



## FEATURES

- Under current, Over current protection
- True RMS value measurement
- User selectable Power ON delay, Trip time delay and Recovery time delay
- Adjustable hysteresis
- Two alarm relays with NC or NO operation selectable

## SPECIFICATIONS

### DISPLAY

3 Digits, LCD with backlight

### ELECTRICAL CONNECTION

1Ø – 2 wire

### AUXILIARY SUPPLY

85 – 270V AC/DC

50 / 60Hz

### POWER CONSUMPTION

4VA max

### CT PRIMARY SETTING

1A / 5A–999A

### CT SECONDARY SETTING

1A or 5A (Selectable)

### TRIP SETTINGS

Under Current : 0 – 999A

(0-100% of CT Primary Setting)

Over Current : 0.5A – 1.19kA

(10-120% of CT Primary Setting)

### TIME SETTINGS

Response Time : < 200ms

Trip time delay : 0 – 99.9sec.

Power ON Delay : 0.5 – 99.9sec.

Recovery Time : 0 – 99.9sec

### MAXIMUM CURRENT INPUT

120% of CT Primary setting

## HYSTERESIS

0.1 - 99.9A

## RESOLUTION

0.01, 0.1, 1A, 0.01kA (Depends on CT setting)

## ACCURACY

Current :  $\pm 1\%$  of Setting,  $\pm 2$  digits

Time (Trip Time, Recovery Time,

Power ON Delay) :  $\pm 5\%$  of setting  $\pm 200$ ms

## OUTPUT SPECIFICATIONS

2 Relays : Relay1 : 1C/O (SPDT)

Relay2 : 1C/O (SPDT)

## RELAY RATING

NO (5A, 250V AC)

NC (3A, 250V AC)

## LED INDICATION

LED1(Red) : Relay1(Continuously ON after trip)

LED2(Red) : Relay2(Continuously ON after trip)

## ENVIRONMENTAL SPECIFICATIONS

- Indoor use

- Altitude of up to 2000 meters

- Pollution degree II

Temperature : Operating : 0°C to 50°C

Storage : -20°C to 70°C

Humidity : Up to 95% RH, non-condensing

## MECHANICAL SPECIFICATIONS

No. of Push Buttons : 3

Size : 35mm width

Mounting : 35mm Din Rail Mount

Wire Size (max) : 4 sq.mm

Screw tightening torque : 0.5 N-M

## WEIGHT

150 gms.

## SAFETY PRECAUTIONS

All safety related codifications, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure the safety of the operating personnel as well as the instrument.

If the equipment is not used in a manner specified by the manufacturer it might impair the protection provided by the equipment.

If there is physical damage to the unit then do not use it.

Read complete instructions prior to installation and operation of the unit.

## WIRING GUIDELINES

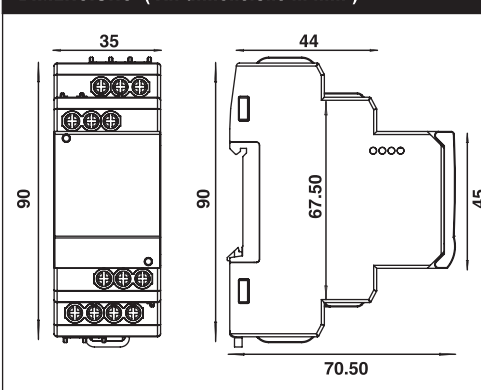
### WARNING

1. To prevent the risk of electric shock power supply to the equipment must be kept OFF while doing the wiring arrangement.
2. Wiring shall be done strictly according to the terminal layout with shortest connections. Confirm that all connections are correct.

### CAUTION

1. To ensure the safe operation of unit, check the wiring and connections.
2. It is recommended to test the unit periodically to satisfy the regulations.

## DIMENSIONS ( All dimensions in mm )

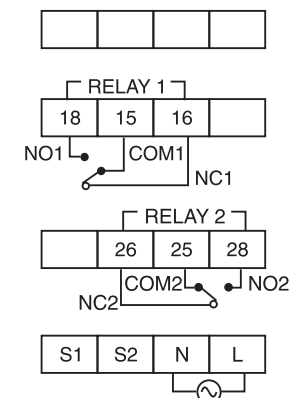


## LED INDICATION CHART

| Various Conditions                   | 'R1' LED | 'R2' LED |
|--------------------------------------|----------|----------|
| No fault                             | OFF      | OFF      |
| Trip (Relay 1)                       | ON       | OFF      |
| Trip (Relay 2)                       | OFF      | ON       |
| Trip (If programmed for both relays) | ON       | ON       |



## TERMINAL CONNECTIONS



Press ▲ + ▼ for 3sec. to enter or exit configuration menu.



**Note :** Appearance of shaded menus dependant on selection of other parameters

Press ▲ to enter sub menu from main menu

Press  +  or  +  to change parameter value

Relay 1 (RL1) Press ▲ to enter sub menu from main menu

Press  +  or  +  to change parameter value

**Time Setting for Relay 1 (TM1)** Press ▲ to enter sub menu from main menu

Press  +  or  +  to change parameter value

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| Relay 2 (RL2) <span>Press ▲ to enter sub menu from main menu</span> |                       |                                                |                                                |                                                                                                                                                                                        |
|---------------------------------------------------------------------|-----------------------|------------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Press ▲ or ▼ to scroll through sub menu                             |                       | Press ● + ▲ or ● + ▼ to change parameter value |                                                |                                                                                                                                                                                        |
| DISPLAY<br>(For 1sec)                                               | DESCRIPTION           | DEFAULT<br>VALUE                               | RANGE                                          | CONDITION                                                                                                                                                                              |
|                                                                     | Relay                 |                                                | RL1 / RL2                                      | If RL1 is selected, all the settings done for RL1 & TM1 will be automatically set for RL2 and no other parameter of RL2 & TM2 will be prompted.                                        |
|                                                                     | Over current          |                                                | ON / OFF                                       |                                                                                                                                                                                        |
|                                                                     | Over current setting  |                                                | 0.5A - 1.19kA<br>10-120% of CT Primary setting | This option will be prompted only when OC option is made ON in config. menu. OC setting cannot go below the UC setting. e.g. If UC is 50A, OC setting cannot go below 50A              |
|                                                                     | Under current         |                                                | ON / OFF                                       |                                                                                                                                                                                        |
|                                                                     | Under current setting |                                                | 0 – 999A<br>0 – 100% of CT Primary setting     | This option will be prompted only when UC option is made ON in config. menu. UC setting cannot go above the OC setting. e.g. If OC is 100A, UC setting will be limited till 100A only. |
|                                                                     | Relay operation mode  |                                                | ON / OFF                                       | ON : NO (During Trip)<br>OFF : NC (During Trip)                                                                                                                                        |
|                                                                     | Latch                 |                                                | ON / OFF                                       | If Latch is ON, user has to reset the unit manually when fault is removed                                                                                                              |

| Time Setting for Relay 2 (TM2) <span>Press ▲ to enter sub menu from main menu</span> |                     |                                                |             |           |
|--------------------------------------------------------------------------------------|---------------------|------------------------------------------------|-------------|-----------|
| Press ▲ or ▼ to scroll through sub menu                                              |                     | Press ● + ▲ or ● + ▼ to change parameter value |             |           |
| DISPLAY<br>(For 1sec)                                                                | DESCRIPTION         | DEFAULT<br>VALUE                               | RANGE       | CONDITION |
|                                                                                      | Trip time delay     |                                                | 0.0 - 99.9s |           |
|                                                                                      | Recovery time delay |                                                | 0.0 - 99.9s |           |

| Hysteresis (HYS) <span>Press ▲ to enter sub menu from main menu</span> |                        |                                                |             |           |
|------------------------------------------------------------------------|------------------------|------------------------------------------------|-------------|-----------|
| Press ▲ or ▼ to scroll through sub menu                                |                        | Press ● + ▲ or ● + ▼ to change parameter value |             |           |
| DISPLAY<br>(For 1sec)                                                  | DESCRIPTION            | DEFAULT<br>VALUE                               | RANGE       | CONDITION |
|                                                                        | Hysteresis for current |                                                | 0.1 - 99.9A |           |

| Password (PW) <span>Press ▲ to enter sub menu from main menu</span>                                                                                                                                              |              |                                                |           |                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------------------------------------|-----------|-------------------------------------------------------|
| Press ▲ or ▼ to scroll through sub menu                                                                                                                                                                          |              | Press ● + ▲ or ● + ▼ to change parameter value |           |                                                       |
| DISPLAY<br>(For 1sec)                                                                                                                                                                                            | DESCRIPTION  | DEFAULT<br>VALUE                               | RANGE     | CONDITION                                             |
|                                                                                                                                                                                                                  | Password     |                                                | ENB / DIS | Enable / Disable password protection option           |
|                                                                                                                                                                                                                  | Set password |                                                | 0-999     | Will be prompted only when Password option is enabled |
| <b>NOTE :</b> PW option will be asked when the user enter the config. menu if PW option is enabled in the config menu and the user has to enter the password which he has set in the S.PW (set password) option. |              |                                                |           |                                                       |

| Factory set (RST) <span>Press ▲ to enter sub menu from main menu</span> |                     |                                                |          |           |
|-------------------------------------------------------------------------|---------------------|------------------------------------------------|----------|-----------|
| Press ▲ or ▼ to scroll through sub menu                                 |                     | Press ● + ▲ or ● + ▼ to change parameter value |          |           |
| DISPLAY<br>(For 1sec)                                                   | DESCRIPTION         | DEFAULT<br>VALUE                               | RANGE    | CONDITION |
|                                                                         | Reset (Factory set) |                                                | YES / NO |           |

| TRIP VALUE SETTING (Online) Press ▲ key for 3 sec. to enter or exit Trip Value Setting menu : |                               |                                                |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Press ▲ or ▼ to scroll through main menu                                                      |                               | Press ● + ▲ or ● + ▼ to change parameter value |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                        |
| DISPLAY<br>(For 1sec)                                                                         | DESCRIPTION                   | DEFAULT<br>VALUE                               | RANGE                                                                                                                                                                                                                                                                                                                                              | CONDITION                                                                                                                                                                              |
| LCK                                                                                           | LOCK                          | YES                                            | YES / NO                                                                                                                                                                                                                                                                                                                                           | This option will be prompted first when the user enters the trip setting menu. User has to set NO after which he can access the trip setting menu.                                     |
| SOC                                                                                           | Over current setting (RLY 1)  | <sup>&gt;</sup><br>110 <sup>A</sup><br>R1      | 0.5A - 1.19kA<br>10-120% of CT Primary setting                                                                                                                                                                                                                                                                                                     | This option will be prompted only when OC option is made ON in config. menu. OC setting cannot go below the UC setting. e.g. If UC is 50A, OC setting cannot go below 50A.             |
| SOC                                                                                           | Over current setting (RLY 2)  | <sup>&gt;</sup><br>110 <sup>A</sup><br>R2      | 0.5A - 1.19kA<br>10-120% of CT Primary setting                                                                                                                                                                                                                                                                                                     | This option will be prompted only when OC option is made ON in config. menu. OC setting cannot go below the UC setting. e.g. If UC is 50A, OC setting cannot go below 50A.             |
| SUC                                                                                           | Under current setting (RLY 1) | <sup>&lt;</sup><br>500 <sup>A</sup><br>R1      | 0 – 999A<br>0-100% of CT Primary setting                                                                                                                                                                                                                                                                                                           | This option will be prompted only when UC option is made ON in config. menu. UC setting cannot go above the OC setting. e.g. If OC is 100A, UC setting will be limited till 100A only. |
| SUC                                                                                           | Under current setting (RLY 2) | <sup>&lt;</sup><br>500 <sup>A</sup><br>R2      | 0 – 999A<br>0-100% of CT Primary setting                                                                                                                                                                                                                                                                                                           | This option will be prompted only when UC option is made ON in config. menu. UC setting cannot go above the OC setting. e.g. If OC is 100A, UC setting will be limited till 100A only. |
| TRP                                                                                           | Trip time delay (RLY 1)       | <sup>s</sup><br>30 <sup>t</sup><br>R1          | 0.0 - 99.9s                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                        |
| TRP                                                                                           | Trip time delay (RLY 2)       | <sup>s</sup><br>30 <sup>t</sup><br>R2          | 0.0 - 99.9s                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                        |
| LCK                                                                                           | LOCK                          | NO                                             | YES / NO,<br>( In this option if YES is selected by the user, then whenever the user enters the Trip Value Setting, initially LOCK option will be prompted. The user will have to set NO after which he can access the trip setting menu. If the user wants to disable LOCK option, he can set NO when LOCK option is prompted after TRP option. ) |                                                                                                                                                                                        |

|                    |                                                                 |
|--------------------|-----------------------------------------------------------------|
| <b>ONLINE KEYS</b> | Individual parameters can be viewed with every press of ▼ keys. |
|--------------------|-----------------------------------------------------------------|

| PARAMETER | SYMBOL |
|-----------|--------|
| Current   | L1 A   |

|                        |                                                                                           |
|------------------------|-------------------------------------------------------------------------------------------|
| <b>TRIP INDICATION</b> | Trip Indication on press of ▲ key : Trip value will be displayed till the key is pressed. |
| <b>RESET</b>           | Press ● key for 3sec. to reset manually (Applicable only if Latch is ON)                  |

**Master Password : 753**

(Specifications subject to change as development is a continuous process.)

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