OP682-V01

# selec

**PPRD-4M-3-415V**
Operating Instructions



## FEATURES

- Dry Run/Under Current, Over Current, Locked Current, Current Asymmetry, Over Voltage, Under Voltage, Voltage Asymmetry, Phase Failure, Phase Sequence and Monitors Over Load (As per NEMA curve) in 3Ø system
- Trip Time Delay, Recovery Time Delay
- Adjustable Hysteresis Band
- Start & Stop Function by Push Button

## SPECIFICATIONS

**DISPLAY**
3 Digits, Seven Segment LED Display

**ELECTRICAL CONNECTION**
3Ø-3 wire

**OPERATING RANGE**
280 - 500VAC (L-L)

**FREQUENCY RANGE**
50 - 60Hz

**VA RATING**
40VA max

**CURRENT MEASUREMENT RANGE**
2CT for R,Y,B Phase and Range From 3A - 80A (Depends on MPCT selected)

**VOLTAGE MEASURING RANGE**
280 - 500 VAC (L-L)

**TRIP PARAMETERS**
**Overload :** NEMA Class : 5,10,15,20,30

**Rated Current:**
10A CT : 3A-10A
40A CT : 11A-40A
80A CT : 24A-80A

**Over Current** :
10A CT : ($I_R$+1)A to 60A
40A CT : ($I_R$+1)A to 240A
80A CT : ($I_R$+1)A to 480A
[$I_R$ = Rated current] & Step size : 1A

**Under Current** :
10A CT : 1A to ($I_R$-1)A
40A CT : 5A to ($I_R$-1)A
80A CT : 10A ($I_R$-1)A
[$I_R$ = Rated current] & step size : 1A

**Locked Current** :
10A CT : ($I_R$+1)A to 60A
40A CT : ($I_R$+1)A to 240A
80A CT : ($I_R$+1)A to 480A
[$I_R$ = Rated current] & Step size : 1A

**Current Asymmetry :**
1A to ($I_R$-1)A
[$I_R$ = Rated current] & step size : 1A

**Over Voltage :**
280VAC - 500VAC (L-L)

**Under Voltage :**
280VAC - 500VAC (L-L)

**Voltage Asymmetry** :
10V - 50V

**Phase Failure :**
Yes

**Phase Sequence :**
Yes

**RESOLUTION**
Current : <10A = 0.01
>10A = 0.1

**ACCURACY**
Voltage : ±1% of 500V ± 1digit
Current : ±5% of $I_R$ ± 1digit
Time : ±5% ± 100msec

**TIME SETTINGS**
Power ON Delay : 1sec (Fixed)
Trip Time Delay : 0 - 999sec
(Current & Voltage Parameters)
Phase Failure : Instantaneous
Phase Reversal : Instantaneous
Reset Time : 1-999sec for Current & Voltage parameters
Response Time : <240ms
Reset Attempts : 3 (Fixed)
Reset Attempt Time Frame : 1 - 999 mins
Auto diagnostic present

**HYSTERESIS**
Voltage : 0 -10V
(Not applicable for Current parameters)

**OUTPUT SPECIFICATIONS**
1 Relay : 1C/O (SPDT)

**RELAY RATING**
NO (5A, 250V AC/28VDC)
NC (3A, 250V AC/28VDC)

**LED INDICATION**
LED1 (Red) : Relay(Continuously ON after trip)
LED2 (Green): Pump(ON when Pump ON)

**LED INDICATION CHART**

| Various Conditions | 'R' LED | 'PUMP' LED |
|---|---|---|
| Healthy | OFF | OFF |
| Healthy & Motor ON | OFF | ON |
| Trip | ON | OFF |

**TST/RST FUNCTION :**
TST : Relay Energized
RST : Relay De-energized

**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**
No. of Push Buttons : 3
Mounting : Din Rail Mount
Wire Size (max) : 4 sq.mm
Screw tightening torque : 0.5 N-M

**WEIGHT**: 220gms (approx.)

**ORDER CODE INFORMATION**

| Product | Supply | Certification | |
|---|---|---|---|
| | | CE | cULus LISTED |
| **PPRD-4M-3-415V** | 280V - 500V | — | — |

**ACCESSORIES**

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

## 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.

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

## WIRING GUIDELINES

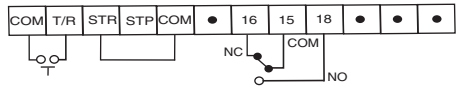
**WARNING**

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.

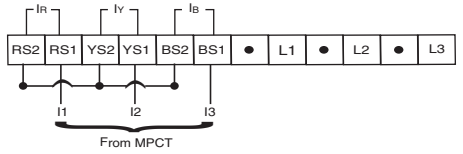
**CAUTION**

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.

## TERMINAL CONNECTIONS




**PPRD-4M-3-415V**




(Note : $I_1$,$I_2$ & $I_3$ to be connected to terminals in MPCT)

## CONFIGURATION MENU

**Press ↑ + ↓ for 3sec. to enter or exit configuration menu.**

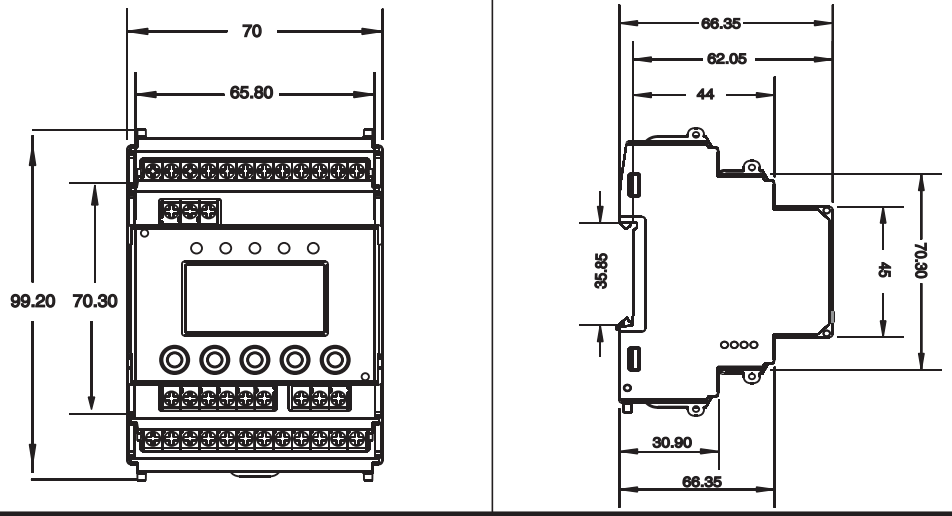
Press ↵ to save and scroll through sub menu | Press ↑ or ↓ to enter and change parameter value

| DISPLAY | DESCRIPTION | DEFAULT VALUE | RANGE | CONDITION |
|---|---|---|---|---|
| rtC | Rated Current | 10 | 3A - 10A (CT : 10A)<br>11A - 40A (CT : 40A)<br>24A - 80A (CT : 80A) | Default value will be as per selected range of CT selection |
| CFG | Config Settings | no | YES / NO | If configuration setting is 'YES', then other pages / settings will be displayed. |
| Ct.S | CT Selection | 10 | 3A - 10A (Default : 10A)<br>11A - 40A (Default : 40A)<br>24A - 80A (Default : 80A) | Default value will be as per selected range |
| OLr | Over Load | 5 | Class 5, 10, 15, 20, 30<br>(Starts with disable) | |
| 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)<br>(Starts with disable) | This parameter is only applicable when motor is already started |
| UC | Under Current | 5 | 1A to (Ir-1)A (Default : 5A)<br>5A to (Ir-1)A (Default : 20A)<br>10A to (Ir-1)A (Default : 40A)<br>(Starts with disable) | This parameter is only applicable when motor is already started |
| LC | 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)<br>(Starts with disable) | This parameter is only applicable during motor start condition |
| CA | Current Asymmetry | 2 | 1A to (Ir-1)A<br>(Starts with disable) | This parameter is only applicable when motor is already started |
| OV | Over Voltage | 480 | 280V to 500V<br>(Starts with disable) | Over Voltage cannot be less than Under Voltage |
| UV | Under Voltage | 350 | 280V to 500V<br>(Starts with disable) | Under Voltage cannot be greater than Over Voltage |
| VA | Voltage Asymmetry | 30 | 10V to 50V<br>(Starts with disable) | |
| PhL | Phase Loss | Enb | Enable / Disable | |
| PhS | Phase Sequence | Enb | Enable / Disable | |
| VtH | Voltage Hysteresis | 6 | 0V to 10V | This parameter is applicable for Voltage parameter |
| trP | Trip Time | 1 | 0 to 999 sec | This parameter is applicable for Voltage and Current parameter |
| rEC | Recovery Time | 5 | 1 to 999 sec | This parameter is applicable for Voltage and Current parameter |
| LCH | Latch | on | ON / OFF | If Latch is ON, user has to reset the unit manually when fault is removed |
| rCt | Rapid Cycle Time | 30 | 1 to 999 mins | Enable only if Auto mode selected |
| FCt | Factory Default | no | YES / NO | |

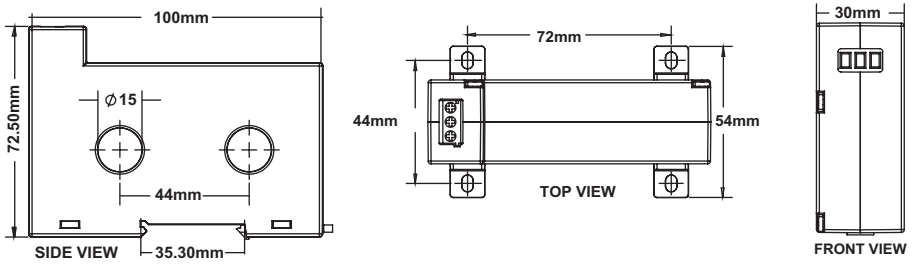
| KEY Function | |
|---|---|
| **CURRENT** | Current value is shown in online mode. |
| **TEST** | Press ↑ key for 3sec to enter in test mode. |
| **RESET** | Press ↓ key for 3sec to reset manually. |
| **VOLTAGE** | Press ↵ key to view voltage value in online mode and after releasing current value is displayed. |
| **TRIP VALUE** | Press ↑ key for 3sec. to display trip value. |

**NOTE :**
- In configuration menu, if no key pressed for 30 sec. Then unit resumes to online page.
- All Voltage and Current Parameters Tripping will be as per Average values of voltage and Current.
- Unit will show OVR when current is greater than 10 times of rated current.
- Unit will not show current less than 10% of full load current (Depends on MPCT selected)
- TEST/RESET function to be performed before turning ON Pump/Start key press & ensure application is disconnected from unit.

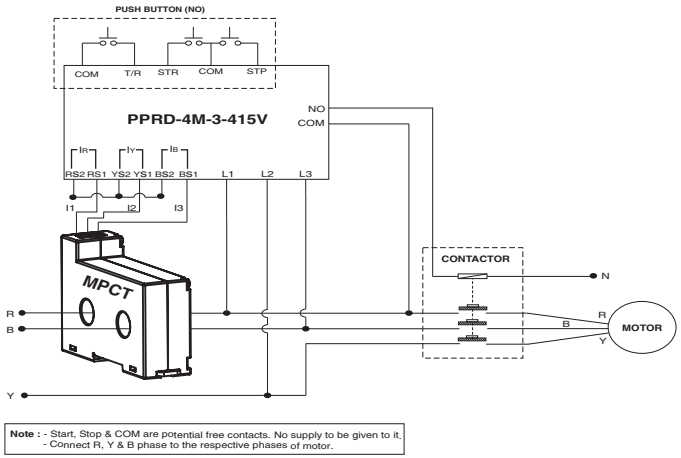
## MECHANICAL INSTALLATION/DIMENSION (in mm)




## CT DIMENSIONS ( All dimensions in mm )




## CONNECTION DIAGRAM




**Note :** - Start, Stop & COM are potential free contacts. No supply to be given to it.
- Connect R, Y & B phase to the respective phases of motor.

## 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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