superior switch solutions

# FSS Operating panel－FSS－Bx 

User manual with safety precautions


## 1．Intended use

The Fire fighter safety switch is especially developed as additional safety switch device in direct current（DC） photovoltaic installations．The DC disconnect switch is made to withstand a continuous current flow with a maximum of 25 A and a string voltage of 750 VDC ．The DC disconnect switch is used to disconnect the connected strings of the installation in case of an emergency situation，either under load or no－load situations．Such an emergency situation is in case of fire．

The firefighter is able to safely disconnect the photovoltaic installation which is in operation and makes sure the installation is completely switched off before proceeding further．To aid the fire fighters the operating panel must be used in case of emergency to switch of the installation．

The equipment needs to be placed in a easy accessible location．The operating panel must be visible for fire fighters so they can see the status and directly act in case of an emergency．The equipment may not be installed in outdoors．

## 2．Operation

When an emergency occurs，the red push button will send a signal to all connected switches to go to the disconnected position（off），the switch will disconnect
the connection between the inverter and the solar panels．When all switches have switched off，indicated by means of the feedback contacts of the switches，the green LED will be on，indicating a safe situation．When the emergency is taken care of and there is no damage to the installation，the key operated switch can be used to send a signal to all connected switches to go to the connected position（on），the switch will close the connection between the inverter and the solar panels． When all switches have switched on，indicated by means of the feedback contacts of the switches，the red LED will be on．During the actions of the switch the Red LED will blink．In case of a fault both LED＇s will blink．This means the switch position is not determined within 15 seconds after a switch action．The reset of this error state can be done by activating the push button and key switch simultaneously．It is considered mandatory to test the system at least once every three months．

## 3．Contents

－Operating panel（metal plate）
－User manual with safety precautions
－Installation guide FSS
－Plastic housing（optional）
－ $3 x$ double membrane blind stop（optional）
－3x cable glands M16 for string connections （optional）

## 4. General safety precautions

The following Regulations and standards are applicable for the installation of electrical equipment:

- International Standard
- IEC 60364-7-712 Electrical installations of buildings Requirements for special installations or locations Solar Photovoltaic (PV) power supply systems
- Local Regulations (if applicable)
- NEN1010 - Veiligheidsbepalingen laagspanningsinstallaties
- DIN VDE 0100 - Errichten von Niederspannungsanlagen
- VDI 6012 - Dezentrale Energiesysteme im Gebäude, Photovoltaik
- BGV A1 - Allgemeine Vorschriften
- BGV A2 - Elektrische Anlagen und Betriebsmittel
- Be advised: Components in the installations are exposed to high voltages and currents. Please read the available technical literature on dimensioning of components before installing the equipment.
- The installation activities may only be performed by educated technical personnel.


## 5. Technical data

| Nom. Voltage | 24VDC $\pm 10 \%$ |
| :--- | :--- |
| Nom. Current | 0.25 A per switch |
| Max. number of switches | 15 |
| Protection degree | IP20 |
| Operating temperature range | $0^{\circ} \mathrm{C}$ till $+40^{\circ} \mathrm{C}$ |
| Dimensions Enclosure (optional) | $250 \times 180 \times 110 \mathrm{~mm}$ |
| Weight | Approx. 1 kg |
| CE certification according | EN 60947 part $1+3$ |
| Number of cycles | $>1500$ |

## 6. Switch connections (single switch)


7. Switch connections (multiple switches)


User Manual/safety precautions
Info@santonswitchgear.com / www.santonswitchgear.com Version B- 25-03-2011

FSS-Bx
© Copyright by Santon

