



Solar Panel Rapid Shutdown Safety Solution

BFS Series



Solar Panel Rapid Shutdown



- **Module Level Rapid Shutdown**
- **Manual Shutdown by button switch**
- **Automatic Shutdown on AC Power Loss**
- **Over temperature Automatic Shutdown**
- **Compatible with most string inverters and panels**
- **No cross-talk with inverter or WIFI**

Application

BFS-11/BFS-12 is a module level rapid shutdown device offers fire safety for solar rooftop and building, remains the rapid shutdown function period the solar PV system whole working life.

Emergency button switch is required to initiate the rapid shutdown operating, as a trigger place on the ground and easier to reach.

The communication cable on the rapid shutdown device should be connected in series and wire to the button switch.

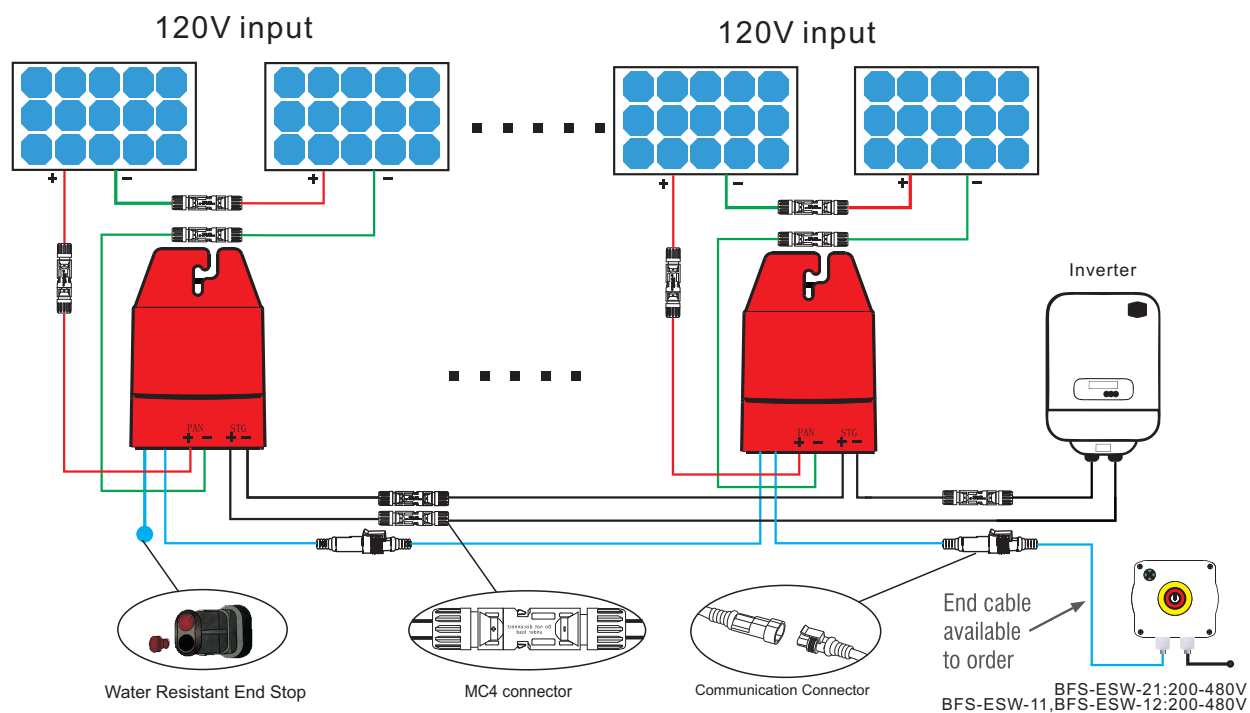
So the button switch can control the BFS rapid shutdown devices.

A communication that is no cross-talk with the inverter or WIFI source.

Solar Panel Rapid Shutdown

BFS-11 RSD Specifications

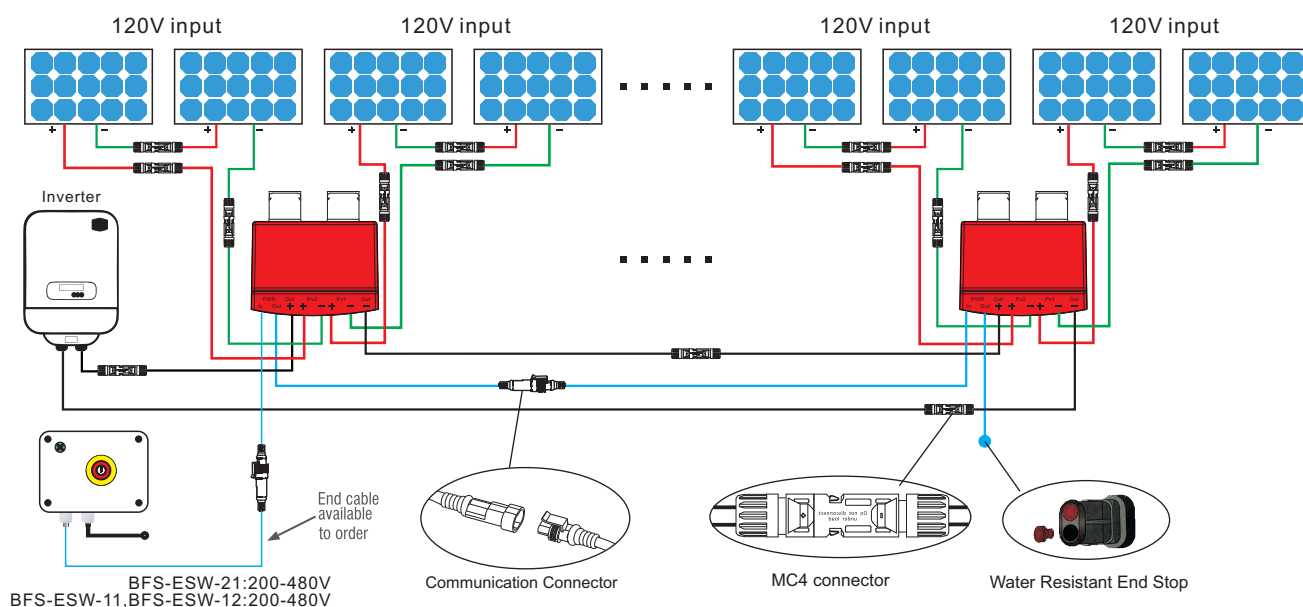
Model	BFS-11	
Maximum Input Voltage	120V Single Panel Or 60V Per Panel (Two Panels In Series)	
Maximum Input Current	18A	20A
Maximum Power	2160W in total	2400W in total
PV Input and Output Cables	4.0mm²(12AWG) Cables + MC4 Connectors	
PV Input Cables Length	180mm	
PV Output Cables Length	1800mm	
IP Protection	>IP68	
Operating Temperature	-40°C to +85°C	
Ambient Operating Temperature	-40°C to +55°C	
Standard Compliance	EN 61646; EN 61000,EN 61215 IEC 60716 draft C(NH3 resistant)	
PV Connectors	Staubli MC4 (Standard) Jinko connectors for option	
Warranty	25 Years	
DC Power Supply for each RSD		
Voltage Range	14V ~ 28V	
Maximum Current	15mA	
Maximum Power	0.2W	
Power Supply Cables (Signal Cables)	2x0.823mm² (18AWG) Signal Cables + Signal Connectors	
Power Supply Cables Length	1800mm	



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BFS-12 RSD Specifications

Model	BFS-12
Maximum Input Voltage	240V in total (Input 1 + Input 2)
Maximum Voltage each Input	120V Single Panel Or 60V Per Panel (Two Panels In Series)
Maximum Input Current	18A
Maximum Power	4320W in total (Input 1 + Input 2)
PV Input and Output Cables	4.0mm²(12AWG) Cables + MC4 Connectors
PV Input 1 Cables Length	180mm
PV Input 2 Cables Length	300mm
PV Output Cables Length	1800mm
IP Protection	>IP68
Operating Temperature	-40°C to +85°C
Ambient Operating Temperature	-40°C to +55°C
Standard Compliance	EN 61646; EN 61000,EN 61215 IEC 60716 draft C(NH3 resistant)
PV Connectors	Staubli MC4 (Standard) Jinko connectors for option
Warranty	25 Years
DC Power Supply for each RSD	
Voltage Range	14V ~ 28V
Maximum Current	15mA
Maximum Power	0.2W
Power Supply Cables (Signal Cables)	2x0.823mm²(18AWG) Signal Cables + Signal Connectors
Power Supply Cables Length	1800mm

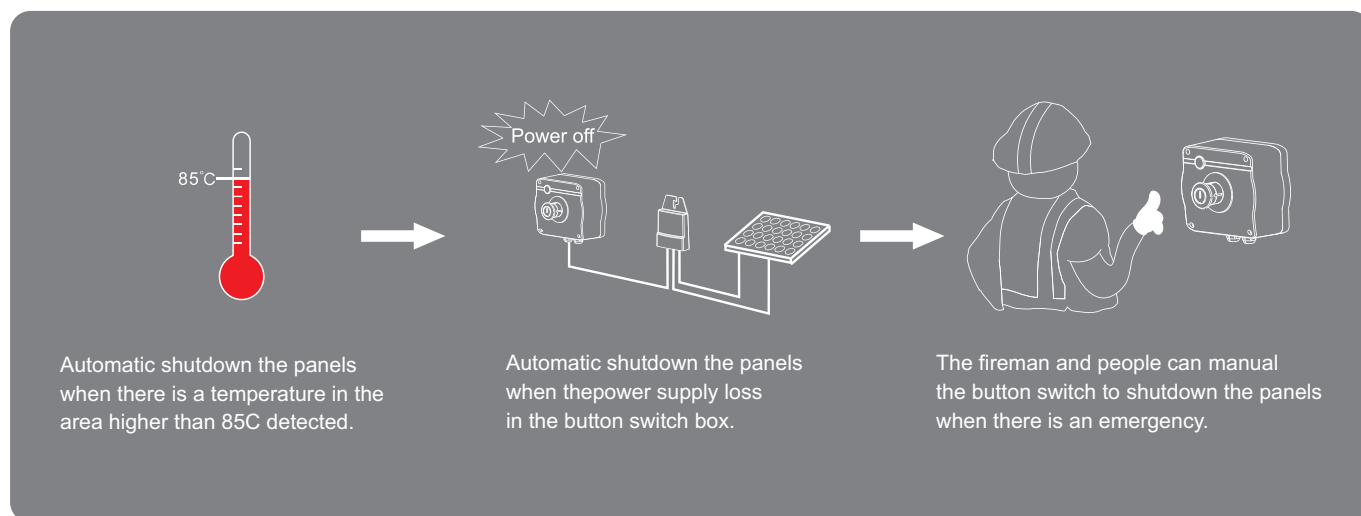


Solar Panel Rapid Shutdown

Each BFS-11/BFS-12 device can hold solar modules output at max 120V in total, the modules connect in series as solar string goes to inverter as PV system designing. One more thing on the rooftop is the connection of BFS-11/BFS-12 RSD and button switch via communication cable.

Note: If your market requires NEC2017/NEC2020 requirement, we recommend one RSD BFS-11 connects 1 panel($\geq 40V$) or 2 panels ($<40V$); BFS-12 connects 2 panels ($\geq 40V$) or 4 panels ($<40V$).

A Complete RSD Solution



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Emergency Shutdown Switch



The Emergency Switch offers the manual shutdown of solar panels on the rooftop by pushing the button.

AC power from grid or AC side at solar inverter both could be the power source for the emergency switch.

And when the AC power loss, automatic rapid shutdown the DC panels at the meantime. (The green light is ON only indicate the AC power supply is live).

Emergency Button Switch Specifications

Model	BFS-ESW11(-K)	BFS-ESW12(-K)	BFS-ESW21(-K)
Input Voltage Range	100~240VAC		200V~480VAC
Maximum Input Current	0.5A	0.88A	0.7A
Input Frequency Range	47~63Hz		
Rated Output Voltage	24VDC		
Maximum Output Current	315mA	750mA	1250mA
Maximum Output Power	7.06W	18W	30W
Power Supply Cables	0.823mm ² / 18AWG		
Cables Torque	0.5 NM/4.5lbin		
DIN Terminal Connector Wiring	0.5-4mm ² /26AWG-10(Note:BFS-11/ BFS-12 uses communication connector 2x0.823mm ²)		
DIN Terminal Torque	0.5-0.8Nm/4.5-7lbin		
Ambient Operating Temperature	-30°C to +70°C		-30°C to +85°C
Maximum BFS-11 Units	40 Units	90 Units	150 Units
Maximum BFS-12 Units	20 Units	45 Units	75 Units
Maximum Distance (First RSD to the Emergency Button Switch)	300m		

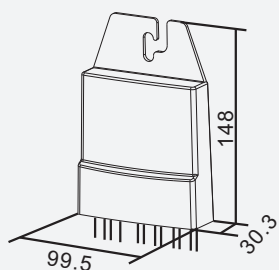
Solar Panel Rapid Shutdown

Ordering Information

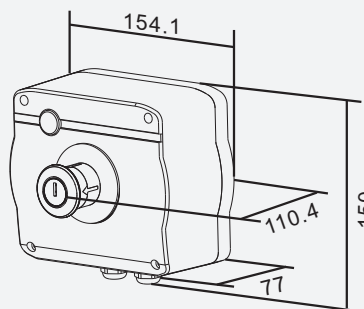
Part Number	Description
BFS-11	Rapid Shutdown Unit for solar panel/panels 120V input
BFS-12	Rapid Shutdown Unit for solar panel/panels 2 x 120V input
BFS-ESW11	Emergency Button Switch for BFS-11/ BFS-12. (100-240V AC power input).
BFS-ESW12	Emergency Button Switch for BFS-11/ BFS-12. (100-240V AC power input).
BFS-ESW11-K	Emergency Button Switch with Key Lock for BFS-11 / BFS-12. (100-240V AC power input).
BFS-ESW12-K	Emergency Button Switch with Key Lock for BFS-11 / BFS-12. (100-240V AC power input).
BFS-ESW21	Emergency Button Switch for BFS-11 / BFS-12. (200V-480V AC power input).
BFS-ESW21-K	Emergency Button Switch with Key Lock for BFS-11 / BFS-12. (200V-480V AC power input).
BFS-CCABLE	20m signal cable with female connector for end of string.
BFS-CCABLES	2m signal cable with male and female connectors for between strings or panels.

Install Dimension

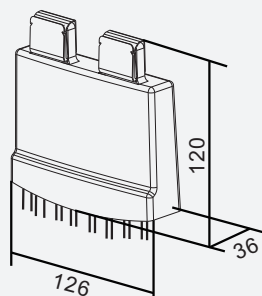
Unit: (mm)



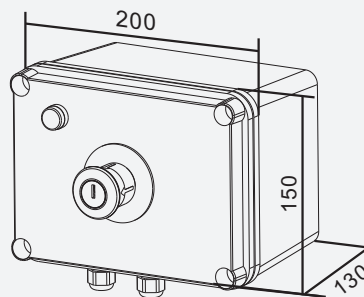
BFS-11



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



BFS-12



BFS-ESW21-(K)

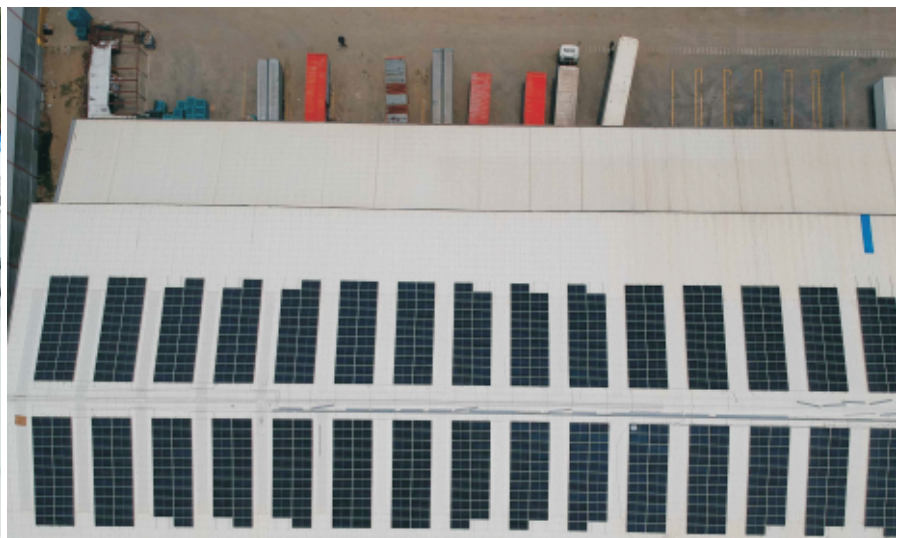
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CASE STUDY:
Philippines with 1.2MW
solar installation.



CASE STUDY:
Bulacan, Philippines with 200kwp
solar installation.



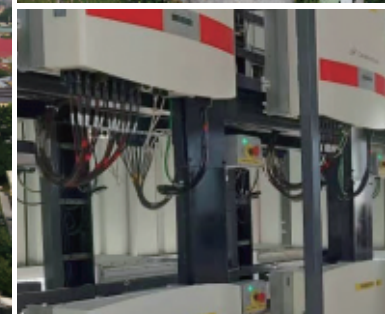
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CASE STUDY:
Festival Supermall Alabang
Solar Rooftop, 2.8MW



CASE STUDY:
Pampanga, Philippines 1.3MW





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VERSION : 20211222

For the latest version of specification, please refer to www.beny.com or contact to benyi@zjbeny.com
We reserve the right to explain the terms of specification.

