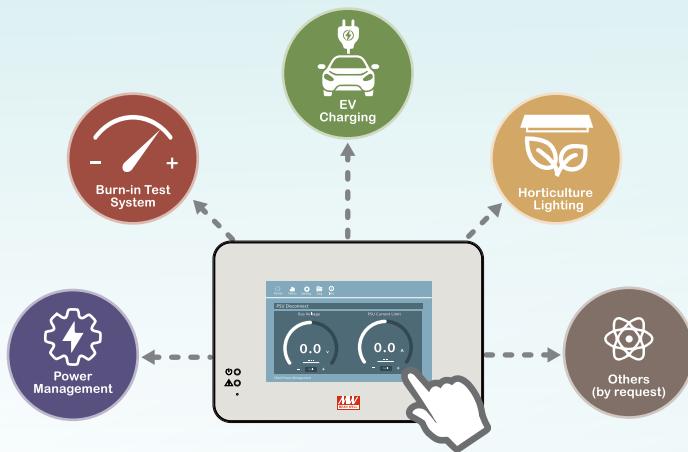




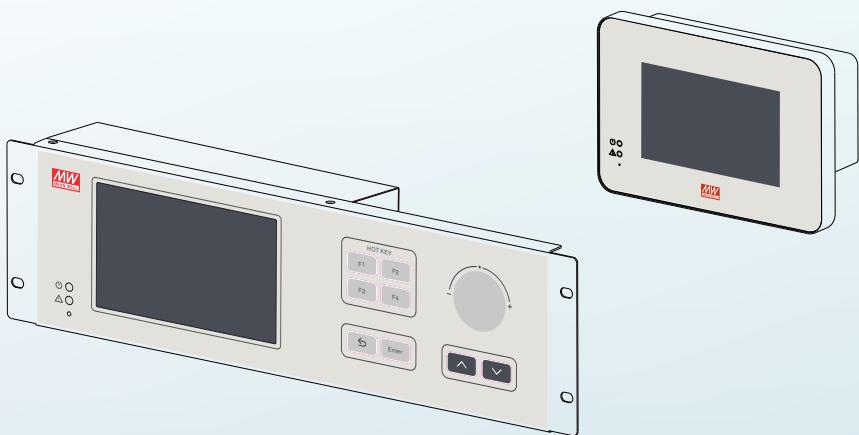
CMU2C

Installation manual



Multi-Industry General Purpose Smart Controller

• Programmable • Intelligent • Smart UI



CMU2C is a fully digitalized smart controller that can execute tasks of monitoring and controlling over power system. It can be accessed through local/remote and wired connection. With four built-in configurable relay contacts, users can flexibly monitor specific events or alarms and take suitable action accordingly. It not only being used to monitor the operating parameters and data of PSUs such as output voltage, output current, internal temperature, fan rpm, series number and firmware version, but also can be used to adjust output voltage and current. In addition, it can remotely control single PSU or entire power system through LAN or internet.

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1. Safety Guidelines

- Risk of electrical shock and energy hazard, all failure should be examined by a qualified technician. Please do not remove the case from the bidirectional power supply by yourself.
- Please do not install the supply in places with high moisture, high ambient temperature or under direct sunlight.
- The AC voltage range is 85 – 265Vac (47 – 63Hz), please do not connect the unit to AC gird out of the range.
- The safety protection level of this supply is class I. The “Frame Ground” (⏚) of the unit must be well connected to PE (Protective Earth).
- Do not use sharp objects or tools in the vicinity of the LCD touch panel.
- Treat the LCD carefully to prevent puncture, bursting, or cracking of the screen.
- If the LCD is damaged and any liquid comes in contact with your skin, immediately rinse the area with running water for at least 15 minutes. If the liquid gets in your eyes, immediately rinse your eyes with running water for at least 15 minutes and consult a doctor.

1.1 Passwords

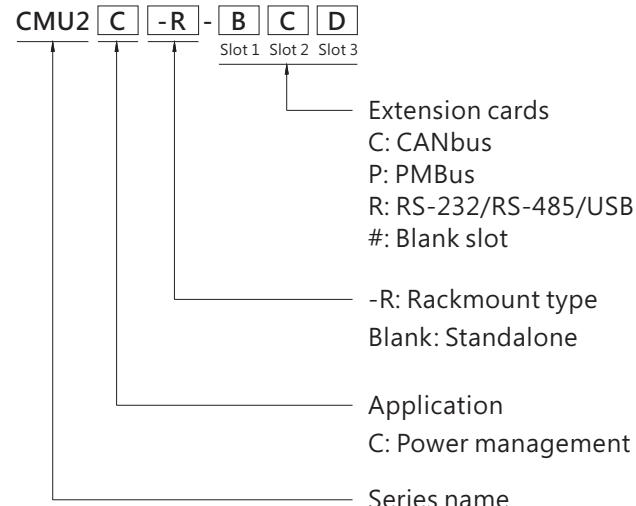
Password is required to edit network settings. The following is the default password for the interfaces:

Touch panel interface: The password is entered when selecting System in Setting page.

- By default, the password is “CMU2C” .

2. Introduction

2.1 Model Encoding



2.2 Features

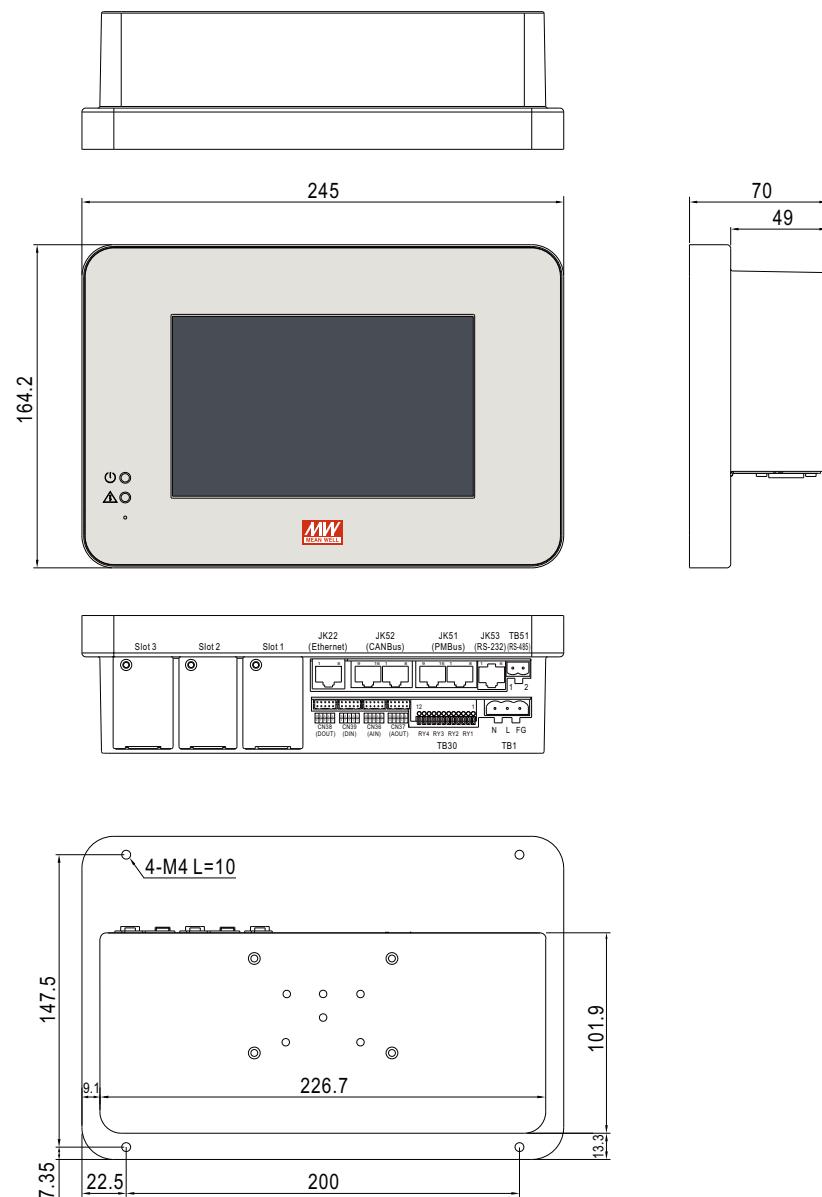
- Integration on system power
- 2 models in 3U 19-inch rack-mount and standalone configurations
- 7" touch panel and buttons for easy operation on-site operation
- Ethernet port for on-site or remote monitor and control over the system
- Selectable PMBus and CAN bus communication protocols
- Support Data/ Event log with date and time
- Support max. 32G SDHC SD card
- Support firmware upgrade
- Four user programmable relay outputs for conventional remote monitoring or warning
- Web-based monitor/control UI provided for various applications
- 5 years warranty

2.3 Specification

MODEL (Note.8)	CMU2C	CMU2C-R
LCD DISPLAY	Display the DC output voltage, current, and status of each PSU	
LED INDICATOR	Green: Power on/ Normal Red: Fault/ Abnormal	
OUTPUT	RELAY CONTACT Note.4	4 user programmable channels, 30V/1A
	ANALOG OUTPUT Note.4	5 user programmable channels, 0-10V
	DIGITAL OUTPUT Note.4	5 user programmable channels, open collector signal
INPUT	VOLTAGE RANGE	85 ~ 264VAC; 120-370VDC
	FREQUENCY RANGE	47 ~ 63Hz
	CURRENT	0.6A / 115VAC 0.4A / 230VAC
	ANALOG INPUT Note.4	5 Channels, 0-10V, 12bit resolution
	DIGITAL INPUT Note.4	5 Channels, open collector signal
FUNCTION	MONITORED	I/P & O/P Voltage, O/P current, temperature, fan rpm
	COMM. INTERFACE Note.1	PMBus, CANbus
	SD CARD SLOT	SDHC 32GB Max.
COMMUNIC- ATION PROTOCOLS	FIRMWARE UPDATE	Update can be done via SD card or Ethernet access
	UI/LANGUAGE	English, Traditional/Simplified Chinese
	LOG	Record data and events
	BUZZER	Alarms, mute Button click & alarms, mute
ETHERNET SUPPORTED	PMBUS Note.4	PMBus v1.1
	CANBUS Note.4	CANbus 2.0B
	NETWORK	Support IEEE802.3, 10/100base network
	EXTENSION CARDS Note.1	Extension Cards
EXTENSION CARDS	PROTOCOLS	TCP/IP, NTP, SMTP
	WEB SERVER	Display status of system, parameters, data being logged or download
	PMBUS Note.7	2 PMBus ports, PMBus V1.1
	CANBUS Note.7	2 CANBus ports, CANBus 2.0B
	USB/RS-232/RS-485	2 USB ports, RS-232 port, RS-485 port
DISPLAY	LCD PANEL Note.2	7" TFT LCD, resolution 800x480, capacitive touch panel Details of settings please refer to user's manual
ENVIRON- MENT	WORKING TEMP. Note.2	-25 ~ +60°C
	STORAGE TEMP.	-40 ~ +60°C
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes
SAFETY & EMC (Note 4)	SAFETY STANDARDS	IEC62368-1, BS EN/EN62368-1, EAC TP TC 004 approved
	WITHSTAND VOLTAGE Note.3	I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.7KVDC
	ISOLATION RESISTANCE Note.3	O/I/P-FG:100M Ohms / 500VDC / 25°C / 70% RH
	EMC EMISSION	Compliance to BS EN/EN55032 (CISPR32) Conduction Class B, Radiation Class A; BS EN/EN61000-3-2,-3, EAC TP TC 020
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11, BS EN/EN61000-6-1(BS EN/EN50082-2), light industry level, criteria A, EAC TP TC 020
OTHER	MTBF	228.1K hrs min. Telcordia TR/SR-332 (Bellcore) ; 77.6 hrs min. MIL-HDBK-217F (25°C) 226.7K hrs min. Telcordia TR/SR-332 (Bellcore) ; 75.9K hrs min. MIL-HDBK-217F (25°C) (-R)
	DIMENSION	245*70*164.2mm (L*W*H)
	PACKING	1.68Kg; 8pcs/14.4Kg/2.14CUFT 2.16Kg; 6pcs/14Kg/2.91CUFT
NOTE	1. Depend on application. 2. LCD may freeze under -20°C. 3. CN36,CN37 are considered as O/P. 4. All functions of signal connectors: DIN/DOUT,AIN/AOUT,Relay,RS-232,RS-485,PMBus,CANBus are defined by application. Please check installation manual for detail. 5.The controller is considered a component which will be installed into a final equipment. EMC is tested by the controller unit, no control equipment is connected. The final equipment must be re-confirmed that still meets EMC directives. For guidance on how to perform these EMC test, Please refer to "EMI testing of component power supplies" (available on http://www.meanwell.com) 6.The RTC power supply used super capacitors, which can last for only 7 days. If the time exceeds the limit, the RTC date must be re-adjusted. 7.Up to 40 power supplies can be operated in parallel connection, and possible up to 48 power supplies. 8.Order model only CMU2C-P##, CMU2C-R-P##, CMU2A-#R# available. ※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx	

2.4 Mechanical Specification Standalone type

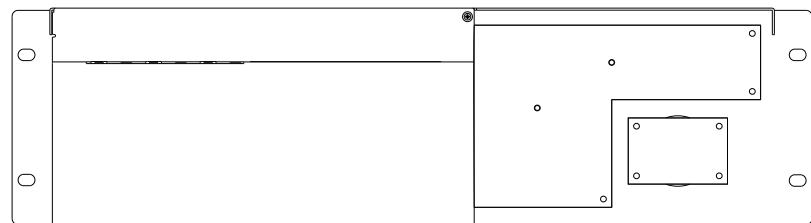
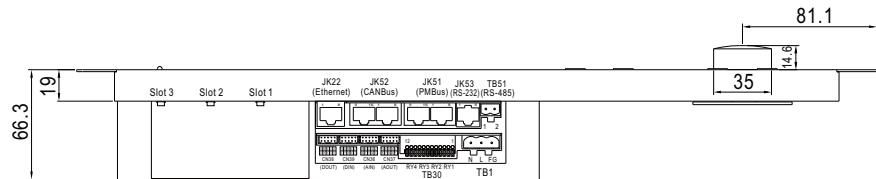
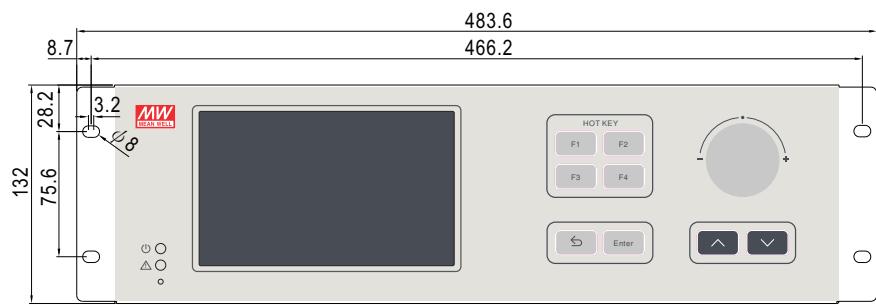
Unit:mm



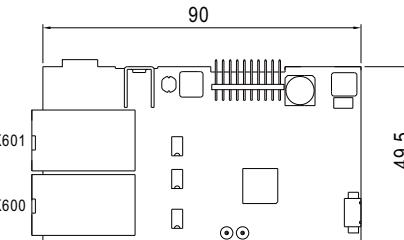
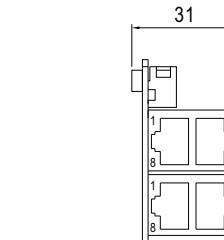
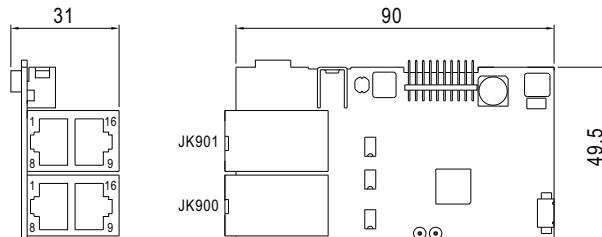
Rack-mount typ

Unit:mm

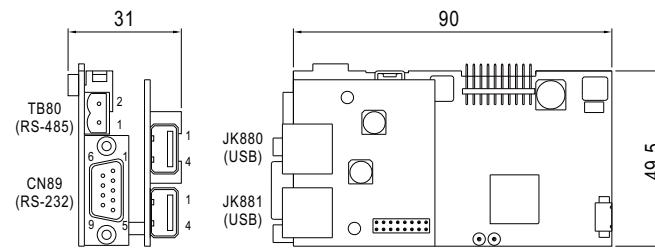
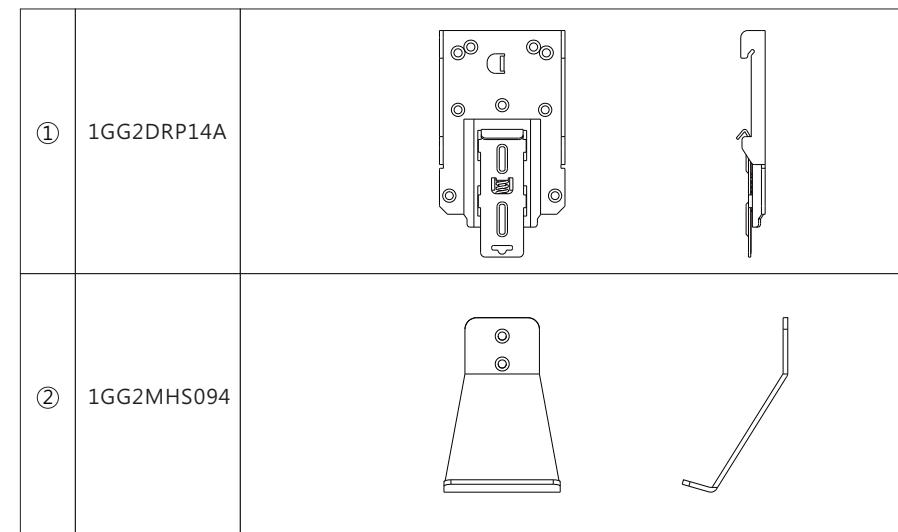
※ PMBus(C card)

**Extension cards**

※ PMBus(P card)



※ RS-232/RS485/USB(R card)

**Accessory (Standalone type only)**

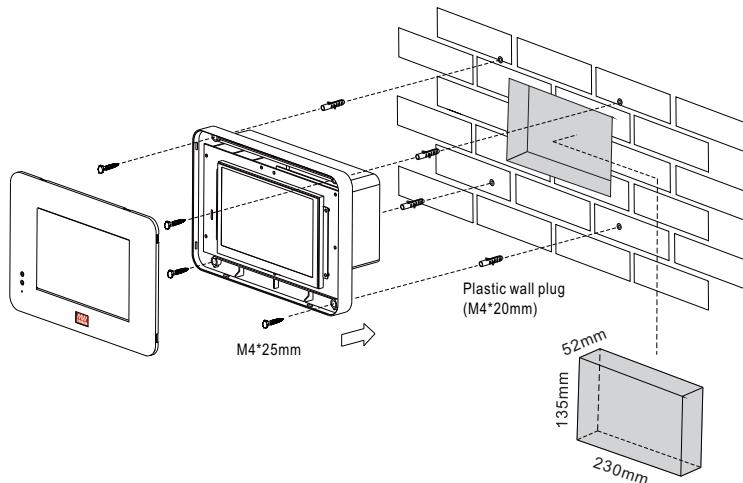
Note: 1GG2DRP14A is suitable for installation on TS35/7.5 or TS35/15 rail

3. Installation & Wiring

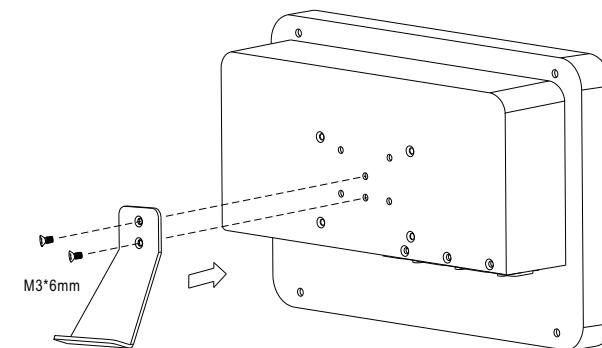
3.1 Installation

3.1.1 Standalone Type

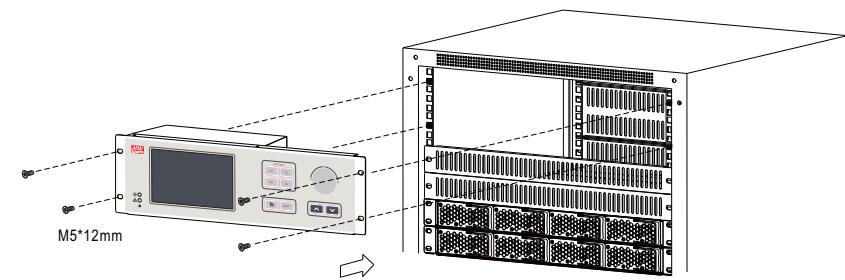
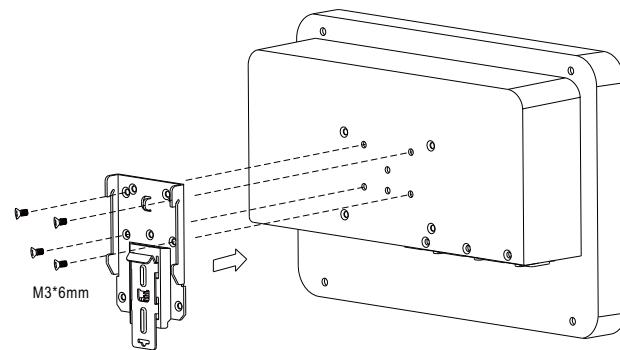
3.1.1.1 Wall Mounting



Desktop



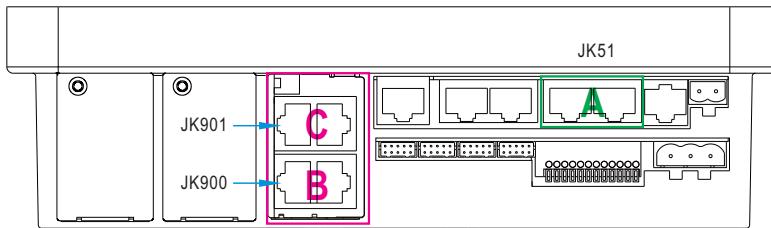
3.1.2 Rack-mount type



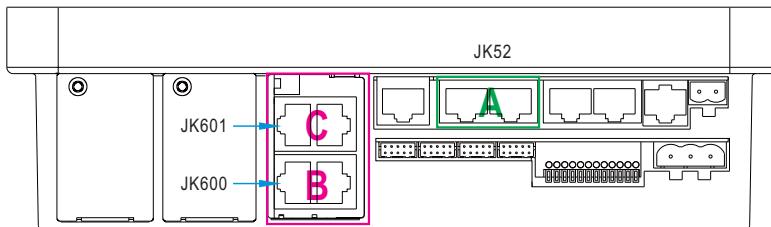
3.2 Configuration

The CMU2 is able to recognize up to three communication ports for PMBus or CAN bus device addressing, each port recognized as an independent group. Before connecting rack powers to a communication port of the CMU2, please make sure these units have their unique and own device address to prevent communication issues caused by duplicate addressing. Locations of these three ports are illustrated below, devices connected to port A will be assigned and displayed address 0 – 15; port B will be address 16 – 31; port C will be address 32 – 47.

PMBus version Port: JK51, Port: JK900 and Port: JK901



CANBus version Port: JK52, Port: JK600 and Port: JK601



Note: If there are less than 16 devices connected to the communication port, the vacant address will display disconnect.

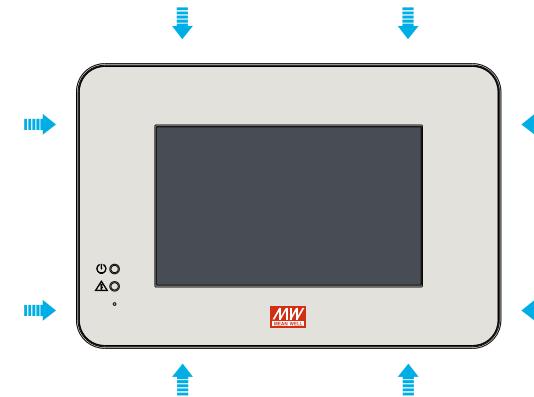
For example: connect 8 units of DRP-3200 to the port B and designate the addresses of these 8 devices as 0-7. Then on the CMU2, it will only display 16-23 online, the remaining 0-15 and 24-47 will be displayed disconnect.

3.3 SD Card Installation

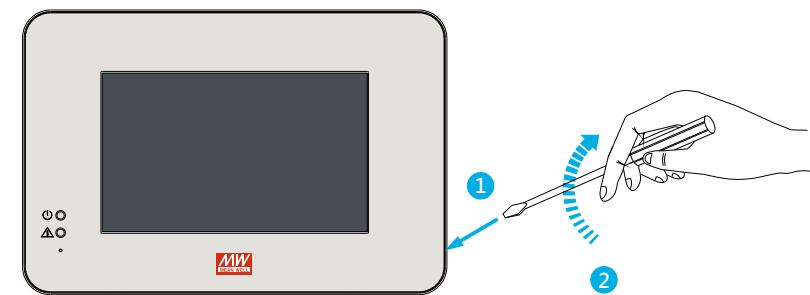
CMU2 supports SDHC type SD cards with capacity of 4G - 32G

Standalone type

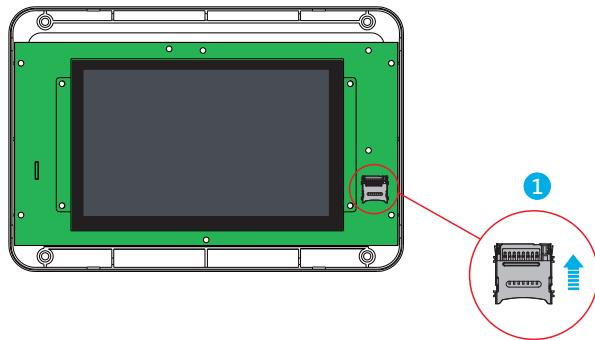
- ① Before installing a SD card, please remove the top cover of the standalone version, the top cover is locked by 8 clips.



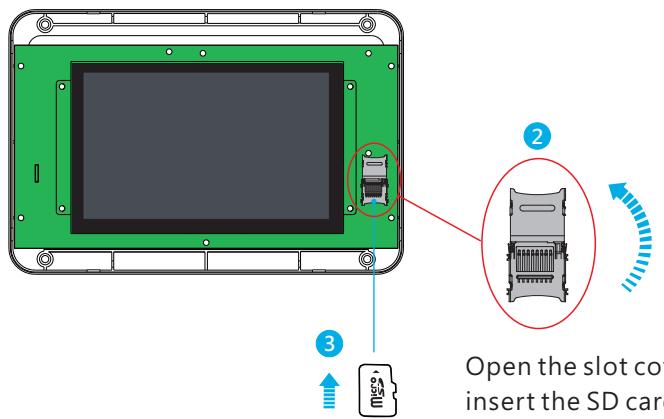
- ② The 8 clips can be released with a flat-blade screwdriver. After inserting the flat-head screwdriver into the gap between the top cover and the body, apply a little force to unlock the clips.



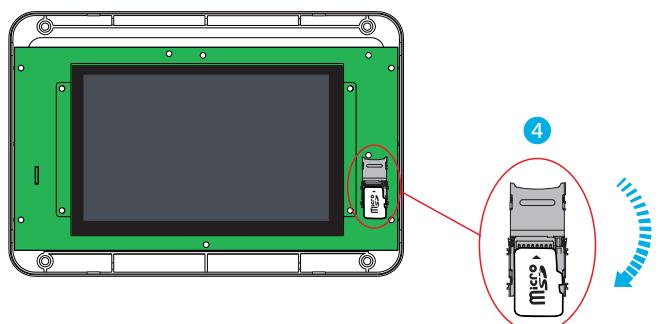
- ③ After the top cover is removed, please follow the steps below to insert a SD card. After a SD card is inserted, please reinstall the cover.



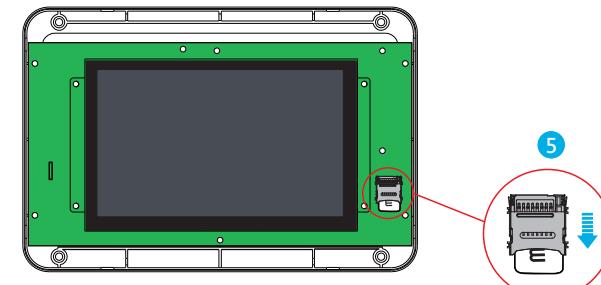
Unlock the slot cover



Open the slot cover and insert the SD card



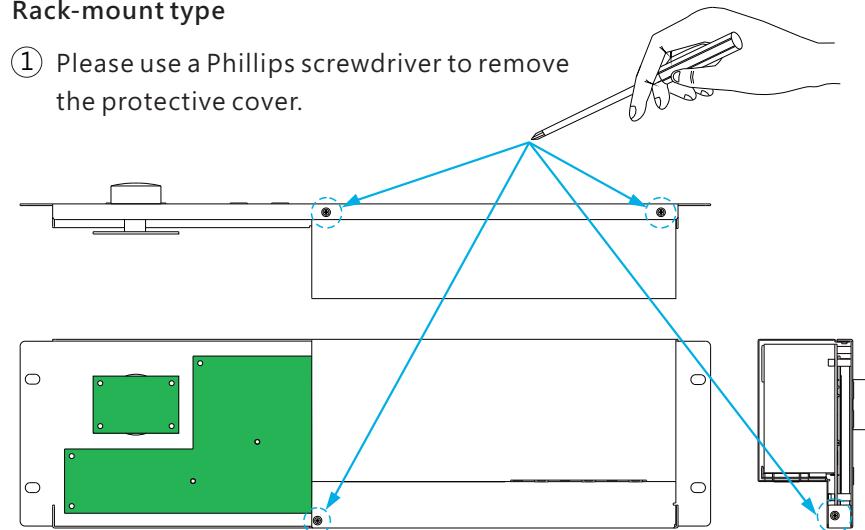
Close the slot cover



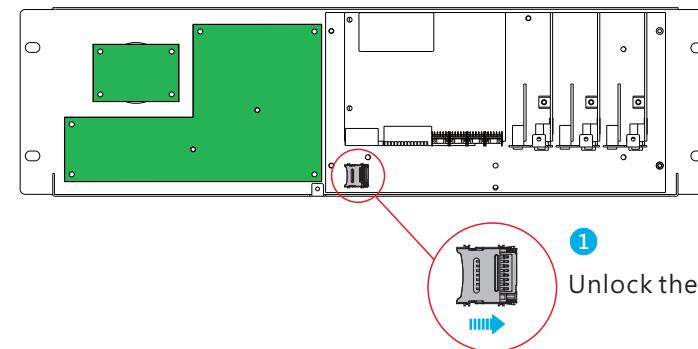
Lock the slot cover

Rack-mount type

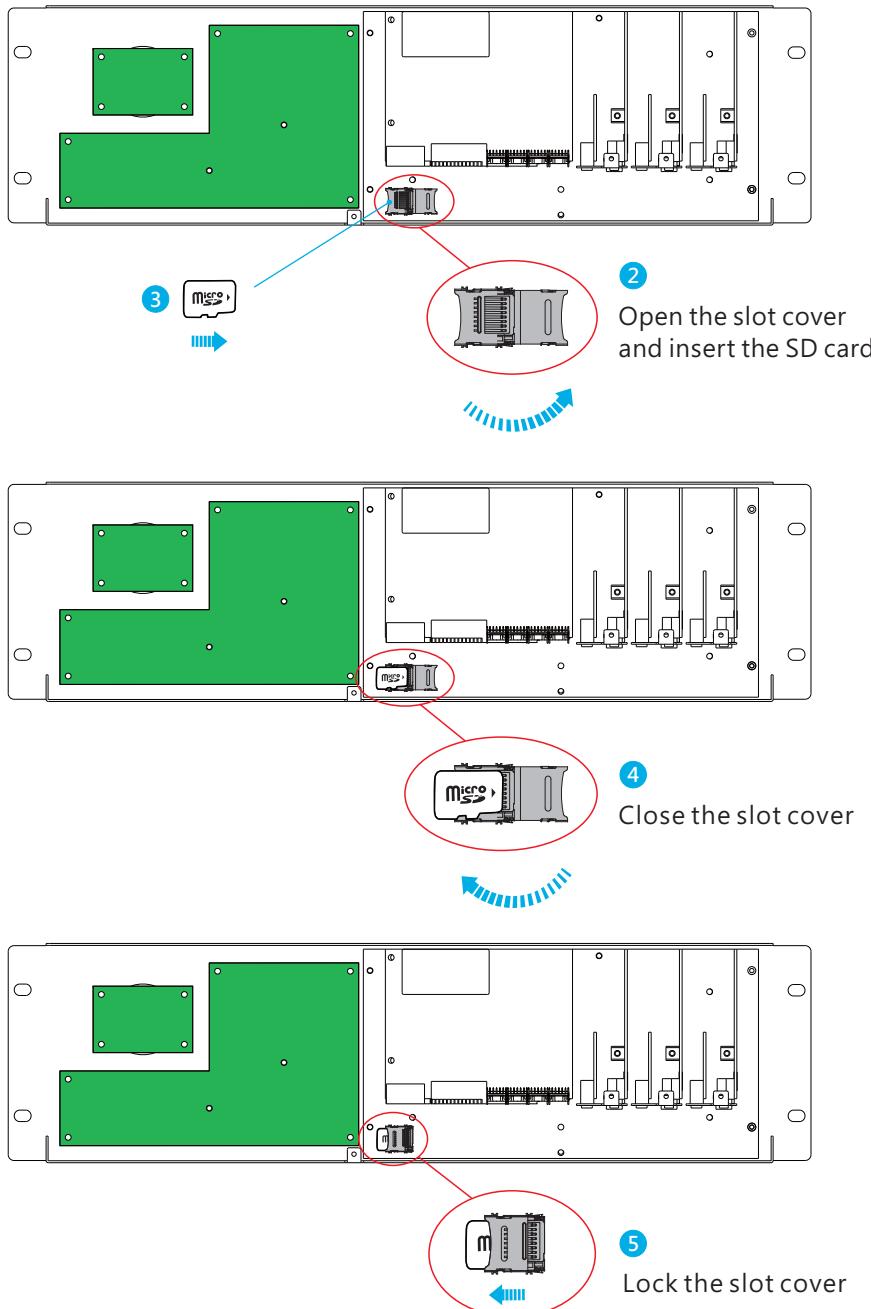
- ① Please use a Phillips screwdriver to remove the protective cover.



- ② After the cover is removed, please follow the steps below to insert a SD card. After a SD card is inserted, please reinstall the cover.



Unlock the slot cover



4. User Interface

4.1 Panel Description

(A) Power indicator:

Used to display whether the CMU is powered on.

(B) Alarm indicator:

Used to display operation status of the CMU2.

(C) Touch panel:

Tap to select functional pages.

(D) Hotkey buttons:

Press F1~F4 to enter the specific pages. F1: Home page; F2: event log page; F3: PUS on/off page; F4: Output voltage/current adjustment page.

(E) Knob:

Used to quickly adjust values, turning clockwise to increase the value and turning anti-clockwise to decrease it. This function is only valid in Output voltage/current adjustment page.

(F) Up and down buttons:

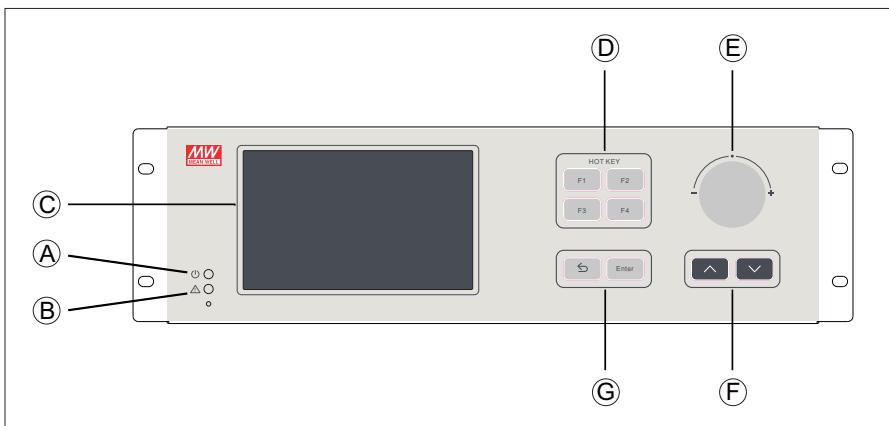
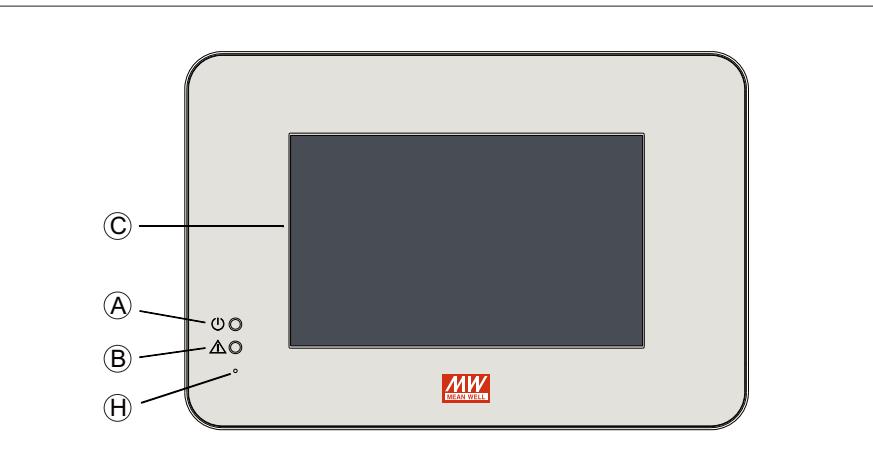
The up and down buttons are used to jump to output voltage and current adjustment page. It can work with the Knob to quickly adjust a required value. This function is only valid in the output adjustment page.

(G) Enter and return buttons:

In Output voltage/current adjustment page, you can use the enter button to apply a value that is adjusted by the Knob or use the return button to jump back to the home page.

(H) Reset button:

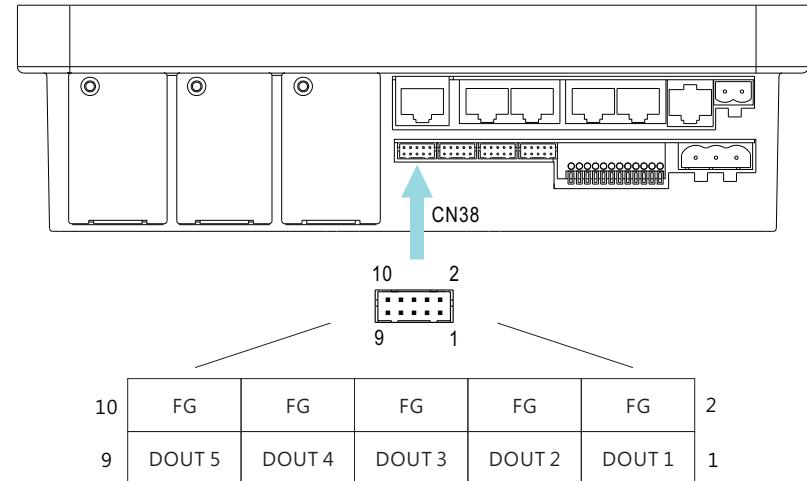
Press to reset the CMU2.



4.2 LED indication

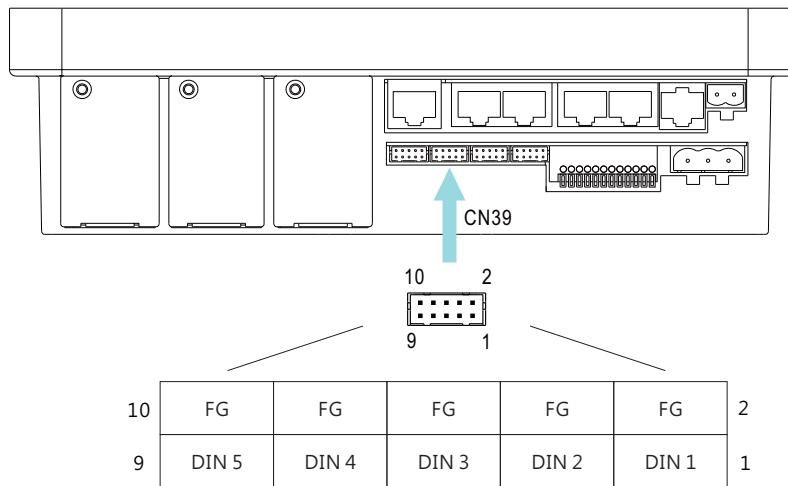
LED	Status	Description
	Green	Power indication, constant green when power on.
	Red (flashing)	CMU2 or Rack Power in abnormal conditions.
	No indication	Normal working.

4.3 Pin assignment of CN38

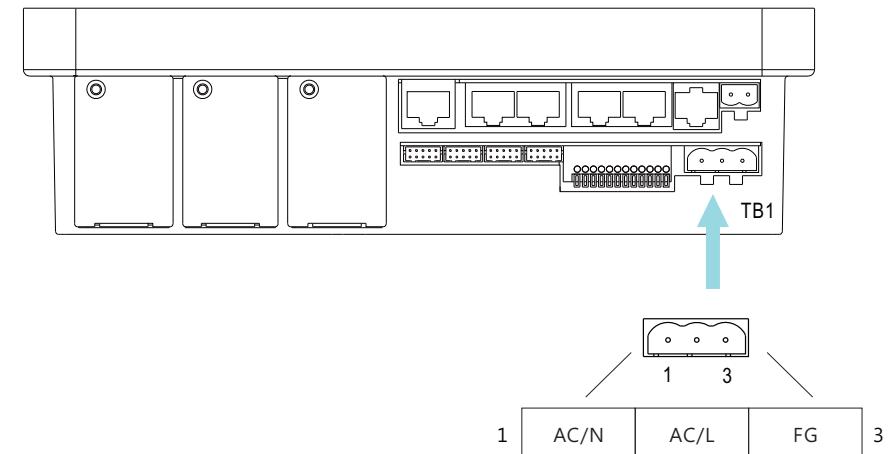


Pin No.	Function	Description
1	DOUT 1	The isolated digital output signal with FG as reference Open collector signal, Max. singal voltage is 5V with FG as reference
2,4,6, 8,10	FG	Common FG for DOUTx
3	DOUT 2	The isolated digital output signal with FG as reference Open collector signal, Max. singal voltage is 5V with FG as reference
5	DOUT 3	
7	DOUT 4	
9	DOUT 5	

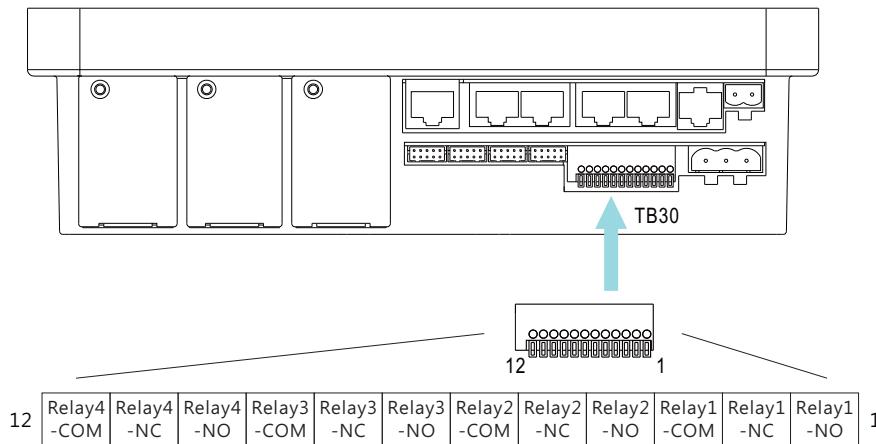
4.4 Pin assignment of CN39



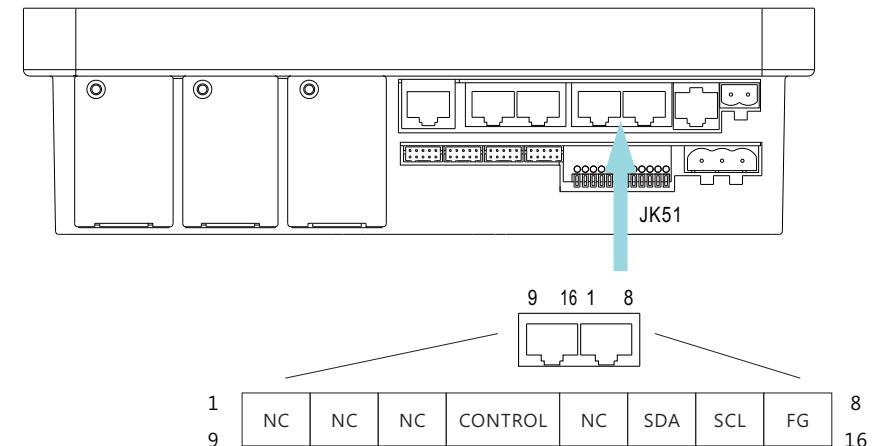
4.5 Pin assignment of TB1



4.6 Pin assignment of TB30



4.7 Pin assignment of JK51

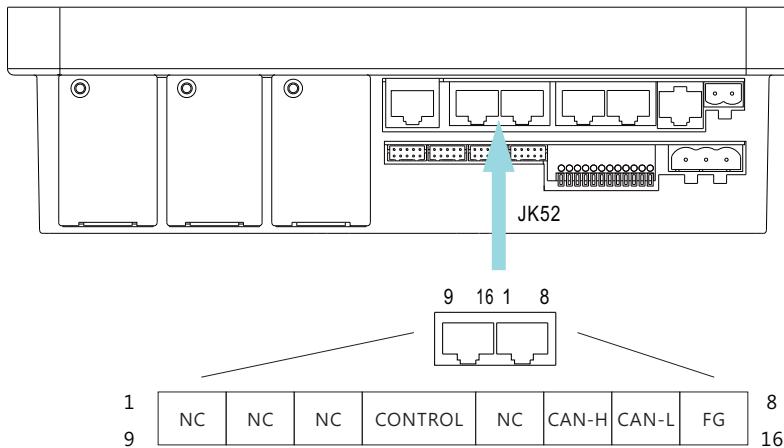


Pin No.	Function	Description
1	Relay1-NO	Normal-open contact of programmable relay1
2	Relay1-NC	Normal-close contact of programmable relay1
3	Relay1-COM	Common for relay1 NO/NC contact
4	Relay2-NO	Normal-open contact of programmable relay2
5	Relay2-NC	Normal-close contact of programmable relay2
6	Relay2-COM	Common for relay2 NO/NC contact
7	Relay3-NO	Normal-open contact of programmable relay3
8	Relay4-NC	Normal-close contact of programmable relay3
9	Relay3-COM	Common for relay3 NO/NC contact
10	Relay4-NO	Normal-open contact of programmable relay4
11	Relay4-NC	Normal-close contact of programmable relay4
12	Relay4-COM	Common for relay4 NO/NC contact

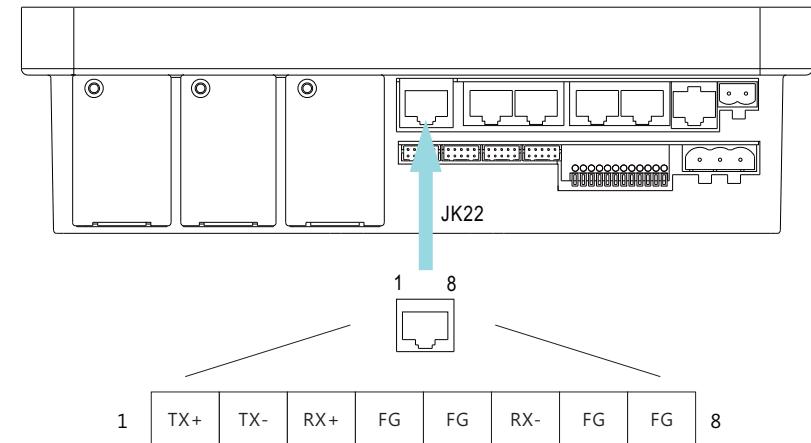
Pin No.	Function	Description
1,2,3,5,9, 10,11,13	NC	Not use
4,12	CONTROL	Remote ON/OFF control pin (Note)
6,14	SDA	Serial Data used in the PMBus interface (Note)
7,15	SCL	Serial Clock used in the PMBus interface (Note)
8,16	FG	Common FG for signal

Note: Isolated signal, with FG as reference

4.8 Pin assignment of JK52



4.9 Pin assignment of JK22



Pin No.	Function	Description
1,2,3,5,9, 10,11,13	NC	Not use
4,12	CONTROL	Remote ON/OFF control pin (Note)
6,14	CAN-H	CAN-H used in the CAN Bus interface (Note)
7,15	CAN-L	CAN-L used in the CAN Bus interface (Note)
8,16	FG	Common FG for signal

Note: Isolated signal, with FG as reference

Pin No.	Function	Description
1	TX+	Transmit data used in the Ethernet interface
2	TX-	Transmit data used in the Ethernet interface
3	RX+	Receive data used in the Ethernet interface
4,5,7,8	FG	Common FG for signal
6	RX-	Receive data used in the Ethernet interface

5.Operation

The CMU2 communicates with rack powers via PMBus and CANBus interfaces to achieve operation monitoring and remote control functions of system power. In addition, CMU2 supports communication interfaces of touch panel and network. Through these interfaces, CMU2 can integrate the management of system power, as shown in the picture below. Detailed information about the functions, please refer to the following chapters.

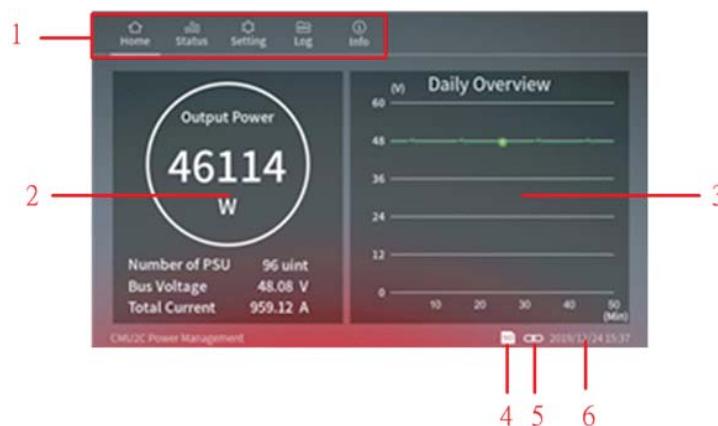
*Up to 40 units of DRP-3200 can be operated in parallel connection and the controller is able to communicate with 48 devices through the bus.



5.1 Touch panel

5.1.1 Home page

After power on, the CMU2 will enter the home page automatically. In the home page, the CMU2 displays the current status of the rack power units, including output power, number of PSU, bus voltage, total current and real-time operation curve, etc. Users can also tap the menu bar above to enter into other pages.



Home page – options

The following functions are available in the home page:

No.	Name	Description
1	Menu bar	Users can enter other function pages by tapping the menu bar. There are Home, Status, Setting, Log and Info menus available. The Menu displayed on the screen will be underlined.
2	Power information	Output Power: displays total wattage Number of PSU: displays numbers of PSUs connected to the CMU2 (the host*16+one extension card 16*2= max 48) Bus Voltage: displays the current voltage setting Total Current: displays the sum of devices' current.
3	Real time operation curve	CMU2 records bus voltage values every 60 seconds and displays them on the curve. Note: When switching to other pages, the curve will be reset and restarted again.
4	SD card icon	This icon is used to display whether there is a SD card connected. The SD card icon appears if there is a SD card detected.
5	Network icon	This icon is used to display whether the network is connected. The icon appears if connected to the network.
6	Date and time	Displays date and time.

5.1.2 Status

Status page displays operation status of PSU, I/O signal and Relays.

5.1.2.1 PSU

PSU page displays status of PSUs connected. Information includes address number, current, operation status, model name, serial number, firmware version, internal temperature, fan speed, etc.



PSU page - options

The following functions are available in the PSU page:

No.	Name	Description
1	Page selection	<p>1) Users can tap to select a desired page to display. There are three pages in total as below: 01/03: PSU address 0 – 15 02/03: PSU address 16 – 31 03/03: PSU address 32 – 47</p> <p>2) After tapping , it becomes six pages because more information added and displays as below: 01/06: PSU address 0 – 7 02/06: PSU address 8 – 15 03/06: PSU address 16 – 23 04/06: PSU address 24 – 31 05/06: PSU address 31 – 39 06/06: PSU address 40 – 47</p>

No.	Name	Description
2	PSU operation status	<p>1) These information boxes are used to display online and operation status of the PSUs. There are four conditions: Running, Error, Remote off and Disconnect. Running: Normal working Error: The PSU is in an abnormal condition Remote off: No PSU connected or PSU off</p> <p>2) Tapping a specific PSU can display more information of the unit, including serial number, firmware version, internal temperature, fan speed, etc.</p>
3	Change the display method	<p>1) After tapping the icon, there are voltage, current and power adding to the box.</p> <p>2) In the mode, you also can display more PSU information by tapping a specific PSU.</p>

5.1.2.2 I/O signal

I/O signal page displays digital status of inputs and outputs. There are 5 channels each.



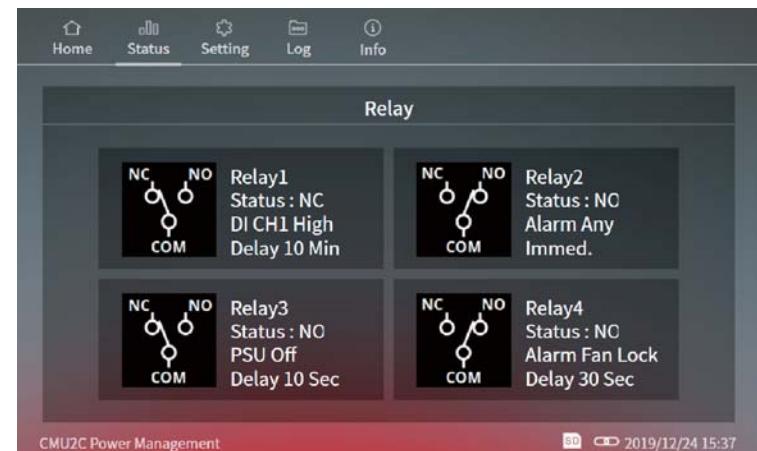
I/O signal page - options

The following functions are available in the I/O signal page:

No.	Name	Description
1	Digital input status	There are 2 conditions, it displays green when logic high whereas it displays gray when logic low. It remains logic high when no signal connected due to hardware design.
2	Digital output status	There are 2 conditions, it displays green when the trigger condition is met whereas it displays gray when the trigger condition is NOT met.

5.1.2.3 Relay

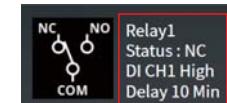
The relay page is used to display output state and setting parameters of the four programmable relays.



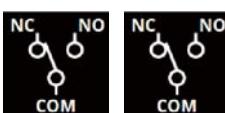
Relay page - options

The following functions are available in the Relay page:
There are up to 285 permutations according to different trigger conditions. Trigger selection is shown as below:

	Trigger	Delay
Alarm	Any, OVP, Short, OTP, AC-Fail, Fan Lock	Immed., 1Sec, 5Sec, 10Sec, 30Sec, 1~10Min
PSU	ON, OFF	
DI CH1 –DI CH5	High, Low	



There are 2 status, if the trigger condition is met, it will display NO (Normal Open), the icon is COM connected to NO; if the trigger condition is not met, it will display NC (Normal Close), the icon is COM connected to NC.



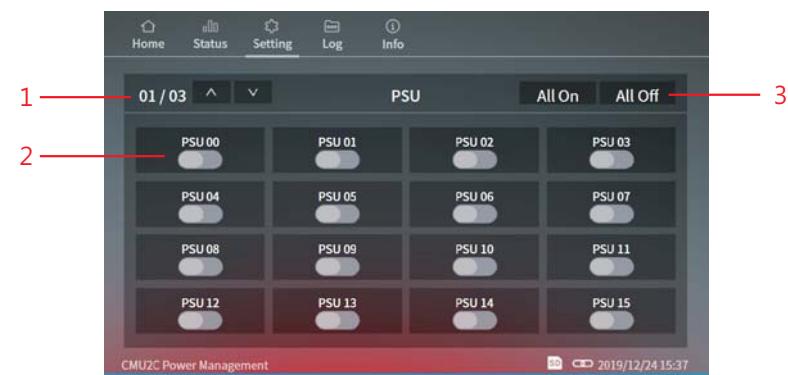
5.1.3 Setting

The Setting page can do settings of PSU on/off, Output adj, I/O signal, Rely and System.

Detailed information about the functions, please refer to following section.

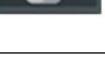
5.1.3.1 PSU on/off

PSU on/off page provides users the ability to turn on/off the PSUs, including all PSUs on/off and single PSU unit on/off.



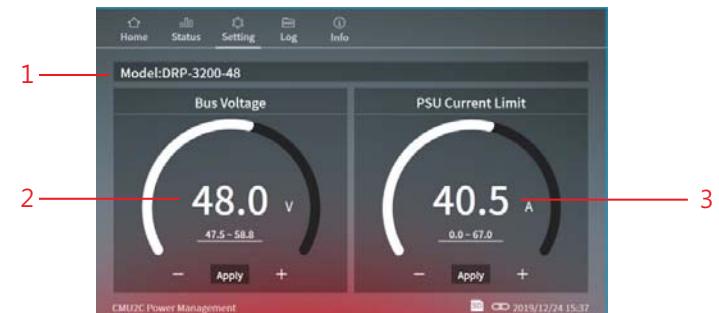
PSU on/off page – options

The following functions are available in PSU on/off page:

No.	Name	Description
1	Page selection	Users can tap  to select a desired page to display. There are three pages in total as below: 01/03: PSU address 0 – 15 02/03: PSU address 16 – 31 03/03: PSU address 32 – 47
2	Single PSU on/off	Tap specific PSUs to control its on/off state. Take PSU00 as an example:  PSU00 ON  PSU00 OFF
3	All PSU on/off	To turn all PSUs on/off at the same time. Note: If PSU is not online, you cannot control it

5.1.3.2 Output adj

The output adj page provides functions to set output voltage and current. It also displays maximum and minimum adjustable values for user convenience.



Output adj page – options

The following functions are available in output adj page:

No.	Name	Description
1	Model	Display model name of the rack power
2	Voltage adjustment	<p>1) Use the slider bar  to adjust the output voltage. Tapping \pm buttons can fine adjust the voltage in 0.1V unit. After choosing a desired voltage value, tap  to write your new voltage setting.</p> <p>2) It will return to the current setting value if no any action is taken.</p> <p>Note: Voltage setting cannot exceed voltage limitation of the rack power. Taking DRP-3200-48 as an example is 24 – 60V</p> 
3	Current adjustment	<p>1) Use the slider bar  to adjust the output current. Tapping \pm buttons can fine adjust the current in 0.1A unit. After choosing a desired current value, tap  to write your new current setting.</p> <p>2) It will return to the current setting value if no any action is taken.</p> <p>Note: Current setting cannot exceed current limitation of the rack power. Taking DRP-3200-48 as an example is 13.5 – 73.5A</p> 

5.1.3.3 I/O signal

I/O signal page is used to set five digital output channels to realize alarm functions you need.

In addition, the channels also can work with digital inputs to do further applications.

Digital Output	Source	Trigger	Active	Delay
Channel 1	Alarm	Any	High	Immed.
Channel 2	PSU	On	Low	10 Min
Channel 3	DI CH4	High	High	30 Sec
Channel 4	Alarm	Fan Lock	High	Immed.
Channel 5	PSU	Off	Low	1 Min

Each digital output channel can flexibly set a source, a trigger definition, an action and a delay. After tapping an output channel, triggering options will appear. Please refer to the table below for detailed triggering functions.

Source	Trigger	Active	Delay
Alarm	Any	High	Immed.
Alarm	Any	High	Immed.
Alarm	Any	High	Immed.

OK

Source	Trigger	Active	Delay
Alarm (default)	Any (default), OVP, OLP, Short, OTP, AC-Fail, Fan Lock	High (default), Low	Immed. (default) - 1Sec - 5Sec - 10Sec - 30Sec - 1~10Min
PSU	On, Off		
DI CH1 - DI CH5	High, Low		

Source:

Alarm, PSU or digital input channels are available to be selected. After selection, the corresponding trigger conditions will appear. For instance: trigger definitions will move to relevant protection options for the rack powers when alarm is selected.

Trigger definitions:

- (1) Alarm: trigger the output channel when one of the supplies meets alarm conditions, such as OVP, OLP, short circuit or any of the protections (default).
- (2) PSU:
 - I. PSU ON: trigger the output channel if one of the supplies is running
 - II. PSU OFF: trigger the output channel if one of the supplies is remote off or in alarm conditions.
 - III. PSU OFF: trigger the output channel if all of the supplies are disconnect.
- (3) DI CH1 - CH5 (digital input channels): trigger the output channel according to condition of the selected input channel.

Active:

Determine the logic level when outputting. High (high level): 5V; Low (low level): 0V.

Delay:

Determine how long to delay before outputting when the trigger condition is met. There are imminently (default), 1Sec ... 10Min available.

5.1.3.4 Relay

Relay page is used to set four programmable relays to realize alarm functions you need.

In addition, the relays also can work with digital inputs to do further applications.

Home	Status	Setting	Log	Info
Source Trigger Delay				
Relay1	Alarm	Any	Immed.	
Relay2	PSU	On	10 Min	
Relay3	DI CH4	High	30 Sec	
Relay4	Alarm	Fan Lock	Immed.	

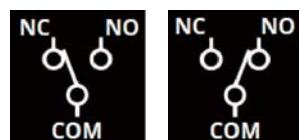
CMU2C Power Management 2019/12/24 15:37

Each relay can flexibly set a source, a trigger definition and a delay. After tapping a relay, triggering options will appear. Please refer to the table below for detailed triggering functions.



Source	Trigger	Delay
Alarm (default)	Any (default), OVP, OLP, Short, OTP, AC-Fail, Fan Lock	Immed. (default) - 1Sec, 5Sec, 10Sec, 30Sec, 1~10Min
PSU	On, Off	
DI CH1 - DI CH5	High, Low	

The COMMON is connected to the NO (Normally Open) when the trigger condition is met (shown as the right picture); The COMMON is connected to the NC (Normally Closed) when the trigger condition is NOT met (shown as the left picture).



Source:

Alarm, PSU or digital input channels are available to be selected. After selection, the corresponding trigger conditions will appear. For instance: trigger definitions will move to relevant protection options for the rack powers when alarm is selected.

Trigger definition:

(1) Alarm: trigger the output channel when one of the supplies meets alarm conditions, such as OVP, OLP, short circuit or any of the protections (default).

(2) PSU:

- I. PSU ON: trigger the relay if one of the supplies is running
- II. PSU OFF: trigger the relay if one of the supplies is remote off or in alarm conditions.
- III. PSU OFF: trigger the relay if all of the supplies are disconnect.
- (3) DI CH1 - CH5 (digital input channels): trigger the relay according to condition of the selected input channel.

Delay:

Determine how long to delay before triggering the relay when the trigger condition is met. There are imminently (default), 1Sec ... 10Min available.

5.1.3.5 System

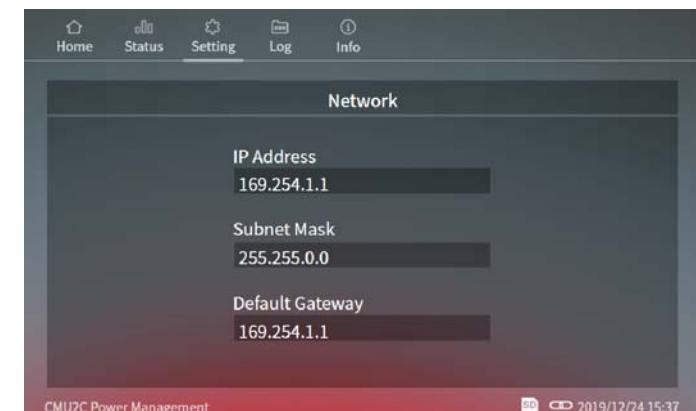
System page provides settings for Network, Notice, Security, log Config, Misc and Utility.

Password is required to enter the menu, the default password is "CMU2C" .

5.1.3.5.1 Network

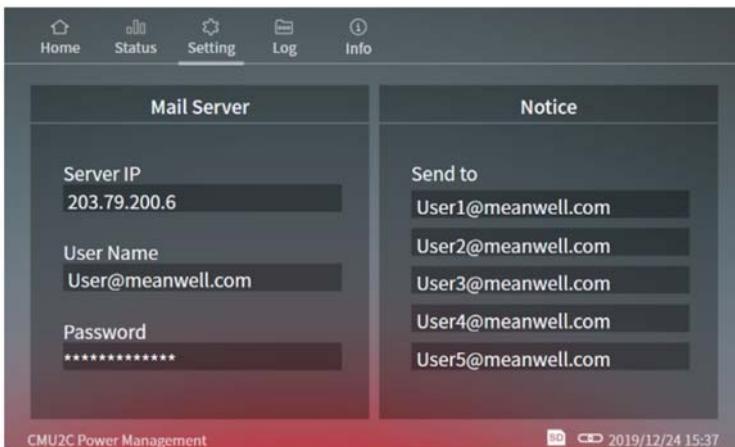
You can set the IP address on this page. The new settings will take effect after power recycling.

Address	Default
IP address	169.254.1.1
Subnet mask	255.255.0.0
Default gateway	169.254.1.1



5.1.3.5.2 Notice

The CMU2 can send emails to notify users when the system power is abnormal so that the issue can be investigated.
Server IP: Set the IP address of SMTP server
User Name: Edit your user name (max 25 words)
Password: Edit your password for the SMTP (max 25 words)
Send to: Up to five emails can be set (max 25 words each)



Note:

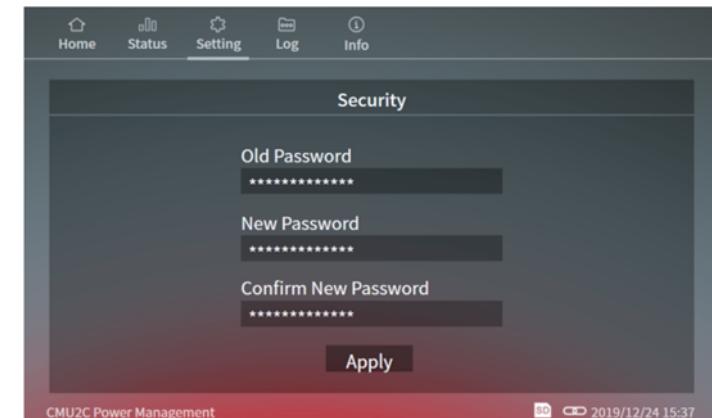
- (1) Up to 5 emails can be sent at a time, the next email will be sent after one has been sent.
- (2) The maximum content of a single mail is 3000 bytes.
- (3) Retransmission mechanism for transmission failure is 3 times, with 10min time interval.
- (4) Email sends when there is any new event log that occurs.

Email sample:



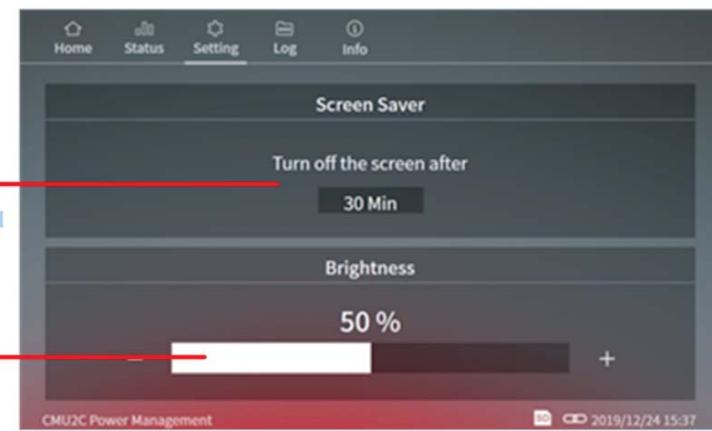
5.1.3.5.3 Security

You can change your password in this page, with max 15 words.
Please input the old and new passwords and then tap Apply to change the password.



5.1.3.5.4 Screen

This page provides functions for setting turn off time for the screen and brightness.



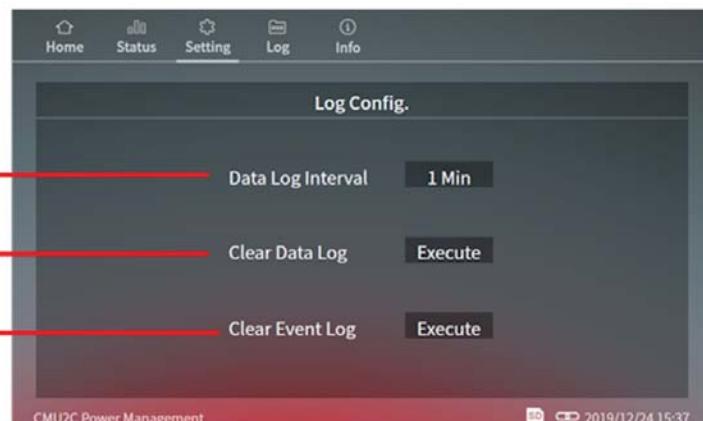
Screen page – options

The following functions are available in screen page:

No.	Name	Description
1	Screen saver	Tap the box to select a certain time to turn off the screen. There are 8 options: 1Min, 5Min, 10Min, 20Min, 30Min, 1Hr, 2Hr and Never. (Default: Never)
2	Brightness	There are 10 options for brightness setting, 10% - 100%. (Default: 50%)

5.1.3.5.5 Log Config.

Log config. page provides relevant settings for data log and event log, including data log interval, clear data log and clear event log.



1

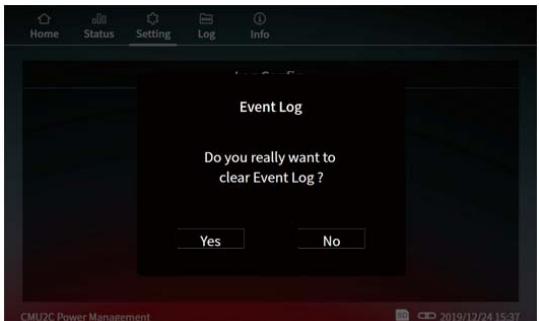
2

3

Log Config. page – options

The following functions are available in Log Config. page:

No.	Name	Description
1	Data log interval	Tap the box to select a certain interval to record operation data of the rack powers. There are 9 options: 1Min, 2Min, 5 Min, 10 Min, 20 Min, 30 Min, 40 Min, 50Min, 1Hr. (Default: 1Min)
2	Clear Data Log	This function is used to delete the saved data log permanently. Tap "Execute" then "Yes" to remove the data.

No.	Name	Description
3	Clear Event Log	<p>This function is used to delete the saved event log permanently.</p> <p>Tap “Execute” then “Yes” to remove the data.</p> 

5.1.3.5.6 Misc.

This page provides settings for Date & Time, language selection, buzzer enabling and SD card formatting.



Misc. page – options

The following functions are available in Log Misc. page:

No.	Name	Description
1	 	<p>Tapping the boxes can change the date and time.</p> <p>Date setting:</p> <p>Time setting:</p> <p>Note: Settings for Date & Time becomes invalid when auto-synchronization with internet time is enabled.</p>

No.	Name	Description
2	Synchronization with internet time	<p>1)Choose whether to synchronize the clock with an internet time.</p>  <p>2)There are 25 options for time zone selection, UTC-12 - UTC+12. (Default: UTC+08)</p> <p>3)Up to 3 internet time servers available to be set, using IP addresses. (Default: Time Server 1 : 118.163.81.61<TW> Time Server 2 : 114.118.7.163<CN> Time Server 3 : 82.161.251.125<EU>)</p>
3	Language selection	There are English, Traditional Chinese and Simplified Chinese selectable.
4	Buzzer enabling	When mute is disabled, a blue switch is displayed; when mute is enabled, a gray switch is displayed (Default: disabled)

Note: The CMU2 utilises a super capacitor as an energy source to drive the internal clock while power off. The date & time will return to default setting when the capacitor runs flat. We suggest synchronising the clock with an internet time to calibrate the time automatically, if not possible turn on the CMU2 to recharge the capacitor at least once every three days.

No.	Name	Description
5	SD card formatting	<p>It displays the SD card capacity and usage information.</p> <p>Tap "Execute" then "Yes" to format the SD card.</p> 

5.1.3.5.7 Utility

This page displays firmware versions of the system host, communication and extension cards and provides the factory resetting function.



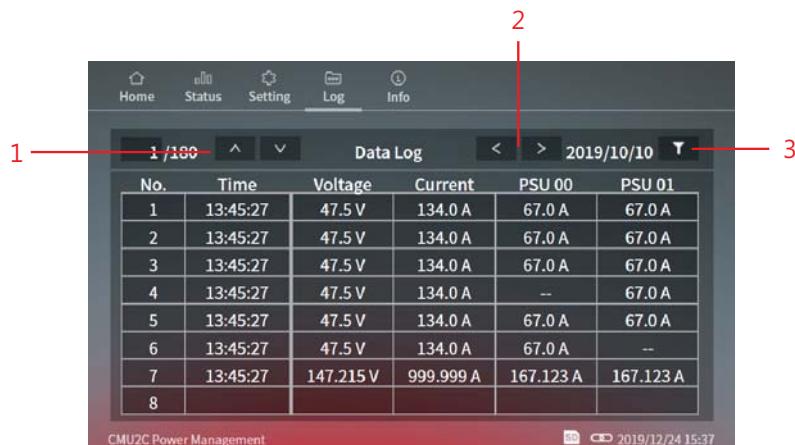
5.1.4 Log

The CMU2 provides data log and event log for users to view operation status and diagnose problems that might arise.

Note: Please insert a SD card to enable data log and event log.

5.1.4.1 Data log

Data Log stores the measurement data at selected intervals and provides a full history database for users to extract and load. One page can display 8 data and there are 180 pages in total in the system. A maximum of 1440 data can be recorded on a day.



Data log page – options

The following functions are available in Data Log page:

No.	Name	Description
1	Page selection	<p>1) 「^」 「v」 can be used to select pages, single tap to display the next or previous pages. (Tap 「^」 on the first page will jump to page 180 and vice versa)</p> <p>2) To jump to a certain page, you can tap 1 / 180 to use the keyboard.</p>

No.	Name	Description
2	Data selection	「<」 「>」 can be used to select operation information that wants to view, including bus voltage, current in total or in single.
3	Data in certain time	To jump to a certain date and time, you can tap the icon to use the scroll wheel.

5.1.4.2 Event log

Event Log stores information about all abnormal events that occur in the system. One page can display 8 data and there are 1000 pages in total in the system.



Event Log page – options

The following functions are available in Event Log page:

No.	Name	Description
1	Page Selection	<p>1) 「^」 「v」 can be used to select pages, single tap to display the next or previous pages. (Tap 「^」 on the first page will jump to page 1000 and vice versa)</p> <p>2) To jump to a certain page, you can tap  to use the keyboard.</p> 
2	Data in Certain Time	<p>To jump to a certain date and time, you can tap the icon to use the scroll wheel.</p> 

5.2 Web-based User Interface

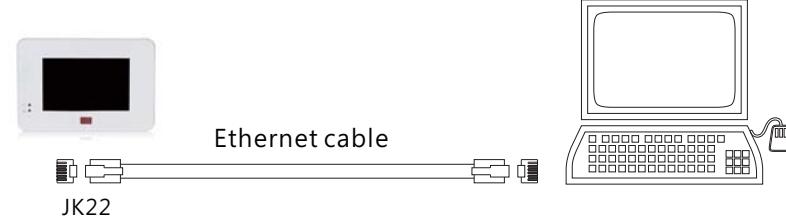
5.2.1 System requirements

◎System requirements

- 1.Windows 10
- 2.AMD or Intel Pentium 133MHz or better based computer
- 3.10/100 BASE-T Ethernet port
- 4.Google Chrome, Firefox or Microsoft Edge

5.2.2 Connection and IP setting

◎Connection diagram



Before accessing to the built-in web page, please make sure that the CMU2 and the PC are set in the same domain. Please refer to IP setting for detail.

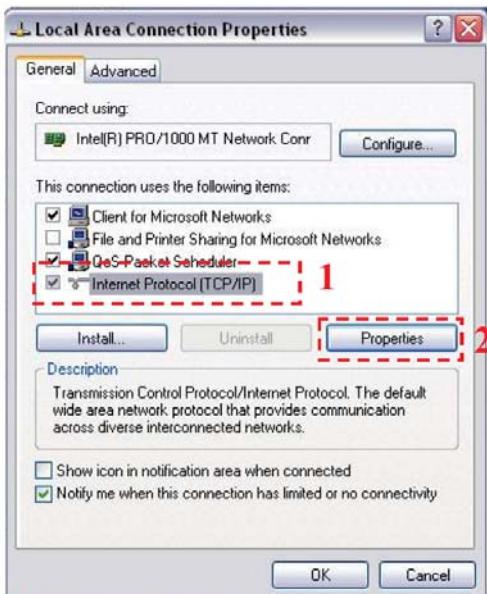
※ Default IP address setting

Address	Default
IP address	169.254.1.1
Subnet mask	255.255.0.0
Default gateway	169.254.1.1

◎IP setting

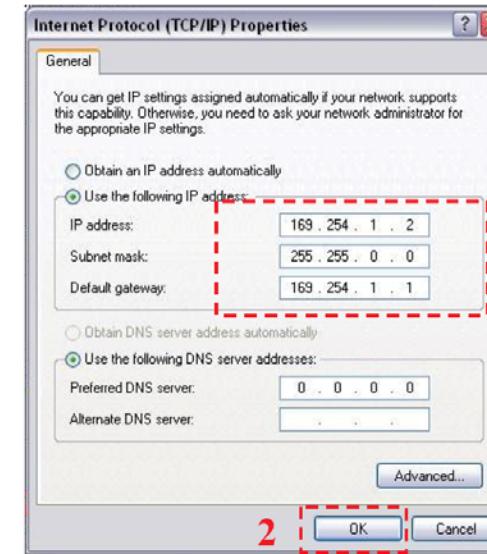
You can change IP address setting of the CMU2 to let your local network to identify the device or you also can change IP address setting of your PC to access to the CMU2. Please follow the instruction below to set IP address of your PC.

- ① Only connect the PC to the CMU2 and make sure there is no other devices connected to the PC.
- ② Click the "Network and Internet Connections" option. Then click the "Local Area Connection". Select "Internet Protocol (TCP/IP)", and then click the "Properties" button. If there are "Internet Protocol Version 4 (TCP/IPv4)" and "Internet Protocol Version 6(TCP/IPv6)" shown on the table, choose "Internet Protocol Version 4 (TCP/IPv4)".

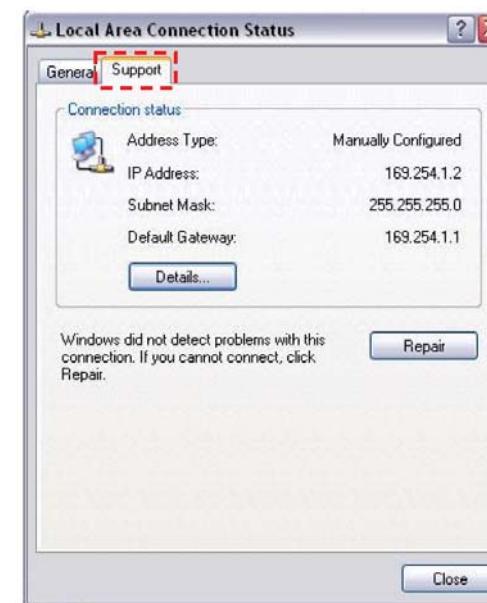


- ③ Click the "Use the following IP address" and then type addresses in "IP address" , "Subnet mask" and "Default gateway" boxes, after that click the "OK" button. The IP address you set should be in the same domain as CMU2 but not the identical IP. Here is an example below for your reference.

Address	Default (for ex.)
IP address	169.254.1.2
Subnet mask	255.255.0.0
Default gateway	169.254.1.1



- ④ Check if it is working correctly by clicking the "Support" . If the addresses presented as you typed, it is successfully done. Then you can access the built-in web page.

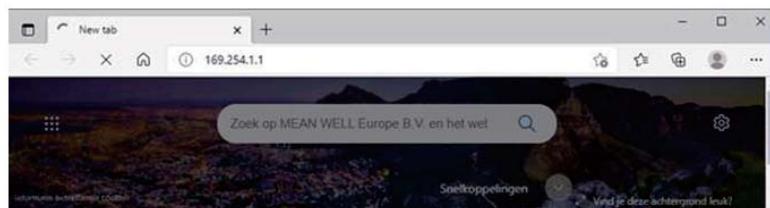


If the table shows below, it means that your RJ-45 cable is not connected properly or the IP address you set is incorrect.



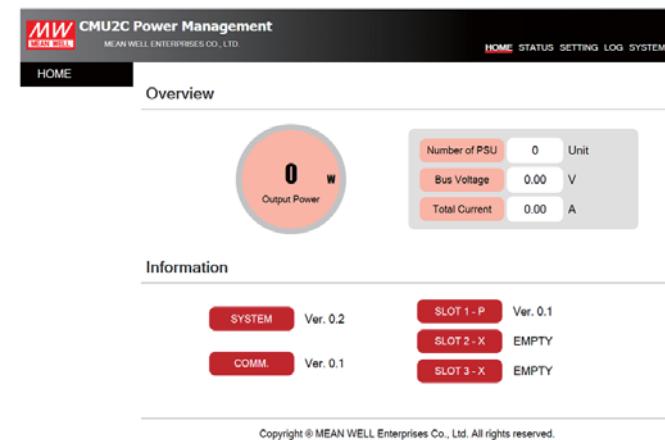
5.2.3 How to Open the Web Page

Connect your PC to the CMU2, then open a blank page and type the IP address of the CMU2 in the address bar. If you are not sure the IP address of the CMU2, refer to the touch panel interface. The route is “Setting” → “System” → “Network” .(Default IP: 169.254.1.1)



5.2.4 HOME

The HOME page of the built-in web displays output power, number of PSU connected, bus voltage, total current, information on firmware versions. Users can enter other pages by clicking the menu bar, located in the top-right corner.



5.2.5 STATUS

STATUS page displays status of PSUs, digital I/O and relays.

5.2.5.1 PSU Status

PSU Status page displays information of address number, power wattage, current, temperature, model name, serial number, firmware version, alarm and online status.

The screenshot shows the 'PSU Status' page. At the top, it says 'MEAN WELL ENTERPRISES CO., LTD.' and has links for 'HOME', 'STATUS', 'SETTING', and 'LOG SYSTEM'. The main area is titled 'PSU Status'. On the left, there is a navigation menu with 'STATUS' selected, and 'PSU Status' and 'Digital / Relay' are also listed. The main table has columns: No, Power, Current, Temp., Model, S/N, Ver, Alarm, and Status. The data is as follows:

No	Power	Current	Temp.	Model	S/N	Ver	Alarm	Status
00	0 W	0.00 A	29.5 °C	DRP-3200-48	200715000004	R01.3	--	Running
01	239 W	4.00 A	30.5 °C	DRP-3200-48	200417000004	R01.3	--	Running
02	--	--	--	--	--	--	--	Disconnect
03	--	--	--	--	--	--	--	Disconnect
04	--	--	--	--	--	--	--	Disconnect
05	--	--	--	--	--	--	--	Disconnect
06	--	--	--	--	--	--	--	Disconnect
07	--	--	--	--	--	--	--	Disconnect
08	--	--	--	--	--	--	--	Disconnect

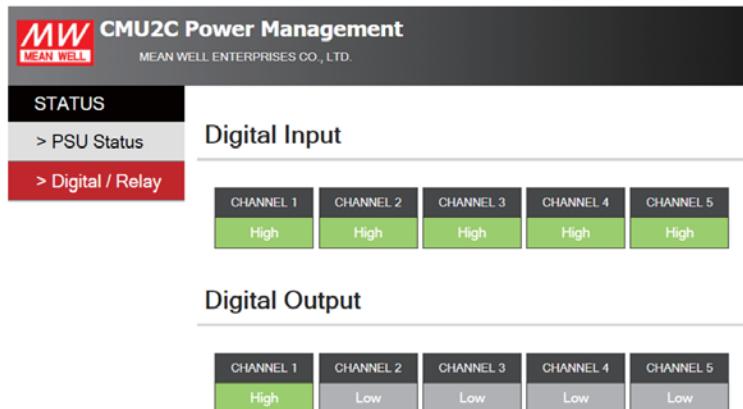
5.2.5.2 Digital/Relay

This page displays status of the digital input/ output and relays.

• Digital Input/ Output

Digital Input: There are 2 conditions, it displays green when logic high whereas it displays gray when logic low. It remains logic high when no signal connected due to hardware design.

Digital Output: There are 2 conditions, it displays green when the trigger condition is met whereas it displays gray when the trigger condition is not met.



• Relay

Relay displays output state and setting parameters of the four programmable relays, including relay status, source, trigger and delay. If the trigger condition is met, it will display NO (Normal Open) in green; if the trigger condition is not met, it will display NC (Normal Close) in gray.

STATUS	Relay1		
> PSU Status		> Digital / Relay	
STATUS	NO	SOURCE	DI CH1
TRIGGER	High	DELAY	Immed.
Relay2			
STATUS	NC	SOURCE	DI CH2
TRIGGER	Low	DELAY	Immed.
Relay3			
STATUS	NC	SOURCE	DI CH3
TRIGGER	Low	DELAY	Immed.
Relay4			
STATUS	NC	SOURCE	Alarm
TRIGGER	OLP	DELAY	Immed.

There are up to 285 permutations according to different trigger conditions. Trigger selection is shown as below:

STATUS	SOURCE	TRIGGER	DELAY
NO(normal open) / NC(normal close)	Alarm	Any / OVP / OLP / Short / OTP / AC-Fail / Fan Lock	Immed.(default) / 1Sec / 5Sec / 10Sec / 30Sec / 1~10Min
		PSU	
		DI CH1-5	

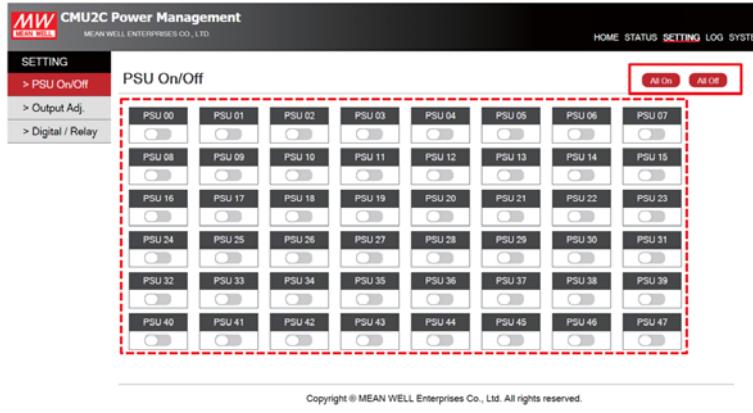
5.2.6 SETTING

SETTING page provides setting of PSU on/off, output adjustment and digital I/O channels and relays.

Detailed information is described in the following sections.

5.2.6.1 PSU on/off

Users can turn all PSUs with 0 – 47 address on/off in the page. It is able to turn single or the whole PSUs on or off. Click **All on** or **All off** on the top right to turn on/off all online PSUs or to turn a certain PSU on/off in the red dotted rectangle.



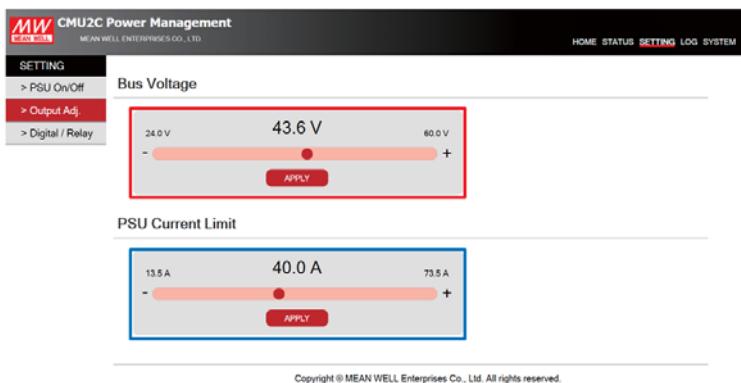
Note: You cannot turn on/off PSUs not on line.

5.2.6.2 Output adj.

Output adj. page can be used to set output voltage and current and displays their adjustable range.

Click the red mark above to adjust output voltage. Click APPLY to set a desired value after adjustment.

Click the blue mark below to adjust output current. Click APPLY to set a desired value after adjustment.

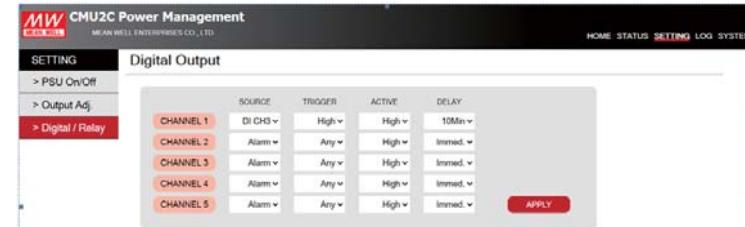


5.2.6.3 Digital/Relay

This page is used to set functions of the digital I/O channels and relays.

• Digital Output

Each digital output channel can flexibly set a source, a trigger definition, an action and a delay.



After setting, click **APPLY** to write your new parameters. Please refer to the table below for detailed triggering functions.

SOURCE	TRIGGER	ACTIVE	DELAY
Alarm (default)	Any (default), OVP, OLP, Short, OTP, AC-Fail, Fan Lock	High (default), Low	Immed.(default) · 1Sec · 5Sec · 10Sec · 30Sec · 1~10Min
PSU	On, Off		
DI CH1 - DI CH5	High, Low		

Source:

Alarm, PSU or digital input channels are available to be selected. After selection, the corresponding trigger conditions will appear. For instance: trigger definitions will move to relevant protection options for the rack powers when alarm is selected.

Trigger definitions:

- (1)Alarm: Trigger the output channel when one of the supplies meets alarm conditions, such as OVP, OLP, short circuit or any of the protections (default).
- (2)PSU: I. PSU ON: Trigger the output channel if one of the supplies is running
II. PSU OFF: Trigger the output channel if one of the supplies is remote off or in alarm conditions.
III. PSU OFF: Trigger the output channel if all of the supplies are disconnect.
- (3)DI CH1 – CH5(digital input channels): Trigger the output channel according to condition of the selected input channel.

Active:

Determine the logic level when outputting. High (high level): 5V; Low (low level): 0V.

Delay:

Determine how long to delay before outputting when the trigger condition is met. There are imminently (default), 1Sec ... 10Min available.

- **Relay**

Relay is used to set four programmable relays to realize alarm functions you need. In addition, the relays also can work with digital inputs to do further applications.

Relay

	SOURCE	TRIGGER	DELAY
RELAY 1	DI CH1	High	Immed.
RELAY 2	DI CH2	Low	Immed.
RELAY 3	DI CH3	Low	Immed.
RELAY 4	Alarm	OLP	Immed.

APPLY

Each relay can flexibly set a source, a trigger definition and a delay. After setting, click **APPLY** to write your new parameters. Please refer to the table below for detailed triggering functions.

SOURCE	TRIGGER	DELAY
Alarm (default)	Any (default), OVP, OLP, Short, OTP, AC-Fail, Fan Lock	Immed.(default)、1Sec、5Sec、10Sec、30Sec、1~10Min
PSU	On, Off	
DI CH1 - DI CH5	High, Low	

Source:

Alarm, PSU or digital input channels are available to be selected. After selection, the corresponding trigger conditions will appear. For instance: trigger definitions will move to relevant protection options for the rack powers when alarm is selected.

Trigger definition:

- (1)Alarm: Trigger the output channel when one of the supplies meets alarm conditions, such as OVP, OLP, short circuit or any of the protections (default).
- (2)PSU: I. PSU ON: Trigger the relay if one of the supplies is running
II. PSU OFF: Trigger the relay if one of the supplies is remote off or in alarm conditions.
III. PSU OFF: Trigger the relay if all of the supplies are disconnect.
- (3)DI CH1 – CH5(digital input channels): Trigger the relay according to condition of the selected input channel.

Delay:

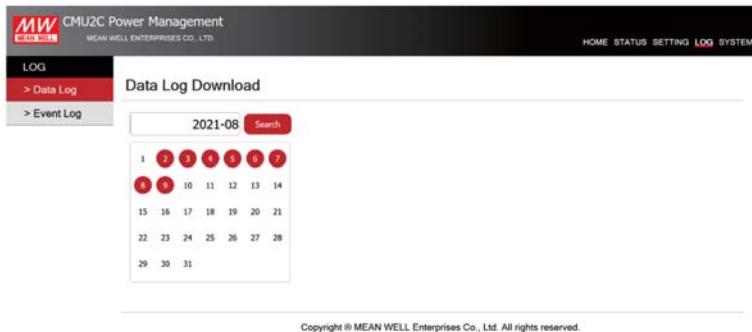
Determine how long to delay before triggering the relay when the trigger condition is met. There are imminently (default), 1Sec ... 10Min available.

5.2.7 LOG

LOG page provides data log and event log for users to view operation status and diagnose problems that might arise. Note: Please insert a SD card to enable data log and event log.

5.2.7.1 Data Log

Data Log stores the measurement data at selected intervals and provides a full history database for users to extract and download. Date displays with a red dot if there is recorded data. For example: **14**; If there is no data recorded, then the date will be shown without red dot. The data is readable in .CSV format, click the date you want to view to download it.



Note: FireFox does not support a date picker function, users has to enter date manually.

Data Log information

1	Time	Bus Volta	Total Curr	PSU 0	PSU 1	PSU 2	PSU 3	PSU 4	PSU 5	PSU 6	PSU 7	PSU 8	PSU 9	PSU 10	F
5	2021/8/3 08:32:48.26V	464.00A	141.25A	0.00A	0										
6	2021/8/3 08:33:00V	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0
7	2021/8/3 08:34:00V	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0
8	2021/8/3 08:35:00V	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0
9	2021/8/3 08:36:48.64V	389.50A	9.75A	10.00A	9.75A	9.75A	9.75A	9.75A	9.75A	9.50A	9.75A	9.75A	9.75A	9.75A	9
10	2021/8/3 08:37:48.31V	400.00A	70.50A	70.50A	70.75A	70.75A	0.00A	0.00A	0.00A	0.00A	9.50A	0.00A	0.00A	0.00A	7
11	2021/8/3 08:38:00V	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0
12	2021/8/3 08:39:00V	96.75A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0
13	2021/8/3 08:40:48.64V	75.75A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0
14	2021/8/3 08:41:00V	155.75A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0
15	2021/8/3 08:42:00V	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0
16	2021/8/3 08:43:00V	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0
17	2021/8/3 08:44:00V	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	9
18	2021/8/3 08:45:48.48V	126.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	9.75A	9.75A	9.75A	9.75A	9
19	2021/8/3 08:46:48.64V	390.50A	10.00A	10.00A	9.75A	10.00A	9.75A	9.50A	9.75A	9.75A	9.75A	9.75A	9.75A	9.75A	9
20	2021/8/3 08:47:00V	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0
21	2021/8/3 08:48:00V	82.75A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	0.00A	13.25A	15.00A	1	
22	2021/8/3 08:49:48.83V	49.50A	10.00A	9.75A	9.75A	0.00A	0								
23	2021/8/3 08:50:48.60V	464.00A	24.75A	24.75A	24.50A	24.75A	25.00A	24.75A	24.75A	25.00A	24.75A	24.75A	24.75A	24.75A	2

5.2.7.2 Event Log

Event Log stores information about all abnormal events that occur in the system. Month displays with a red dot if there is recorded data. For example: ⑧ ; If there is no data recorded, then the month will be shown without red dot. The data is readable in .CSV format, click the month you want to view to download it.

1	Device	Event	Date & Time
2	PSU_15	AC Fail	2021/8/2 13:48
3	PSU_25	AC Fail	2021/8/2 13:48
4	PSU_32	AC Fail	2021/8/2 13:48
5	PSU_15	AC Fail Remove	2021/8/2 13:48
6	PSU_25	AC Fail Remove	2021/8/2 13:48
7	PSU_32	AC Fail Remove	2021/8/2 13:48
8	PSU_00	AC Fail	2021/8/2 13:49
9	PSU_32	AC Fail	2021/8/2 13:49
10	PSU_00	AC Fail Remove	2021/8/2 13:50
11	PSU_32	AC Fail Remove	2021/8/2 13:50
12	PSU_00	AC Fail	2021/8/2 13:50
13	PSU_24	AC Fail	2021/8/2 13:50
14	PSU_32	AC Fail	2021/8/2 13:50
15	PSU_24	AC Fail Remove	2021/8/2 13:50
16	PSU_00	AC Fail Remove	2021/8/2 13:50
17	PSU_32	AC Fail Remove	2021/8/2 13:50
18	PSU_15	AC Fail	2021/8/2 15:19

5.2.8 SYSTEM

SYSTEM page provides setting of Network, Notice, Security and Data/Event Log.

5.2.8.1 Network

Network page provides IP address setting. The new settings will take effect after power recycling.

IP address	Default
IP address	169.254.1.1
Subnet mask	255.255.0.0
Default gateway	169.254.1.1

5.2.8.2 Notice

The CMU2 can send emails to notify users when the system power is abnormal so that the issue can be investigated.

Mail Server

Server IP: Set the IP address of SMTP server

User Name: Edit your user name (max 25 words)

Password: Edit your password for the SMTP (max 25 words)

Notice

Send to: Up to five emails can be set (max 25 words each)

Note:

- (1) Up to 5 emails can be sent at a time, the next email will be sent after one has been sent.
- (2) The maximum content of a single mail is 3000 bytes.
- (3) Retransmission mechanism for transmission failure is 3 times, with 10min time interval.
- (4) Email sends when there is any new event log that occurs.

Email sample:

Sent: Tuesday, August 03, 2021 18:07 PM
 From: XXXX@meanwell.com
 Subject: CMU2C Event Log(2021/08/03 18:07)
 To: XXXX

PSU_31,AC Fail,2021/08/03 18:06:59,
 PSU_47,AC Fail,2021/08/03 18:07:01,

Sender

Subject

Recipient

Abnormal conditions

5.2.8.3 Security

You can change your password in this page, with max 15 words. Please input the old and new passwords and then tap **APPLY** to change the password.

The default password: CMU2C.

5.2.8.4 Data/Event Log

This page provides relevant settings for data log and event log, including data log interval, clear data log and clear event log.

- **Data Log**

Click the box to select a certain interval to record operation data of the rack powers.

There are 9 options: 1Min, 2Min, 5 Min, 10 Min, 20 Min, 30 Min, 40 Min, 50Min, 1Hr. (Default: 1Min)

Clicking **Clera Data Log** can remove data log recorded.



- **Event Log**

Clicking **Clera Data Log** can remove event log recorded.

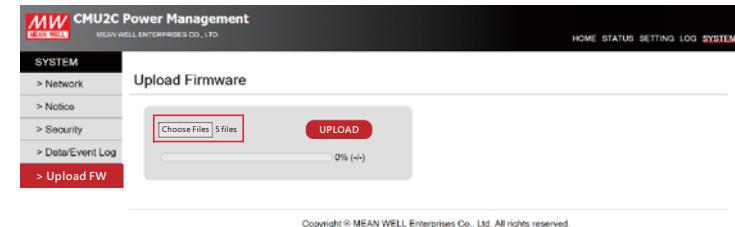


6. Maintenance

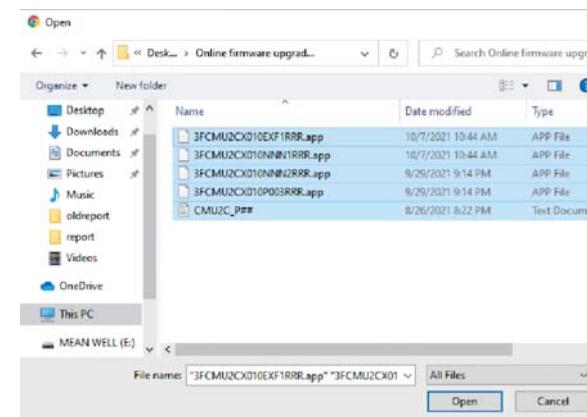
6.1 Firmware update instruction

Firmware updates are infrequent but sometimes may be necessary for older devices due to product compatibility. Please contact our local distributors you feel the need. You can perform a firmware update by following the instruction below.

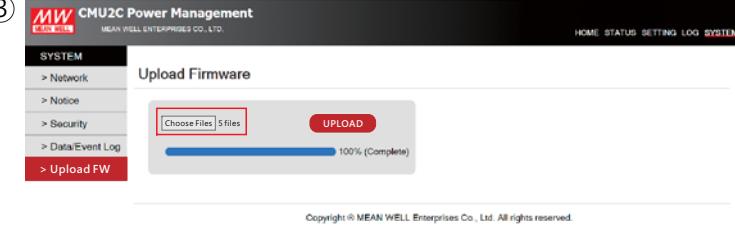
- ① Click the red mark to add latest firmware files.



- ② After selecting the correct firmware files, click UPLOAD button to upload firmware to the latest version.



- ③



7.Warranty

This product provides five years warranty under normal usage. Do not replace parts or any form of modification to the product in order to keep the warranty effectively.

※ MEAN WELL possesses the right to adjust the content of this manual.

Please refer to the latest version of our manual on our website.

<https://www.meanwell.com>



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