zeliox
ZCM6 Control Module

zeliox ZCM6 Control Module User Manual

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Preface

This user manual introduces in details of product structure, parameters, basic procedures and methods of installation, as well as operation and maintenance of the product. Please follow below request during the procedure of installation, operation, and maintenance

- Please connect wires properly while installation, do not reverse connect. To avoid short circuit, please do not connect positive and negative poles with conductor (Wires for instance).
- For your safety, product shall be grounded properly before normal use.
- Please ensure that the electrical parameters of the related equipments are compatible with each other before use.
- For your safety, please do not arbitrarily dismantle any components in any circumstances unless a specialist. Product breakdown due to improper operation will not be covered under warranty.

The product has been strictly inspected before shipment. If you find abnormal phenomena such as swelling of the shell, please contact the sales. The use environment and storage method have a certain impact on the service life and reliability of this product, so environmental factors must be fully considered before installation and use to ensure that the system works in a suitable environment.

Disclaimer: Due to the continuous update and improvement of products and technologies, the content in this document may not completely match the actual product, please understand. For product updates, please contact your sales.

Safety Instructions

- Please pay attention to the safety signs on the product and manual.
- During product installation, operation, and maintenance, electrical safety regulations and related operating procedures must be observed; otherwise, it may cause personal injury or product damage. The safety precautions mentioned in the manual are only a supplement to the safety regulations.
- The manufacturer does not assume any responsibility caused by violation of general safety operation requirements or violation of safety standards for design, production and use of equipment.

General safety precautions

- Please handle strictly in accordance with the requirements of this manual.
- It is strictly forbidden to put the product in water or fire to avoid explosion or other dangers.
- Please do not stab, hit, trample or strike the product in any other way.
- Avoid direct sunlight.
- Please do not remove the product from the original packaging before use.
- The product needs to be installed in a dry and clean environment.
- During use, when the system needs to be moved or rewired, the power must be completely cut off and the system must be completely shut down, otherwise there will be a risk of electric shock.
- In order to avoid fire and electric shock, please ensure that all cables have good electrical characteristics and suitable wire diameter; it is forbidden to use damaged or too small cables.
- When encountering a fire, please use a dry powder fire extinguisher to extinguish the fire. The use of a liquid fire extinguisher may cause secondary hazards.

This product should be kept away from water, dust and pollution sources. Please install the product in a well-ventilated environment.

Disposal or recycle

- Disposal and recycling of lithium batteries should comply with local, state, and federal laws and regulations. Mixed treatment with other (industrial) waste is prohibited.

Product Introduction

Brief introduction
ZCM6 is a smart control module dedicated to vehiclesystem. It has 6 output channels and a complete protection strategy. It can detect the current of each output channel in real time and intelligently count the power consumption. ZCM6 has multiple communication methods such as CAN, RS485, RF, and Bluetooth. You can view and control the output channel through the Bluetooth APP. It supports up to 4 ZCM6s in parallel and can pair up to 10 wireless switch panels PICO. Supports 10-30Vdc wide voltage input (adapted to 12V and 24V batteries).

Features

- Supports a maximum DC load of 76A in total.
- Power input protection function: realizes overvoltage and undervoltage protection functions of the device.
- 6 independently controlled output channels: 5 of which have a rated current of 15A, and 1 has a rated current of 25A.
- Output channels support parallel connection: When a load is greater than 15A and less than or equal to 25A, it can be loaded by connecting two output channels in parallel.
- Single channel protection function: It can realize real-time detection of single channel current and realize over-current, under-current and short-circuit protection functions of a single channel.
- Intelligent monitoring: The built-in current sampling unit can monitor the power consumption of each load in real time. Combined with the independently designed intelligent control strategy, it can achieve energy-saving, efficient and intelligent power control, and real-time statistics of load power consumption.
- Supports CAN, RS485 communication.
- Supports up to 4 devices in parallel.
- Supports connecting wireless switch panel PICO II.

- Built in Bluetooth to support mobile APP.

Appearance and dimension

Figure 2-1 Productappearance

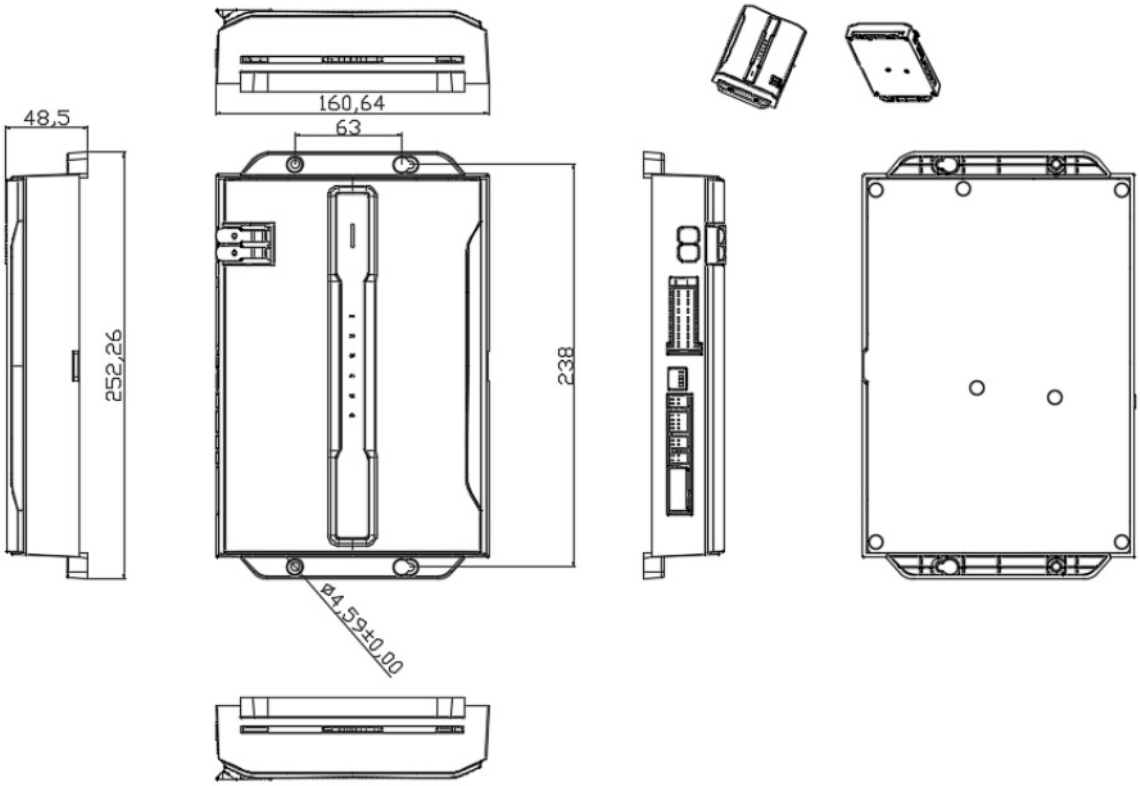


Figure 2-2 Product dimensions

Interface definition

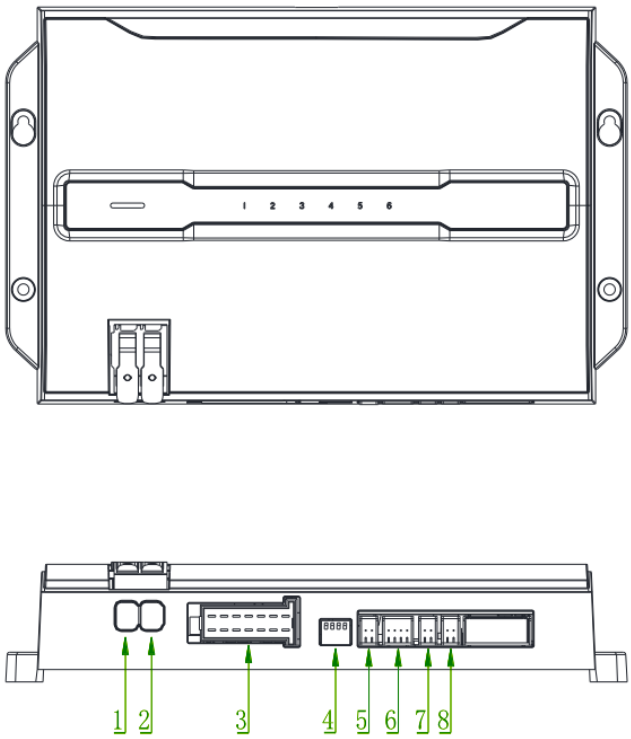


Table 2-1 External interface description

No	Terminal Definition	Polarity	Note
1	BAT+	12V/24V Power Input_Positive	
2	BAT-	12V/24V Power Input_Negative	
3	Output	Output Connector	
4	DIP	DIP Switch	
5	Remote	2 PINs for Remote Switch 1 PIN for D+ input detect	
6	Display	Display interface	Communication with the system
7	Parallel 1	Parallel Communication interface	The parallel communication cable can be connected to 1 or 2
8	Parallel 2	Parallel Communication interface	The parallel communication cable can be connected to 1 or 2

Indicators and switch port

Indicator lights
This product has 7 indicator lights on the panel, which are:

1. Power indicator

Table 2-2 Power indicator description

Status	Color	Description
Run	Green	Flashing: Auxiliary source is normal, system is initi alizing Solid on: Working
Protect	Red	Flashing: Alarm Solid on: Protection and shut down output

Output channel (1-6) indicators

Table 2-3 Output channel indicator description

Status	Color	Description
Run	White	Solid on: Working
Protect	Red	Solid on: Protection and shut down output

Switch port
This product has a On/Off Switch dry contact, which can be used to control the power on and off of the entire device. When the On/Off Switch dry contact is engaged, it is in the power-on state, otherwise it is in the power-off state.

DIP switch
If you use more than one ZCM6, please set the parallel address in advance through the DIP switch before powering on.

Table 2-4 Parallel communication address settings and instructions

DIP Switch		Parallel address	Description
Pin 1	**Pin 2**		
OFF	OFF	1	Master
OFF	ON	2	Slave 1
ON	OFF	3	Slave 2
ON	ON	4	Slave 3

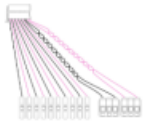
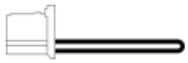
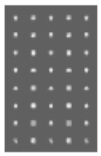
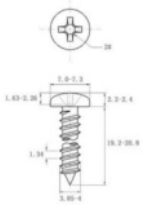
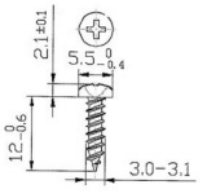
Table 2-5 BLE ON/OFF setting

DIP Switch	BLEON/OFF description
Pin 3	
OFF	BLE OFF
ON	BLE ON

Product Installation

Unpacking inspection
Before unpacking, check whether the outer packaging is intact and undamaged. If the outer packaging is damaged, please contact your dealer or our company. After unpacking, please check whether the product is intact and undamaged. If the product is damaged, please contact your dealer or our company. Please check whether the accessories are complete according to the packing list. If the accessories are not complete, please contact your dealer.

Table 3-1 Packing list

Packing List			
Parts	**Spec.**	**Q'ty**	**Pictures**
ZCM6 module	252 mm x 161 mm x 47 mm（LxWxH）	1	
Power output cables with connectors	Diameter: 13AWG Length: 250mm	1	
Remote switch cable	/	1	
Wireless switch panel – PICO	72 mm x 72 mm x 11.5 mm（LxWxH）	2	
Wireless panel button stickers	Includes 40 button stickers	1	
ZCM6 screws	ST4*20mm	4	
PICO screws	ST3*12mm	8	

Installation and Fixing

Before use, the module must be effectively fixed and cannot be fixed upside down. The fixing scre should be ST4*20mm.

Preparation for installation

After unpacking, please check that the device has not been damaged during transportation and that all accessories are included.

1. Check whether the input voltage matches the ZCM6. If it does not match, do not use it, otherwise it may cause damage to the ZCM6.If you are unclear, please consult the supplier or the manufacturer directly.

2. Check whether the input wiring is correct, and then connect the power supply.
3. Check that the wiring is secure and ensure that there is no short circuit.
4. Check whether ZCM6 is installed stably and firmly
5. Confirm the above items are correct before turning on the ZCM6.

Installation Space Requirements

The controller MUST have adequate room on all sides for air flow. Refer to Figure 3-1 for minimum spacing requirements.

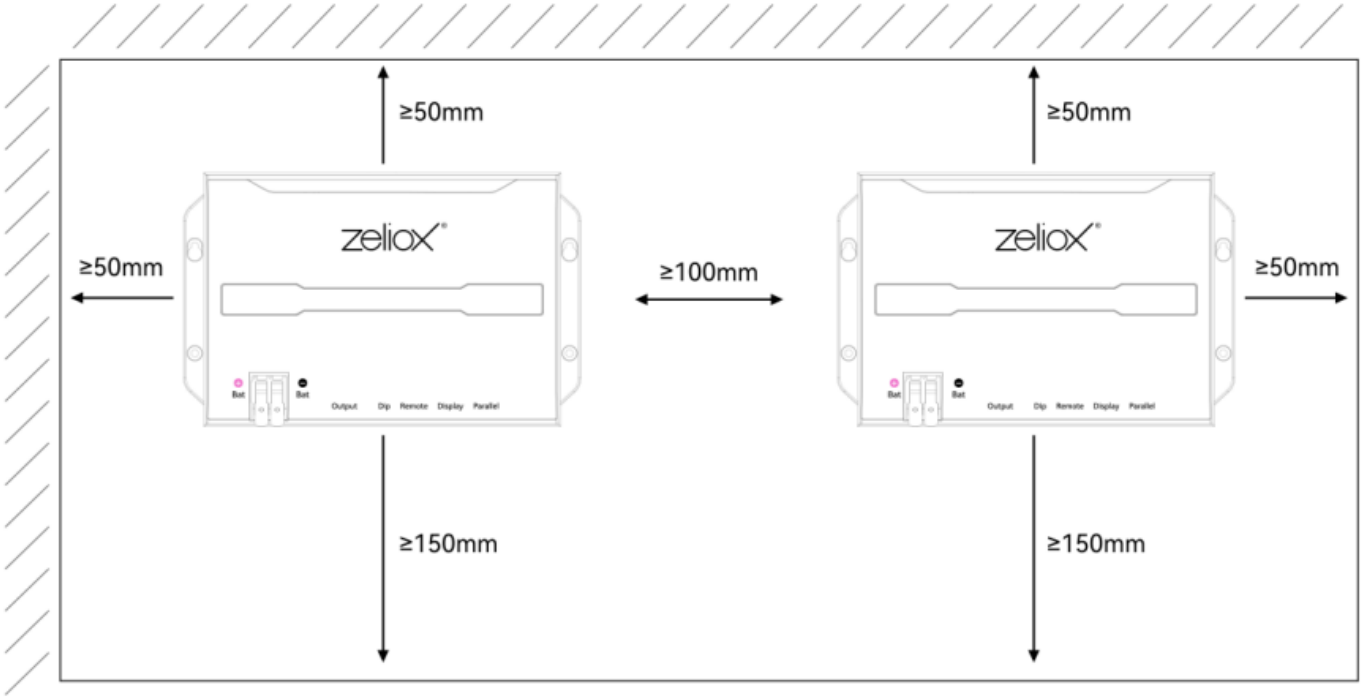


Figure 3-1 Minimal Installation Distance

Cable Preparation

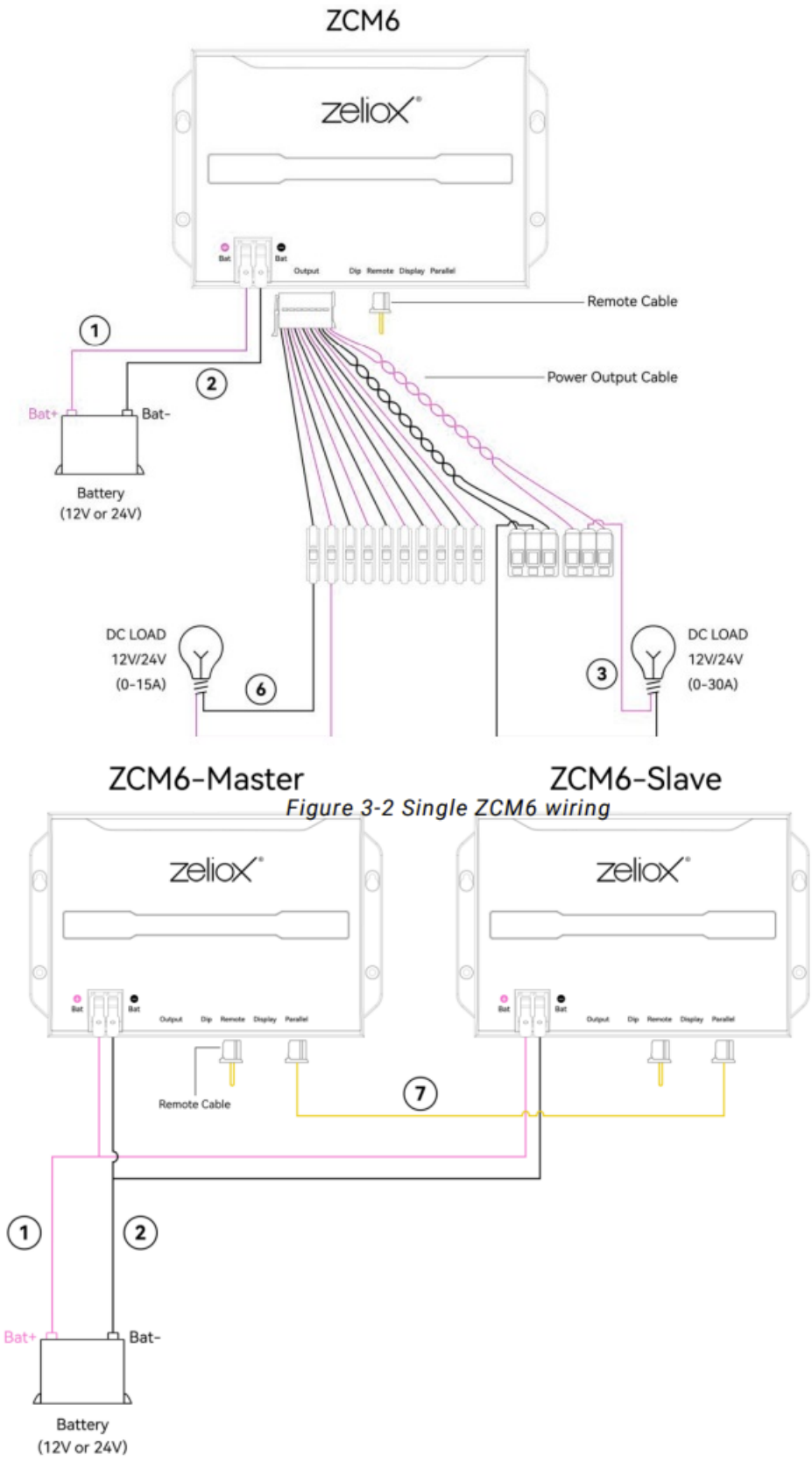


Figure 3-2 Single ZCM6 wiring

Table3-2 Cable requirements

NO.	**Recommended wire diameter**	**Recommend length**	**Recommended color**	**Recommend End Stripping Length**	**Remark**
①	16mm²	≤3m	Red	18-20mm	
②	16mm²	≤3m	Black	18-20mm	
③	6mm²	≤10m	Red	9-10mm	
④	6mm²	≤10m	Black	9-10mm	
⑤	6mm²	≤10m	Red	12-14mm	
⑥	6mm²	≤10m	Black	12-14mm	
⑦	–	–	–	–	Parallel communication cable (Optional)

Installation steps

Perform the following steps to connect cables.

- **Step 1**: Select the appropriate wire according to Table 3-2, make sure the input power is shut down and the ZCM6 “Remote” port is not connected before wiring.
- **Step 2**: Remove the dust cap from the input terminal, connect BAT- to battery negative terminal, and connect BAT+ to battery positive terminal . Please see Figure 3-2. Be sure to check the input polarity, reversing it will damage the device
- **Step 3**: Connect Output- to DC Load- and connect Output+ to DC Load+ , Please see Figure 3-2.
- **Step 4**: Make sure the wire is connected correctly and reliably.
- **Step 5**: After the wiring connection, connect the matching “Remote Cable” to the ZCM6 “Remote” port, turn on the input power, and the ZCM6 will be turned on.
- **Step 6**: Pair the wireless switch panel PICO (please refer to the APP manual). After the PICO is paired, please stick the corresponding sticker on the PICO.

- **Step 7**: If you need to connect more than one ZCM6 in parallel, please contact the dealer to purchase the parallel communication cable and connect it to the “Parallel” port of the ZCM6s. Please set the parallel address in advance through the DIP switch before powering on.

Product Features

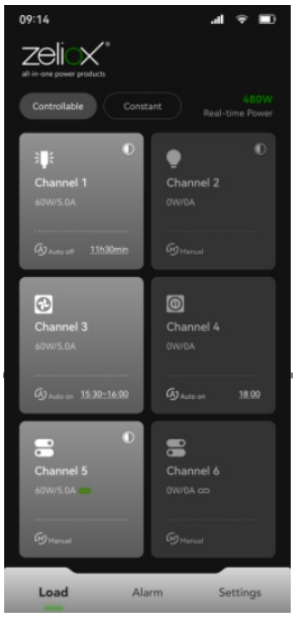
Output channel

1. 5 PWM controlled output channels, 15A each
    - Output-1 and output-2 can be connected in parallel to form a 30A channel
    - Output-3 and output-4 can be connected in parallel to form a 30A channel
    - Output-5 cannot be used in parallel
2. 1 PWM controlled output channel, 30A
    - Special treatment of the wiring harness, output-6A and output-6B are connected in parallel to form one circuit, which can provide a maximum power output of 30A

Communication method
ZCM6 supports RS485, CAN, RF, Bluetooth communication.

Automatically turn on/off channels at a scheduled time
Users can set the channel to automatically ON or OFF according to actual needs. Users can customize the ZCM6 channel switch mode, which are, Manual (default), AUTO OFF, AUTO ON. When the channel is set to automatic mode, the specified channel switch will automatically turn on or off within the set time, and the channel can also be manually turned on or off in advance.

Bluetooth APP interface and download address
You can monitor, control and set the ZCM6 by a Bluetooth APP. Please search Zeliox ZCM6 on Google Play or Apple App Store to download the APP.



No.	Name	Comments and recommended actions
1	Input Low voltage protection	Battery Voltage is too low. Please charge the battery.
2	Input Over voltage protection	Battery voltage is too high, please check the input voltage.
3	Module fault	1. Please restart the module. 2. Please contact your dealer if it still exists.
4	Over Temperature Protection	Please reduce the load.
5	Input overcurrent protection	Please reduce the load.
6	OUT 1-6: Undercurrent	1. Please check if the load wiring is abnormal. 2. Please check if the load is faulty.
7	OUT 1-6: Overcurrent protection	1. Please check if the load wiring is abnormal. 2. Please check if the load power is too large.
8	OUT 1-6: Short circuit protection	1. Please check if the load wiring is abnormal. 2. Please check if the load power is too large.

9	OUT 1-6: Fuse failure	1. Please Restart the Module. 2. Please contact your dealer if it still exists.
10	Slave module lost communication	1. Please check if the DIP Switch is set correctly. 2. Please check if the parallel communication cable is connected correctly.

Specification

Model	**ZCM6**
Electrical	
Rated input voltage	12/24 Vdc
Input voltage range	10~16/21~30 Vdc
Maximum input current	76A
Maximum output current of a single channel	15A*5 &25A*1
Maximum output current in total	76A
Standby power consumption	≤5mA
Communication	CAN, RS485, BLE, RF

Parallel connection	Max 4 units
Wireless switch	Max 10 PICOs
Protection	
Input overvoltage protection	16/30 Vdc
Input undervoltage protection	11/21 Vdc
Output short circuit protection	Yes
Output overcurrent protection	Yes
Output undercurrent protection	Yes
Input overcurrent protection	Yes
Internal over temperature protection	Yes
Others	
Storage temperature	-40℃~85℃
Operating temperature	-20℃~60℃
IP rating	IP20
Dimensions	252 mm x 161 mm x 47 mm LxWxH
Product weight	0.87 Kg
Certification	CE, E-mark

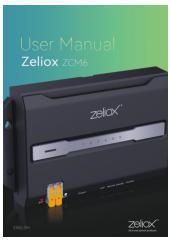
FAQs

Q: What should I do if I encounter abnormal phenomena like swelling of the shell?
A: Contact your sales representative for further assistance. Ensure that environmental factors are considered during installation and usage.

Q: How many output channels does the ZCM6 have?
A: The ZCM6 has 6 output channels, with 5 rated at 15A and 1 rated at 25A.

Q: What communication methods are supported by the ZCM6?
A: The ZCM6 supports communication methods such as CAN, RS485, RF, and Bluetooth.

Documents / Resources

	**zeliox ZCM6 Control Module** [pdf] User Manual ZCM6 Control Module, Control Module, Module

References

- **User Manual**