

BFS Series

# Solar Panel Rapid Shutdown Safety Solution



## Application

**ZBENY** BFS-11 is a UL1741 listed module level rapid shutdown device for solar building fire safety, inherently compliant with NEC 2014 and NEC2017 requirements.

The emergency button switch is required to initiate the rapid shutdown function, after the button switch connected with BFS-11 devices by signal cables.

This communication type is the most reliable one, ensure the PV system has RSD function in decades and the panel can be switched off to a safe voltage level in case of emergency at the lowest power consumption.

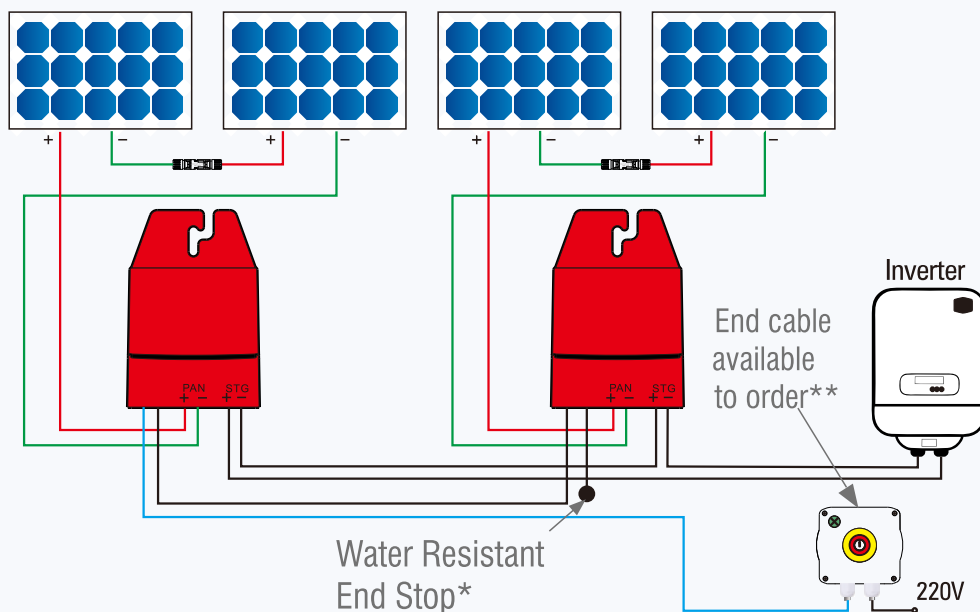
A RSD solution good for existing solar rooftop or new installations.

## BFS-11 RSD SPECIFICATIONS

Max operating Voltage Voc(V dc):	120V(60V per panel 2 in serie)
*In BFS-11 Installations need to meet NEC 2017. each panel must be <40V	
Max operating current (A dc):	12A
Max. output power(W):	1200(600W per panel)
UL 50 E Enclosure Type Rating(s):	4X
Range of operating voltage (V dc):	10-120V
Max. array short circuit current (A dc):	12A
Max. outputOperating voltage (V dc):	120V
Rated Max. output current (A dc):	12A
Communication Type:	2x1mm <sup>2</sup> Signal cables + connectors
Signal Cable Length:	1800mm
Maximum Air Ambient (°C):	55°C
Storage/shipping Temperature range:	-30°C to- +55°C
Operating Ambient Temperature range:	-30°C to- +55°C
Rapid Shutdown UL Listed:	UL1741;UL991
PV Panel Cable Length:	180mm
PV Connectors:	Staubli MC4 (Standard)
	Jinko and QC connectors for option
Weight with cables:	890g
Warranty:	BFS-11:25Years BFS-ESWXX(-K):5Years

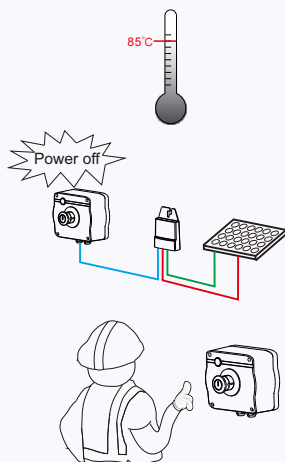
\*Rapid Shutdown initiate of BFS-11 requires button switch as a complete solution

## How the solution works?



Each BFS-11 device operates two solar modules, the modules in series go to inverter string as usual. The only difference is the communication signaling cables connect the BFS-11 in series and go to the button switch complete the RSD solution.

A complete RSD solution:



Automatic shutdown the panels when there is a temperature in the area higher than 85°C detected.

Automatic shutdown the panels when the power supply loss in the button switch box.

The fireman and people can manual the button switch to shutdown the panels when there is an emergency.

## EMERGENCY SHUTDOWN SWITCH

The Emergency Shutdown Switches offer manual way of shutdown the solar panels on the roof by pushing the button switches are installed at easy to reach site.

A 24VDC power supply suitable for up to 60 panels operation. The 24VDC power is supplied by solar inverter AC side, so when the AC power loss at solar.

inverter brings rapid shutdown units off. (ON indicates the 24VDC supply is live).

The max distance allowed from button switch to RSD:150M.



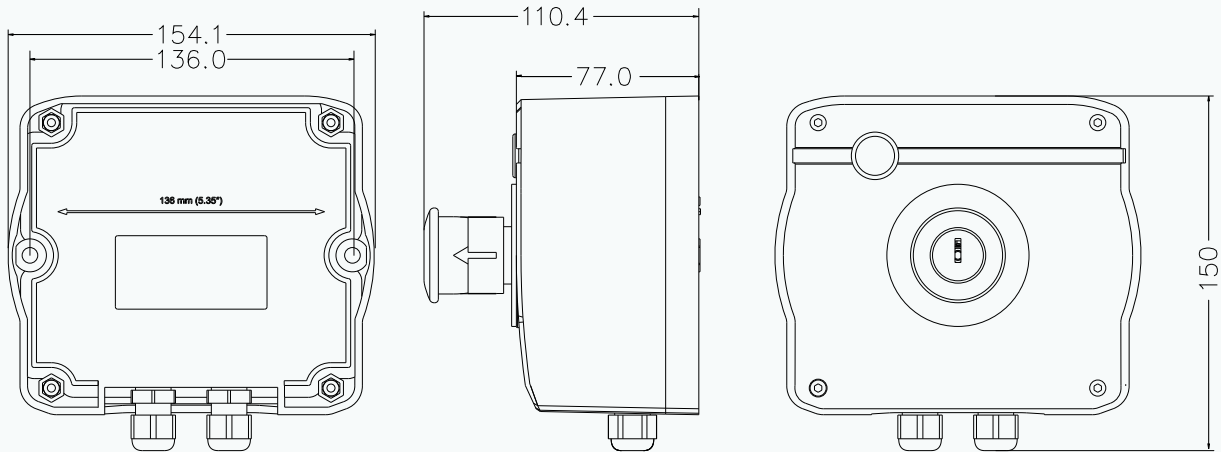
## SPECIFICATION

Part Number	Description
<b>BFS-11</b>	Rapid Shutdown Unit for connection to 2 solar panels
<b>BFS-ESW11</b>	Emergency Rapid Shutdown Switch for BFS-11, max 120 solar panels (60 units BFS)
<b>BFS-ESW12</b>	Emergency Rapid Shutdown Switch for BFS-11, max 240 solar panels (120 units BFS)
<b>BFS-ESW11-K</b>	Emergency Rapid Shutdown Switch with Key Lock for BFS-11, max 120 solar panels (60 units BFS)
<b>BFS-ESW12-K</b>	Emergency Rapid Shutdown Switch with Key Lock for BFS-11, max 240 solar panels (120 units BFS)
<b>BFS-CCABLE</b>	20m signal cable with female communication connector for end of string
<b>BFS-CCABLES</b>	2m signal cable with male and female communication connectors for between strings or panels.

## INSTALL DIMENSION

mm

BFS-ESW11-(K)/BFS-ESW12-(K)



**Note: Customized solutions are available**