

Technical data	Symbol	Ratings:	I	II	III	Unit
Rated operational voltage	Ue		1000	800	500	V dc
Rated operational current	Ie		20	30	45	A dc
Required fine wire cross-section (minimal)*:			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	
Positions						
Actuator			12 (OFF) and 3 o'clock (ON)			
Method of operation			Standard A knob with long screw to fix in shaft			
Actuator operation force (max.)					1,4	Nm
Tightening torque M3 screw in the actuator (min. - max.)			0,5	-	0,7	Nm
Rated impulse withstand voltage						
Insulation voltage	Uimp				8	kV
Rated thermal current uninterrupted duty	Iu				45	A
Rated short-time withstand current (1s)	Icw				700	A
Rated short-circuit making capacity	Icm				1,4	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
					50	mm
* see the drawing for the height of the switch. The number of layers N is:						
					2	
Weight						
					ca. 149	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 Left	Front Side Right	Symbol	Rear Side Left	Rear Side Right	Positions 1	Positions 2	Positions 3	Positions 4
7									
6									
5									
4									
3	-1			-1		I			0
2		+1			+1	I			0
1			Empty						

(I = Contact is closed, 0 = 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 85oC under full load.
- By operating the switch a few times (5x) the contacts will clean themselves and the switch will have a longer life.

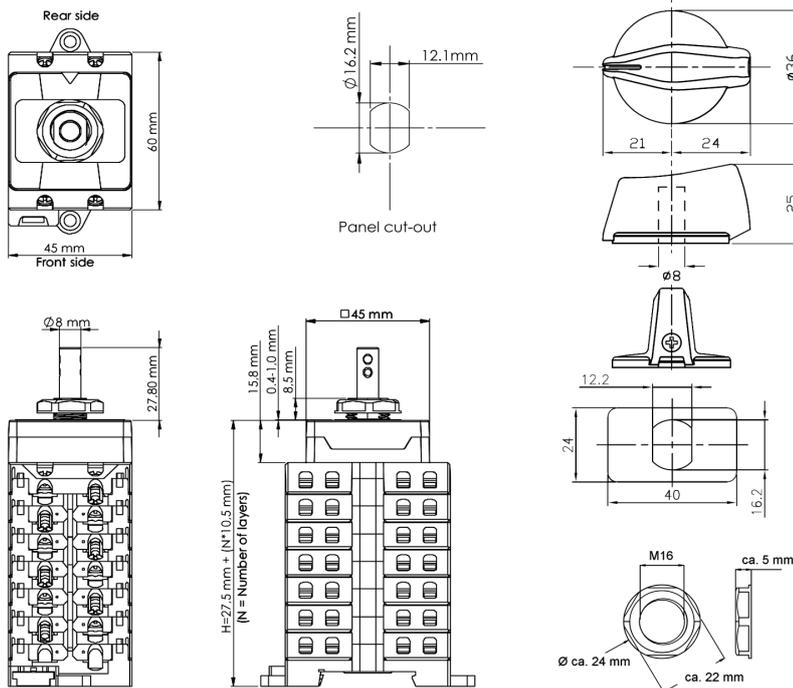
Connection

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



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Required fine wire cross-section (minimal)*:			4,0	6,0	10,0	mm ²
*IEC60947-1, table 9						
Number of DC poles					4	
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	
Positions						
Positions			12 (OFF) and 3 o'clock (ON)			
Actuator			Standard A knob with long screw to fix in shaft			
Method of 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				1000	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 71 mm
* see the drawing for the height of the switch. The number of layers N is:						
					4	
Weight						
					ca. 211	g
Allowed ambient temperature (min. - max.)						
Allowed ambient temperature (min. - max.)	T _{ambient}		-40	-	70	°C
Allowed storage temperature (min. - max.)						
Allowed storage temperature (min. - max.)	T _{storage}		-40	-	85	°C
Relative humidity (max.), without condensation at 20°C						
Relative humidity (max.), without condensation at 20°C	RH				90	%

Layer No.	Front Side		Symbol	Rear Side		Positions			
	Left	Right		Left	Right	1	2	3	4
7									
6									
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.

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.

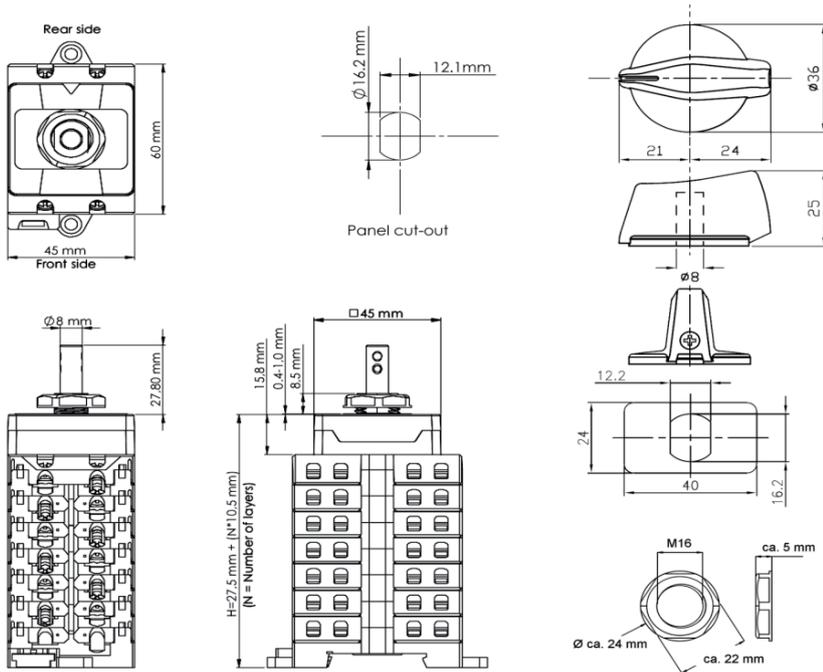
Connection

The terminals, can take copper wires up to 6 mm². The recommended Spade Terminal (Santon 52A1256.35) 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)

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*IEC60947-1, table 9						
Number of DC poles					6	
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
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.)				0,5	- 0,7	Nm
Rated impulse withstand voltage	Uimp					8 kV
Insulation voltage	Ui					1000 V
Rated thermal current uninterrupted duty	Iu					45 A
Rated short-time withstand current (1s)	Icw					700 A
Rated short-circuit making capacity	Icm					1,4 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 92	mm
* see the drawing for the height of the switch. The number of layers N is:						6
Weight						ca. 274 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 Left	Front Side Right	Symbol	Rear Side Left	Rear Side Right	Positions 1 2 3 4
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.

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 850C 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)

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TE connectivity	C-165015	AWG 12 - AWG 10	3,0 - 6,0 mm ²	Yellow
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