

BSM Series Brake Status Monitoring Alarm Device

User's Manual



Harbin Huaxin Power Electronic Equipment Co., Ltd.

Introduction to our company

Our company founded in 1986, is one of the professional factories producing low-tension distribution equipment, power supply system and shaft current relay protect fixture. Of 30 employees, there are 9 technologists and 4 quality managers. Our permanent assets have reached 7,500,000 RMB. Recently, our products have been used in both domestic and overseas large and medium hydroelectric stations and met the performance requirement. For example, in Xiao Fengman hydroelectric station, a fateful accident was avoided betimes with the supervising alarm.

Our BZL-10 series shaft current relay protection fixture is being applied in many domestic and overseas large and medium hydroelectric stations including “Cuishuli” of Nepal, “Kejia” of Macedonian and some domestic stations such as “Fengman”, “lotus flower”, “Tiansheng Bridge”, “Wanjia stockaded village”, “Little Langdi”, “Liuja gorge”, “Tuolin”, “Mujing”, “Zhuzhou”, “Qingju”, “Shan county”, “Gongchuan”, “Qingshan”, “Mangtang brook”, “North brook”, “Xiayang”, “Nina”, “Fengtan”, “Huanglongtan”, “Jiangkou”, “Hongjia ferry”, “Zhouning”, “Nierji” etc.

I plant research and development of fourth generation (BZL-10C model)has been put into the market, its performance and the indicators are better than similar domestic products.

I plant research and development of fifth generation (BZL-10D model) has entered the acceptance stage, its performance and the indicators are ahead of similar

products in the domestic and import substitution products.

Our company attaching importance to the product quality has found a set of strict quality control and proof-test system. Now our company has possessed perfect proof-test standard from material stock, each produce process to products leaving factory, and achieved the authentication from ISO9000 quality control system. At present, our company has gained customers' reliance and trust with the enterprise recognizing contract and keeping faith because a complete set of quality control system applied in every tache including product design, development, exploiting, manufacture and proof-test have een formed.



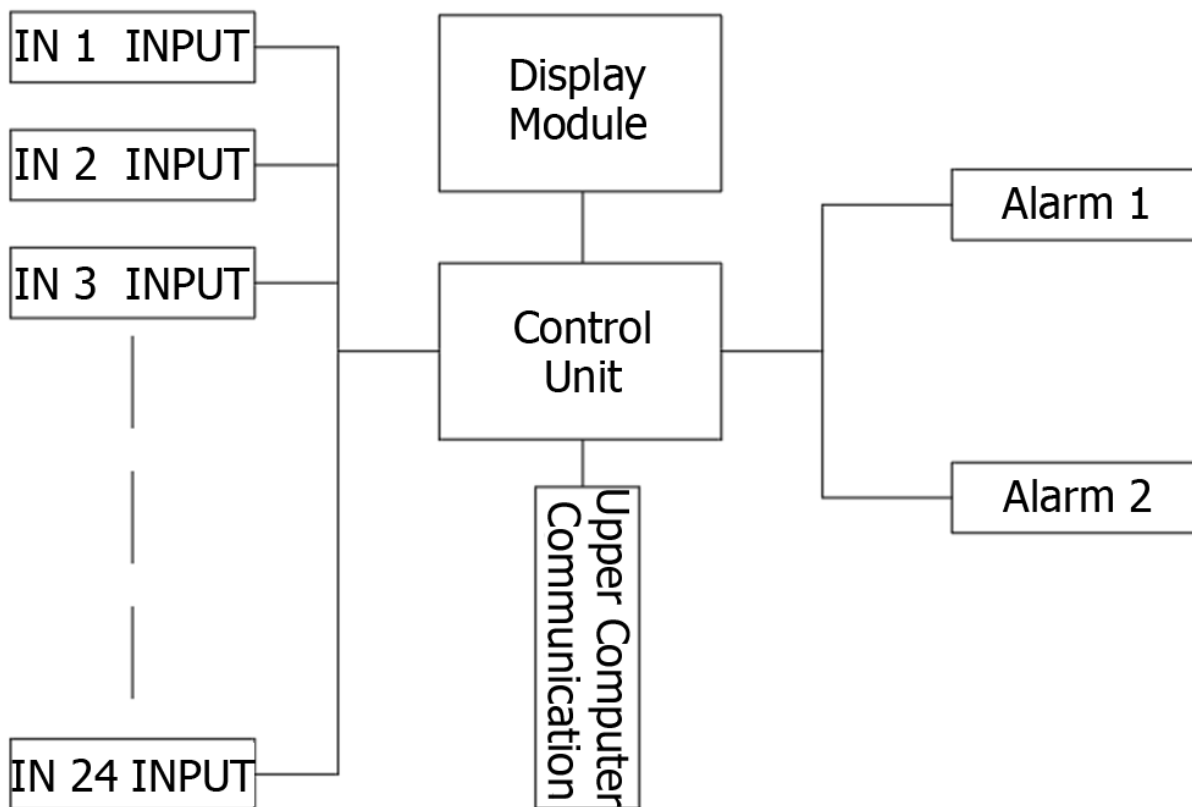
一、 Overview

BSM-24M / BSM-36M The BSM brake status monitoring alarm device is suitable for monitoring the position of the generator brake in the automation system of hydroelectric power plants.

二、 Principle Of Work

BSM-24M / BSM-36M The BSM brake status monitoring alarm device is specifically designed to monitor the lifting and resetting status of brakes. When the transmission of signals corresponding to the lifting and resetting status is abnormal, users can set multiple combination alarm points. When the transmission signal of the lifting or resetting status matches the set value, the alarm relay contact will be activated. This device utilizes Surface Mount Technology (SMT) and integration, with features such as low power consumption, high reliability, and easy maintenance. It displays the status through a human-machine interface, providing a visual display of the number of alarm channels and the combination alarm status. It also has an RS-485 communication interface for convenient communication with control systems.

三、 Block diagram



四、 Peculiarity

- Interactive man-machine interface display
- Alarm records can be queried

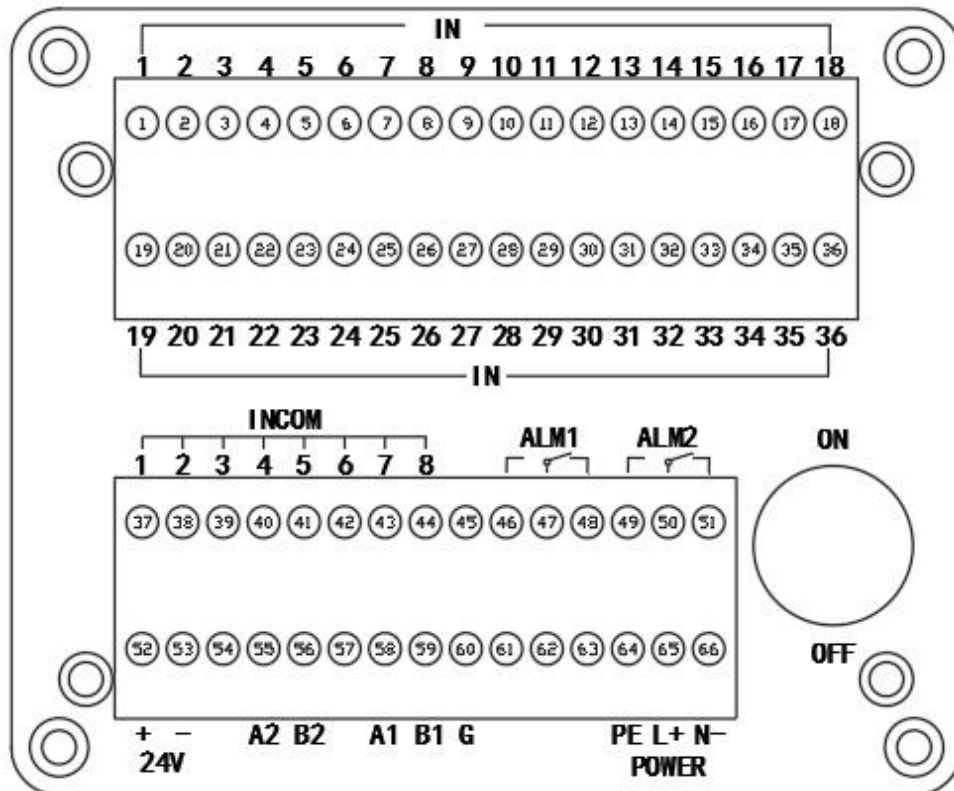
五、 Technical Parameters

- Input type: normally open type or normally closed type optional
- Input number: 24 channels / 36 channels optional
- Output type: normally open type
- Output contact capacity: 1A/30VDC, 0.3A/80VDC, 0.5A/125VAC
- Working power: DC24V

- Power consumption: $\leq 30W$
- Installation method: opening size:
- Meter dimensions: 201 x 147 x 205 (L×W×D)
- Plug-in panel mounting: cut-out size: 192 x 138 (length × width)

六、 Wiring And Terminal Definition

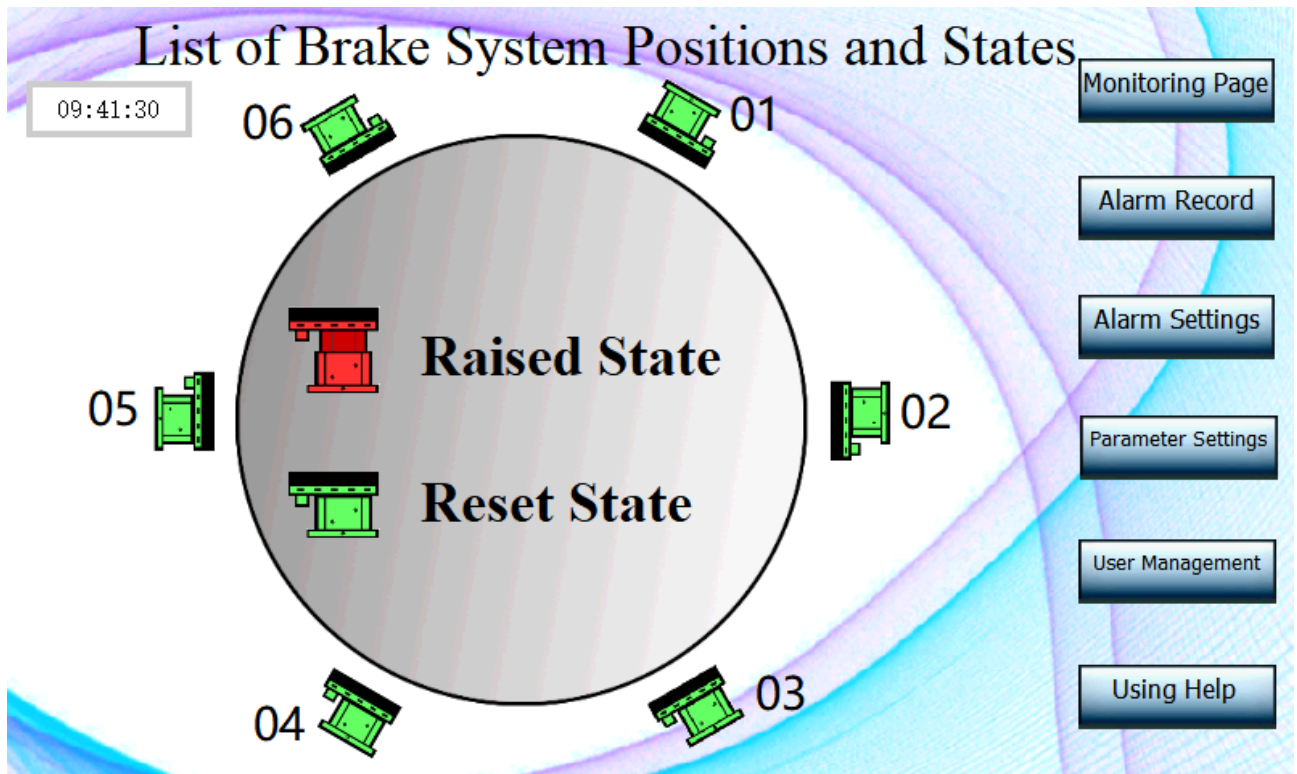
1. The display screen COM1 is connected with the man-machine interface communication end of the control unit; The display power supply is connected to the power supply end of the man-machine interface of the control unit.
2. Connect one end wire of the annunciator to the corresponding terminal according to the label.
3. Connect the other end wire of all annunciators in parallel and connect them to the common end.
4. If the number of signalers is less than 24, the excess input signal terminals will be connected in parallel and connected to the common end.
5. Terminal block definition:



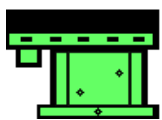
- 1-36: IN input signal terminal
- 37-44: INCOM input signal common terminal total alarm signal contact
- 46-48: ALM1 alarm contact 1
- 49-51: ALM2 alarm contact 2
- 52-53: 24V output DC24V, power supply for man-machine interface
(connected at the factory)
- 55-56: A2, B2 control module and man-machine interface communication port
(connected at the factory)
- 58-60: A1, B1, G instrument and host computer communication port
- 64 : PE grounded
- 65-66: L+, N- instrument working power supply DC24V

七、 Operation Interface

1. Monitoring Page



This screen provides a view of all alarm channels




Indicates Reset State



Indicates Raised State

2. Alarm Record



- The right side is the Real Time Alarm Recording, when there is an alarm, this area will be displayed.
- The left side is the Alarm Record Query, you can query the alarm at any time.
- Click  button to open the time interval/range selection window

This screen is used
Set Alarm Report
The basic settings

Start Time Set

Year: 2023, Month: 8, Day: 5, Hour: 14, Min: 6, Sec: 2

Time Span Set

Day: 1, Hour: 0, Min: 0, Sec: 0

Buttons: Enter, Cancel

After selecting the time interval. Click “Enter” button to display the alarm

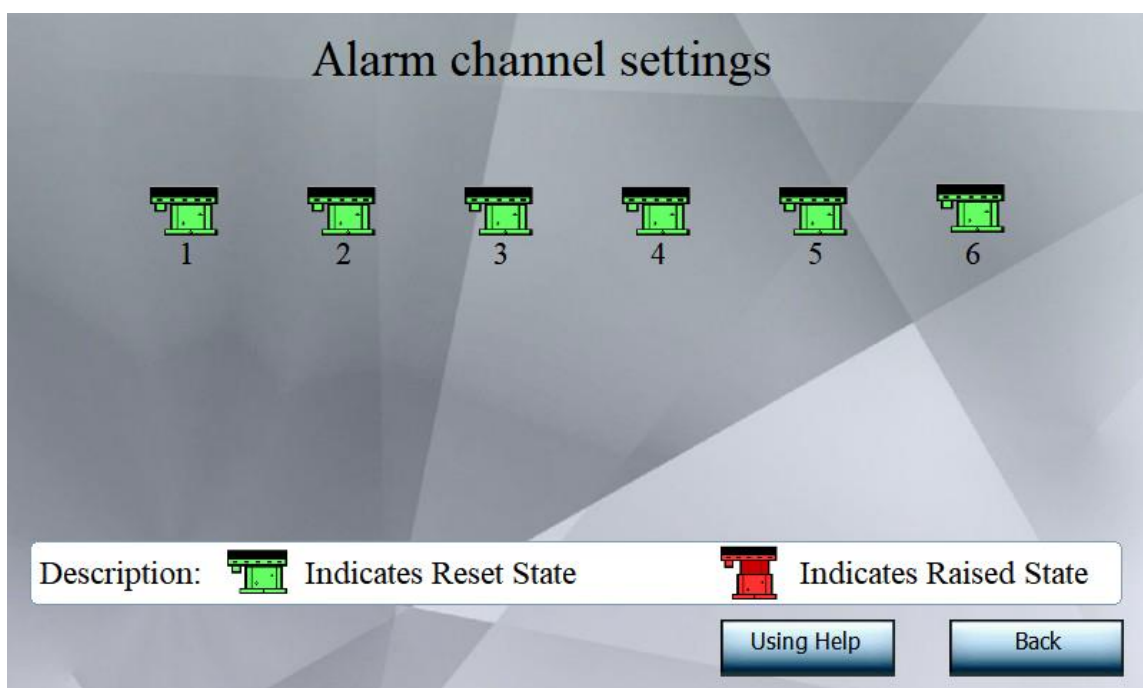
record in the selected time interval.

- The USB A interface on the back panel of the display screen is connected to a randomly configured U disk to save alarm records.



The automatically generated alarm record is saved on the USB stick:
\\AL\\1\\Year\\ Month \\ folder, the file is named by date. You can open a query with Excell.

3. Alarm Settings



In the initial state, the status box displays green, indicating that the contact reset is normal; Click the status box, and the status box color changes to red, indicating that the contact is in the top state (or falling state).

Combined alarm contact status setting: The contact that requires the combined alarm is set to a red top state (or falling state).

When the 1-24 alarm state is consistent with the set state, the combined alarm relay contact action.

4. Parameter Settings

!!! Attention: The parameter can only be set after the user logs in successfully, otherwise it cannot be operated.

The screenshot displays a software interface titled "Parameter settings". It is divided into two main sections: "Communication settings" and "User editing".

Communication settings:

- Communication Address:** A text box containing the value "1".
- Communication speed:** A text box containing the value "4800" with a dropdown arrow on the right.

User editing:

- User Name:** An empty text box.
- Password:** An empty text box.
- Confirm Password:** An empty text box.
- User Group:** A dropdown menu currently showing "Manufacturer".
- New Users:** A button located below the User Group dropdown.
- User To Be Deleted:** A dropdown menu currently showing "Manufacturer".
- Delete User:** A button located below the User To Be Deleted dropdown.

Input status setting:

- Input status:** A text box containing the value "1".
- Normally Closed Type:** 0
- Normally Open Type:** 1

Navigation Bar:

At the bottom of the window, there is a navigation bar with five buttons: "Monitoring Page", "Alarm Record", "Parameter Settings" (which is highlighted), "User Management", and "Using Help".

- On the left side of window, the operator could change the communication

address, communication speed, and input/output mode.

- The User editing window on the right side could be used to manage the users "New Users" button for creat and add user. "Delete Users" button for delete exsited users.

!!! Attention: The "Manufacturer" is a dedicated use for system parameters adjustment, please do not delete or modify it. Users can add "Administrator" or "Operator" users for dailay maintenance.

Parameter settings

Communication settings

Communication Address: 1

Communication speed: 4800

Input status setting

1

Normally Closed Type: 0

Normally Open Type: 1

User editing

User Name:

Password:

Confirm Password:

User Group: Administrator

User To Be Deleted: Administrator, Operator

Delete User

Monitoring Page | Alarm Record | Parameter Settings | User Management | Using Help

- When the administrator logs in successfully. he/she can add and delete users in the User Editing window under Parameter Settings.
- In the user editing window, there an "User Group" option, in which different groups have different authorities.

<Manufacturer>: able to modify all parameter settings.

<Administrator>: unable to edit users but can change other settings.

<Operator>: unable to modify any parameter settings.

- When adding users, they can be grouped as needed.
- The Factory Settings are:

“Administrator” belongs to the <Manufacturer> Group, can perform all parameter settings;

“Operator 1” belongs to the <Operator> Group, cannot perform parameter settings;

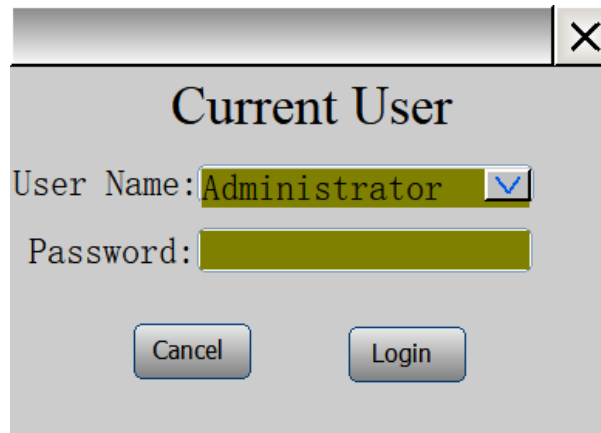
“Operator 2” belongs to the <Operator> Group, cannot perform parameter settings .

!!! Attention: Please note that after the administrator logs in to their account, do not delete 7administrator7 and 7manufacturer7 users from the parameter setting window. Once deleted, it will result in the inability to add new users in the future

5. User Management



- Click on the "portrait" icon on the left to see the login window. Select the correct username and enter the password. Click on the "login" button to successfully log in.

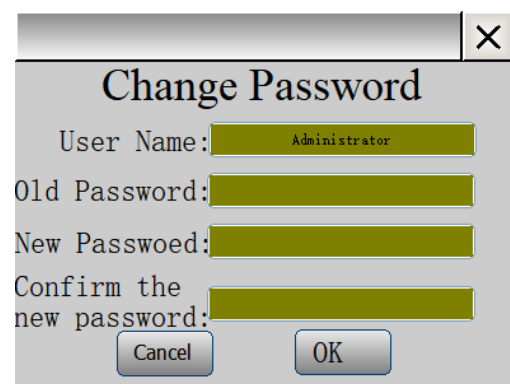


A dialog box titled "Current User" with a close button (X) in the top right corner. It contains two input fields: "User Name:" with a dropdown menu showing "Administrator" and a blue arrow, and "Password:" with a text box. Below the fields are two buttons: "Cancel" and "Login".

The user who successfully logged in will be displayed after "Current User".

Current User: Administrator

- After user login, they can modify their password. Click on the "lock" icon on the right side to open the password modification dialog box. It is possible to change to a new password.

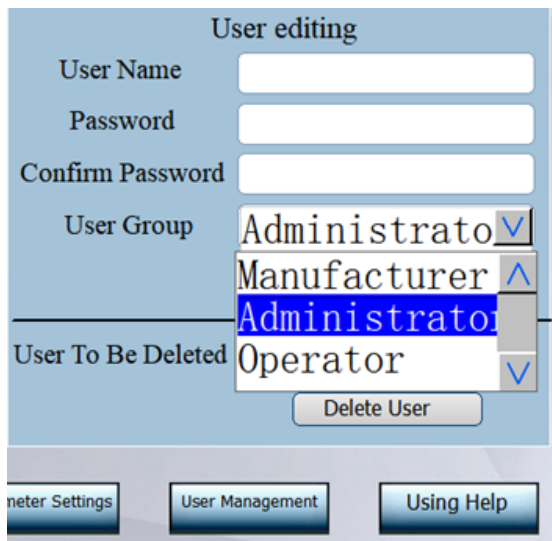


A dialog box titled "Change Password" with a close button (X) in the top right corner. It contains four input fields: "User Name:" with a dropdown menu showing "Administrator", "Old Password:", "New Password:", and "Confirm the new password:". Below the fields are two buttons: "Cancel" and "OK".

!!! Attention: The default password for administrator and operators is: "1".

!!! Attention: When the **administrator** logs in successfully. he/she can add and delete users in the **User Editing** window under **Parameter Settings**.

In the user editing window, there an "User Group" option, in which different groups have different authorities.



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- When adding users, they can be grouped as needed.
- The Factory Settings are:

"Administrator"

belongs to the <Manufacturer> Group can perform all parameter settings;

"Operator 1"

belongs to the <Operator> Group cannot perform parameter settings;

"Operator 2"

belongs to the <Operator> Group cannot perform parameter settings .

!!! Attention: Please note that after the administrator logs in to their account, do not delete "administrator" and "manufacturer" users from the parameter setting window. Once deleted, it will result in the inability to add new users in the future

6. Use Help:

Click the "Use Help" button on the corresponding operation interface to display the help file of this page, detailing the functions and operation methods of this page.

八、 Model and configuration

Model	number of channels	Alarm contact
BSM-24M	24	2
BSM-36M	36	2

九、 Use

▲ Inspection

- It is recommended to conduct inspections every two hours.
- During inspection, please observe whether the display on the instrument is normal.

▲ Overhaul

- It is recommended to carry out maintenance every three months.
- Please turn off the power during maintenance, restart the instrument, and observe whether the instrument starts normally.
- During maintenance, please observe whether the status value on the instrument is normal.
- If the instrument is running in normal working condition during

maintenance, no alarm occurs. Please disconnect the input terminal connection line, through the short route, so that the instrument enters the alarm state, please observe whether the display status on the instrument display interface is normal.

- After the test is completed, please restore the input cable to the state before the service.

- ▲ **The warranty period of the instrument is one year, and the maintenance is lifelong.**

- During the warranty period, if there is an abnormal situation, the company is responsible for free repair and maintenance.

- After the warranty period, if there is an abnormal situation, the company is responsible for repair and maintenance, but will charge the cost of maintenance according to the actual situation.

- ▲ **If the instrument is abnormal, please contact the company, call the company's contact number or send an email to the company's email, we will reply as soon as possible after receiving it, and arrange perfect technical support and service in time.**

+、 Purchase

Please provide the purchase

- ▲ Product model

- ▲ Power supply voltage

Please contact us for purchase

- ▲ Call the company's contact number or send an email to the company's email for inquiries
- ▲ Determine technical indicators, prices and delivery times
- ▲ Sign a procurement contract
- ▲ Execute the contract and receive the goods

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