User Manual

Version 1.0

Arc Fault Protection Box FR-DCBS-AFS8B

Scan code to learn more

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Preface

Instruction

This user manual describes introduction, installation, electrical connection and operation in detail for FR-DCBS-AFS8B users. Before installing and operating of the equipment, you should read and understand all the instructions and be familiar with the relevant safety in relevant paragraphs.

Target Group

This user manual is intended for operators and end users.

Signs

The following signs may appear in this article, and their meanings are as follows.

Signs	Instructions
⚠ DANGER	Indicates a hazardous situation which,if not avoided, will result in death or serious injury.
⚠ WARNING	Indicates a hazardous situation which,if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a hazardous situation which,if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a situation which,if not avoided, can result in property damage. It is not safety warning information, and does not involve personal, equipment and environmental damage.
📖 Note	Protrudes important or critical information, best practices, tips, etc. It is not safety warning information, and does not involve personal, equipment and environmental damage.

1 Safety Precautions

To prevent personal injury and property damage, read this section carefully and observe all safety information at all times.

Requirements of operators

Operators must have the following skills:
- Knowledge of how an arc fault production box works and is operated.
- Training in how to deal with the dangers and risks associated with installing, using electrical devices and installations.
- Knowledge of and compliance with this document and all safety information.

Installation

⚠ **DANGER**

- Disconnect the product form voltage sources and make sure it cannot be reconnected before working on the device.

⚠ **CAUTION**

- Please do not touch the other parts inside in addition to the terminals during the installation process.

NOTICE

- Please read this user manual carefully before installation. If the equipment is damaged resulting from violation of the regulations specified in this document, our company has the right not to guarantee the quality.
- The distance between FR-DCBS-AFS8B and the object should meet the conditions.

Electrical connection

⚠ **DANGER**

- Before electrical connection, please make sure that FR-DCBS-AFS8B is not damaged and in a safe state, otherwise it may cause electric shock or fire.

⚠ **CAUTION**

- Touch the cables of the PV array on the insulation only.
- All electrical connections must meet the electrical standards of the country or region where they are located.
- Please use the indicated electric wire and electric cable. Using electric wire and electric cable with no sufficient capacity or with no correct connection method will lead to machine breakdown, machine fire or electric shock.

Operation

⚠ DANGER

- FR-DCBS-AFS8B has high voltage during operation, which may cause electric shock or death in severe cases. Please operate strictly in accordance with the safety precautions listed in this manual and other related documents.

2 Product Overview

2.1 Description

FR-DCBS-AFS8B Arc Fault Protection Box is a solar AFCI (Arc Fault Circuit Interrupter), which is mainly used in middle sizes of distributed PV system, such as 20-200KW rooftop solar system.

Functions

Its main function is to detect the arc fault of the PV strings and disconnect the string cables when arc fault occurs. If the arc fault is detected, it will issue an alarm signal by local LCD and RS485. At the same time, the DC relays will be driven to break off the DC circuit, which can effectively prevent fire hazard. In addition, it has the function of real-time monitoring the current of each PV string and communicating with the host PC by RS485 to realize remote monitoring.
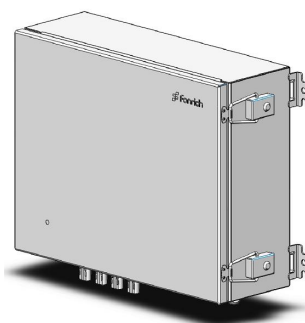
Features

- 8 PV strings each box supports, be parallel running to support larger system
- Fonrich IP technology to self-adapt with different inverters
- UL 1699B 2018 conformity
- The protection arc sensitivity is adjustable
- Arc fault detecting of each PV string
- Remote monitoring with Modbus RS485

Application

FR-DCBS-AFS8B is mainly used in middle sizes of distributed PV system, such as 20-200KW rooftop solar system. The system consists of PV strings, arc fault protection box, inverter and grid, as shown in the figure below.
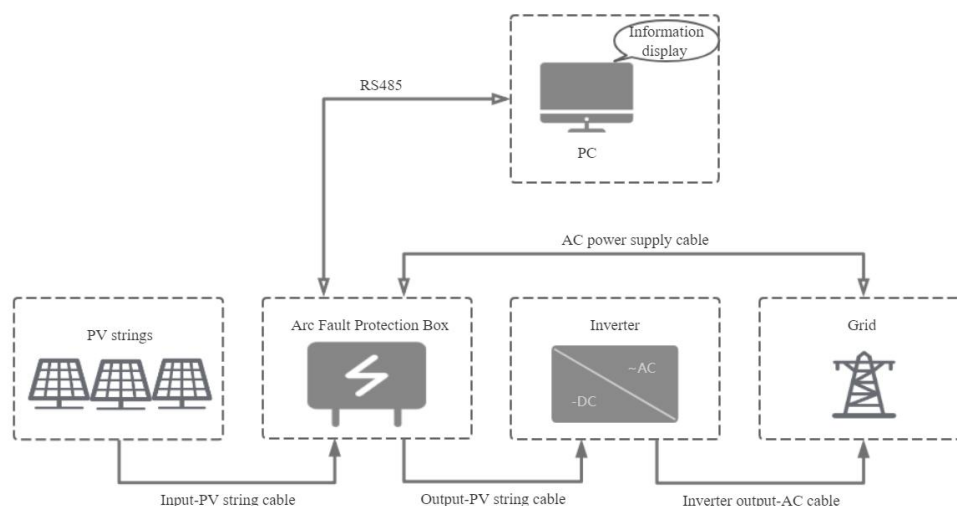
2.2 Appearance

Dimensions(mm)
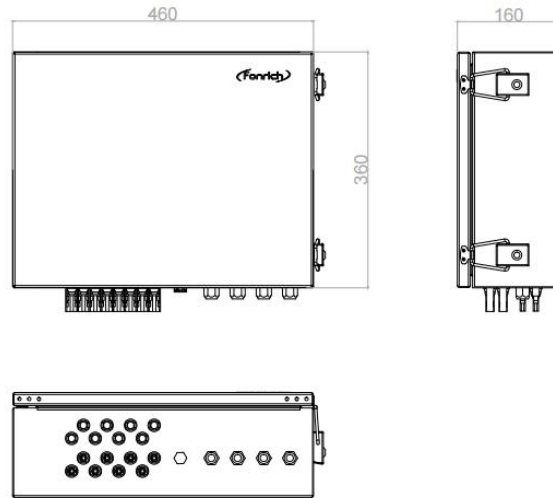
Ports
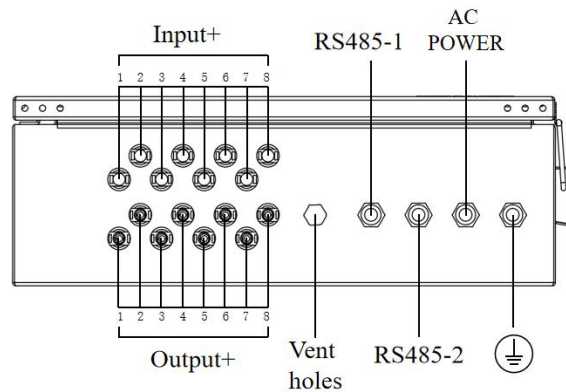
2.3 Principles of Design

Schematic Diagram

If the arc fault is detected, AFS8B will issue an alarm signal by the LCD and RS485. At the same time, the DC relay will be driven to break off the DC circuit. So that the DC circuit is in the state of no current.

After 3 minutes, the DC relay will be driven to turn on the DC circuit and then the entire circuit resumes normal operation.

However, when the arc alarm times is up to 5, AFS8B must be restarted manually.
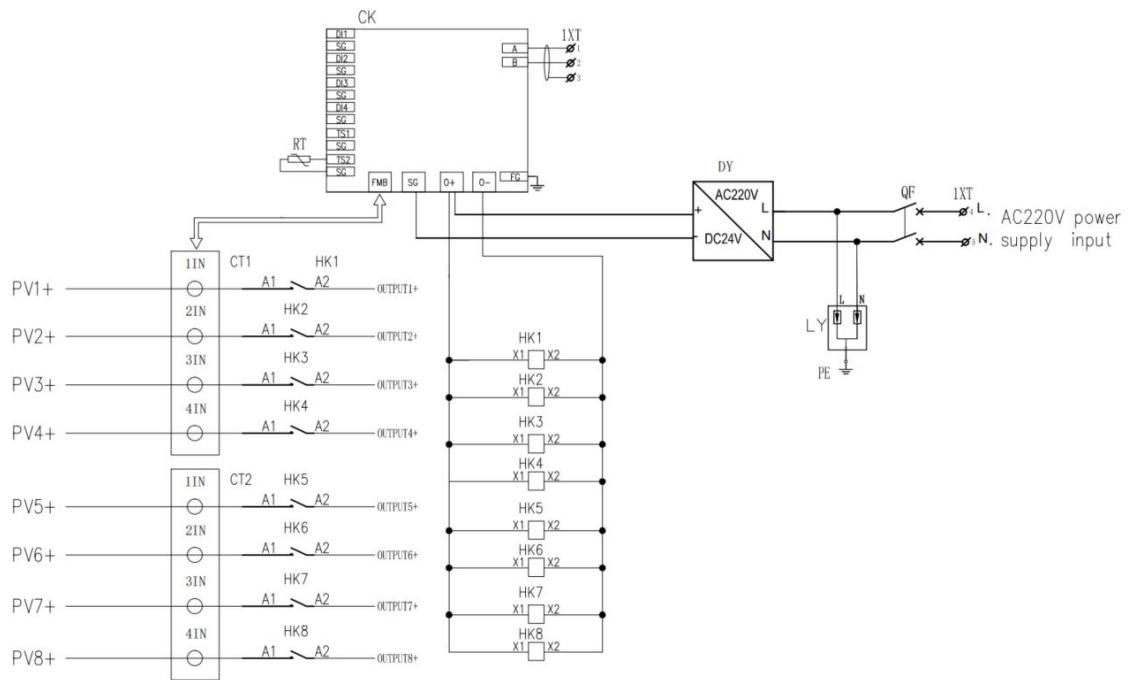
2.4 Arc alarm strategy

2.4.1 Arc mode

We divide the arcs into Instantaneous Arc and Continuous Arc.

Instantaneous Arc

The arc duration does not exceed the Instantaneous Arc Time (IAT), and there is no arc occurring again within the Continuous Arc Time (CAT).

Continuous Arc

The arc duration exceeds the IAT, or the arc duration does not exceed the IAT, but the arc occurs again within the CAT.

2.4.2 Arc alarm strategy

1. Instantaneous arc alarm mode

If the arc intensity of any channel exceeds the channel alarm threshold, an arc alarm will be generated.

2. Continuous arc alarm mode

The product does not alarm when instantaneous arc is detected, but only when continuous arc is detected.

3 Installation

3.1 Scope of Delivery

Check the scope of delivery for completeness and any externally visible damage before installation. Contact your distributor if the scope of delivery is incomplete or damaged.

Product and accessories
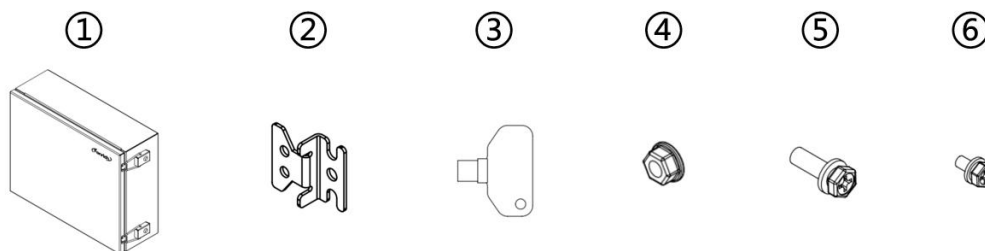
Position	Quantity	Designation
①	1	Arc Fault Protection Box
②	4	Fixture
③	2	Lock Key
④	4	Hex Nut M8
⑤	4	Bolt M8×25, Hex head
⑥	8	Bolt M6×12, Hex head

3.2 Requirements for Installation

⚠ DANGER

● Do not install the product in areas containing highly flammable material or grass.
● Do not install the product in potentially explosive atmospheres.
● Disconnect the product from voltage sources and make sure it cannot be reconnected before working on the device.

⚠ CAUTION

● Do not install the product in the area where can be touched unintentionally.

Take wall-mounted installation as an example to introduce：

● A solid support surface must be available.

● The ambient temperature range is -30℃ ~ +60℃.

● The protection level of FR-DCBS-AFS8B is IP65, and it can be used in both indoor and outdoor environments.

Recommended installation clearances

If you maintain the recommended clearances,adequate heat dissipation will be ensured. Thus,you will prevent power reduction due to excessive temperature.

● Maintain the recommended clearances to walls as well as to other products or objects.

(Dimensions in mm)
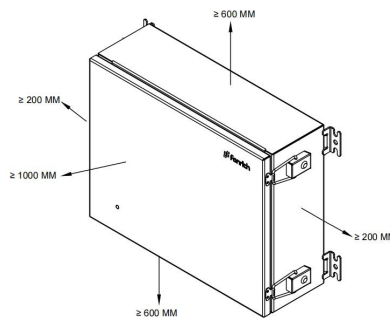
3.3 Procedure

1) Place the four fixtures under the four corners of the product bottom, screw the four fixtures to the product using the Bolt M6×12.
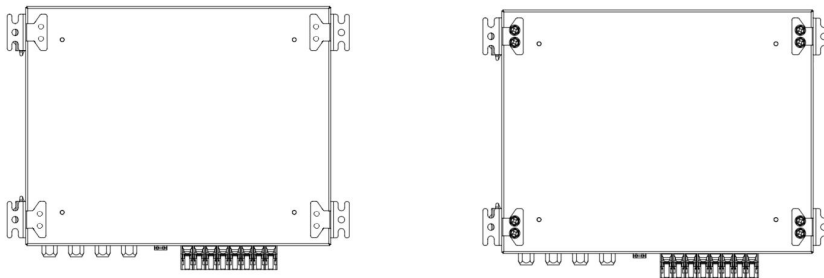
2) Place the product vertically on the wall and use the screws to attach the four fixtures of the product to the wall.
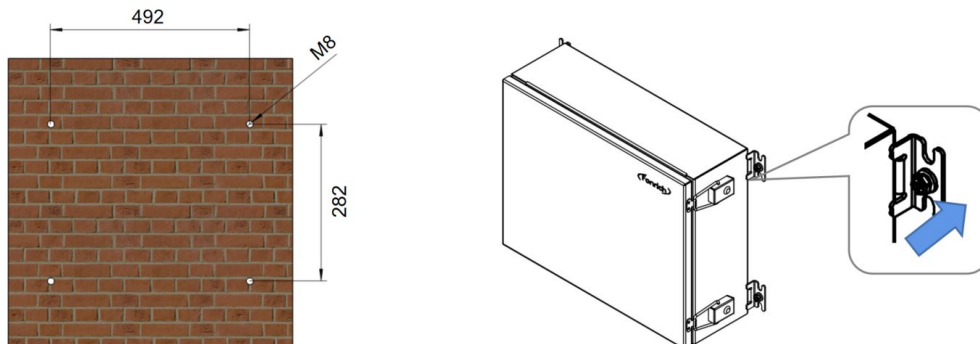
4 Electrical Connection

● Before electrical connection, please make sure that FR-DCBS-AFS8B is not damaged and in a safe state, otherwise it may cause electric shock or fire.

⚠ CAUTION

● Touch the cables of the PV array on the insulation only.
● All electrical connections must meet the electrical standards of the country or region where they are located.
● Please use the indicated electric wire and electric cable. Using electric wire and electric cable with no sufficient capacity or with no correct connection method will lead to machine breakdown, machine fire or electric shock.

4.1 Opening the product

1) Use the key to open the lock
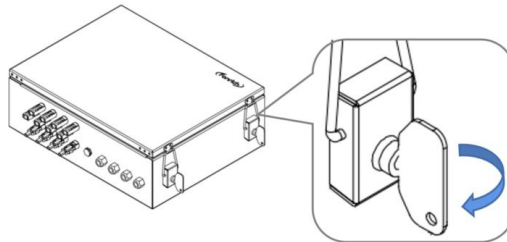
2) Pull the buckle up, and pull the hook down, then open the lid.
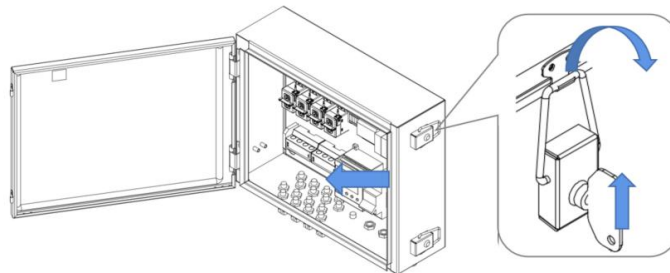
4.2 Overview of the Connection Area
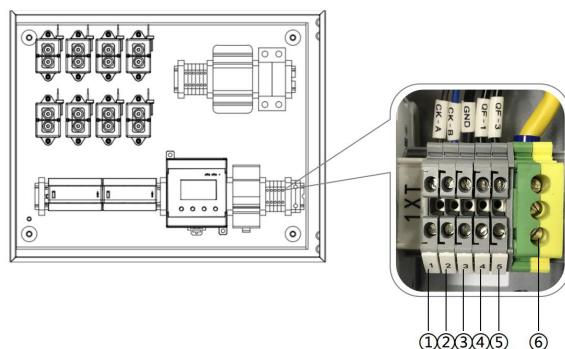
①② : RS485 Terminals.

③   : GND Terminal of RS485 shielded wire.(RS485 shielded wire only needs to be grounded at a single point, you can choose one device to connect to the GND terminal or ground outside the device, and the GND terminal is not used.)

④⑤ : AC Power Terminals.

⑥   : PE Terminal.

4.3 PE cable connection

1) Strip the insulation of the PE cable.
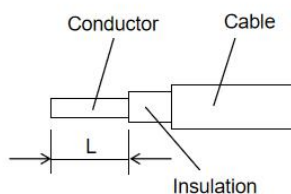
L is the reference value of the exposed length of the conductor of the **PE** cable.
The length of L is recommended to be 9-11mm.

2) Open the PE waterproof terminal and pass the PE cable through the PE waterproof terminal.

3) Connect the PE cable to the PE terminal⑥, and then tighten the PE terminal ⑥with a flat-blade screwdriver.
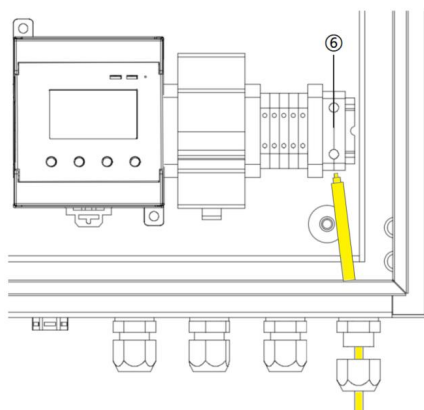
4.4 AC power cable connection

1) Strip the insulation of the AC power cable.
2) Open the AC power waterproof terminal and pass the AC power cable through the AC power waterproof terminal.
3) Connect the AC power cable to the AC power terminals④⑤, and then tighten the AC power terminals④⑤ with a flat-blade screwdriver.
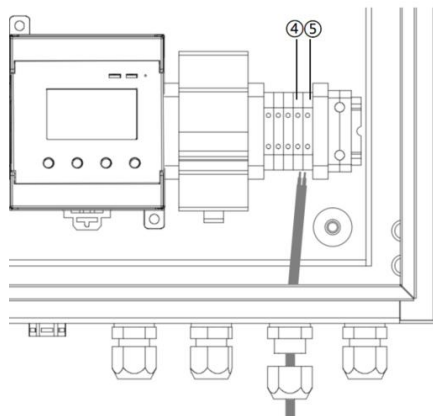
4.5 RS485 cables connection

1) Strip the insulation of the RS485 cables.
2) Open the RS485 waterproof terminal and pass the RS485 cables through the AC power waterproof terminal.
3) Connect the RS485 cables to the RS485 terminals①②, and then tighten the AC power terminals①② with a flat-blade screwdriver.(Note:A and B cannot be reversed)
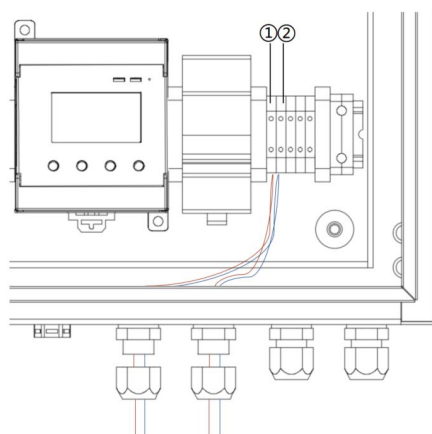
4.6 PV String Cables Connection

1) Connect the PV+ of the PV string to the Input+ of AFS8B in turn.
2) Connect the Output+ of the AFS8B to the DC+ of the inverter in turn.
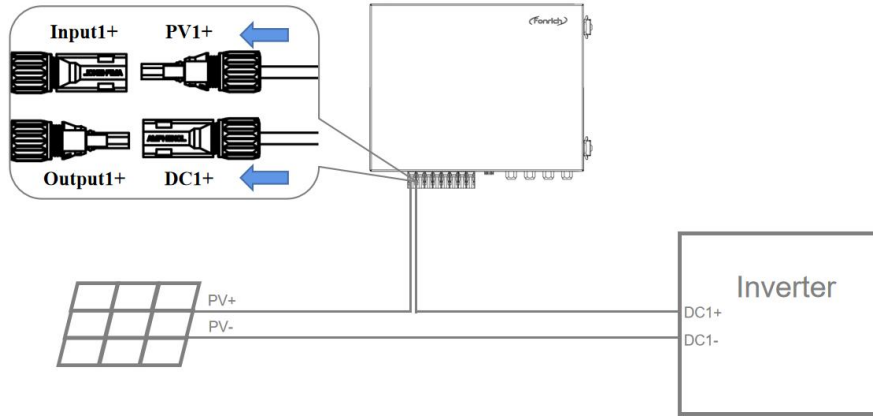
------THE END

5 Operation

5.1 Checking before Operation

In order to ensure the normal operation of the arc safety protection box, a pre-operation inspection is required.

● The product must be correctly installed.
● All cables must be correctly connected.

5.2 Operation

1) Perform power-on operation to turn on the FR-DCBS-AFS8B.
2) Set the switch of the QF to ON.
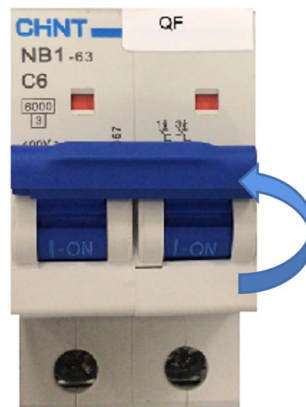
6 Setting

Users can interact with the AFS8B by using the host module or RS485.This topic uses operations on the host modbus as an example.For details about operations on the RS485, see the Chapter 7 modbus protocol.

6.1 Host Module
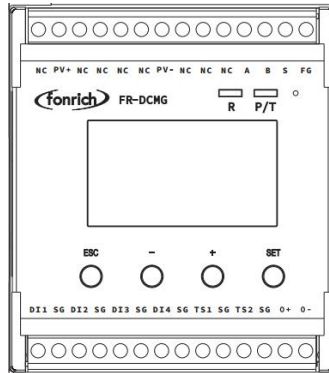
The host module has four buttons [**ESC**], [**−**], [**+**] and [**SET**] .

[**ESC**] : Return to the default interface and cancel parameter settings.

[**SET**] : Enter the parameter setting mode, select the parameter to be set and complete the parameter setting.

[**−**] or [**+**] : Scroll the screen and adjust the parameters.

[**−**] and [**+**] : Press at the same time to display the software version interface.

[**ESC**] and [**−**] : Press at the same time to display the current calibration interface.

[**ESC**] and [**+**] : Press at the same time to display the trip self-check interface.

If there is no key operation for 10 seconds, the interface will automatically jump to the default interface of the current mode, and the brightness will decrease after 5 seconds.

6.2 Power On Interface

After the device is powered on, the following interface will be displayed.

6.3 Current Interface

After the boot interface, the current interface will be displayed, as shown below.
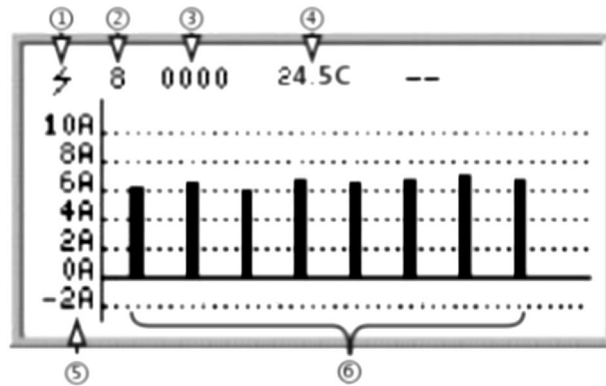
①   Arc detection: Have the function of arc detection.

②   Number of current channels: Varies according to the actual number of connected sensors.

③   Switch input status: Real-time status of DI1, DI2, DI3, DI4.

④   Real-time temperature.

⑤   Current histogram: The default display range is -2A~10A, and the display range can be enlarged by setting the register 0x0B16.

⑥   Histogram of current.

6.3 PLC status interface

Press [**ESC**] to enter the PLC interface.

Because AFS8B does not use PLC module, it displays [**NO PLC !**].PLC will not be discussed in the follow-up.
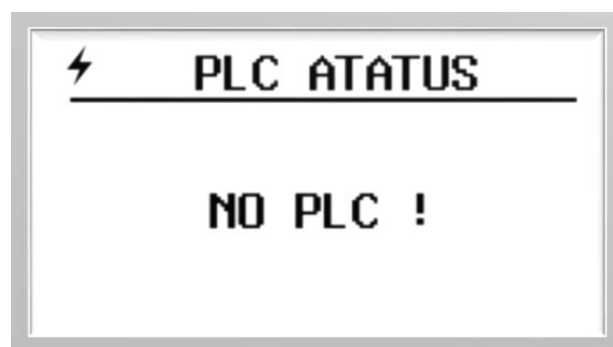
6.4 Current and Power Generation Data Interface

Press the [**−**] or [**+**] key to enter the current and power generation interface, and the screen displays the current and power generation values. Because AFS8B has no voltage value, so the displayed power generation is 0 Kwh.

```
⚡ 8  0000   24.5C   --
CH1  :   6.929   A
CH2  :   6.798   A
CH3  :   5.929   A
CH4  :   6.619   A
```

```
⚡ 8  0000   24.5C   --
CH1 :  0.000   KWh
CH2 :  0.000   KWh
CH3 :  0.000   KWh
CH4 :  0.000   KWh
```
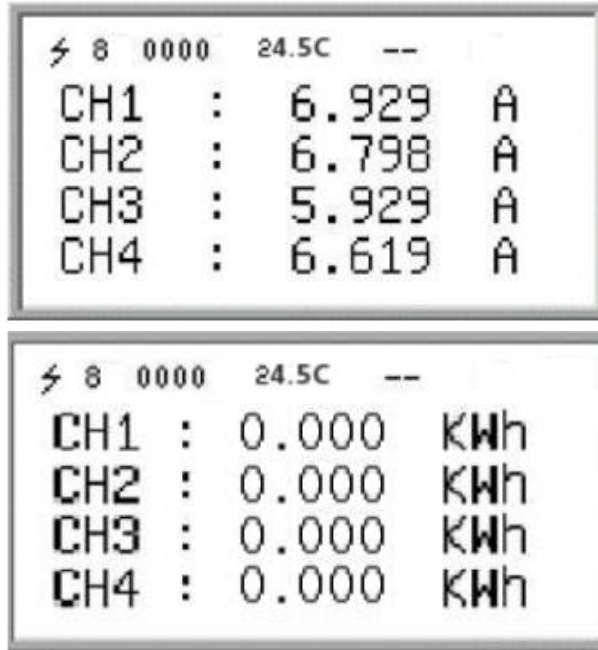
6.5 Setting Interface

Press the [**SET**] key to enter the setting interface.The setting interface includes device interface, PLC interface and system setting interface. Press the [–] or [+] key to select.

Modified procedure

1) Press the [–] or [+] key to move the cursor to the item to be modified.
2) Press the [**SET**] key to select the item that needs to be modified.
3) Press the [–] or [+] key to adjust the value of the item.
4) Press the [**SET**] key to confirm.

6.3.1 Device Setting Interface

Press the [**SET**] key to enter the device setting interface:

```
Device Setting
✳ ADDR :  247
   PAR  :  None
   BPS  :  9600
```
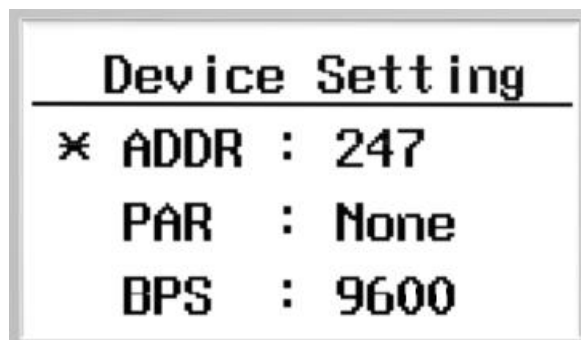
ADDR : The communication address of the Modbus slave node, the range is 1 -247 (default is 247).

PAR : The data verification method of Modbus communication. The optional parity (None), odd parity (Odd), even parity (Even), and no parity by default.

BPS : Baud rate for Modbus communication. The selectable baud rates are 2400,

4800, 9600 (default), 19200, 38400.

6.3.2 Arc Setting Interface

Press the [+] key on the PLC setting interface to enter the ARC setting interface.

```
ARC Setting
✳ MOD   : Cont
  THR   : 50
  IAT   : 2
```
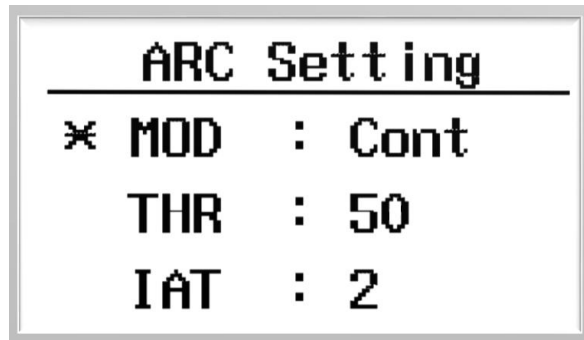
MODE : Arc alarm mode(Cont: continuous arc alarm, Single: instantaneous arc alarm).

THR : Threshold.

IAT : Instantaneous arc time ,range 1-5.

CAT : Continuous arc time, range 5-60.(Not enough space, put it in the system settings on the next page).

6.3.3 System Setting Interface

Press the [+] key on the ARC setting interface to enter the System setting interface.

```
System Setting
✳ CAT   : 15
  LANG : EN
```
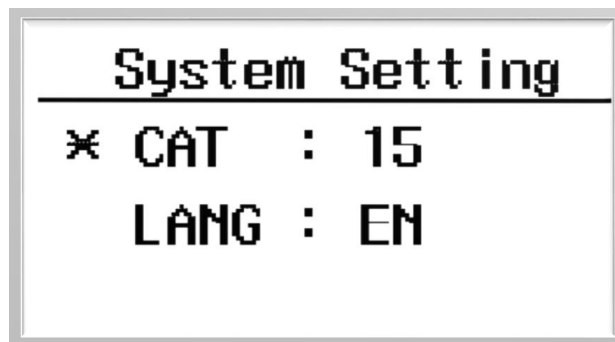
LANG : Language (EN : English，中文：Chinese）

6.6 Current Calibration Setting Interface

Press the [**ESC**] and [**−**] keys at the same time to enter the current calibration setting interface.
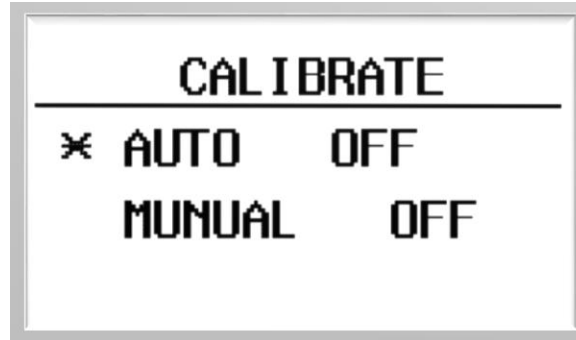
📖 Note: To use this feature, please contact the company's technical support staff support@fonrich.com.

6.7 SHTPA Interface

Press the [**ESC**] and [**✚**] keys at the same time to enter the current calibration setting interface.

TIME: After the alarm occurs, the device will automatically reset the time
SELECHECK: Move the cursor to SELECHECK, press the set key, and the device will automatically perform self-check.

6.8 CBM Information Interface

Press the [**━**] and [**✚**] keys at the same time to enter CBM information interface.
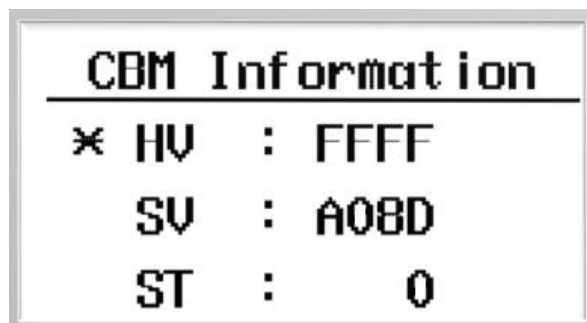
HV:Keep

SV: Software version number
ST: Keep

6.8 Arc Fault Alarm Interface

When an arc occurs, the alarm information interface of the host module is as shown in the figure below.
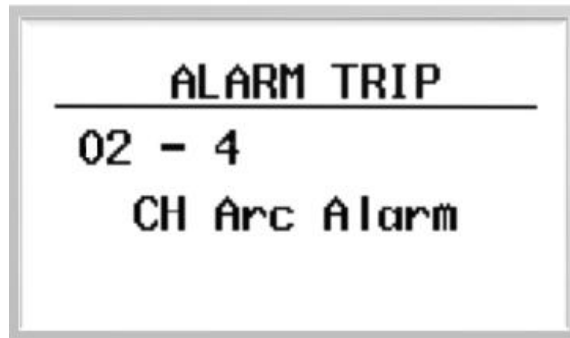
02: Channel arc fault alarm
4: The fault arc alarm channel is the 4th channel.

6.9 Alarm Clearing Interface

When the host module sends out an alarm message, the user can eliminate it locally or remotely.

Local: After pressing the [**ESC**] key for about 1.5 seconds, the host module will display the alarm clearing interface, indicating that the alarm information has been cleared.

Remote: Write 1 to register 0x0079 by RS485, the host module will display the alarm clear interface, indicating that the alarm information has been cleared.
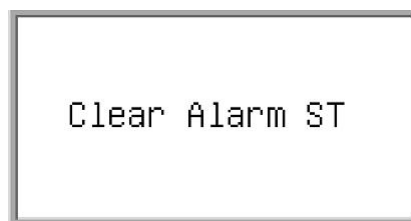
7 MODBUS Protocol Definition

7.1 Communication Format Configuration

- Modbus communication mode: RTU mode
- Address of the slave device: range form 1 to 247 (default 247)
- Baud rate (bps): 2400, 4800, 9600 (default), 19200, 38400
- Byte check mode: odd check, even check, no check (default)

Data frame format description (refer to Modbus RTU standard)

The byte in the communication frame composed by 1 start bit, 8 bits data bit, 1 parity bit, 1 stop bit like the below table（Refer to standard modbus RTU protocol):

Table 1: Data frame format table

Address Code	Function Code	Data Area	Check Zone
1byte	1byte	N*1byte	2bytes

The address code is used to identify the slave that receives the data frame and the response frame sent by that slave. The function code indicates how the master requires the slave to respond and the slave responds to that function code. Data area The content can be the address value, the number of registers, the data from the slave response and the data sent by the master to the slave, etc., which can hold up to 252 bytes of data. The check area uses CRC cyclic redundancy to check whether a frame of data is wrong. The high byte of the data frame comes first, and the low byte comes after.

7.2 Function Code Description

Register reads and writes in bits
- Function code 01 used to   read the contents of the bit register
- Function code 02 used to reads the contents of the bit register
- Function code 05 used to write single bit-type registers
- The contents represented by the register in bits are: switch value, alarm information, etc.

Register read and write in word units
- Function codes 03、04 are used to read multiple word-type registers
- Function code 06 is used to write single word-type registers
- Function code 16 is used to multiple word-type registers

The content of the word-type registers can be voltage, current,   generated energy, etc

7.3 Register Description

7.3.1 Register Description In Bit Units (function code 02)

Bit address		Functional description	Remark
Hex	Decimal		
0x021E	542	Remote manual trip status	The remote manual control release performs a trip action and this bit is set to 1. Clear alarm after setting 0
0x0231	561	Channel arc alarm status	This bit is set when the channel arc strength is above the alarm threshold. Clear the alarm and set it to 0.
0x0234	564	Temperature sensor 1 high temperature alarm status	This bit is set when the temperature sensor 1 temperature exceeds the alarm threshold. Cleared below the alarm release threshold
0x0236	566	Channel reverse current alarm status	When the reverse current is generated in the channel, the position is 1, and the alarm is cleared.
0x0237	567	Total reverse current alarm status	This bit is set when the total reverse current exceeds the alarm threshold. Cleared below the alarm release threshold
...	...	...	...
0x0260	608	Channel 1 arc alarm status	When the arc intensity of the channel is greater than the alarm threshold, this bit is set to 1; after clearing the alarm, it is set to 0
0x0261	609	Channel 2 arc alarm status	When the arc intensity of the channel is greater than the alarm threshold, this bit is set to 1; after clearing the alarm, it is set to 0
0x0262	610	Channel 3 arc alarm status	When the arc intensity of the channel is greater than the alarm threshold, this bit is set to 1; after clearing the alarm, it is set to 0
0x0263	611	Channel 4 arc alarm status	When the arc intensity of the channel is greater than the alarm threshold, this bit is set to 1; after clearing the alarm, it is set to 0
0x0264	612	Channel 5 arc alarm status	When the arc intensity of the channel is greater than the alarm threshold, this bit is set to 1; after clearing the alarm, it is set to 0
0x0265	613	Channel 6 arc alarm status	When the arc intensity of the channel is greater than the alarm threshold, this bit is set to 1; after clearing the alarm, it is set to 0
0x0266	614	Channel 7 arc alarm status	When the arc intensity of the channel is greater than the alarm threshold, this bit is set to 1; after clearing the alarm, it is set to 0
0x0267	615	Channel 8 arc alarm status	When the arc intensity of the channel is greater than the alarm threshold, this bit is set to 1; after clearing the alarm, it is set to 0
...	...	...	...

Modbus address		Function description		
0x0280	640	Channel 1 current reverse alarm status	This bit is set when the channel current is reversed and greater than the alarm threshold, otherwise cleared.	
0x0281	641	Channel 2 current reverse alarm status	This bit is set when the channel current is reversed and greater than the alarm threshold, otherwise cleared.	
0x0282	642	Channel 3 current reverse alarm status	This bit is set when the channel current is reversed and greater than the alarm threshold, otherwise cleared.	
0x0283	643	Channel 4 current reverse alarm status	This bit is set when the channel current is reversed and greater than the alarm threshold, otherwise cleared.	
0x0284	644	Channel 5 current reverse alarm status	This bit is set when the channel current is reversed and greater than the alarm threshold, otherwise cleared.	
0x0285	645	Channel 6 current reverse alarm status	This bit is set when the channel current is reversed and greater than the alarm threshold, otherwise cleared.	
0x0286	646	Channel 7 current reverse alarm status	This bit is set when the channel current is reversed and greater than the alarm threshold, otherwise cleared.	
0x0287	647	Channel 8 current reverse alarm status	This bit is set when the channel current is reversed and greater than the alarm threshold, otherwise cleared.	

7.3.2 Register Description In Word Unit (function code 03 04 06)

Modbus address		Function description	Data Type	instruction	R/W
Hex	Decimal				
Address 0x0100 ～ 0x0158, a total of 89 consecutive addresses					
Address 0x0100 ～ 0x0123, a total of 36 consecutive addresses (data in this address supports data freeze)					
0x0100	256	Retain			R
0x0101	257	Retain			R
0x0102	258	Retain			R
0x0103	259	Retain			
0x0105	261	Temperature sensor 1	short	Unit: 0.1 ° C, default -500	R
0x0108	264	Quantity of online Hall channels	Unsigned short	Shows the quantity of Hall channels currently connected. default 0	R
0x0109	265	Total reverse current	short	Unit is 10mA, default is 0	R
0x010A	266	Total current	Short	Unit is 10mA, default is 0,	R
0x010B	267	Average current	Short	Unit mA, default 0	
0x010C ～ 0x0113	268 ～ 275	Channel 1 to 8 current	Short	Unit mA, default 0	R
Address 0x012D ～ 0x0158, a total of 45 addresses (function code 04 read, but the data is not latched)					
0x012D	301	Alarm status 1	Unsigned short	bit1 channel arc, bit4 high temperature 1,	R

				bit6 channel current value is reversed	
				bit7 reverse total current is high,	
				0: No alarm, 1: Alarm, default 0	
0x012E	302	Retain			
0x0130	304	Channel 1 ～ 8 arc alarm	Unsigned short	Default 0 0: No alarm, 1: Alarm	R
0x0132	306	The number of consecutive alarms of the current alarm channel	Unsigned short	If the current channel alarms continuously, the value will increase by 1. If there are alarms on other channels, the count will restart.	R
0x0133 ～ 0x013A	307 ～ 314	The quantity of Channel 1~8 arc history alarm	Unsigned short	default 0 This value is incremented by 1 for each channel arc alarm.	R
0x014B	331	Channel 1 ～ 8 reverse current alarm	Unsigned short	Default 0 0: No alarm, 1: Alarm	R
0x0157	343	Channel 1 ～ 8 arc channel self-check status	Unsigned short	default 0 0 means self-check passed, 1 means self-check failed	R
....	...	...	...	...	...

The address 0x0200 ~ 0x02FF, which has a total of 128 consecutive addresses. It is recommended to read in sections.

Arc information (0x0250-0x0297)					
0x0250 ～ 0x0257	592 ～ 599	Channel 1~8 arc intensity real-time value	short	Unit 1, default 0	R
0x0268 ～ 0x026F	616 ～ 623	Channel 1~8 arc intensity history maximum	short	Unit 1, default 0	R
0x0280 ～ 0x0287	640 ～ 647	Channel 1 ～ 8 10 minutes arc intensity value	short	Unit 1, default 0	R

System information configuration (0x0B00-0x0B24)					
0x0B00	2816	Alarm release	Unsigned Short	The percentage of the alarm threshold is used as the alarm release threshold. Unit %, default 2, setting range 0 to 100	W/R
0x0B03	2819	Temperature sensor 1 alarm high threshold	short	Unit 0.1 ° C, default 800, setting range is greater than -400	W/R
0x0B0B	2827	Reverse total current too high threshold	short	Unit 10mA, default -600.	W/R
0x0B0C	2828	Channel reverse current too high threshold	short	Unit mA, default -2000.	W/R

0x0B0D	2829	-	-	-	W/R
0x0B0E	2830	Channel arc intensity super high alarm threshold	Short	The default is 70.Need to set according to the site conditions or customer requirements, you can call the company's technical staff	W/R
0x0B0F	2831	Retain			W/R
0x0B10	2832	Retain			W/R
0x0B11	2833	Automatic current calibration setting	Bool	Write 1 to enable automatic current calibration, write 0 to disable, default is 0	W/R
0x0B12	2834	Manual current calibration setting	Bool	Write 1 to start current calibration, write 0 to turn off, default is 0 Note: Make sure the channel has no current when starting calibration.	W/R
0x0B13	2835	Channel 1~8 current channel switch setting	Unsigned short	bit0: Represents the switch setting for channel 1 0 means disabled, 1 means enabled Default 0xFFFF	W/R
0x0B15	2837	External power management time setting	Unsigned short	Unit M (min), default 120 minutes. When the photovoltaic power supply stops, the host can be powered by external 24 power sources, and the power supply time can be set.	W/R
0x0B16	2838	Current UI display, direction, reverse order control	Unsigned short	Bit0 ~ bit1: Y-axis scale setting of UI interface 0 means the UI interface displays the current up to 10A 1 means the UI interface displays the current up to 20A 2 means the UI interface displays a maximum current of 30A bit2: current channel forward / reverse sequence setting (Positive sequence: 1 ~ 24 channels arranged near the host Hall; Reverse order: Calculate from 24 to 1 channel near the host Hall) 0 means positive order; 1 means reverse order bit3: Channel current direction setting 0 means the direction is positive, 1 means the current is reversed. 0x0000 by default;	W/R
0x0B17	2839	Retain	Unsigned short	0: release mode; 1: relay mode Default value: 0	W/R

0x0B18	2840	Arc alarm mode setting	Unsigned short	0:Instantaneous arc; 1: Continuous arc Default value: 1	W/R
0x0B19	2841	Instantaneous arc time(IAT)	Unsigned short	Default value: 2,range:1-5	W/R
0x0B1A	2842	Continuous arc time(CAT)	Unsigned short	Default value: 15,range:5-60	W/R
0x0B20	2848	Alarm function management 1	Unsigned short	Bit1 Channel arc, bit4 High temperature 1, bit6 Channel current value is reversed, bit7 Reverse total current is high, 1: enable (open) alarm, 0: disable(close) alarm Default：0x0003	W/R
0x0B21	2849	Alarm function management 2	Unsigned short	bit14: remote trip, bit15: General alarm switch, (function is forcibly turned on) 1: enable alarm, 0: disable alarm Default value: 0x800F	W/R
0x0B23	2851	Retain			W/R
0x0B24	2852	Retain			W/R
System information configuration 2 (0x0C00-0x0C06)					W/R
0x0C01	3073	Clear channel arc history alarms	Unsigned short	Write 1 reset channel arc history alarm times record, read always 0	W/R
0x0C05	3077	Arc channel self-check operation	Unsigned short	Write 1 to start the arc channel self-check, 1S to end the self-check. read always 0	W/R
System settings (0xFE00-0xFE3C)					
0xFE00	65024	Modbus address	Unsigned short	Set range 1～247, default 247. Set other values to restore the default values.	W/R
0xFE01	65025	Modbus Baud rate	Unsigned short	1：2400，2：4800，3：9600，4：19200，5：38400 Default is 3, setting other values to restore the default	W/R
0xFE02	65026	Modbus Parity	Unsigned short	0: NONE, 1: ODD, 2: EVEN Default is 0, setting other values to restore the default	W/R
0xFE06	65030	System UI display settings	Unsigned short	Lower 8 bits: system language setting 0: Chinese; 1: English, default value 1 High eight bits: system logo settings Reserved, default 0	W/R
0xFE1D	65053	Modbus Master bps modify status	Unsigned short	1: indicates that the Modbus Slave baud rate of 9600 is changed to 19200. 2: Modification of Modbus Slave baud rate	R

				9600 to 19200	
				3: Indicates that the Modbus Slave baud rate of 9600 is changed to 19200. Failed to execute. The Modbus Slave baud rate is changed to 9600.	
				4: indicates that the execution of the Modbus Slave baud rate to 9600 is successful	
				5: Modification of Modbus Slave baud rate 9600 to 19200 failed. The system will use 9600bps for Modbus data exchange	
				6: It means that the system has performed a baud rate modification action before. Now the Modbus Slave connection status cannot be monitored. The system automatically adjusts the baud rate to 9600.	
				The system default Modbus Master baud rate is 9600bps. Only after monitoring the battery board information, it attempts to adjust the baud rate.	
0xFE23	65059	Retain			W/R

8 Appendix

8.1 Revision Log

Version	Change content	Revision date
1.0	First edition	2021.08.01

8.2 Contact Us

Fonrich (Shanghai) New Energy Technology Co., Ltd.
Add: 1st Floor, Building 5, No.999 Jiangyue Road, Minhang District,Shanghai
Tel: +86 21 61679671
Email:sales@fonrich.com
Web: www.fonrich.com