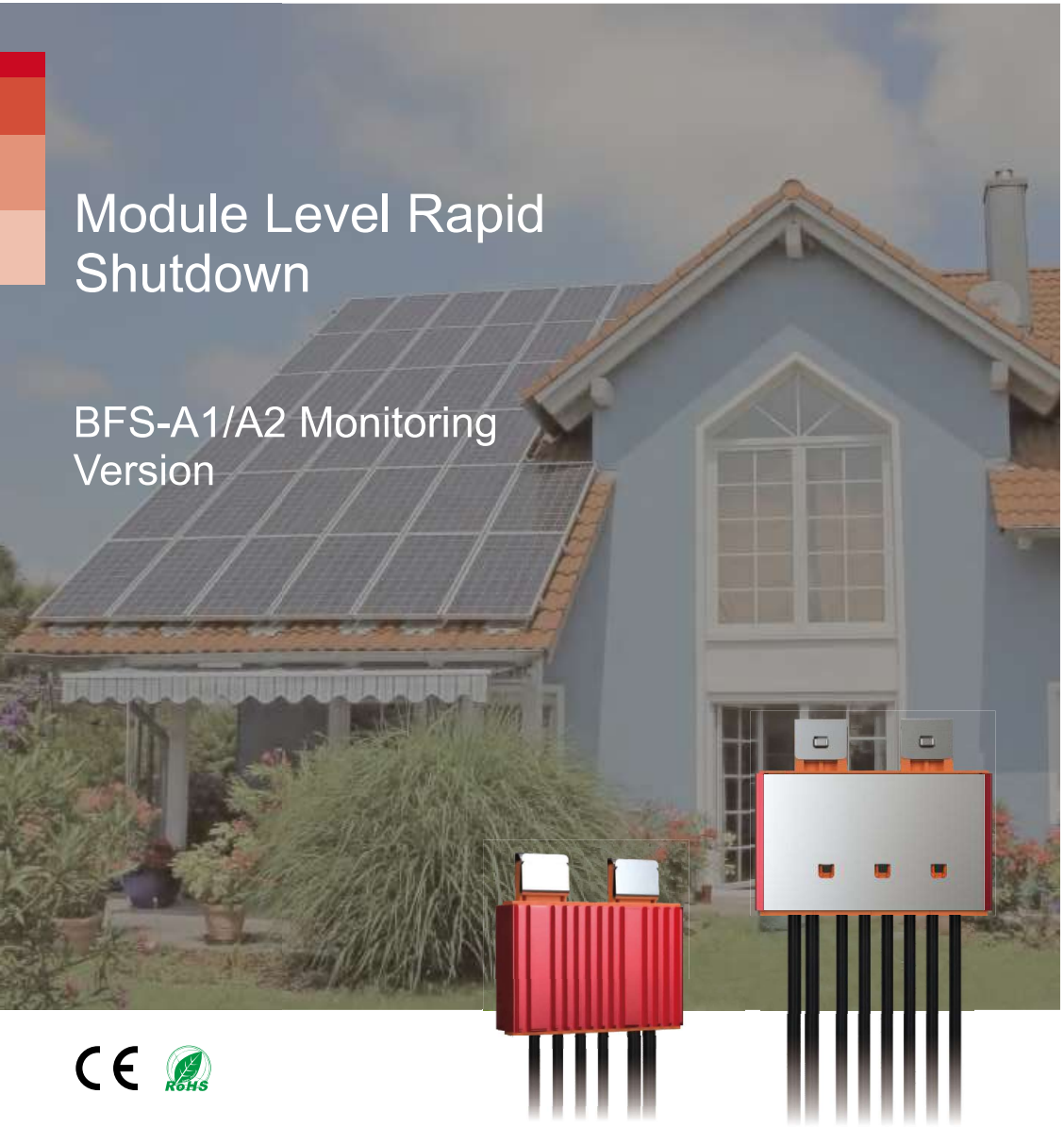
Module Level Rapid Shutdown

BFS-A1/A2 Monitoring Version



- Module Level Rapid Shutdown With Monitoring Fuction
- Aluminum Enclosure With Higher Safety Level and Better Heat Dissipation Function
- Manual Shutdown by emergency button
- 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

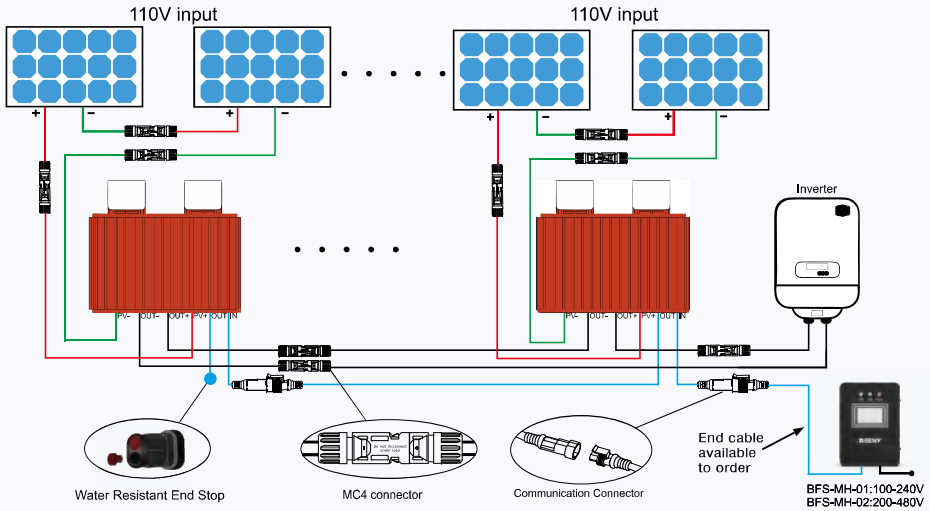
The BFS-A1/A2 Monitor version is a module-level rapid shutdown device designed to enhance fire safety for solar rooftops and buildings. It maintains rapid shutdown functionality throughout the entire lifespan of the solar PV system.

Utilizing a unique POWERBUS communication method, it continuously monitors the temperature, voltage, current, and other data of the Rapid Shutdown Device (RSD) in real-time. This enables immediate observation of RSD status and early detection of issues, facilitating replacement and maintenance, thereby enhancing the safety of the PV power generation system.

The accompanying RSD monitoring equipment is required to utilize monitoring functions. Additionally, the monitoring equipment is equipped with emergency stop functionality alongside its monitoring capabilities.

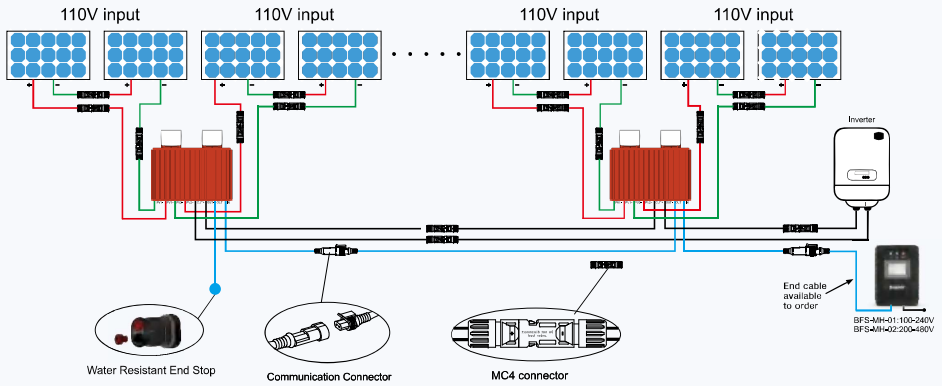
BFS-A1 RSD Monitoring Version

Model	BFS-A1	
Maximum Input Voltage	110V	70V
Maximum Input Current	20A	25A
Maximum Power	2200W	1750W
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	
Storage Temperature	-40˚C to +85˚C	
Standard Compliance	EN 62109-1:2010, EN 61058-1:2018	
PV Connectors	Staubli MC4 (Standard) Jinko connectors for option	
DC Power Supply for each RSD		
Voltage Range	14V ~ 28V	
Maximum Current	15mA	
Maximum Power	0.2W	
Power Supply Cables (Signal Cables)	2 *0.823mm² (18AWG) Signal Cable + Signal	
Power Supply Cables Length	1800mm	
Mechanical		
Enclosure Material	Aluminum	
Dimension	118mm*107mm*42.8mm	



BFS-A2 RSD Monitoring Version

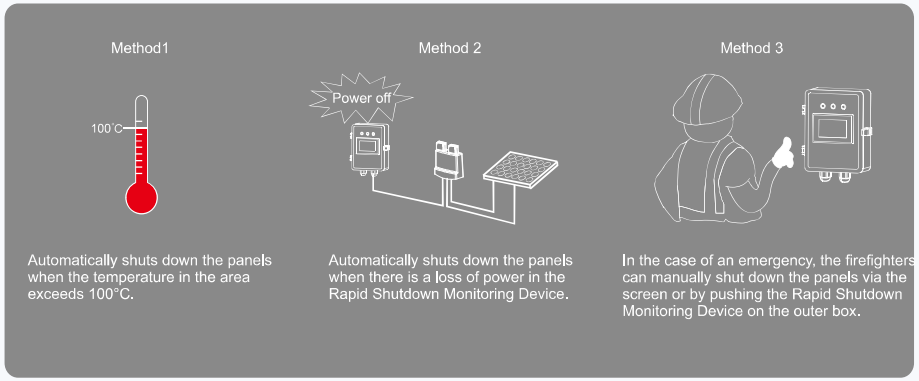
Model	BFS-A2	
Maximum Input Voltage	110V*2	70V*2
Maximum Input Current	20A	25A
Maximum Power(Input1+Input2)	2200W*2	1750W*2
PV Input and Output Cables	4.0mm² (12AWG) Cables + MC4 Connectors	
PV Input 1 Cables Length	180mm	
PV Input 2 Cables Length	300mm	
PV Output Cables Length	1800mm	
IP Protection	IP68	
Operating Temperature	-40˚C to +85˚C	
Storage Temperature	-40˚C to +85˚C	
Standard Compliance	EN 62109-1:2010, EN 61058-1:2018	
PV Connectors	Staubli MC4 (Standard) Jinko connectors for option	
DC Power Supply for each RSD		
Voltage Range	14V ~ 28V	
Maximum Current	20mA	
Maximum Power	0.3W	
Power Supply Cables (Signal Cables)	2 *0.823mm² (18AWG) Signal Cable + Signal Connectors	
Power Supply Cables Length	1800mm	
Mechanical		
Enclosure Material	Aluminum	
Dimension	136mm*116mm*42.8mm	



Each BFS-A1/BFS-A2 device can accommodate solar modules with a total max output of 1500V. The modules connect in series as the solar string links to the inverter as will be stated in the PV design. The BFS-A1/BFS-A2 and Rapid Shutdown Monitoring Device are connected via communication cable.

Note: If your market requires NEC2017/NEC2020 requirement, we recommend one RSD BFS-A1 connects 1 panel (≥40V) or 2 panels (<40V); BFS-A2 connects 2 panels (≥40V) or 4 panels (<40V).

A Complete RSD Solution



Rapid Shutdown Monitoring Device

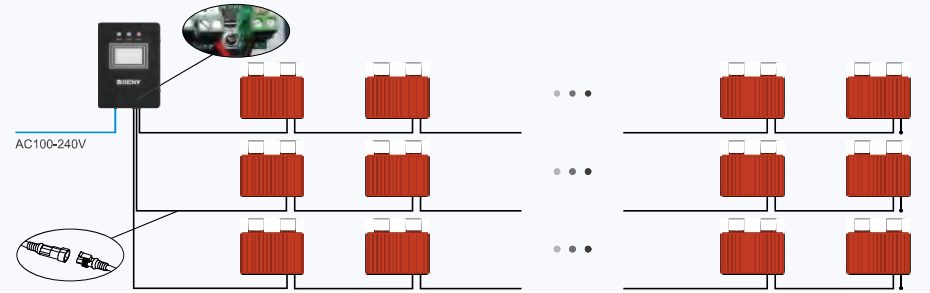
Rapid Shutdown Monitoring Device can simultaneously monitor the failure and communication status of multiple Rapid Shutdown Devices.

AC power from the grid or AC side at the solar inverter could both be the power source for Rapid Shutdown Monitoring Device.

When there is a loss of AC power, the DC panels will be automatically shutdown.

Rapid Shutdown Monitoring Device Specifications

Product Model	BFS-MH-01	BFS-MH-02
Rated Working Voltage	100V-240VAC	200V-480VAC
Interactive Mode	Touch screen and indicator light	
Maximum Power consumption	180W	
Operating Temperature	-25℃~55℃	
Storage Temperature	-30℃~80℃	
IP Class Protection	IP65	
Overvoltage Category	II	
Maximum Altitude	2000m	
Mechanical		
Dimension	W360*D260*H152.5mm	
Weight	8.2kg	9.1kg
Communication Mode	POWERBUS	
The Maximum Distance: (From the First RSD to the Monitoring Device)	150m	
The Maximum Number of Circuit	3	
The Maximum Number of Strings Per Circuit	4	
The Maximum On-load Per String	BFS-A1:40	
	BFS-A2:20	
Total maximum number of standby	BFS-A1:3*4*40=480	
	BFS-A2:3*4*20=240	
Polling Speed	4 times per second is for each channel, and 12 times per second can be achieved when three channels work simultaneously	

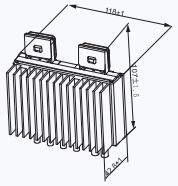


Ordering Information

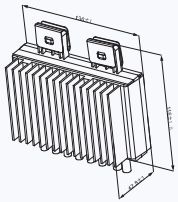
Model Number	Description
BFS-A1	Rapid Shutdowm Unit with Monitoring for solar panel(s).
BFS-A2	Rapid Shutdowm Unit with Monitoring for solar panel(s).
BFS-MH-01	Rapid Shutdown Monitoring Device for BFS-A1/BFS-A2.（100-240V AC input)
BFS-MH-02	Rapid Shutdown Monitoring Device for BFS-A1/BFS-A2.（200-480V AC 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

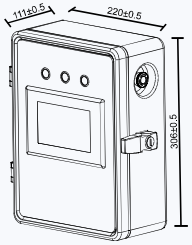
Unit: (mm)



BFS-A1



BFS-A2



BFS-MH-01/02

CASE STUDY: Festival Supermall Alabang Solar Rooftop, 2.8Mw

CASE STUDY: 2MW Commercial Rooftop Project in Malaysia