X60 Combined Overcurrent and Earth Fault Quick Reference Guide

A Brief Overview

a) Trip LED Indication
b) Alarm LED Indication
c) 2x16 LCD Display
d) "ESC" Button
e) "UP" Button
f) "DOWN" Button
g) "ENTER" Button
h) "CLEAR" Button
i) "RECORD" Button
j) AUX LED Indication
k) RS232 Communication Port

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 Over Current and 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.

1. General Description

Mikro X60 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. There are 2 sets of current inputs for 1A and 5A rated CTs.

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 RS232 port available on the front panel and 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.

X60 has 4 configurable output relays. They can be activated by any of the protection functions available in the relay. There is 1 output relay for internal fault indication. Another 2 configurable logic inputs are for various functions.

2. Thing to be Caution

The X60 should be installed, operated, serviced and maintained only by qualified personnel. No responsiblility is assumed by the manufacturer for any consequences arising out of the use of this material.

a) Before power up the X60, make sure auxiliarry 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 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 33, 34 and 35.

c) If LCD display and AUX LED not turn On after power up the X60, 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 X60 Protection Relay
b) 2 x Silver Metal Brackets
c) 1 x X60 Quick Reference Guide Hardcopy

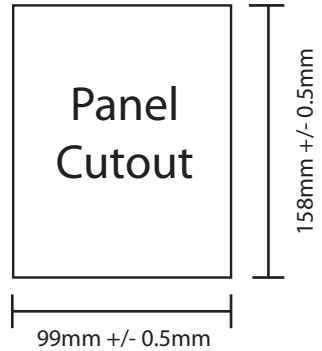
4. Installation Guide

Before installing the X60, please ensure that the environment meets the following conditions:

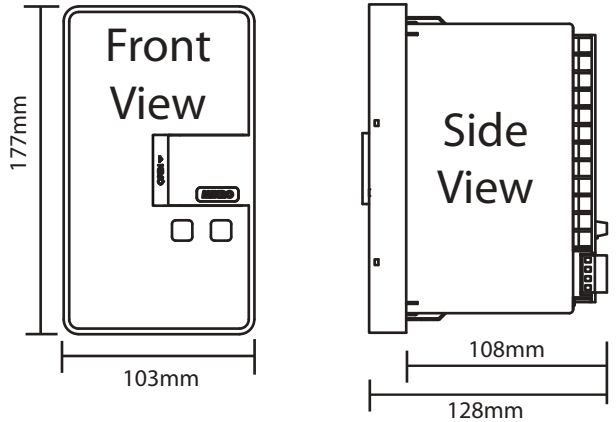
- Operating temperature: -5°C to +55°C
- Humidity: 56 days at 93%, 40°C non-condensing
- Dust free environment away from electrical noise and radiation.

5. Mounting

Insert the X60 through a 158mm x 99mm switch-gear panel as shown below:



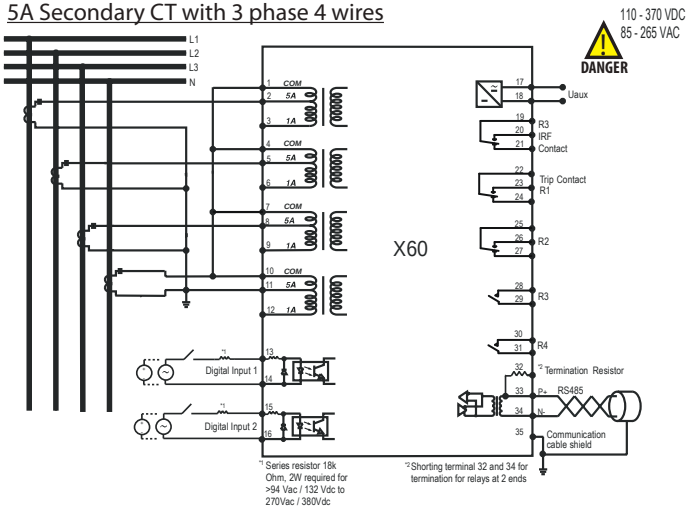
6. Dimension



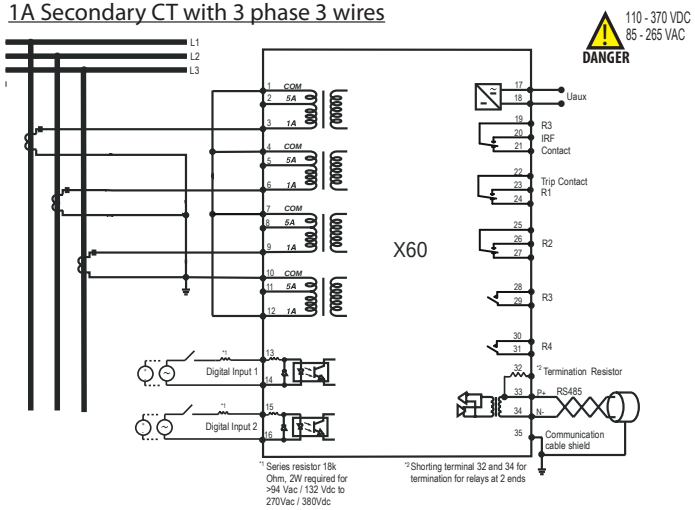
*** For more detail information, please download full set of X60 user manual from http://itmikro.com/Contents/view/122 website.**

7. Connection Diagram

5A Secondary CT with 3 phase 4 wires



1A Secondary CT with 3 phase 3 wires



8. How to Change Setting in X60

There are two ways to change setting in X60 which are through X60 front panel or Communication port (RS485 and RS232).

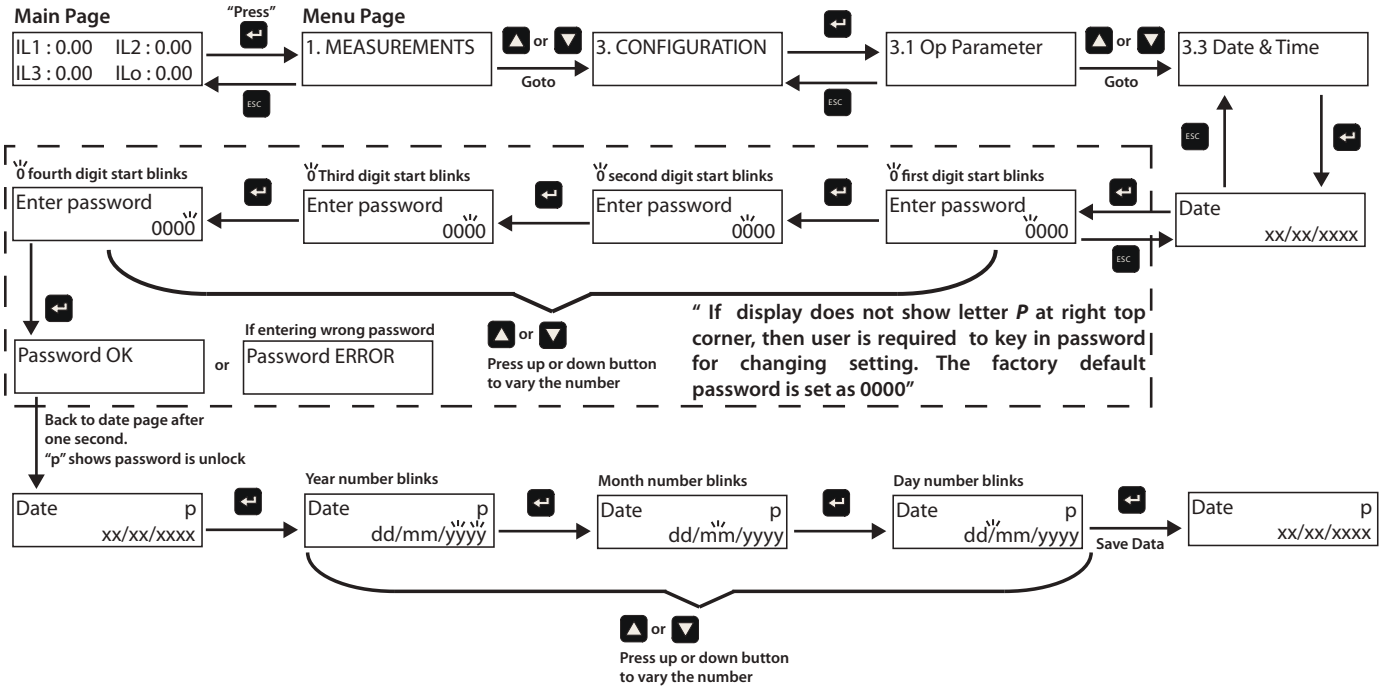
Change setting through RS485 & RS232 communication port

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

Change setting through X60 front panel

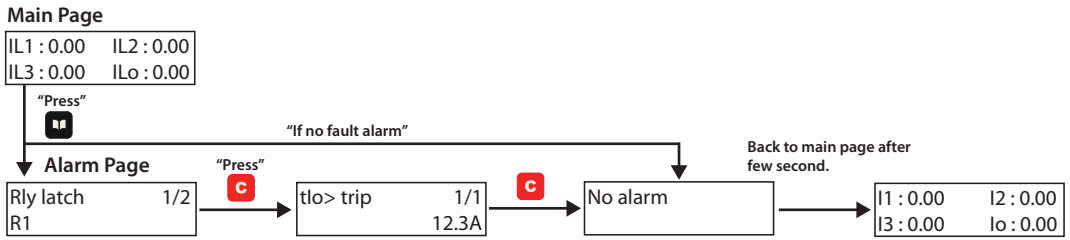
User must unlock the password first then only allow to change the setting. The default password for X60 is ***"0000".*** The following flow chart shown an example on how to change date:

Example of set date thorugh X60 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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