



Technical data	Symbol	Rated voltage	I	II	III	IV	V	Unit
Rated operational voltage	Ue	1000	850	800	650	400		V dc
Rated operational current	Ie	16	20	25	30	45		A dc
Required fine wire cross-section (minimal)*:		2,5	4,0	4,0	6,0	10,0		mm ²
*IEC60947-1, table 9								
Number of DC poles						2		
Utilization category DC						DC-21B		
Pollution degree						2		
IP rating terminals						IP20		
Tightening torque terminal screws M4 (min. - max.)					1,5	–	1,7	Nm
Method of mounting								
IP rating of the shaft in case of single hole and four hole panel 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						Standard A knob with long screw to fix in shaft		
Method of operation						Independent manual operation		
Actuator operation force (max.)								1,4 Nm
Tightening torque M3 screw in the actuator (min. - max.)						0,2	–	0,4 Nm
Rated impulse withstand voltage								
Rated impulse withstand voltage	Uimp							8 kV
Insulation voltage								
Insulation voltage	Ui							850 V
Rated thermal current uninterrupted duty								
Rated thermal current uninterrupted duty	Iu							45 A
Rated short-time withstand current (1s)								
Rated short-time withstand current (1s)	Icw							700 A
Rated short-circuit making capacity								
Rated short-circuit making capacity	Icm							1,4 kA
Rated conditional short-circuit current								
Rated conditional short-circuit current	Isc							5 kA
Minimum required dimensions of enclosures L x W x D* (space envelope)								
Minimum required dimensions of enclosures L x W x D* (space envelope)					124	x	47	x 64 mm
* see the drawing for the height of the switch. The number of layers N is:								
Weight								ca. 137 g
Allowed ambient temperature (min. - max.)	T _{ambient}							-40 – 70 °C
Allowed storage temperature (min. - max.)	T _{storage}							-40 – 85 °C
Relative humidity (max.), without condensation at 20 °C	RH							90 %

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

(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.

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 mm². The recommended Spade Tongue Terminals may have a maximum width of 9 mm (see table for recommendations)

Recommend Manufacturer	Type number	Wire size (AWG)	Wire size (mm ²)	Color
JST	FVD2-YS4A	AWG 16 – AWG 14	1,0 – 2,5 mm ²	Blue
TE connectivity	C-165012	AWG 16 – AWG 14	1,0 – 2,5 mm ²	Blue
Vogt	3635c	AWG 16 – AWG 14	1,5 – 2,5 mm ²	Blue
TE connectivity	C-165015	AWG 12 - AWG 10	3,0 - 6,0 mm ²	Yellow
Vogt	3652c / 3653c	AWG 12 - AWG 10	3,0 - 6,0 mm ²	Yellow
Santon (JST)	52A1256.35	AWG 8 - AWG 10	10,5mm ² -16mm ² *1	*2

*1 16mm² only with fine stranded wire (or two times 6mm²)

*2 Optional: A yellow finger safe sleeve for the Spade Tongue Terminal (Santon 52A1256.35) can be ordered under item number 52A1564.00