

# X30 Combined Overcurrent and Earth Fault Quick Reference Guide

## A Brief Overview



- a) Auxiliary LED Indication
- b) Trip LED Indication
- c) Alarm LED Indication
- d) 2x16 LCD Display
- e) "ESC" Button
- f) "UP" Button
- g) "DOWN" Button
- h) "ENTER" Button
- i) "CLEAR" Button
- j) "RECORD" Button

### 1. General Description

Mikro X30 provides protections for 3 independent phase overcurrent elements and one non-directional earth-fault element. All these elements are connected to the current transformers of the feeders to be protected. This element is connected to protection current transformer that has 5A rated CT on secondary part.

Using the front panel, the user can easily navigate through the user friendly menu, read measurements and change settings. The relay status and alarm or trip records are displayed on the back-lit LCD.

There is a RS485 port on the rear terminals. Using MODBUS RTU protocol, all stored information can be read and settings can be modified via PC loaded with Mikro setting software.

X30 has 2 configurable output relays. They can be activated by any of the protection functions available in the relay. Another 2 configurable logic inputs are for various functions.

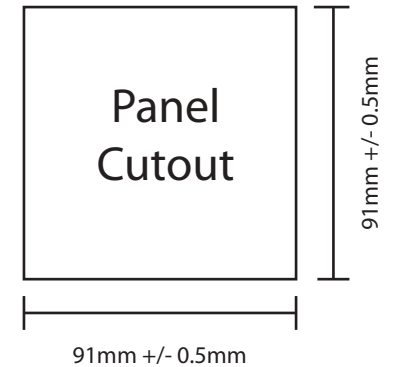
### 4. Installation Guide

Before installing the X30, 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 X30 through a 91mm x 91mm switch-gear panel as shown below:



### 2. Thing to be Caution



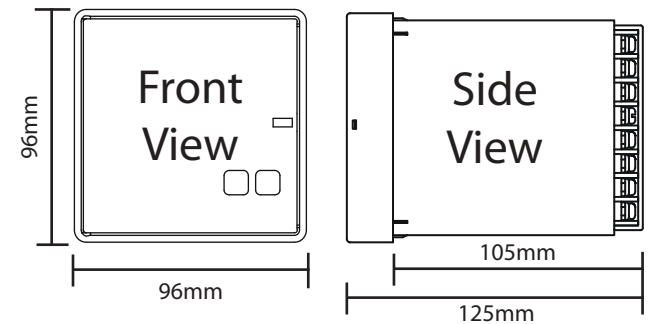
The X30 should be installed, operated, serviced and maintained only by qualified personnel. No responsibility is assumed by the manufacturer for any consequences arising out of the use of this material.

- a) Before power up the X30, make sure auxiliary voltage supply is not out of the range given in connection diagram (85 - 265 VAC or 110 - 370 VDC).
- b) Make sure no high voltage inject into terminal 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 and 20.
- c) If LCD display and AUX LED not turn On after power up the X30, please stop using it and contact the manufacturer for service.
- d) Anything crack on the casing, please stop using it and contact the manufacturer.

### 3. Things include in Packing Box

- a) 1 x X30 Protection Relay
- b) 2 x Grey Brackets
- c) 1 x X30 Quick Reference Guide Hardcopy

### 6. Dimension



### Keypad

Up, Down, Enter and Esc are used to navigate through the menus and adjust the settings.

ESC : To exit from menus, submenus or to cancel setting value change. Press and hold for 1.5 seconds to return to default display from any submenu.

UP : Scroll up the menus or increase setting value.

Down : Scroll down the menus or decrease setting value.

Enter : To enter submenus or to confirm setting value change.

Clear : To reset tripping, reset latched relay. If "CLEAR" Scroll is enabled (under Configurations->Display menu) and during alarm status, it can be used to scroll through Earth Fault settings, and to return to default display from any submenu by pressing and holding for 1.5 seconds.

Record : To display alarm records or successive record just press Record button again.

### LEDs

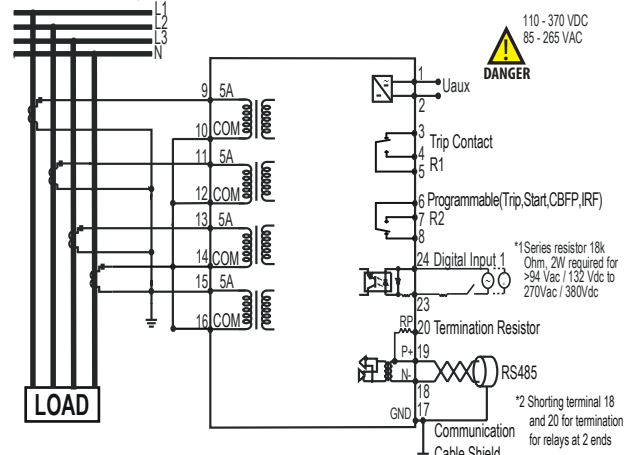
Trip LED : Indicates tripping

Alarm LED : Blinks to indicate non acknowledge alarm (or tripping). Steady on when the alarm is acknowledged by pressing any button.

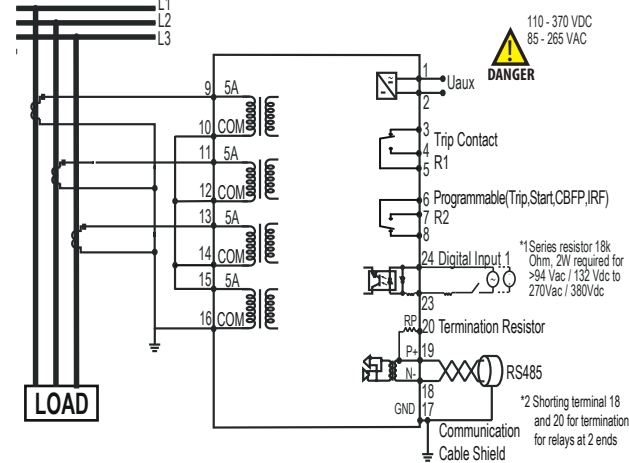
\* For more detail information, please download full set of X30 user manual from <http://itmikro.com/Contents/view/122> website.

## 7. Connection Diagram

### 5A Secondary CT with 3 phase 4 wires



### 5A Secondary CT with 3 phase 3 wires



## 8. How to Change Setting in X30

There are two ways to change setting in X30 which are through RS485 communication port.

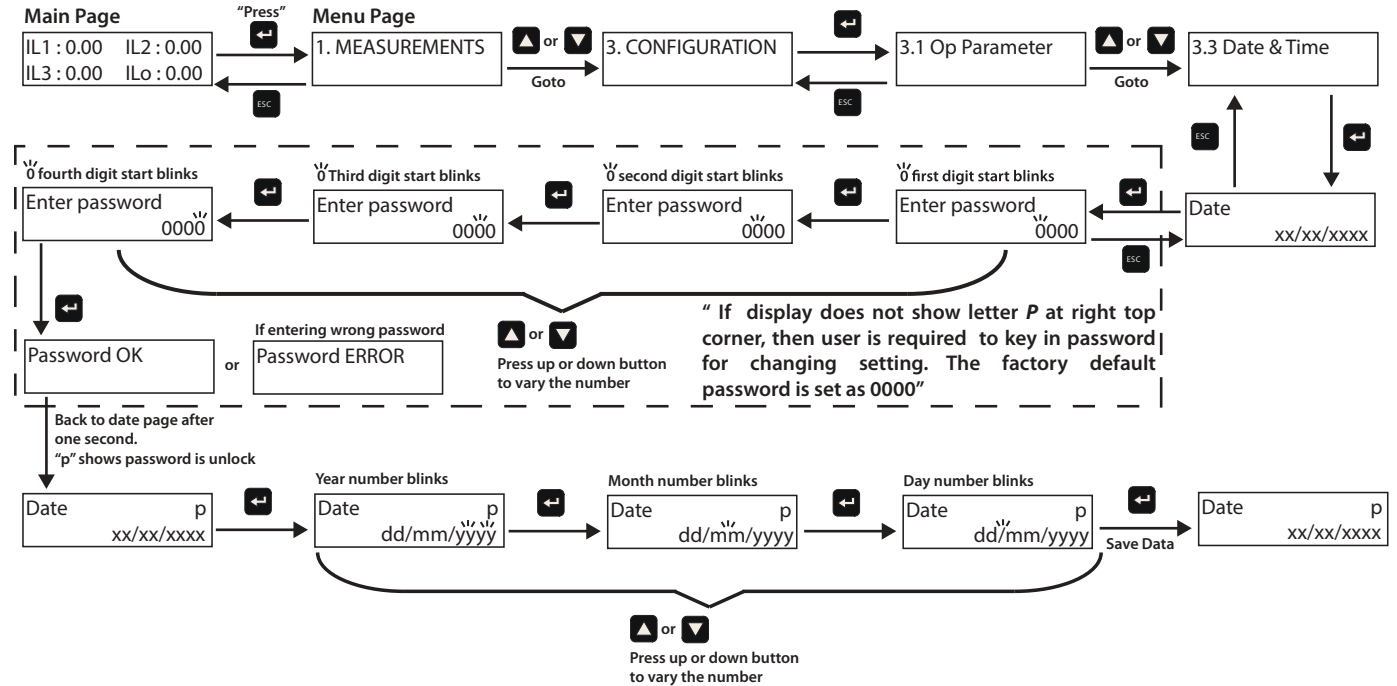
### Change setting through RS485 communication port

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

### Change setting through X30 front panel

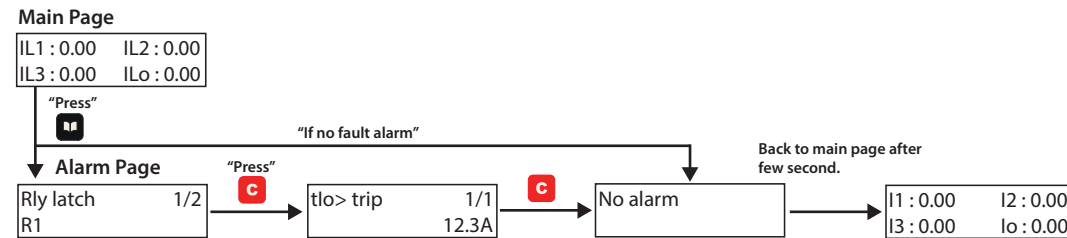
User must unlock the password first then only allow to change the setting. The default password for X30 is "0000". The following flow chart shown an example on how to change date:

## Example of set date through X30 front panel



## 9. How to clear fault alarm

The following flow chart shown an example on how to clear fault alarm:



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