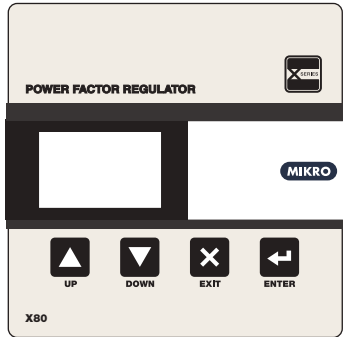


# X80 Power Factor Regulator Quick Reference Guide

## A Brief Overview



### Keypad

UP, DOWN, EXIT and ENTER are used to navigate through the menus and adjust the settings.

**EXIT** : To exit from menus, submenus or to cancel setting value change. For X80 three phase models, at the main display page, pressing EXIT will scroll through the display page for Phase 1, Phase 2 and Phase 3 parameters

**UP** : Scroll up the menus or increase settings value.

**Down** : Scroll down the menus or decrease settings value.

**Enter** : To enter submenus or to confirm settings value change.

## 1. General Description

Mikro's power factor regulator X80 is designed to detect and compensate displacement power factor caused by inductive load by switching in banks of capacitors. As oppose to traditional regulator that only measures reactive power on a single phase basis but compensates three phases, the X80's Three Phase model is a true three phase system as reactive power of all three phases are measured individually and compensated optimally.

Mikro's power factor regulator X80 also provides flexibility in configuring (or disabling) different levels of alarms. The alarms can then be linked to dedicated signal contact to alert the users of potential issues such as under compensation (thus avoiding penalty charges from the utilities).

Mikro's power factor regulator X80 provides the user with a 2 inch wide, 64 x 128 dot matrix LCD for displaying its various measurement parameters such as: frequency, voltage, current, THD, active, reactive and apparent power and temperature. The dot matrix LCD allows up to 31st order voltage and current harmonics to display in graphical and table form.

As per Mikro's power factor regulator series, it includes the automatic C/K and rated step size detection feature for ease of commissioning for typical inductive loads. Taking advantage of the dot matrix LCD, the X80 also provides a guided step-by-step commissioning menu that enables fast setup.

The regulator extends its connectivity by adopting the Modbus-RTU protocol. Through the use of RS485 standard protocol, the user will be able to network the regulator with other IEDS that link to a center monitoring station.

## 2. Precautions



Please read the instructions carefully before operating the equipment. The following symbols will appear throughout this user manual to warn of potential dangers or hazardous situation that will arise while operating the equipment.

a) Before powering up X80, make sure auxiliary voltage supply does not exceed the range given in connection diagram (i.e. **85 - 265 VAC**)

b) Ensure that there is no high voltage injected into terminal 13, 14, 23, 24, 36, 37, 38, 39, 40, 41, 42 and 43.

c) If LCD display and AUX LED does not turn On after powering up X80, please stop using the X80 and contact the manufacturer for service.

d) If any crack is found on the casing, please stop using the X80 and contact the manufacturer.

## 3. Things include in Packing Box

- a) 1 x X80 Power Factor Regulator
- b) 2 x Steel Brackets
- c) 1 x X80 Quick Reference Guide Hardcopy

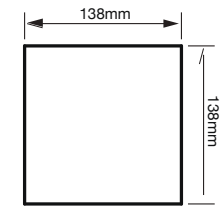
## 4. Installation Guide

Before installing the X80, please ensure that the environment meets the following conditions:

- Operating temperature: -5°C to +55°C
- Humidity: 56 days at 93%, 40°C non-condensing
- Dust free environment away from electrical noise and radiation.

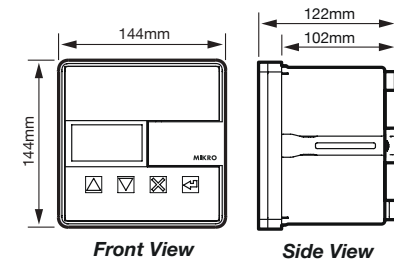
## 5. Mounting

Insert the X80 through a 138mm x 138mm switch-gear panel as shown below:



Panel Cutout

## 6. Dimension

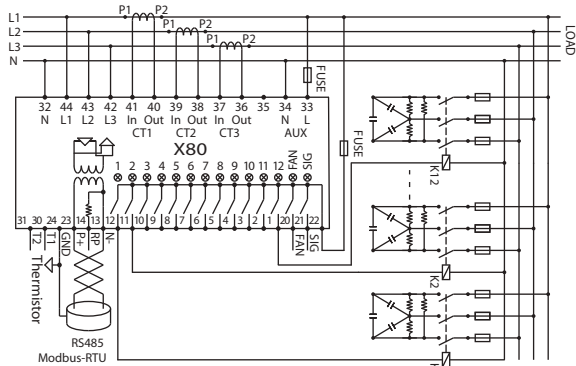


Front View

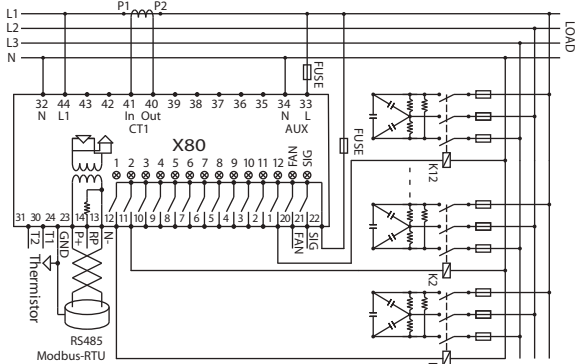
Side View

\* For more detail information, please download full set of X80 user manual from :  
<https://itmikro.com.my/x80-series-power-factor-regulator/>

## 7. Connection Diagram



X80 PFR120P3-240-50



X80 PFR120P1-240-50

## 8. Changing settings for X80

There are two ways to change settings for X80 which are either through X80's front panel or Communication port (RS485).

### Change setting through RS485 communication port

User can use X-series toolkits software to change setting in PC. This X-series toolkits can be downloaded from website <http://itmikro.com/Contents/view/122>

### Change setting through X80's front panel

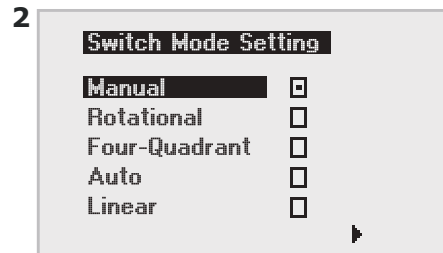
User must unlock the password first in order to change the settings for X80. The default password for X80 is "0000". The following flow chart shows an example on how to change date:

## 9. Commissioning

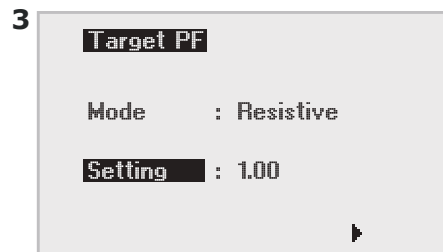
The regulator is pre-programmed with the most common parameters as its factory default setting. Users are normally not required to change any setting upon commissioning. If the user requires any changes in the setting, the quick commissioning feature will provide the user with a step-by-step guidance in setting up all the mandatory parameters for the regulator to function properly.



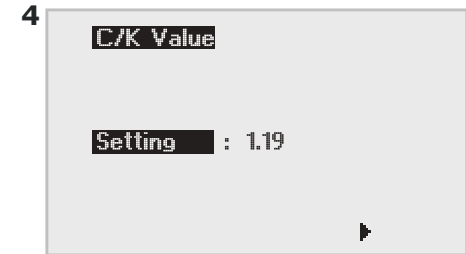
Press **↵** button from Home menu.



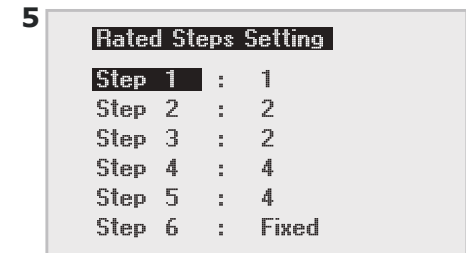
Press **↵** button to confirm your selection. To navigate to the next page, press **▲** or **▼** to select "▶", then press **↵** button.



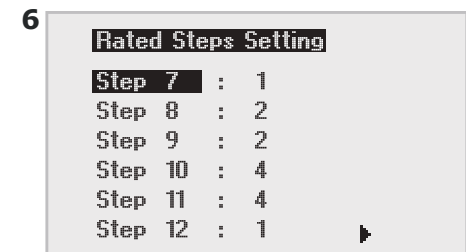
Press **↵** button, then press **▲** or **▼** to set the value. To navigate to the next page, press **▲** or **▼** to select "▶", then press **↵** button.



Press **↵** button, then press **▲** or **▼** to set the value. To navigate to the next page, press **▲** or **▼** to select "▶", then press **↵** button.



Press **▲** or **▼** button to navigate to the following pages.



Press **↵** button to confirm the selection, and then the press **▲** or **▼** to set the value. Back to the Main menu, press **▲** or **▼** to select "▶", then press **↵** button.

\* For more detail information, please download full set of X80 user manual from: <https://itmikro.com.my/x80-series-power-factor-regulator/>