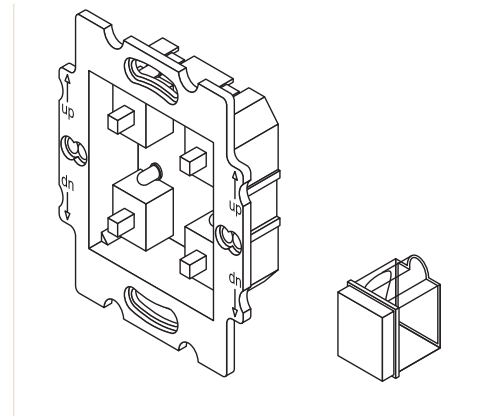
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2.1 Switches

2.1.3 Technical info LED's

GENERAL DESCRIPTION

A LED (Light-Emitting Diode), is a semiconductor light source. LED's are used as indicator lamps in many devices, and are increasingly used for lighting. Lithoss uses LED's that can be used as continuous backlights around the buttons, or as indicational light to provide feedback to the user. Lithoss LED's are soldered with a common anode. Specific domotics systems may require an inversed polarization.



LITHOSS LEDS

Color	Orange (standard)	White	Blue	Red
Uf	2,1 VDC	3,4 VDC	3,65 VDC	2,5 VDC
If (max)	30 mA	20mA	20mA	30mA

EXAMPLE CALCULATIONS

Information needed:	Symbol	Unit	Example
Voltage of the source	Us	V DC	24
Forward voltage of the LED	Uf	V DC	2,1 (Orange LED)
Max. Forward current of the LED	If	A	0,03 (Orange LED)

Calculation of the resistor value

Calculated value of serialresistor	R	Ohm	730	$R = (U_s - U_f) / I_f$
Select a common higher resistorvalue	Example 1 820	Example 2 1000	Example 3 1200 Ohm	
Calculate the exact forward current	0,027	0,022	0,018 mA	$I_f = (U_s - U_f) / R$
Calculate the power factor	0,58	0,48	0,40 Watt	$P = (U_s - U_f) * I_f$

DRAWINGS

