



General tolerances on linear dimensions:	For the height of a switch is the tolerance always ± 1%				
Dimensions (mm)	0,5 - 3	> 3 - 6	> 6 - 30	> 30 - 120	> 120 - 400
Tolerances unless Otherwise mentioned (mm)	± 0,1	± 0,1	± 0,2	± 0,3	± 0,5

The tolerances for the Santon datasheet are according to ISO 1101, ISO 8015, ISO 2768 1 class m, unless stated otherwise.

Technical data	Symbol	Rated:	I	II	III	Unit		
Rated operational voltage	Ue		1500	1000	800	V dc		
Rated operational current	Ie		20	50	60	A dc		
Required fine wire cross-section (minimal)*:			4	10	16	mm <sup>2</sup>		
*IEC60947-1, table 9								
Number of DC poles					8			
Pollution degree					2			
Utilization category DC					DC-PV1			
IP rating terminals					IP20			
Tightening torque terminal screws M4 (min. - max.)			1,5	-	1,7	Nm		
Method of mounting					IP65			
IP rating of the shaft in case of single hole mounting					IP65			
Tightening torque panel mounting nut (min. - max.)			2,0	-	2,5	Nm		
Panel thickness between			1	-	4	mm		
Positions			12 (OFF) and 3 o'clock (ON)					
Actuator			knob with padlock and top screw, black/grey [G],					
Method of operation			Independent manual operation					
Rated impulse withstand voltage	Uimp				8	kV		
Insulation voltage	Ui				1500	V		
Rated thermal current uninterrupted duty	Iu				60	A		
Rated short-time withstand current (1s)	Icw				700	A		
Rated short-circuit making capacity	Icm				1	kA		
Rated conditional short-circuit current	Isc				5	kA		
Minimum required dimensions of enclosures L x W x D* (space envelope)			124	x	47	x	123	mm
* see the drawing for the height of the switch. The number of layers N is:					8			
Weight					ca. 308	g		
Allowed ambient temperature (min. - max.)	Tambient		-40	-	70	°C		
Allowed storage temperature (min. - max.)	Tstorage		-40	-	85	°C		
Relative humidity (max.), without condensation at 20 °C	RH				90	%		

Terminals Scheme							
Layer No.	Front Side Left	Front Side Right	Symbol	Rear Side Left	Rear Side Right	Positions 1	Positions 2 3 4
9	+4		○	+4		I	0
8		-4	○		-4	I	0
7	-3		○	-3		I	0
6		+3	○		+3	I	0
5	+2		○	+2		I	0
4		-2	○		-2	I	0
3	-1		○	-1		I	0
2		+1	○		+1	I	0
1			Empty				

(I = Contact is closed, O = Contact is open)

**Mounting instructions**

In the application all ratings according to the datasheet have to be respected. After mounting, the wiring must be checked and the switch must operate smoothly. When building the switch in an enclosure, the space envelope must be respected according to the applicable standards. In case mounting the switch with a rear bracket using the optional four screw holes in the bottom plate, please take into account the required air & creeping distances with respect to the live parts according to the applicable standard (IEC/UL).

**Maintenance**

The X type switches are designed for a very long life but it is advised to do some simple yearly maintenance.

- Check the installation for signs of overload or overheating. The terminals may not exceed the limit of 85°C under full load.

- By operating the switch a few times (5x) the contacts will clean themselves and the switch will have a longer life.

**Connection**

The terminals, can take copper wires up to 6 mm<sup>2</sup>.

The recommended Spade Tongue Terminals may have a maximum width of 9 mm (see table for recommendations)

**Warning**

Verify that all connections (including bridging link connections) are suitable for the rated current, prepared to ensure only conductive parts are clamped and tightend to the manufacturer's required torque before energization.

Recommend Manufacturer	Type number	Wire size (AWG)	Wire size (mm <sup>2</sup> )	Color
JST		AWG 16 – AWG 14	1,0 – 2,5 mm <sup>2</sup>	Blue
TE connectivity	C-165012	AWG 16 – AWG 14	1,0 – 2,5 mm <sup>2</sup>	Blue
Vogt	3635c	AWG 16 – AWG 14	1,5 – 2,5 mm <sup>2</sup>	Blue
TE connectivity	C-165015	AWG 12 - AWG 10	3,0 - 6,0 mm <sup>2</sup>	Yellow
Vogt	3654c / 3655c	AWG 12 - AWG 10	3,0 - 6,0 mm <sup>2</sup>	Yellow
Santon (JST)	54A1256.35	AWG 8 - AWG 10	10,5mm <sup>2</sup> -16mm <sup>2</sup> *1	*2

\*1 16mm<sup>2</sup> only with fine stranded wire (or two times 6mm<sup>2</sup>)

\*2 To insulate the cable lugs, you can use the insulating spouts of the ES series from CEMBRE with the type designation ES3 ....