



**FEATURES**

- 3 phase RMS current measurement with protection from Dry run, Over current, Lock current, Current Asymmetry, Phase Failure & Phase Sequence, Over Load (as per NEMA Curve)
- Selectable Power ON delay, Trip time delay & Recovery delay
- Earth fault protection
- 1 CO relay for trip
- Programmable 1 CO relay for alarm

**SPECIFICATIONS**

**HMI**

- 4 Digit Seven Segment Display
- 3 Keys For Control and Setting

**ELECTRICAL CONNECTION**

3Ø-3 wire

**AUXILIARY SUPPLY**

- 90V-270V AC/DC
- 50-60Hz
- 4VA max.

**CURRENT MEASURING RANGE**

- A) Motor rated current (IR) measuring with MPCT from 3A-80A.
- MPCT D15 10A
  - MPCT D15 40A
  - MPCT D15 80A
- B) Earth fault current measurement with EFCT From 1A-160A
- EFCT 100/25 160/1A VA1 CL 1
  - EFCT 140/35 160/1A VA1 CL 1

**TIME SETTINGS**

Power ON Delay : 1 - 999sec  
 Trip time delay : 0 - 999sec  
 (For OC, UC, LC, Asymmetry, Earth Fault)  
 Phase Failure : Instantaneous(<120ms)  
 Phase Reversal : Instantaneous(<400ms)  
 Reset Time : 1-999sec for current parameters  
 : 1-999 sec for Earth Fault  
 Response Time : <400ms  
 Reset Attempts : 3 (fixed)  
 Reset Attempt Time Frame : 0 - 999min

**HYSTERESIS**

Current : 0-99A

**RESOLUTION**

Current : 0.01 for < 10A  
 : 0.1 for >10A

**ACCURACY**

Time : ±5%+100msec  
 Current : 5% of IR(Rated Current)

**OUTPUT SPECIFICATIONS**

2 Relays : Relay1 : TRIP (1CO)  
 Relay2 : ALARM (1CO)

**RELAY RATING**

NO (5A, 250V AC/28VDC)  
 NC (5A, 250V AC/28VDC)

**LED INDICATION**

LED1 (Red) : Relay1  
 LED2 (Red) : Relay2  
 (Continuously ON after trip)

**RESET CONDITION**

- Power ON reset
- Terminal reset (Y1 & Y2 short)
- Press RST key for 3 sec.
- Auto reset (As per settings)

**TEST / RESET FUNCTION**

Test / Reset function is used to check proper functioning of product. It includes

- Relay contact switching
- LED Check
- Internal Circuit verification

**TEST MODE**

- To check Test mode press ▲ key for 3sec
- Y1 & Y2 short

**RESET MODE**

- To check Reset mode press ▼ Reset key for 3 sec.
- Y1 & Y2 short

**ENVIRONMENTAL SPECIFICATIONS**

- Indoor use  
 - Altitude of up to 2000 meters  
 - Pollution degree II  
 Temperature : Operating : 0 to 55°C  
 Storage : -20 to 70°C  
 Humidity : Up to 95% RH, non-condensing

**MECHANICAL SPECIFICATIONS**

Size : 96 x 96 mm  
 Mounting : Panel Mount  
 Wire Size (max) : 4 sq.mm  
 Screw tightening torque : 0.5 N-M

**WEIGHT** : 300gm approx.

**LED INDICATION CHART**

| Various Conditions                   | 'R1' LED | 'R2' LED |
|--------------------------------------|----------|----------|
| No fault                             | OFF      | OFF      |
| Trip (Relay 1)                       | ON       | OFF      |
| Alarm (Relay 2)                      | OFF      | BLINKING |
| Trip (If programmed for alarm relay) | ON       | ON       |

**TRIP INDICATION CHART**

| Trip indication | Trip parameters   |
|-----------------|-------------------|
| t.UC            | Under Current     |
| t.OC            | Over Current      |
| t.LC            | Locked Current    |
| t.CA            | Current Asymmetry |
| PHL             | Phase Loss        |
| PHS             | Phase Sequence    |
| t.OL            | Over Load         |
| EFR             | Earth Fault       |

**ORDER CODE INFORMATION**

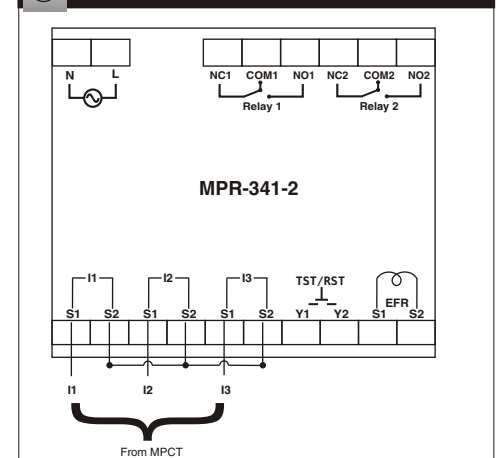
| PRODUCT   | SUPPLY  | CERTIFICATION |
|-----------|---------|---------------|
| MPR-341-2 | 230V AC | CE UL         |

**ACCESSORIES**

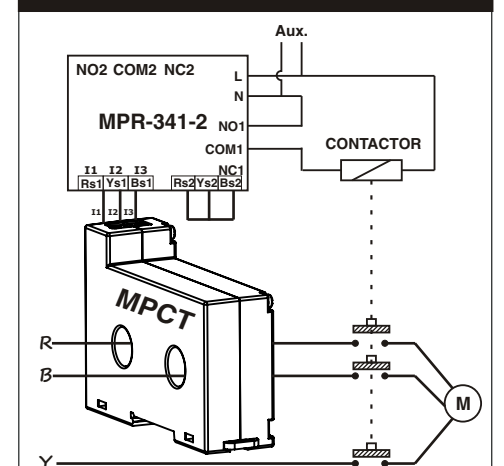
| PRODUCT      | SUPPLY | CERTIFICATION |
|--------------|--------|---------------|
| MPCT D15 10A | 10A    | ---           |
| MPCT D15 40A | 40A    | ---           |
| MPCT D15 80A | 80A    | ---           |

| PRODUCT                     | CURRENT RATIO | CERTIFICATION |
|-----------------------------|---------------|---------------|
| EFCT 100/25 160/1A VA1 CL 1 | 160/1A        | ---           |
| EFCT 140/35 160/1A VA1 CL 1 | 160/1A        | ---           |

**TERMINAL CONNECTIONS**



**WIRING DIAGRAM**



**NOTE** : Use of contactor recommended

**CONFIGURATION MENU**

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

| Network Selection (NWK) <span style="float: right;">Press ● + ▲ to enter sub menu from main menu</span> |                             |   |  |   |
|---|-----------------------------|---|--|---|
| Press ▲ or ▼ to scroll through sub menu   |                             | Press ● + ▲ or ● + ▼ to change parameter value<br>Press ● to set parameter value. |  |   |
| DISPLAY (For 1sec)  | DESCRIPTION                 | DEFAULT VALUE   | RANGE  | CONDITION   |
| PON   | Power ON Delay              | 1   | 1 to 999 sec   | Relay status: Trip (connection as per mode selection)                 |
| CTSL  | CT Selection                | 10  | 10A, 40A, 80A  | MPCT Selection as per application & motor rating                      |
| rtdC  | Rated Current               | 10  | 3A - 10A (Default : 10A)<br>11A - 40A (Default : 40A)<br>24A - 80A (Default : 80A)               | Default value will be as per selected range                           |
| OL  | Over Load                   | 5   | Class 5, 10, 15, 20, 30 (Starts with disable)  | This parameter ensure tripping as per selected class                  |
| OC  | Over Current                | 20  | (Ir+1)A to 60A(Default :20A)<br>(Ir+1)A to 240A(Default : 80A)<br>(Ir+1)A to 480A(Default: 160A) | This parameter is only applicable when motor is started               |
| OCt   | Over Current Trip Time      | 1   | 0 to 999 sec   | This parameter will not be displayed if over current is disabled      |
| UC  | Under Current               | 5   | 1A to (Ir-1)A<br>5A to (Ir-1)A<br>10A to (Ir-1)A   | This parameter is only applicable when motor is started               |
| UCt   | Under Current Trip Time     | 1   | 0 to 999 sec   | This parameter will not be displayed if under current is disabled     |
| CA  | Current Asymmetry           | 2   | 1A to (Ir-1)A  | This parameter is only applicable when motor is started               |
| CAt   | Current Asymmetry Trip Time | 1   | 0 to 999 sec   | This parameter will not be displayed if current asymmetry is disabled |
| LOC   | Locked Current              | 20  | (Ir+1)A to 60A(Default :20A)<br>(Ir+1)A to 240A(Default : 80A)<br>(Ir+1)A to 480A(Default: 160A) | This parameter is only applicable when motor is started               |
| LOCt  | Locked Current Trip Time    | 1   | 0 to 999 sec   | This parameter will not be displayed if lock current is disabled      |
| Crrr  | Current Reset Time          | 5   | 1 to 999 sec   | This parameter indicates recovery time                                |
| EFr   | Earth Fault                 | 160   | Trip : Disable then 1A to 160A   | Earth fault protection  |

| DISPLAY (For 1sec) |                       | DEFAULT VALUE | RANGE                  | CONDITION   |
|--------------------|-----------------------|---------------|------------------------|---|
| EFrt               | Earth Fault Trip Time | 1             | 0 to 999 sec           | This parameter will not be displayed if earth fault is disabled |
| EFrs               | Reset Time EFR        | 5             | 1 to 999 sec           | This parameter will not be displayed if earth fault is disabled |
| PHL                | Phase Loss            | ENB           | ENB/DIS                | This parameter will enable / disable phase loss                 |
| PHS                | Phase Sequence        | ENB           | ENB/DIS                | This parameter will enable / disable phase sequence             |
| HYSL               | Hysteresis            | 1             | 0A to 99A              | This parameter is only applicable for alarm condition           |
| rRPd               | Rapid Cycle Time      | 30            | 0 - 999 min            | Fixed reset 3 times. user has to manually reset 4th time        |
| rL42               | Relay 2 Condition     | TRP           | Disable / Trip / Alarm | Relay 2 can be configured as disable, alarm, Relay1             |
| rL4ā               | Relay Mode            | ON            | ON / OFF               | Relay can be operated in fail safe & shunt trip mode            |
| ALā                | Alarm                 | 5             | 1%-25% <sup>(1)</sup>  | This parameter indicates alarm condition                        |
| LACH               | Latch                 | ON            | ON / OFF               | If this parameter on, user has to manually reset the unit       |
| Fct.d              | Factory Default       | NO            | YES / NO               | This parameter will, reset all the saved parameters to default  |

**Note-** Step size : 1A for all current trip parameters  
Step size : 1sec for all time parametres.

(1) For Under current : Alarm value= Trip value+Alarm% of trip value  
For Over/Lock current : Alarm value=Trip value-Alarm% of trip value.

(1)In Trip value setting & configuration menu, if no key pressed for 30 sec, then unit resumes online mode.  
(2)When zero current is detected in all 3 phases ,it will not be considered as Phase Loss.

|   |   |
|---|---|
| <b>RESET</b>  | Press ▼ key for 3sec. to reset manually   |
| <b>CURRENT</b>  | Press ● key to view current value in Manual mode  |
| <b>TRIP VALUE</b>   | Press ● key for 3sec. To display trip value(when trip page is displayed & press same key to go back to trip page) |
| <b>Note-</b> If rated current value is less than set under current/current asymmetry trip value then default under current/ current asymmetry value will be Ir-1 and if rated current value is greater than over current/lock current trip value then default over current/lock current will be Ir+1. |   |

## 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

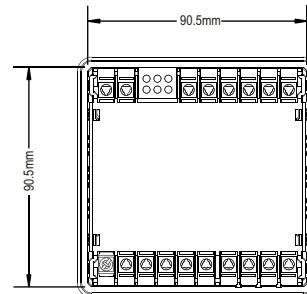
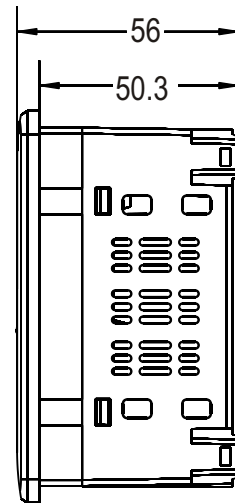
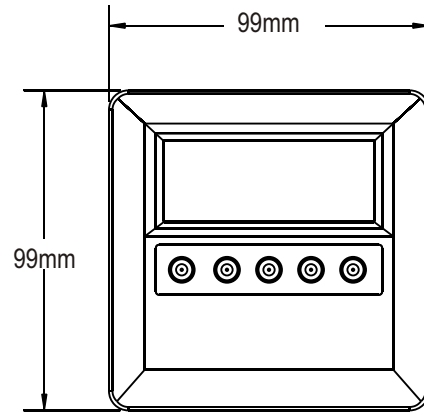
### WARNING

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.

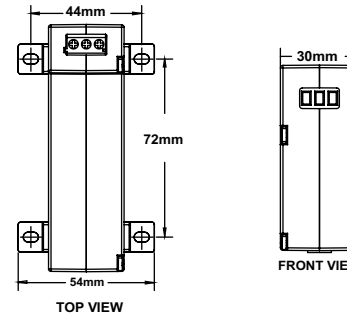
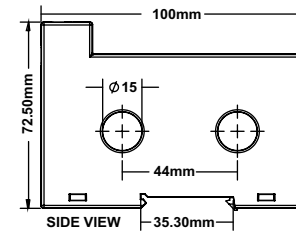
### CAUTION

1. To ensure the safe operation of unit, check the wiring and connections.

## DIMENSIONS



## CT DIMENSIONS



| OUTLINE<br>Dimensions (in mm) |                  | PANEL CUTOUT<br>Dimensions (in mm) |
|-------------------------------|------------------|------------------------------------|
| <p>Front View</p>             | <p>Side View</p> |                                    |

## WARRANTY / LIMITATIONS OF LIABILITY

Selec warrants the products to be free from defects in the materials and workmanship for a period of one year (or other period specified, if any) from the date of sale by Selec.

The warranty does not apply to defects resulting from any action of the buyer, including but not limited to improper handling, operating the product outside the specification limits or unauthorized disassembling / altering of the product. The warranty shall be VOID if the product shows evidence of having been tampered or being damaged due to usage in corrosive environment; or current, heat, moisture or vibration; improper specification; wrong usage in an application; misuse or other operating conditions outside of Selec's control.

Selec shall not be responsible for special, indirect or consequential damages, loss of profits or commercial loss in any way connected with the products, whether such claim is based on contract, warranty, negligence or strict liability.

In no event shall the responsibility of Selec for any act exceed the individual price of the product on which liability is asserted.

In no event shall Selec be responsible for warranty or other claims regarding the products unless Selec's analysis confirms that the products were properly handled, stored, installed and maintained and not subject to contamination, abuse, misuse or inappropriate modification or repair.

( Specifications are subject to change, since development is a continuous process )

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