PMC-224x Brief User Guide

[Version 3.4.1]



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Table of Contents

- Introduction 1
- Before Installation 2
  - Network Settings 2
- Basic Setting 3
  - Setup and Scan Power Meters 3
  - Start Data Logger 6
- Advanced Setting 7
  - Setup and Scan Modbus I/O Modules 8
  - Schedule Setting 10
  - Email Setting 12
  - IF-THEN-ELSE Rule Setting 14

LRI Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Introduction

This document is intended to guide users to quickly implement settings of PMC-224x. This document can be divided into three parts from basic to advanced settings:

1. **Before Installation**: PMC-224x Network Setting.
   → Required settings before installing PMC-224x.

2. **Basic Settings**: Scan the connected power meters and start the data logger function.
   → Quickly build up a power monitoring system.

3. **Advanced Settings**: Given example scenarios for logic rule settings for advanced functions such as I/O module monitoring & control, Email sending and Schedule functions.
   → Settings for advanced functions of PMC-224x.

This document will give quick guides for basic power meter connection settings and advanced function settings.

Please Note:

- PMC-224x provides COM3 (RS-485) and COM4 (RS-485) interfaces for connections to Modbus RTU power meters, and PMC-224x also provides LAN interface for connections to Modbus TCP power meters.

- A single PMC-224x can connect to at most 24 ICP DAS Modbus power meters (including Modbus RTU power meters and Modubs TCP power meters)

- A single I/O interface (COM3, COM4, or LAN) can connect to at most 16 ICP DAS Modbus power meters.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

■ Before Installation

◆ Network Settings



The default network setting of **LAN1** on PMC-224x is as follow:

- **IP**：192.168.255.1
- **Subnet mask**：c255.255.0.0
- **Gateway**：192.168.0.1

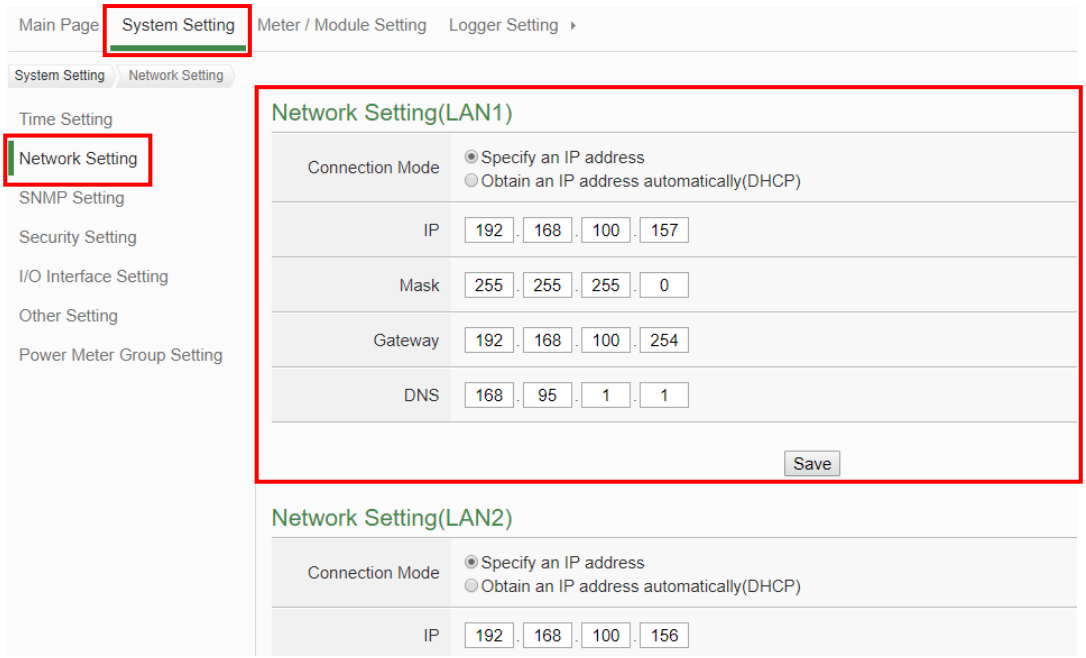
(1) Modify the network settings of the PC or Notebook to be the same network domain as PMC-224x. For example:
- IP：192.168.255.10
- Subnet mask：255.255.0.0
- Gateway：192.168.0.1

(2) Connect PMC-224x **LAN1** to PC by network cable (there is no need for crossover cables).

(3) Start the browser and input http://192.168.255.1 in the address bar.

(4) Input default administrator password "Admin" to login into the page.

(5) After login into the page, go to "System Setting"→"Network Setting" and modify the **LAN1** network setting to fit current network environment.



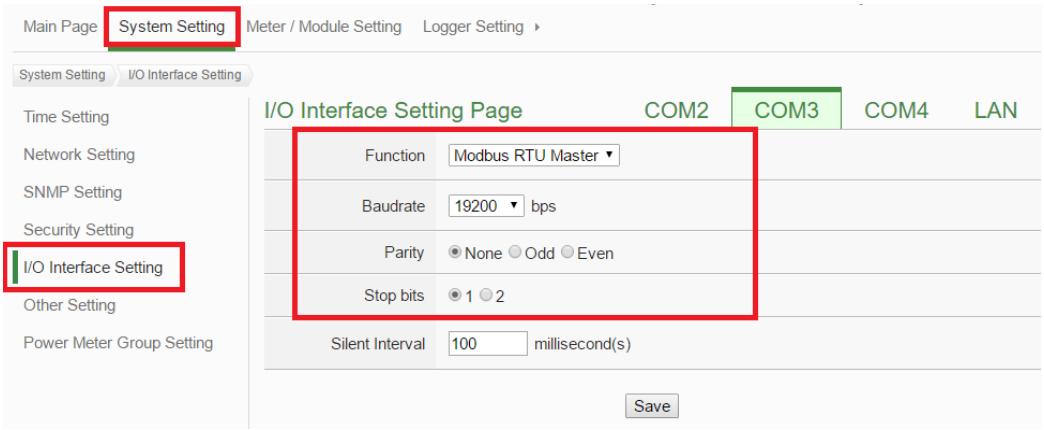
(6) After clicking on "Save" button, for the network domain of the PMC-224x and PC are different, it is normal being not able to connect to the webpage, please connect PMC-224x and PC to the actual network environment and then modify the network settings of PC to correct settings to connect to the PMC-224x.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

■ Basic Setting

◆ Setup and Scan Power Meters

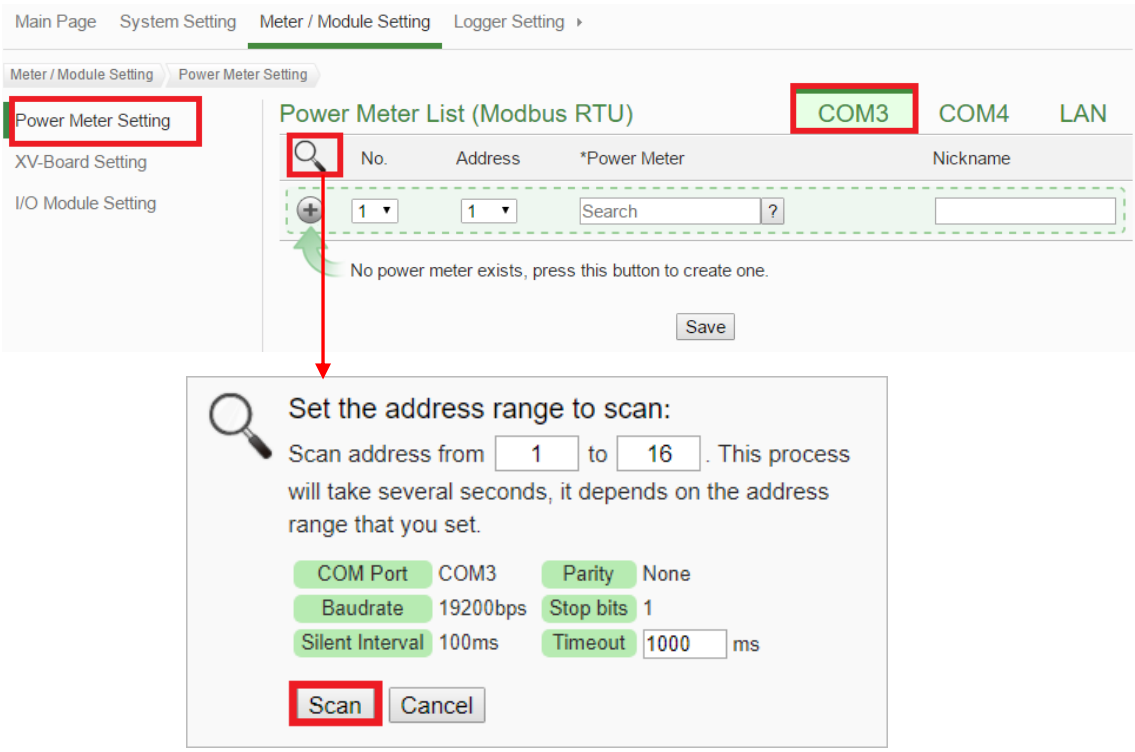
(1) Please complete the RS-485 wiring connections of the power meters first and then login into the PMC-224x web page as Administrator, select “System Setting”→”I/O Interface Setting”; make sure the settings of the parameters(Baudrate/Parity/Stop bits) of the COM Port that are connected to the power meter are accurate. After all settings are completed, click “Save” button to save the changes.



(2) Select “Meter/Module Setting”→“Power Meter Setting”, and then follow the steps below to scan or add power meters.

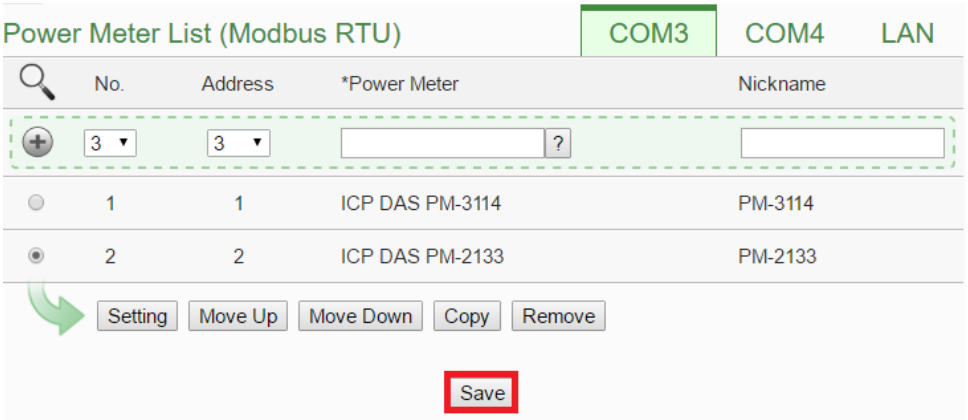
(3) Scan Modbus RTU Power Meters:

3.1 Scan the power meters on the interface of the COM Port(**assuming the power meters are connected to the COM3**).



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.2 After the scanning is completed, the power meters connected to the COM Port interface will be displayed, click “Save” to complete the settings of the power meter list.

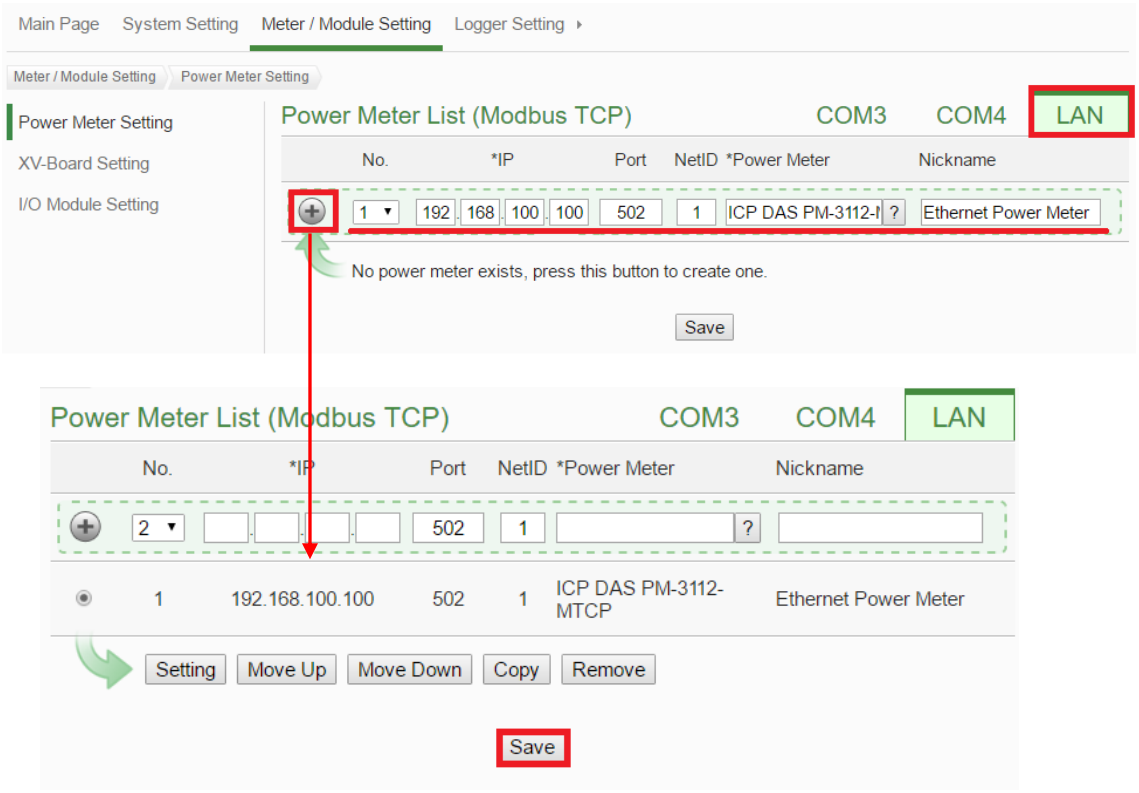


Please note: if fail to scan the power meters, please make sure the RS-485 cable is properly connected. And then go to Step 1: “System Setting”→”I/O Interface Setting” to make sure the settings of the COM Port that are connected to the power meter are accurate. After all settings are completed, click “Save” button to save the changes and repeat Step 3.1 to perform scanning of the power meters again.

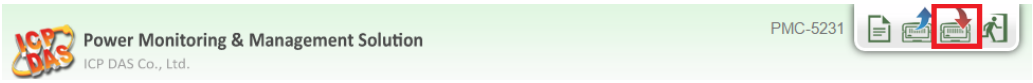
(4) Add Modbus TCP Power Meters:

If there is power meter connected via network, please select LAN to set up the settings(IP, Port, NetID, and Nickname) of the Modbus TCP Power Meter. After all settings are completed, click “+” to add the Modbus TCP Power Meter to the list and then click “Save” to save the settings.

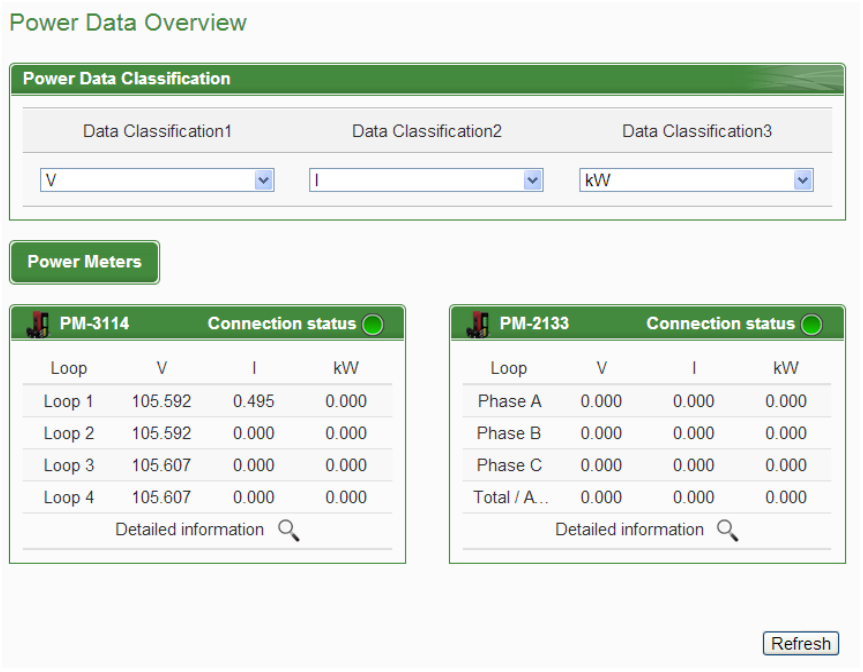
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



(5) Save the settings to the PMC-224x.



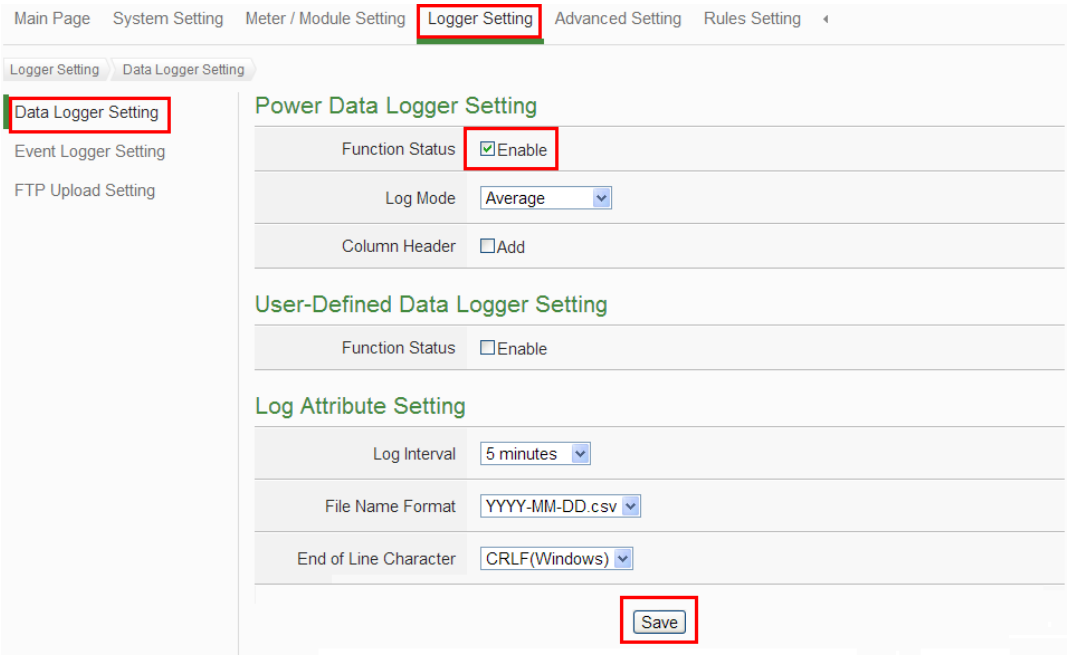
(6) After saving the settings to the PMC-224x, the settings of the connections to the power meters are completed. After the system is initialized, the power information of the connected power meters will be displayed on the home page.



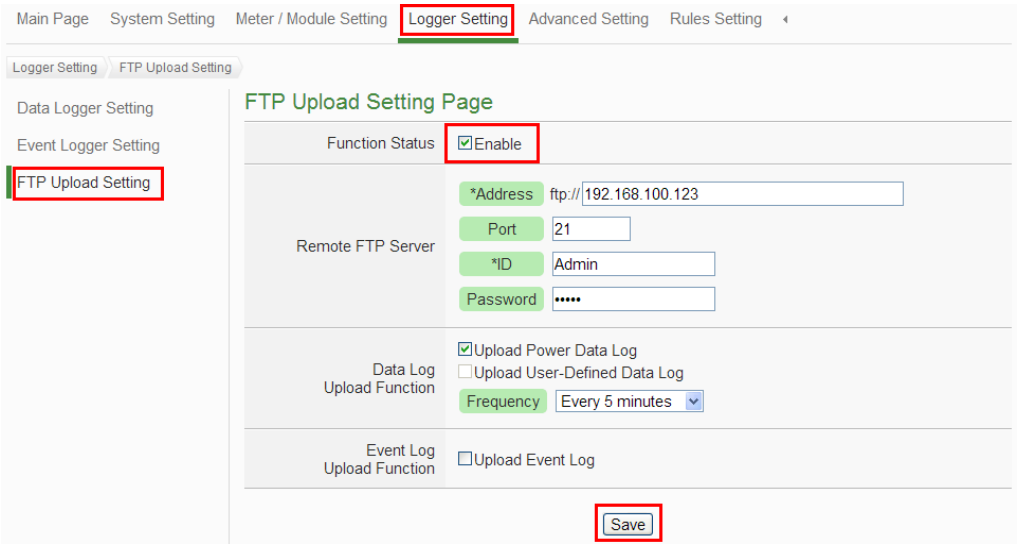
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

◆ Start Data Logger

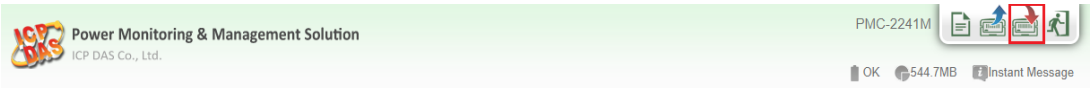
(1) Login into the PMC-224x as administrator and select “Logger Setting”→ “Data Logger Setting”→ “Enable” Function Status, after the setting is completed, click “Save” to save the settings.



(2) If the user would like to send the power data file to the FTP server of the control center, please click “Enable” and complete settings on the “FTP Upload Setting” Page. After all settings are completed, click “Save” button to save the changes.



(3) Save the settings to PMC-224x, and then the Data Logger function will be enabled. The system will start to save the power data in the MicroSD card.



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

■ Advanced Setting

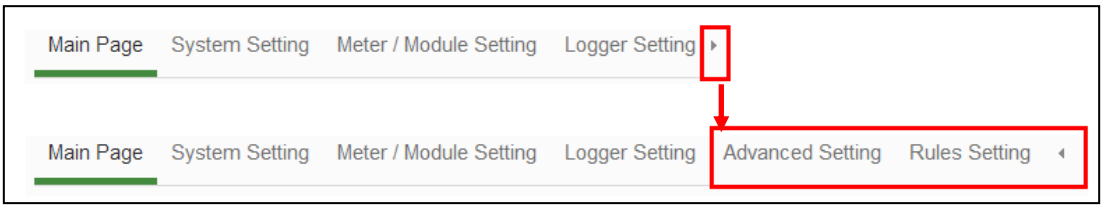
In addition to collection, statistical analysis, recording and display of the power data, PMC-224x also provides **I/O module control**, **Email sending** and **Schedule** functions. With the **IF-THEN-ELSE** logic rules function, PMC-224x offers more thought-out power demand management and monitoring functions. The following application is an example that will give more introductions of these functions:

Set up a power monitoring system that will monitor if the electricity usage is unusual during weekdays ((Monday to Friday / 8.00a.m. to 5:00p.m.). If any unusual condition is detected, the system will send email and SMS message to related personnel and the DO channel of the Modbus I/O module will be set as "ON" to turn on the waning light.

The user has to complete the Condition/Action settings of adding I/O modules, Schedule, Email first, and then these settings can be included in the IF-THEN-ELSE logic settings for editing rules for monitoring, shown as below:

IF	THEN	ELSE
Schedule: Weekdays	Send Email	
Unusual electricity usage	Turn on warning light	Turn off warning light

Please note: The Advanced Setting function is hidden by default, click on the expand button to display the option, shown as below:



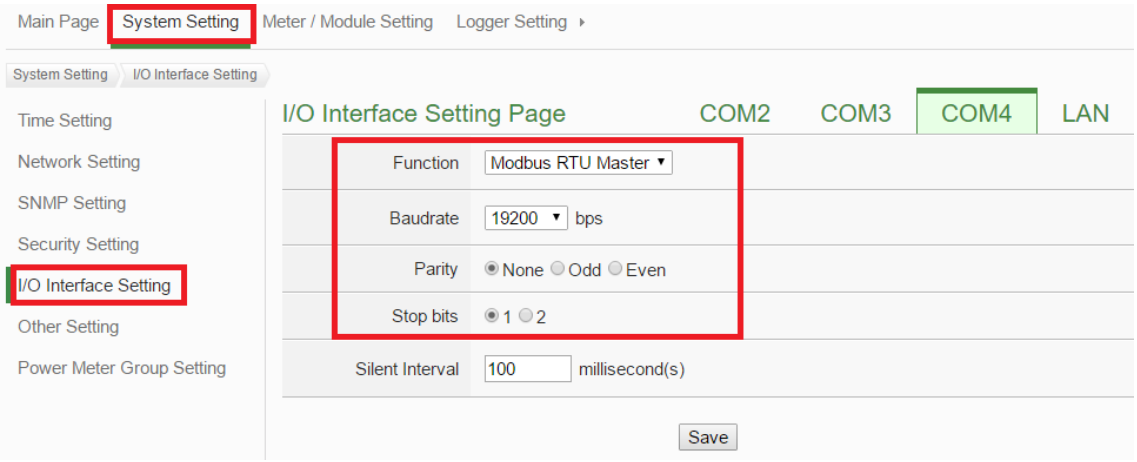
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

◆ Setup and Scan Modbus I/O Modules

Description: Set up the "Modbus I / O modules" for the application example。

Steps:

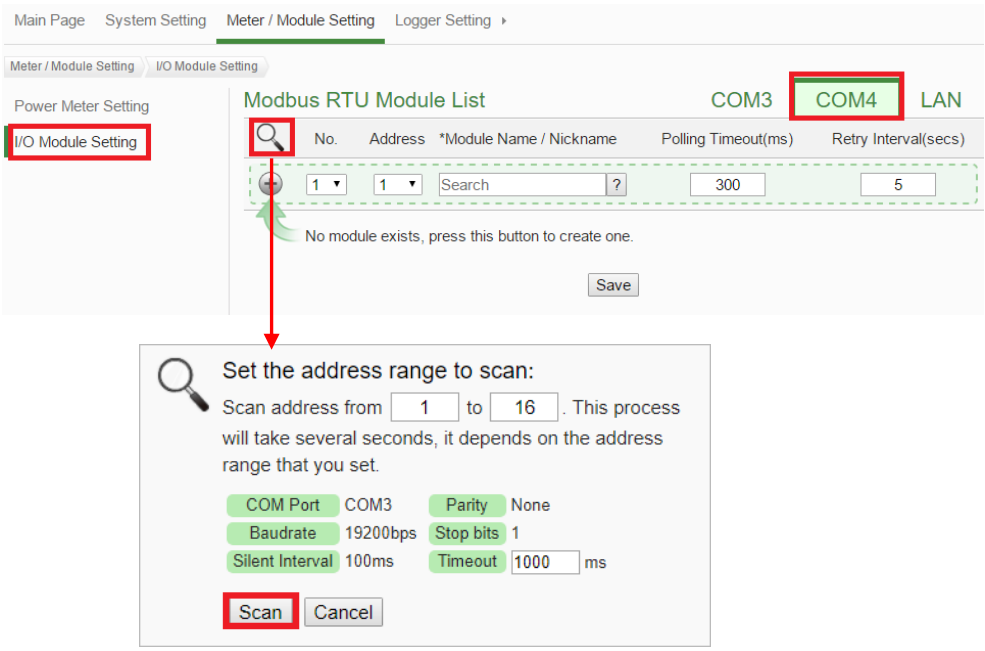
(1) Please complete the RS-485 wiring connections of the M-7000 modules first and then login into the PMC-224x web page as the Administrator, select "System Setting"→"I/O Interface Setting" to make sure the parameters(Baudrate/Parity/Stop bits) of the COM Port connected are accurate. After all settings are completed, click "Save" button to save the changes.



(2) Select "Meter/Module Setting"→"I/O Module Setting", and then follow the steps below to scan or add I/O Modules to the list.

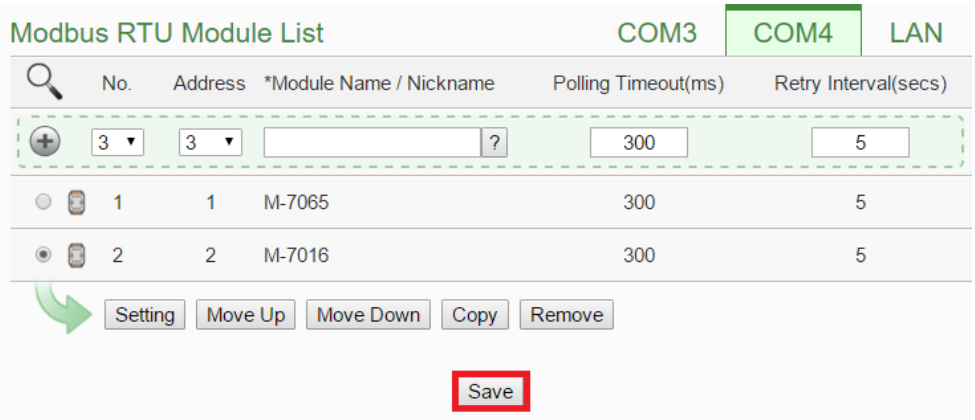
(3) Scan ICP DAS M-7000 Modules

3.1 Scan the I/O modules on the interface of the COM Port that are connected to the M-7000 Modules (**assuming the M-7000 Modules are connected to the COM4**).



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

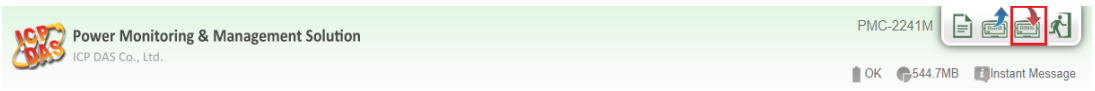
3.2 After the scanning is completed, the M-7000 Modules connected to the COM Port interface will be displayed, click “Save” to complete the settings of the M-7000 I/O Module List.



Please note: if fail to scan the I/O modules, please make sure the RS-485 cable is properly connected. And then go to Step 1: “System Setting”→”I/O Interface Setting” to make sure the settings of the COM Port that are connected to the I/O Module are accurate. After all settings are completed, click “Save” button to save the changes and repeat Step 3.1 to perform scanning of the I/O modules again.

(4) To add other Modbus RTU or Modbus TCP I/O Modules, please refer to Chapter 7 in the PMC-224x User manual.

(5) Save the settings to the PMC-224x (the user could also save the settings later after all other settings are completed)



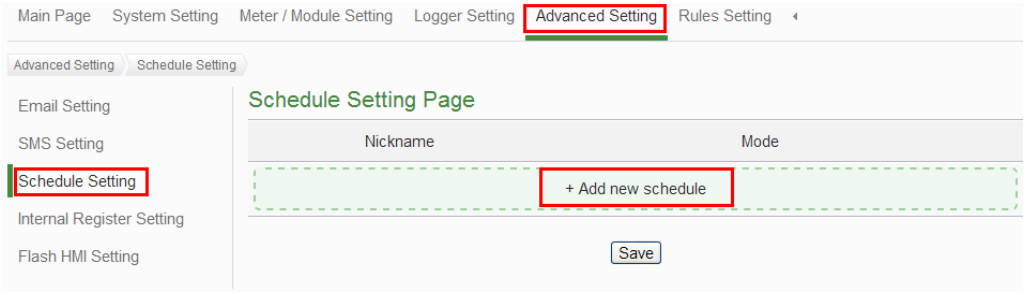
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

◆ Schedule Setting

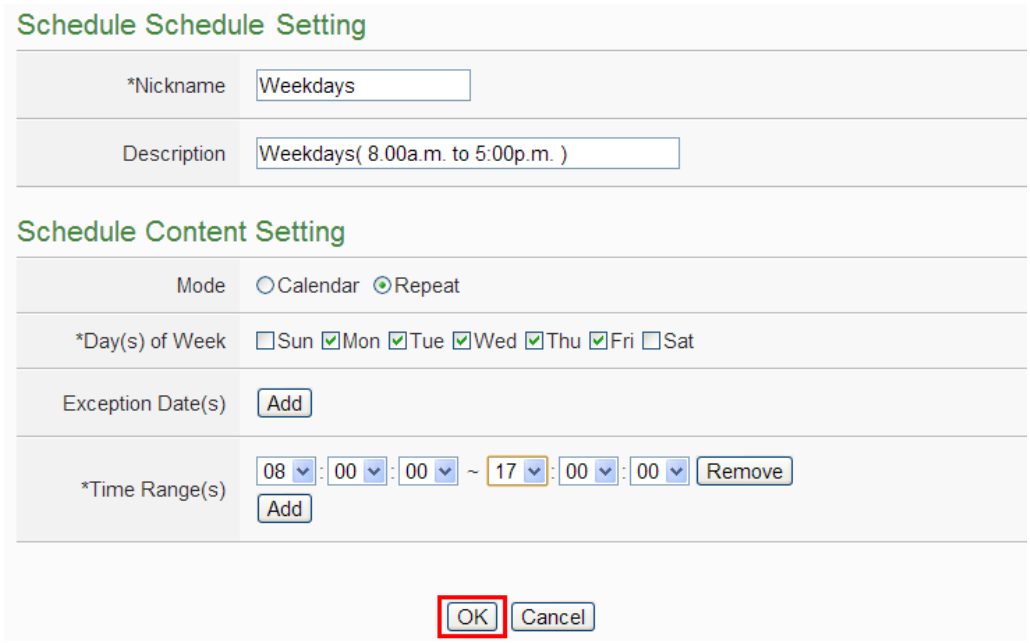
Description: Set up the "weekdays (Monday to Friday / 8.00a.m. to 5:00p.m.)" settings for the application example.

Weekday Schedule setting steps:

(1) Login into the PMC-224x web page as the Administrator, select "Advanced Setting"→"Schedule Setting"→"Add new schedule".

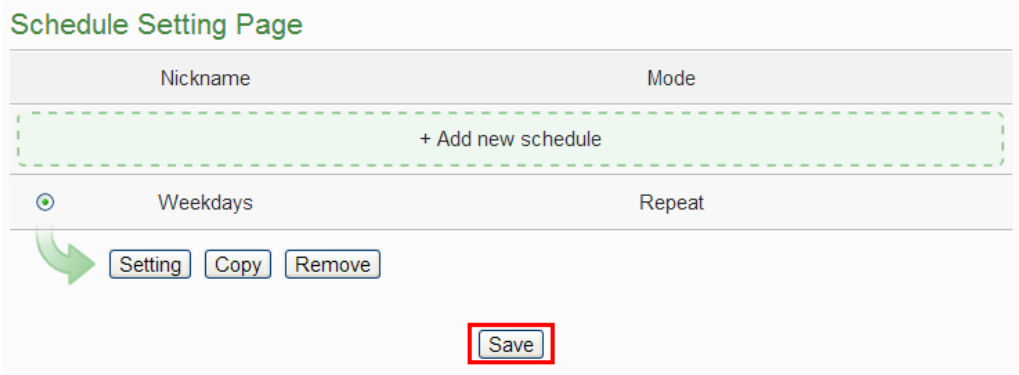


(2) Please follow the figures and descriptions below to complete the settings, after all settings are completed, click "OK" button.

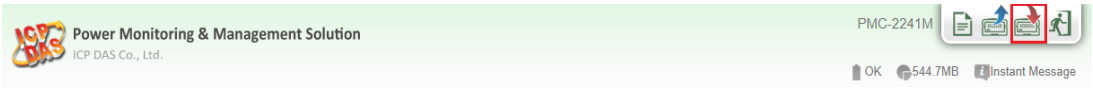


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

(3) Save schedule settings.



(4) Save the settings to the PMC-224x (the user could also save the settings later after all other settings are completed).



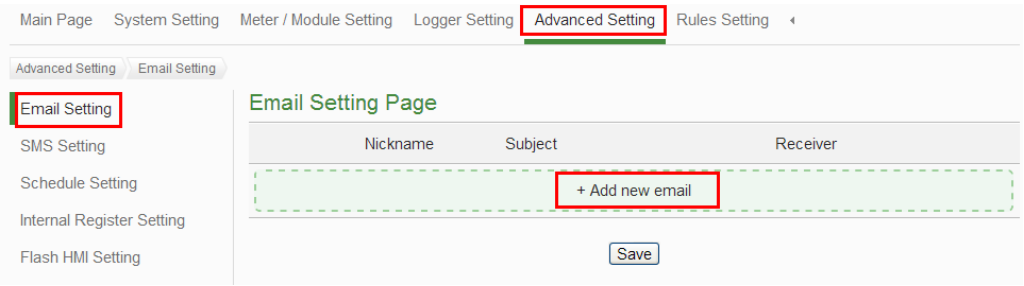
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

◆ Email Setting

Description: Set up the " Email" settings for the application example

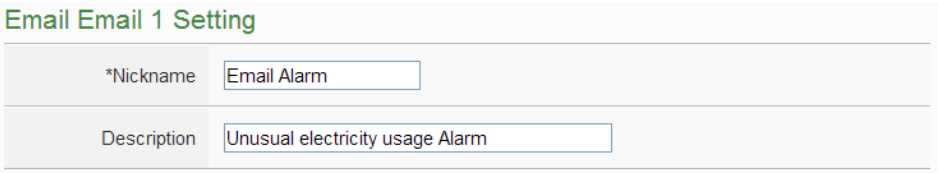
Email setting steps:

(1) Login into the PMC-224x web page as the Administrator, select “Advanced Setting”→“Email Setting”→”Add new email”.

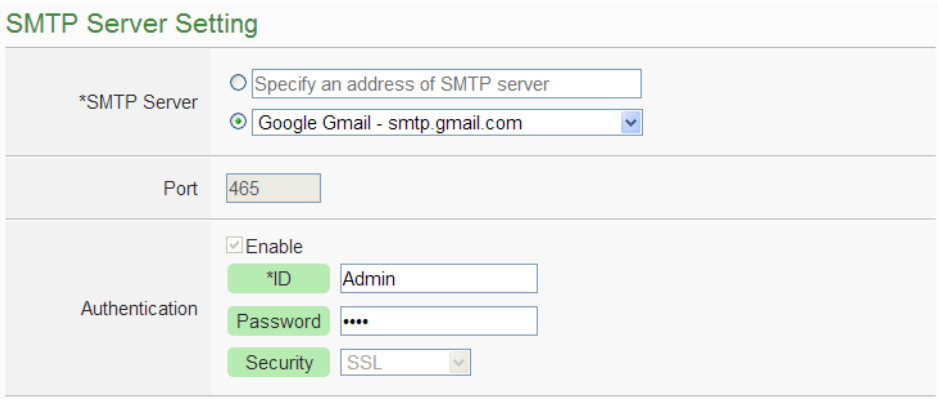


(2) Please follow the figures and descriptions below to complete the settings.

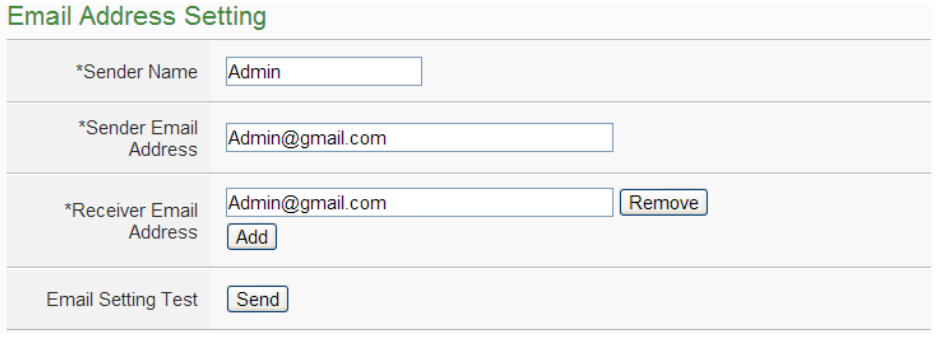
- Input the Nickname and Description of the Email.



- Set up SMTP Server and its ID/Password.

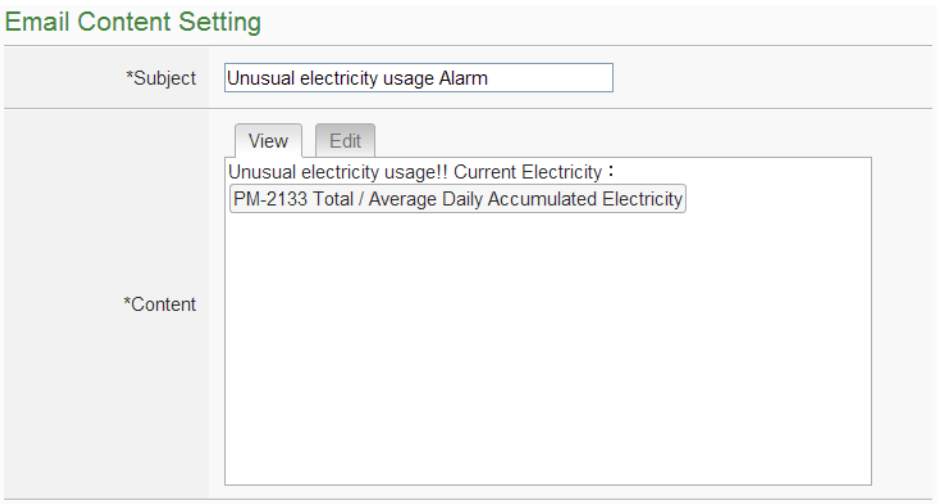


- Set up Sender Name and Receiver information.



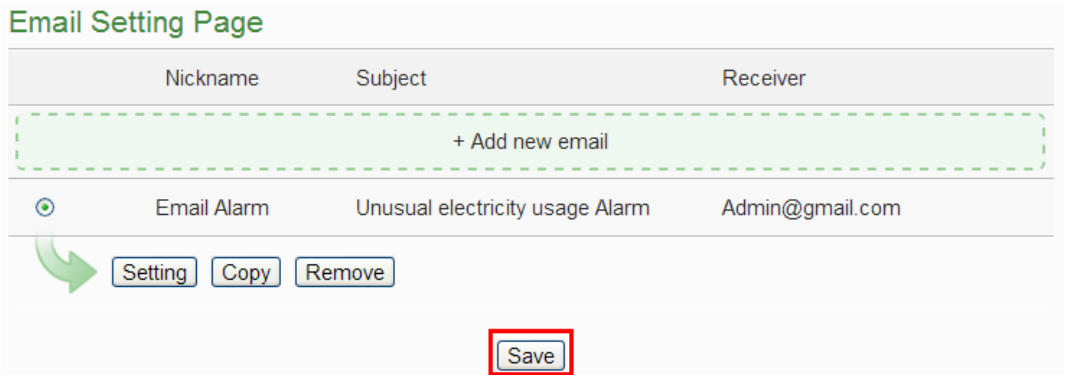
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

■ Input Email content.

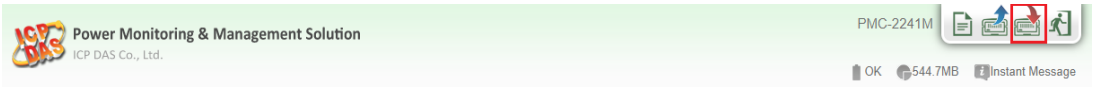


■ Click “OK” to complete the settings.

(3) Save Email Settings.



(4) Save the settings to the PMC-224x (the user could also save the settings later after all other settings are completed).



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

◆ IF-THEN-ELSE Rule Setting

Description: Edit the "IF-THEN-ELSE Rule" in the application example. Please implement the settings of the following configuration before editing the IF-THEN-ELSE Rule: adding new Power Meter / adding new Modbus I/O Module / Schedule / Email / SMS.

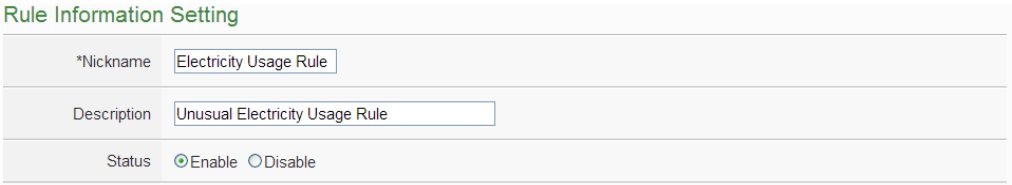
Rule Setting steps:

(1) Login into the PMC-224x web page as the Administrator, select "Rules Setting"→"Add new rule".

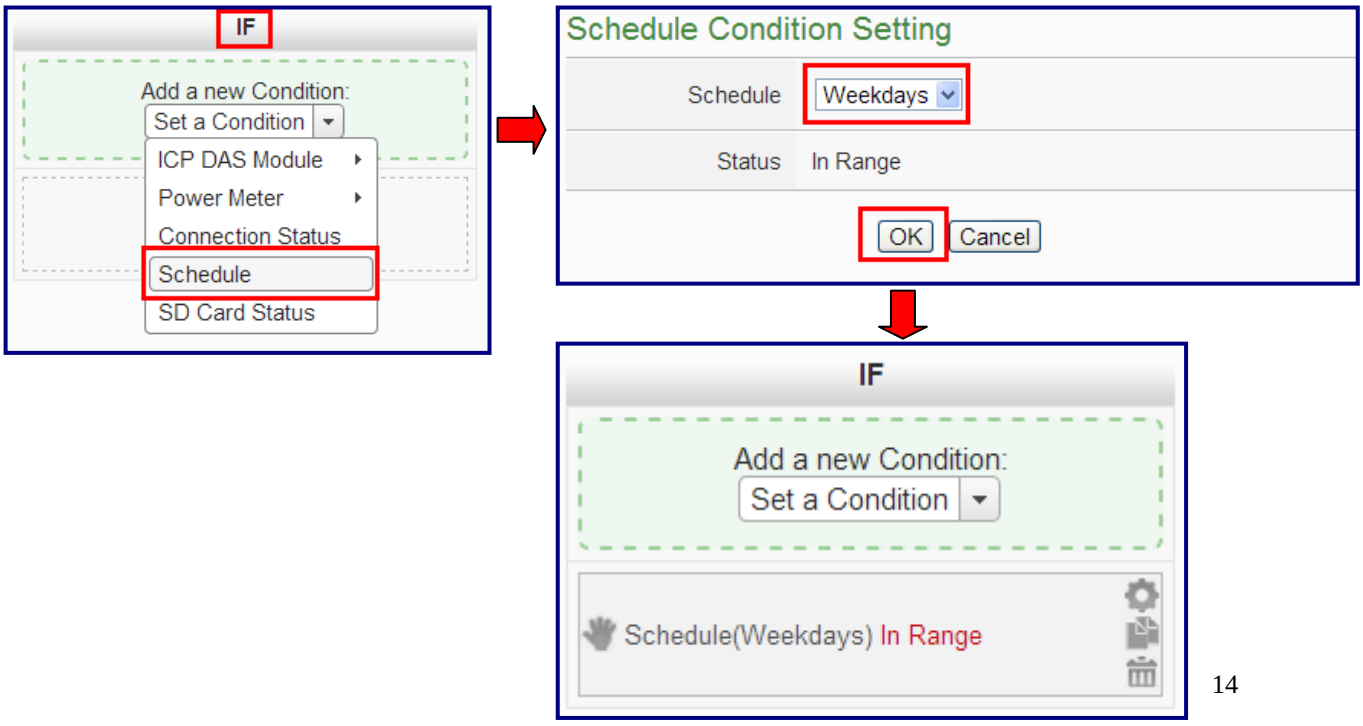


(2) Please follow the figures and descriptions below to complete the settings.

■ Input the Nickname and Description, and then click "Enable".

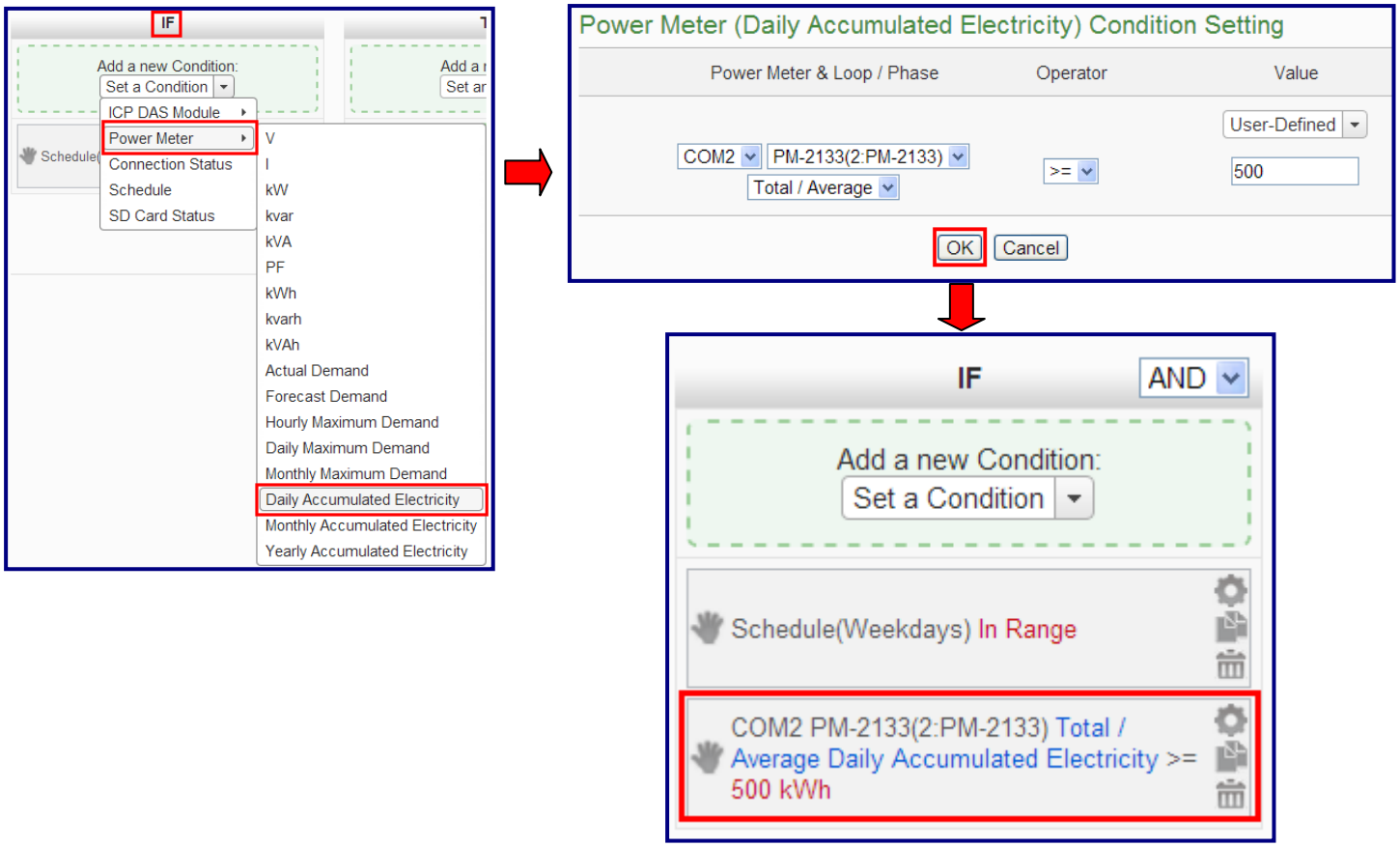


■ **Set up IF Condition:** Set up the time range to be weekdays.

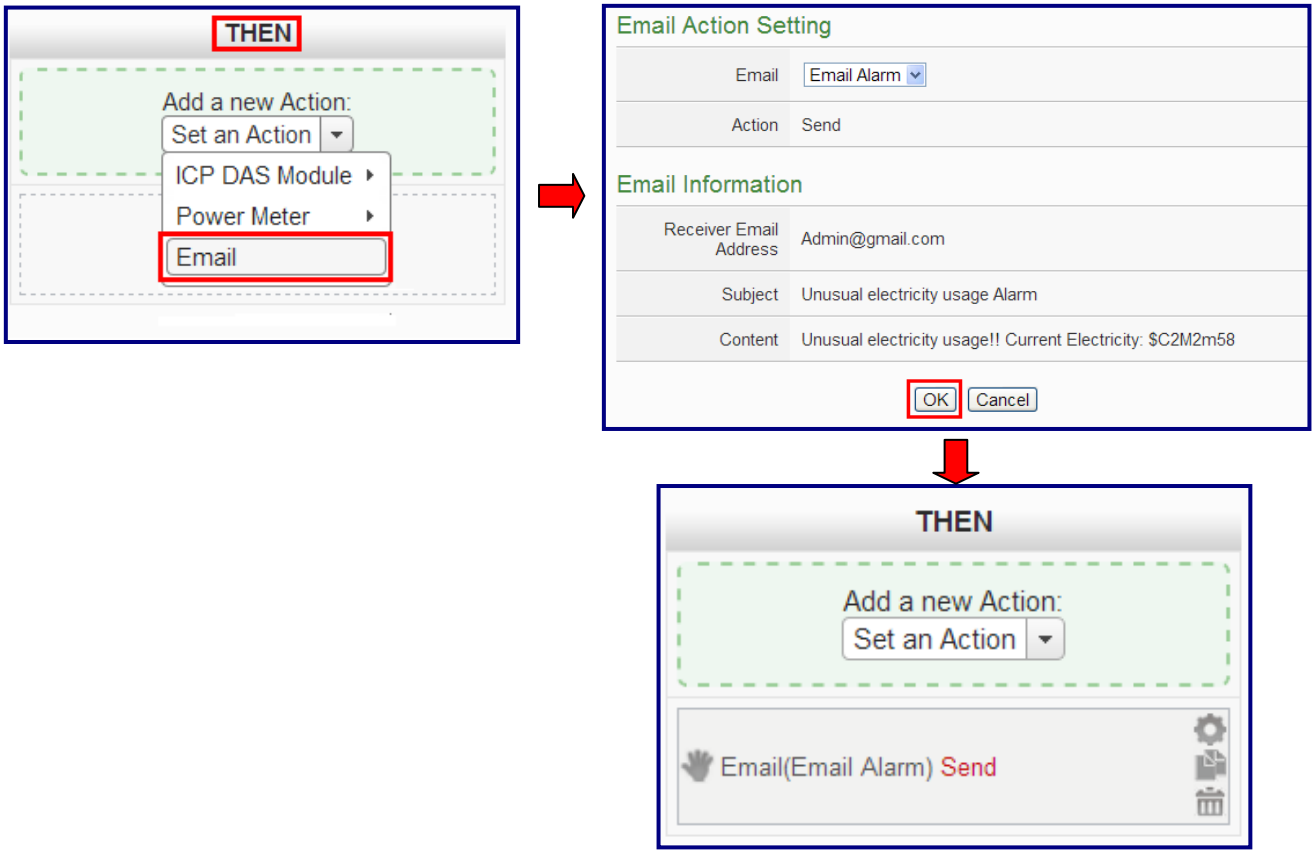


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

- **Set up IF Condition:** When Daily Accumulated Electricity is over 500 kWh

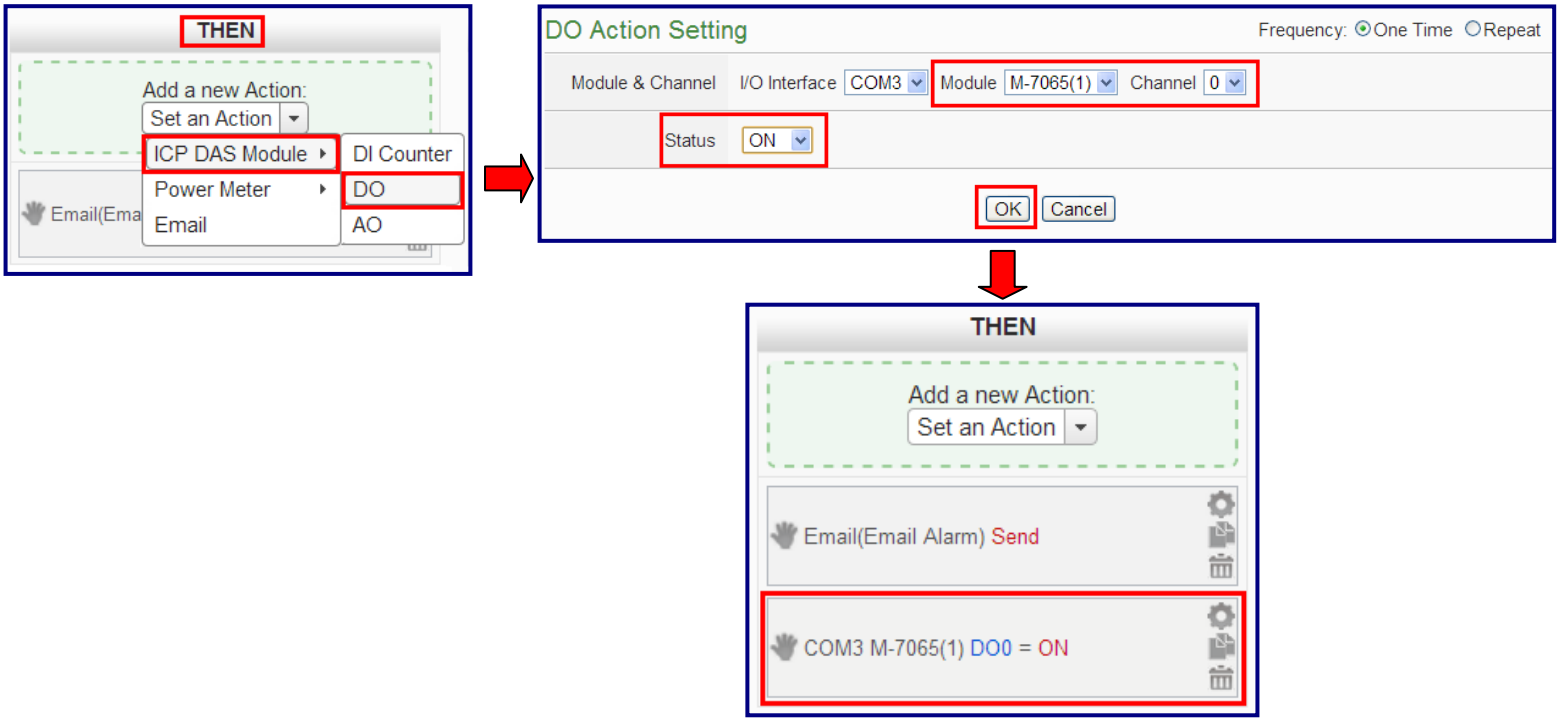


- **Set up THEN Action:** Send Email

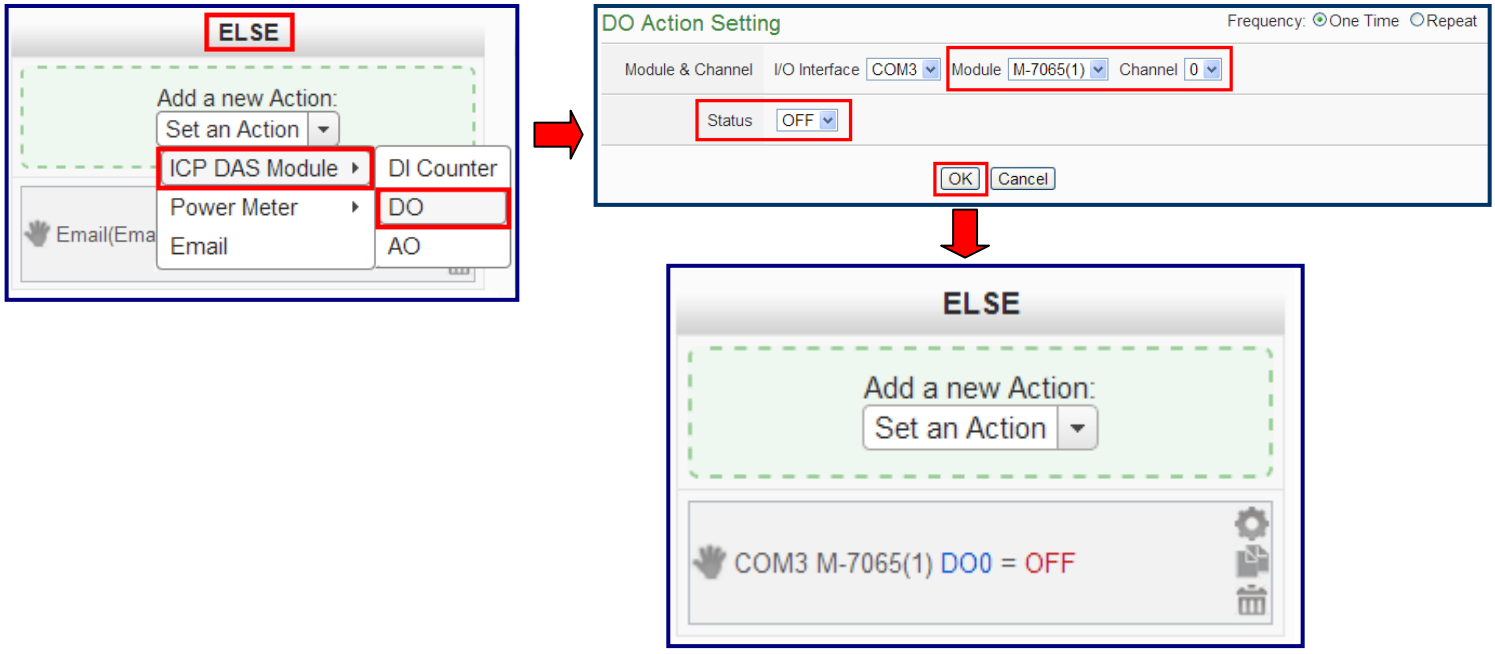


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

■ **Set up THEN Action:** Turn on warning light (M-7065 DO0=ON)

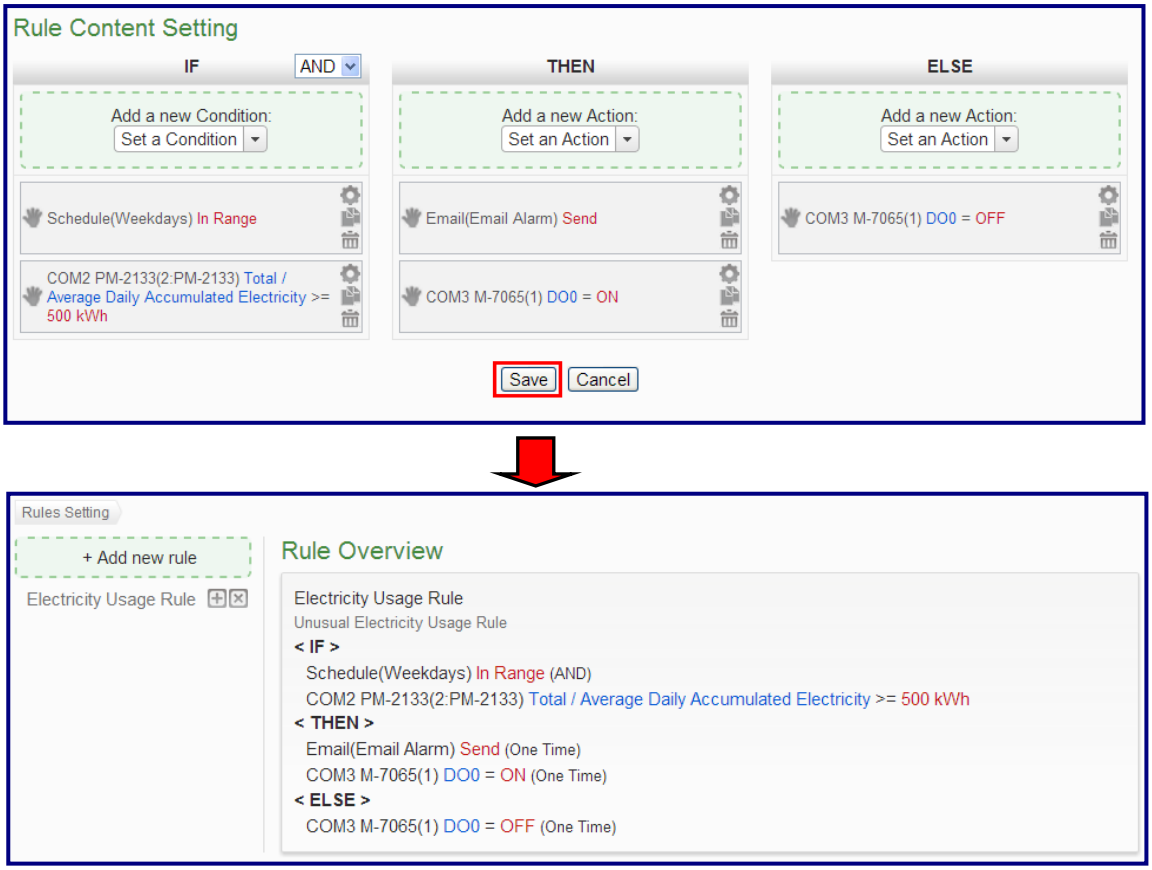


■ **Set up ELSE Action:** Turn off warning light (M-7065 DO0=OFF)

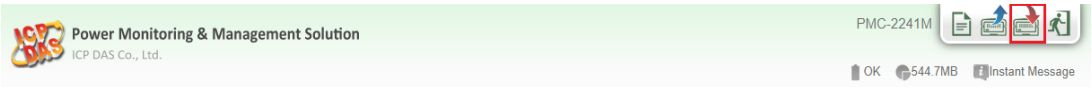


Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

(3) Save Rule Settings



(4) Save the settings to the PMC-224x



Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000