



| Technical data   | Symbol | Ratings:             | 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 <sup>2</sup> |
| *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              |
| <b>Method of mounting</b>  |        |                      |  |     |     |     |          |                 |
| 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 knob with top screw, black [E], |     |     |     |          |                 |
| Method of operation  |        |                      | Independent manual operation             |     |     |     |          |                 |
| Actuator operation force (max.)  |        |                      |  |     |     |     | 1,4      | Nm              |
| Tightening torque M3 screw in the actuator (min. - max.)                     |        |                      |  |     |     | 1,3 | – 1,5    | Nm              |
| Rated impulse withstand voltage  | Uimp   |                      |  |     |     |     | 8        | kV              |
| Insulation voltage   | Ui     |                      |  |     |     |     | 1000     | V               |
| Rated thermal current uninterrupted duty                                     | Iu     |                      |  |     |     |     | 0        | 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              |
| <b>Minimum required dimensions of enclosures L x W x D* (space envelope)</b> |        |                      |  |     |     |     |          |                 |
|  |        |                      | 124                                      | x   | 47  | x   | 85       | mm              |
| * see the drawing for the height of the switch. The number of layers N is:   |        |                      |  |     |     |     |          |                 |
|  |        |                      |  |     |     |     | 4        |                 |
| Weight   |        |                      |  |     |     |     | ca. 235  | g               |
| Allowed ambient temperature (min. - max.)                                    |        | T <sub>ambient</sub> |  |     |     |     | -40 – 70 | °C              |
| Allowed storage temperature (min. - max.)                                    |        | T <sub>storage</sub> |  |     |     |     | -40 – 85 | °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         |            |       |        |           |       |           |   |   |   |
| 4         | +2         |       |        | +2        |       | I         |   |   | 0 |
| 3         |            | -2    |        |           | -2    | I         |   |   | 0 |
| 2         | -1         |       |        |           | -1    | I         |   |   | 0 |
| 1         |            | +1    |        |           | +1    | I         |   |   | 0 |

(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 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)

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

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

| Recommend Manufacturer | Type number   | Wire size (AWG) | Wire size (mm <sup>2</sup> )              | Color  |
|------------------------|---------------|-----------------|---|--------|
| JST                    | FVD2-YS4A     | 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                   | 3652c / 3653c | AWG 12 - AWG 10 | 3,0 - 6,0 mm <sup>2</sup>                 | Yellow |
| Santon (JST)           | 52A1256.35    | AWG 8 - AWG 10  | 10,5mm <sup>2</sup> -16mm <sup>2</sup> *1 | *2     |