



**User Manual: PD-BTPMC102M-GE
Industrial Media converter lite managed with PoE af/at/bt**

Version 3.2021

Introduction

The Lite Managed Industrial GbE Fiber-to-Ethernet 802.3bt PoE media converter PD-BTPMC102M-GE is equipped with 2-port 10/100/1000 Base-TX IEEE 802.3bt PoE standard to transmit data and power between 1000 Base-FX Fiber and 10/100/1000BASE-T(X) Ethernet interface.

The PD-BTPMC102M-GE delivers up to 120 watts of power output to PDs. With ultra-compact hardened design and dual DC power inputs, the PD-BTPMC102M-GE offer power protection for redundancy and operate in extremely harsh conditions.

Featuring an extended operating temperature range of -40 to 75C, the PD-BTPMC102M-GE come with efficient web-based management interface to help quickly evaluate the PoE status and the power usage in hazardous environments as well as to flexibly configure the PoE output budget at remote site. The PD-BTPMC102M-GE also provides an optional entry-level central network management software (ISMS One), which includes dashboards, configuration settings, and MQTT publish, allowing the administrator to manage centrally for easily deploying, controlling and monitoring.

Supporting Link Fault Pass-Through (LFPT) function via DIP switch setting, the PD-BTPMC102M-GE enables the uplink device to get the failed link information if the downlink device fails. Built-in relay output warning, the PD-BTPMC102M-GE prevents damage and loss from power failure and port link down. The Lite Managed Industrial GbE Fiber-to-Ethernet 802.3bt PoE media converter PD-BTPMC102M-GE enable reliable high data transmission speed and stable long distance network communication in a variety of industrial environments.

Features

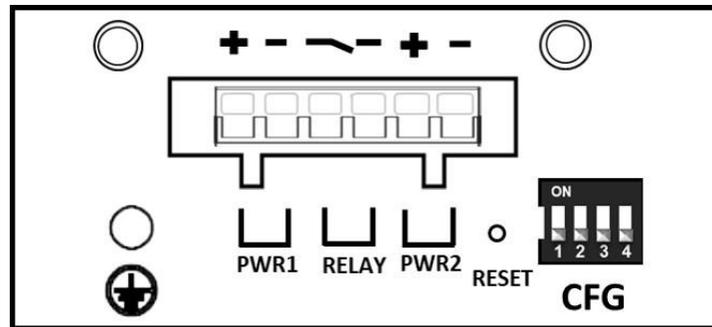
- 2-Port 10/100/1000 Base-TX RJ45 IEEE 802.3bt
- Deliver up to 90W/120W of Power Output (Managed Power).
- Terminal block and DC Jack for redundant DC power inputs.
- -40 to 75°C operating temperature range.
- Support Link Fault Pass-Through (LFPT).
- Built-in relay output warning for power failure and port link down.
- Provide easy-to-use web management functions.

Power connection

The PoE injector provides dual DC power input for redundancy. Each power input voltage depends on the situation of power budget to select the voltage range.

Hardware Description

| Model Name | PD-BTPMC102M-GE |
|---------------|--------------------------------|
| LAN Interface | 2 ports 10/100/1000 Base-TX |
| Power Budget | 120 Watts |
| Voltage Range | 48V(3A) ~ 56V(2.5A) |



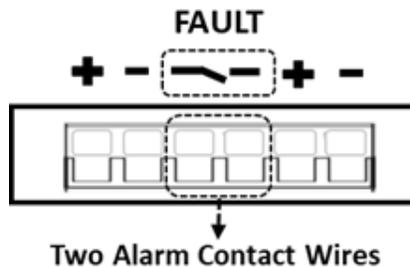
On the top panel the following interfaces are placed:

- Wiring the Alarm Contact.
- Wiring the Power Inputs.
- DIP Switch Setting.
- Reset Configuration.
- Grounding Connection.

Wiring the Alarm Contact

The alarm contact wires are at the two middle contacts of the 6-contact terminal block connector. The two wires attached to the fault contacts form an open circuit when detecting the fault status of the power failure or the Ethernet port link fails.

***Note:** Only use cooper conductors. (12~24 AWG wire gauge, 5.2kgf-cm (MAX) torque.)



Wiring the Power Inputs

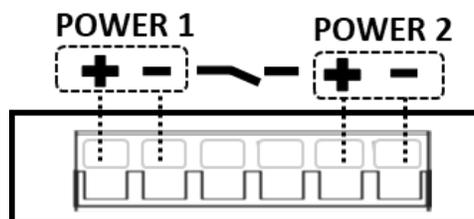
The power contact wires at the two right and two left sides of the 6-contact terminal block connector are used for two DC Inputs.

STEP 1: Insert the positive/negative DC wires into to the V+/V- terminals for power 1 and power 2.

STEP 2: Tighten the wire-clamp screws for avoiding the DC wires loosening by using a small flat-blade screwdriver.

***Note:**

- Please check the DC power source voltage is stable before connecting.
- Only use cooper conductors. (12~20 AWG wire gauge, 5.2kgf-cm (MAX) torque.)



Installation Procedures DIN RAIL

Mounting Step

STEP 1: Hook the unit over the DIN Rail.

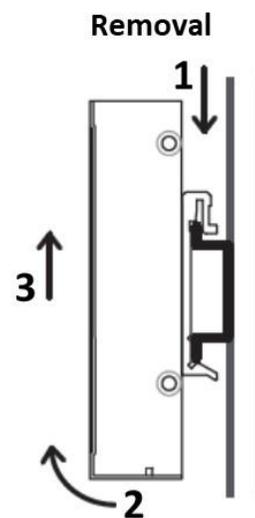
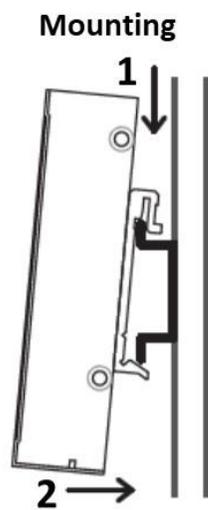
STEP 2: Push the bottom of the unit towards the DIN Rail until it snaps into place.

Removal Step

STEP 1: Push the unit down to free the bottom of the DIN Rail.

STEP 2: Rotate the bottom of the unit away from the DIN Rail.

STEP 3: Unhook top of unit from DIN Rail.



LED Definition

The function of each LED indicator on the front panel is described in the table below.

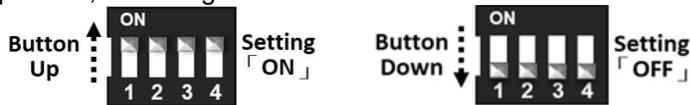
| LED | Color | State | Description |
|------------|--------|----------|---------------------------------------|
| PWR1 | Green | ON | Power is provided from power input 1. |
| PWR2 | Green | ON | Power is provided from power input 2. |
| SYS | Green | ON | System is working. |
| ALARM | Red | ON | Alarm happens. |
| PoE1 | Green | ON | Power output is on port 1. |
| PoE2 | Green | ON | Power output is on port 2. |
| SFP 1000 | Green | ON | SFP is at 1000Mbps. |
| SFP 100 | Green | ON | SFP is at 100Mbps. |
| LAN 1000 | Green | ON | Link speed is at 1000Mbps. |
| | Green | Blinking | Data is transmitting. |
| LAN 10/100 | Yellow | ON | Link speed is at 10/100Mbps. |
| | Yellow | Blinking | Data is transmitting. |

DIP Switch Configuration

There are four settings for DIP switch, including Relay, LFPT, PoE, and SFP. The configuration of DIP switch is described in the table below.



***Note:** There are four white buttons for DIP switch. Moving the white button up position, its setting is "ON". Moving the white button down position, its setting is "OFF".



| DIP | Mode | ON | OFF |
|-----|-------|---|---|
| 1 | Relay | <ul style="list-style-type: none"> The hardware device is set to ON mode, and Alarm Relay Output is enabled. If using web page to control Alarm Output and the mode is set to ON, Alarm Relay Output can be set to enable or disable in web page. If the device power is failure or the Ethernet port link fails, the relay activates alarm and the fault LED lights up. Relay contact is normally close. | Disable Alarm Output. |
| 2 | LFPT | <ul style="list-style-type: none"> The hardware device is set to ON mode, and LFPT function is enabled. If using web page to control LFPT function and the mode is set to ON, LFPT function can be set to enable or disable in web page. The function is to pass link failure alarm to the downstream device when the upstream device has link failure alarm. | Disable LFPT (Link Fault Pass-through). |
| 3 | PoE | <ul style="list-style-type: none"> The hardware device is set to ON mode, and PoE Output is enabled. If using web page to control PoE Output and the mode is set to ON, PoE output function can be set to enable or disable in web page. | Disable PoE Output. |
| 4 | SFP | <ul style="list-style-type: none"> Use web page to control SFP mode. (Support 1000M/100M only.) | Force SFP port to 1000M. |

Access the Web Configurator

After properly connecting the hardware as previously explained. Launch your web browser and enter <http://192.168.1.1> as URL. The default IP address, username, and password are as follows.

- Default IP Address: 192.168.1.1
- Default Username: admin
- Default Password: 2wsx#EDC

Please fill in the default username **admin** and the default password **2wsx#EDC**, and then click **Login**. For the system security, changing the default password is strongly suggested after configuration. You can go to the **User** setting to reset.

*Note:

- The device only supports one web session.
- The timeout of web session is 15 minutes.

The system information is shown as below. This section includes Hardware MCSV, Software MCSV, Software Version, PSE Software Version, MAC Address, Serial Number, Current Time, and System Up Time.

| | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|---|---------------------------------|--|---------|------------------|---------|------------------|------------------|------|----------------------|-------|-------------|-------------------|---------------|--------------|--------------|----|----------------|---------------------------------|------------|--|-------|----------------|
| Information | <h3>System Information</h3> <table><tr><td colspan="2">System</td></tr><tr><td>HW MCSV</td><td>00CA000001030DB1</td></tr><tr><td>SW MCSV</td><td>00CA000001930EEC</td></tr><tr><td>Software Version</td><td>V010</td></tr><tr><td>PSE Software Version</td><td>3.5.2</td></tr><tr><td>Mac Address</td><td>00:03:79:00:00:01</td></tr><tr><td>Serial Number</td><td>BKLM12345678</td></tr><tr><td>Current Time</td><td>NA</td></tr><tr><td>System Up Time</td><td>5 days 16 hours 24 mins 57 secs</td></tr><tr><td colspan="2">DDM</td></tr><tr><td>Exist</td><td>SFP not exist!</td></tr></table> | System | | HW MCSV | 00CA000001030DB1 | SW MCSV | 00CA000001930EEC | Software Version | V010 | PSE Software Version | 3.5.2 | Mac Address | 00:03:79:00:00:01 | Serial Number | BKLM12345678 | Current Time | NA | System Up Time | 5 days 16 hours 24 mins 57 secs | DDM | | Exist | SFP not exist! |
| System | | | | | | | | | | | | | | | | | | | | | | | |
| HW MCSV | | 00CA000001030DB1 | | | | | | | | | | | | | | | | | | | | | |
| SW MCSV | | 00CA000001930EEC | | | | | | | | | | | | | | | | | | | | | |
| Software Version | | V010 | | | | | | | | | | | | | | | | | | | | | |
| PSE Software Version | | 3.5.2 | | | | | | | | | | | | | | | | | | | | | |
| Mac Address | | 00:03:79:00:00:01 | | | | | | | | | | | | | | | | | | | | | |
| Serial Number | | BKLM12345678 | | | | | | | | | | | | | | | | | | | | | |
| Current Time | | NA | | | | | | | | | | | | | | | | | | | | | |
| System Up Time | | 5 days 16 hours 24 mins 57 secs | | | | | | | | | | | | | | | | | | | | | |
| DDM | | | | | | | | | | | | | | | | | | | | | | | |
| Exist | SFP not exist! | | | | | | | | | | | | | | | | | | | | | | |
| Status | | | | | | | | | | | | | | | | | | | | | | | |
| Config/Interface | | | | | | | | | | | | | | | | | | | | | | | |
| Config/PSE | | | | | | | | | | | | | | | | | | | | | | | |
| User | | | | | | | | | | | | | | | | | | | | | | | |
| Ping | | | | | | | | | | | | | | | | | | | | | | | |
| Load Default | | | | | | | | | | | | | | | | | | | | | | | |
| Reboot | | | | | | | | | | | | | | | | | | | | | | | |
| Logout | | | | | | | | | | | | | | | | | | | | | | | |

The system status is shown as below. This section includes Switch Port Status, PSE Port Status, Alarm Status, and DIP Switch.

- Information
- Status**
- Config/Interface
- Config/PSE
- User
- Ping
- Load Default
- Reboot
- Logout

Interface Status

Refresh Interval: v

Interface Status

| | |
|------------------------------|---------------|
| Lan IP Address | 192.168.1.1 |
| Lan IP Netmask | 255.255.255.0 |
| Lan Gateway Address | 192.168.1.254 |
| DNS Primary Address | 8.8.8.8 |
| DNS Secondary Address | |

Switch Port Status

| Port | Receive Packets | | | Transmit Packets | | | Link Status |
|------|-----------------|-----------|---------|------------------|-----------|---------|-------------|
| | Broadcast | Multicast | Unicast | Broadcast | Multicast | Unicast | |
| Mgmt | 24802 | 0 | 5234 | 20891 | 11605 | 5280 | 100M/Full |
| SFP | 19441 | 7 | 1200 | 26252 | 11598 | 1265 | 1G/Full |
| Lan1 | 1421 | 11315 | 5638 | 44134 | 0 | 5475 | 1G/Full |
| Lan2 | 29 | 283 | 458 | 76 | 12 | 510 | 1G/Full |

PSE Port Status (Temperature=64°C)

| Port | Detect Class | Request Power | Assign Power | Voltage | Current | Power |
|------|--------------|---------------|--------------|---------|---------|-------|
| Lan1 | Class-8 | 90.0W | 90.0W | 54.3V | 1679mA | 90.8W |
| Lan2 | Class-4 | 30.0W | 30.0W | 54.4V | 546mA | 29.4W |

Alarm Status

| | | | | | | | | | |
|--------------------|-------|-----|--------|-----|------|-------|------|--------------|------------|
| Relay Alarm | TEMP | PWR | SFP | L1 | L2 | L1&L2 | | | |
| Alarm Led | FLASH | PHY | SWITCH | PSE | TEMP | PWR1 | PWR2 | SFP Tx Fault | SFP Rx Los |

Dip Switch

| Relay Alarm | LFP Mode | PoE Power | SFP Mode |
|-------------|----------|-----------|----------|
| Disabled | Disabled | Power Off | 1000M |
| By SW | By SW | By SW | By SW |

The device setting is shown as below. This section includes LAN Setting, SNTP Setting, and MISC Setting.

Information

Status

Config/Interface

Config/PSE

User

Ping

Load Default

Reboot

Logout

Device Setting

Lan Setting

| | |
|------------------|---------------|
| Dhcp Client Mode | Disable |
| IP Address | 192.168.1.1 |
| IP Netmask | 255.255.255.0 |
| Gateway Address | 192.168.1.254 |
| DNS Primary | 8.8.8.8 |
| DNS Secondary | |

SNTP Setting

| | |
|-------------|--|
| Time Zone | UTC+00:00 |
| Sntp Server | pool.ntp.org |
| PC Time | 2020/05/06 10:47:17 Manual Sync |

MISC Setting

| Relay Alarm Mode | Enable | | | | | | | | | | | | |
|-------------------------------------|---|--------------------------|--------------------------|--------------------------|--------------------------|----|-------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Relay Alarm Event | <table border="1" style="width: 100%; text-align: center; border-collapse: collapse;"> <thead> <tr style="background-color: #00a651; color: white;"> <th>TEMP</th> <th>PWR</th> <th>SFP</th> <th>L1</th> <th>L2</th> <th>L1&L2</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> | TEMP | PWR | SFP | L1 | L2 | L1&L2 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| TEMP | PWR | SFP | L1 | L2 | L1&L2 | | | | | | | | |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | |
| Link Fault Pass Through | Enable | | | | | | | | | | | | |
| SFP Mode | 1000M | | | | | | | | | | | | |

Apply Cancel

- The SNTP server is necessary when PoE scheduling mode is on.
- The situation of Relay Alarm Event is described in the table below.

| Item | Description |
|------------------|---|
| Temp | <ul style="list-style-type: none"> · When the temperature is over 110 degrees C, the relay alarm event is enabled. · The relay alarm event will return to the normal status when the temperature is small than 100 degrees C. |
| PWR | When the power is failure from Power Input 1 or Power Input 2, the relay alarm event is on. |
| SFP | When SFP link is disconnected, the relay alarm event is on. |
| L1 | When the Ethernet link from port 1 is disconnected, the relay alarm event is on. |
| L2 | When the Ethernet link from port 2 is disconnected, the relay alarm event is on. |
| L1&L2 | When the Ethernet links from both port 1 and port 2 are disconnected, the relay alarm event is on. |
| | |

The PSE configuration is shown as below. This section includes Port Link Speed, and PSE Setting.

Information

Status

Config/Interface

Config/PSE

User

Ping

Load Default

Reboot

Logout

Port Link Speed

| | Lan 1 | Lan 2 |
|------------|---------------------------|---------------------------|
| Link Speed | Auto <input type="text"/> | Auto <input type="text"/> |

PSE Setting

| | Lan 1 | Lan 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|---|--|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|-----|-----|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|---|-----|-----|-----|-----|-----|-----|-----|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|
| Legacy | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power Budget | 90W <input type="text"/> | 30W <input type="text"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Keep Alive Enable | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Keep Alive IP Address | <input type="text"/> | <input type="text"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Scheduling Mode | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Scheduling Match Power Mode | Off <input type="text"/> | Off <input type="text"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Scheduling (Days of Week) | <table border="1" style="font-size: 8px;"> <tr><th>Sun</th><th>Mon</th><th>Tue</th><th>Wed</th><th>Thu</th><th>Fri</th><th>Sat</th></tr> <tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td></tr> </table> | Sun | Mon | Tue | Wed | Thu | Fri | Sat | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <table border="1" style="font-size: 8px;"> <tr><th>Sun</th><th>Mon</th><th>Tue</th><th>Wed</th><th>Thu</th><th>Fri</th><th>Sat</th></tr> <tr><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td></tr> </table> | Sun | Mon | Tue | Wed | Thu | Fri | Sat | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Sun | Mon | Tue | Wed | Thu | Fri | Sat | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | |
| Sun | Mon | Tue | Wed | Thu | Fri | Sat | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | |
| Scheduling Time(From/To) | 08 <input type="text"/> : 30 <input type="text"/> TO 17 <input type="text"/> : 30 <input type="text"/> | 08 <input type="text"/> : 30 <input type="text"/> TO 17 <input type="text"/> : 30 <input type="text"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

For the PSE Setting, there are some principles to describe in the table below.

| Item | Description | | | | | | | | |
|------------------------------|---|-------|------|-----|-----|-----|-----|-----|-----|
| Power Budget | <ul style="list-style-type: none"> The total maximum power budget is 120W. The valid power budget is as follows. <table border="1" style="margin-left: 40px; border-collapse: collapse; font-size: 10px;"> <thead> <tr style="background-color: #d9d9d9;"> <th>LAN 1</th> <th>LAN2</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">30W</td> <td style="text-align: center;">90W</td> </tr> <tr> <td style="text-align: center;">60W</td> <td style="text-align: center;">60W</td> </tr> <tr> <td style="text-align: center;">90W</td> <td style="text-align: center;">30W</td> </tr> </tbody> </table> | LAN 1 | LAN2 | 30W | 90W | 60W | 60W | 90W | 30W |
| LAN 1 | LAN2 | | | | | | | | |
| 30W | 90W | | | | | | | | |
| 60W | 60W | | | | | | | | |
| 90W | 30W | | | | | | | | |
| Keep Alive Enable | <p>When the mode is enabled, the device will have the following status.</p> <ul style="list-style-type: none"> Step1: Power on device and wait 90 seconds. Step2: When Ethernet link is connected, the device will send the ping request every 15 seconds. Step3: When the ping response is received, reset the ping counter and go to Step2. Otherwise, increase the ping counter. Step4: When the ping counter is over three times, cut off the port power. Step5: Wait 30 seconds, then the power is on the port and go to Step1. | | | | | | | | |
| Keep Alive IP Address | Keep Alive IP is the IP of device connected to the port. | | | | | | | | |
| | | | | | | | | | |

This section allows you to set up and change your username and password for different level users. The users setting is shown in the interface as below.

- Information
- Status
- Config/Interface
- Config/PSE
- User**
- Load Default
- Reboot
- Logout

Users

Users Setting

| Index | Username | Password | Retype Password | Level |
|-------|----------|----------|-----------------|---------------|
| 1 | root | • | • | Administrator |
| 2 | test | • | • | Normal |
| 3 | guest | • | • | Guest |

The Ping Setting is shown in the interface as below.

- Information
- Status
- Config/Interface
- Config/PSE
- User
- Ping**
- Load Default
- Reboot
- Logout

Ping Setting

Ping Setting

| | |
|--------|---------------|
| Host | www.yahoo.com |
| Length | 100 (0..1472) |
| Count | 3 (1..10) |

Reload the device default configuration.

After clicking **Load Default** item, it will be shown the interface as below to make sure if you are ready to load or not.

192.168.1.1 says

Are you sure?

Reboot the device.

After clicking **Reboot** item, it will be shown the interface as below to make sure if you are ready to reboot or not.



Precautions and Safety Warnings

- Disconnect all power from devices before attempting installation.
- This device is intended for installation only in restricted access locations as defined where both these conditions apply:
 - Access is through the use of a lock or tool and key, or other means of security, and is controlled by the authority responsible for the location.
 - Access can only be gained by service persons or by users who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken.
- All electric installations must be carried out in accordance with local and national regulations.
- Do not work on the system, connect or disconnect cables during periods of lightning activity.
- The equipment must be connected to earth.
- Shield of RJ45 cables has to be connected to the same earth potential as the equipment.



Hot parts!

- Burned fingers when handling the parts.
- Wait one-half hour after switching off before handling parts.