



# Product Datasheet

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Version 1.8

PV Module Safety Protection Device FR-PVMS-TFQB



Scan code to learn more

Fonrich (Shanghai) New Energy Technology Co., Ltd.

Add: 1st Floor, Building 5, No.999 Jiangyue Road, Minhang District, Shanghai

Web: [www.fonrich.com](http://www.fonrich.com)

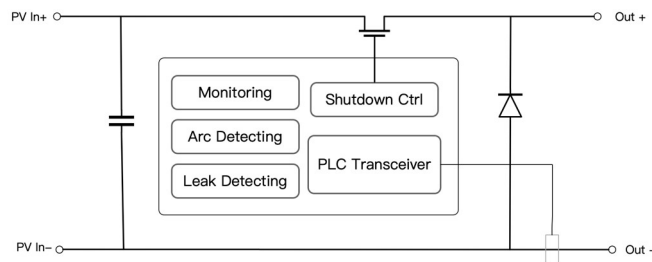
Tel: +86 21 61679671

Email: [sales@fonrich.com](mailto:sales@fonrich.com)

## Key Features

- PV module rapid shutdown meets NEC 2017 & 2020 (690.12) requirements
- Rapid shutdown: Initiated within 30 seconds after the monitor loses power or the control switch manually turns off.
- Module level data monitoring: five big data including voltage, current, power generation, power generation operating point, temperature, and in the way of snapshot collection
- Module level arc fault protection: includes arc detection, protection, auto reset, manual reset, alarm, early warning and location functions
- String break protection: active protection, all the PV module safety devices went into shutdown state within 5 seconds
- Bidirectional PLC communication

## Schematic Diagram

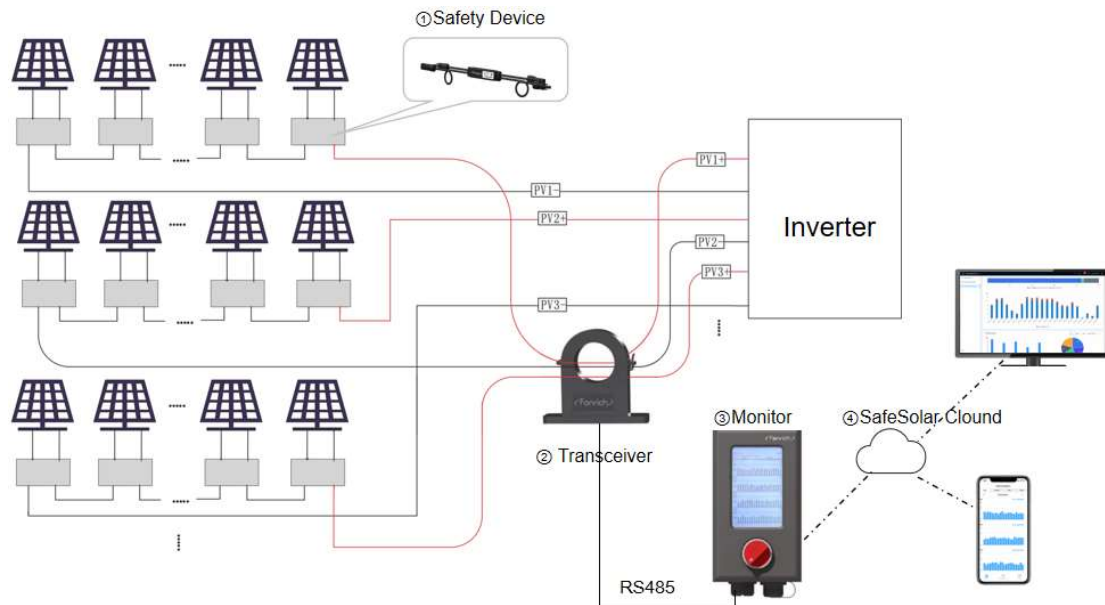


## Specifications

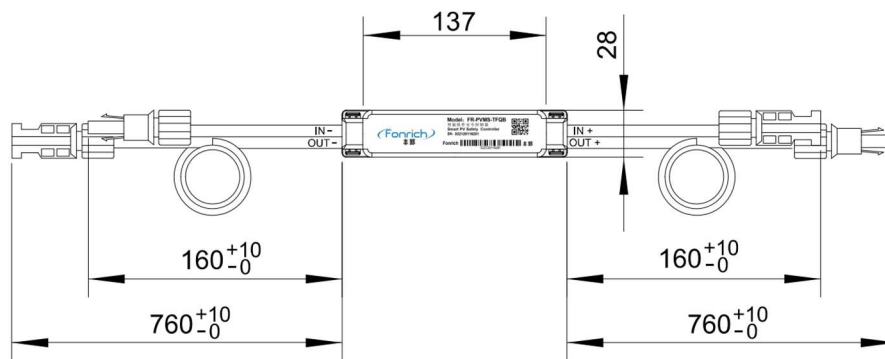
Item	Specification	Unit	Comment
Electrical Data			
Max input/output operating voltage	60	Vdc	
Range of input/output operating voltage	20~60	Vdc	
Max continuous input/output current (Imax)	18	Adc	
Max input short circuit current (Isc)	38	Adc	
Max system voltage (dc)	1500	Vdc	
Mechanical Data			
Dimensions (without bracket, cable & connectors)	163 x 28 x 22	mm	
Cable cross-section size	TUV:4mm <sup>2</sup> , UL:12AWG		

Cable length	Input 160, output 760	mm	customize
Connector	MC4 compatible		customize
Weight with bracket, cable & connector	380 ± 20	g	
<b>Environmental Data</b>			
Pollution degree	PD3		
Operating ambient temperature range	-40 ~ 75	°C	
Relative humidity range	4%~100%		
Ingress protection	IP68		
<b>PLC Communication Performance Data</b>			
Communication	Power Line Carrier Communication		
Max cable loop length	500	m	
Max PV modules under one transceiver module	512		
Max PV strings under one transceiver module	32		
<b>Monitoring Performance Data</b>			
Voltage monitoring accuracy	± 0.2	Vdc	STC
Current monitoring accuracy	± 0.05A	Adc	STC
Energy production metering accuracy	1	%	STC
Temperature monitoring accuracy	± 1	°C	
<b>Arc Fault Detection, Protection</b>			
Max arcing fault detection and shutdown time	2.5	Sec	
<b>Compliance</b>			
Communication compliance	PLC		
Safety compliance	NEC 2017 & 2020 (690.12); UL1741; CSA C22.2 No. 330-17; IEC/EN62109-1		
Arc fault detection and protection	UL1699B		
EMC	EN IEC 61000-6-1:2019 EN IEC 61000-6-3:2021 EN IEC 61000-6-8:2020		

## Typical Application Wiring Diagram



## Mechanical Drawing (mm)



## Detailed Feature List

### Rapid Shutdown Features:

- Shutdown initiation
- Reset
- On/Off status monitoring

### Module level arc fault protection:

- Arc fault detection and protection
- Manual reset
- Auto reset
- Arc fault monitoring

### String break protection function:

- String break detection and protection
- Fault alarm
- Manual reset

### Component data monitoring function:

- PV module voltage monitoring
- PV module current monitoring
- PV module power generation operating point
- Temperature monitoring
- PV plant data snapshot

## Revision Log

Version	Revision	Date
1.0	First edition	2021.5.31
1.1	Increase reverse current	2021.7.12
1.2	Separate datasheet of system to dedicated ones	2022.4.22
1.3	- Fix some typos	2022.5.18
1.4	- Modify the content sequence - Add Detailed Feature List	2022.5.19
1.5	- Add EMC standard	2022.6.13
1.6	Modify the product name to Smart PV Safety Controller from PVRSS Tail Module	2022.7.21
1.7	Modify the cable length of the product	2022.11.23
1.8	Change the name of the product, call it protection device, not controller	2022.12.14

## Contact us

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