PMAC770 LAN Module User Manual

V1.0
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1. Product Description

PMAC770 with LAN Module can fulfill following functions:
- Fulfill modbus / TCP function
- Support web page real time data query
- Support web page parameter configuration

1.1 WEB page data

On the WEB page, users can get below real-time data from the PMAC770

<table>
<thead>
<tr>
<th>Items</th>
<th>WEB function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three-phase Phase Voltage</td>
<td>●</td>
</tr>
<tr>
<td>Three-phase Line Voltage</td>
<td>●</td>
</tr>
<tr>
<td>Three-phase Current</td>
<td>●</td>
</tr>
<tr>
<td>Three Phase Active Power &amp; Total Active Power</td>
<td>●</td>
</tr>
<tr>
<td>Three Phase Reactive Power &amp; Total Reactive Power</td>
<td>●</td>
</tr>
<tr>
<td>Three Phase Apparent Power &amp; Total Apparent Power</td>
<td>●</td>
</tr>
<tr>
<td>Total Import / Export Active Energy</td>
<td>●</td>
</tr>
<tr>
<td>Total Import / Export Reactive Energy</td>
<td>●</td>
</tr>
<tr>
<td>Frequency</td>
<td>●</td>
</tr>
<tr>
<td>DI</td>
<td>11</td>
</tr>
<tr>
<td>DO</td>
<td>2</td>
</tr>
<tr>
<td>AI</td>
<td>2</td>
</tr>
<tr>
<td>Parameter Configuration</td>
<td>●</td>
</tr>
<tr>
<td>System Information</td>
<td></td>
</tr>
</tbody>
</table>

Please refer to following pages

1.2 Functions

- Transmission conversion function, support modbus RTU to modbus TCP
- Support for inter-network search device
- WDT function
- Support web page configuration
- Support web page real time data query
- Good electromagnetic compatibility
- 10/100BaseT (X) auto detect, Full / half duplex mode and MDIMDI-X auto detect

1.3 Performance Specifications

- The device from powered to fully start: \( \leq 3 \) second
✓ Enclosure meets standard anti-static 4
✓ MTBF > 300,000 hours
✓ Full load of data transmission equipment do not crash
✓ Direct Connect network cable (not switches and routers), Packet loss rate<0.02%

2. Installation and Wiring

2.1 Environment

Operating temperature: -10℃ ~ +55℃
Storage temperature: -40℃ ~ +70℃
Operating humidity: 5% ~ 95%RH, (Non-condensing)

2.2 Installation

LAN Module terminal description

<table>
<thead>
<tr>
<th>Terminal No.</th>
<th>Mark</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RJ45</td>
<td>No</td>
<td>Ethernet Port</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Green Light: link</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yellow Light: act</td>
</tr>
</tbody>
</table>

The LAN Module can be easily connected to any port on PMAC770E.

Notice:
1) One PMAC770E can connect only 1 piece LAN Module
2) On one PMAC770E, the RS485 Module can not work with the LAN Module at the same time.

Internet Cable:
The left side internet cable is Class B cable, the right side is Class A cable
If internet cable two sides are AA, BB, it is Straight-through cable
If internet cable two sides are AB, BA, it is Crossover cable
Notice: This Ethernet module can work under both Straight-through cable and Crossover cable

**Network Structure**

![Network Diagram]

3. **WEB Description**

1) Connect PC and PMAC770 by internet cable, using PMAC770 Testing Software.exe to search PMAC770 IP. Set PC’s IP in the same segment as PMAC770, but address different.
   For example: PMAC770 IP is 192.168.8.101  
   Subnet mask: 255.255.240.0
   The IP address of PC can configuration as: 192.168.N.M (here the N range can be 0-15, M range can be 1-254)

   Notice: Must ensure that all LAN Ethernet devices (PMAC770, PC) unique IP address, Before configuration, you can be configured to ping IP, if you can ping each other, it means that there is machine for change the LAN IP, please exchange to the other IP

2) Open IE browser or Firefox browser (not support other browsers at this moment), and input IP address: 192.168.8.101
3) Click on the left menu [System Info], appears current system information page

Device Information: The model of the device  
Software Version: The version of the firmware  
Release Date: current compilation date of the firmware  
MAC Address: MAC address of the device  
Operation Time: the device is powered operating time, the format is HH: MM: SS

4) Click on the left menu [IP Set], appears the current communication parameters page

Device Info: You can fill in the room number, location, easy for user to find the equipment location.  
IP address, subnet mask, gateway: Ethernet communication parameters.

Note: IP address must not conflict with other LAN machines, dividing the subnet mask must be consistent. If need go through outside network, Gateway must be set for the export route IP address

5) Click on the left menu [Measure Info], display the interface of real time data information
Click the button [Get Value], pop up [succeed], click [OK] to display real-time data in the table

6) Click on the left menu [DI/ DO], appears the status amount interface

Digital input:

- ● Low Level
- ○ High Level

Relay status:

- ● OFF
- ○ ON

7) Click on the left menu [Energy], will display energy data
Click button [Get Value] button, pop up [succeed], click [OK], will display the real-time energy data.

4. FTP Download BIN File

Input ftp://192.168.8.101 in your browser address bar or folder, then can query the data inside of PMAC770 memory, Pull directly from the bin folder of all files to local PC computer folder will be OK. Using PMAC770 Testing Software.exe to open those bin file and do analysis.

If can not query the data from FTP, please make sure the FTP Access method on IE browser is active mode. The setting method as following:
Open IE browser, click "Tool"-Internet from Toolbar, same as display on left side dialog. Click "Advanced", cancel tick on "Use Passive FTP" [For firewall and DSL modem compatibility], same as the dialog on right side

*Besides, user also can download the BIN file by PMAC770 Testing Software.exe (please refer to Chapter 5.2)*
5. Read Memory Data by PMAC770 Testing Software

5.1 FTP Config (Search IP)

Since Ethernet device on the same LAN IP address must be unique, in different LAN, IP address of different devices should be in different network segments, which resulted in a user without making to record in IP cases and can not configure the device. Hence they need the software to get the current information of the devices.

Steps:
1) Connect PMAC770E LAN module by internet cable to PC, then run the PMAC770 Testing Software.exe
On the left menu “FTP”, there are 3 submenu:
FTP Config (Search IP).
FTP Data Download (data in 64Mbit memory).
FTP Data Query (data in 64Mbit memory).

2) In menu “FTP config”, click the button “Search Equipment”

In the search window will display all the information of PMAC770 LAN Module, and debugging information window displays the current actions and results

3) Click button “Configuration MAC Add”
4) Debug Info
Click button "Empty" to clear all debug information.

5.2 FTP Data Download (data in 64Mbit memory).

Steps:

1) Connect
Run PMAC770 Testing Software.exe, click the menu "FTP Data Download"
Input the FTP server address: 192.168.8.101 (the users need to input the correct FTP address)
Login name: anonymous (for example)
Password: Null
Mode: Active

Click the button “Connect”

If connect success, there will show Memory data, and there is Message to show the connection status. as below pic.
If connection failed, the Message will show: Failed to connect the server.

2) Download the memory data
Select the path where to save the data, and then select the BIN file you need to download from the LAN module to PC. Click the button “Down”
5.3 FTP Data Query (data in 64Mbit memory)

Steps
1) Click the menu : FTP Data Query, as below pic.

2) Click the button “add” to select the BIN file in folder of PC.

After add the BIN file, click the button “Read”, there will show the memory data.

Note: The Time which you want to read must be in range of Start Date-End Date

If the selected time is out of range, there will be a tip: The date is out of range, pls select again.
Click the button “Export”, the memory data will be exported to CSV file. User can use excel to read the CSV file.
## 6. Maintenance and Troubleshooting

<table>
<thead>
<tr>
<th>Possible problems</th>
<th>Possible Causes</th>
<th>Possible Solutions</th>
</tr>
</thead>
</table>
| After adding control power devices without display     | Power failure added to the device        | Check L/+ & N/- terminal and make sure whether has been power ON  
|                                                        |                                          | Check that control power fuse is burned                 |
| Web can log in, but display "Get timeout"              | Poor connections                         | Check expansion port connection is reliable              |
|                                                        | Add LAN module after power ON           | Power Off, after connect well expansion module then power ON |
|                                                        | Serial port setting do not match        | Check whether PMAC770 Serial port parameter is the same as expansion module |