




## Installation Instruction BCH-iPro

Thank you for purchasing the BCH-iPro Relay

### SAFETY PRECAUTIONS

Be sure to read the Installation Guide and safety precautions before using the product.

 Warning : Failure to comply with this message may result in damage to the device or system.

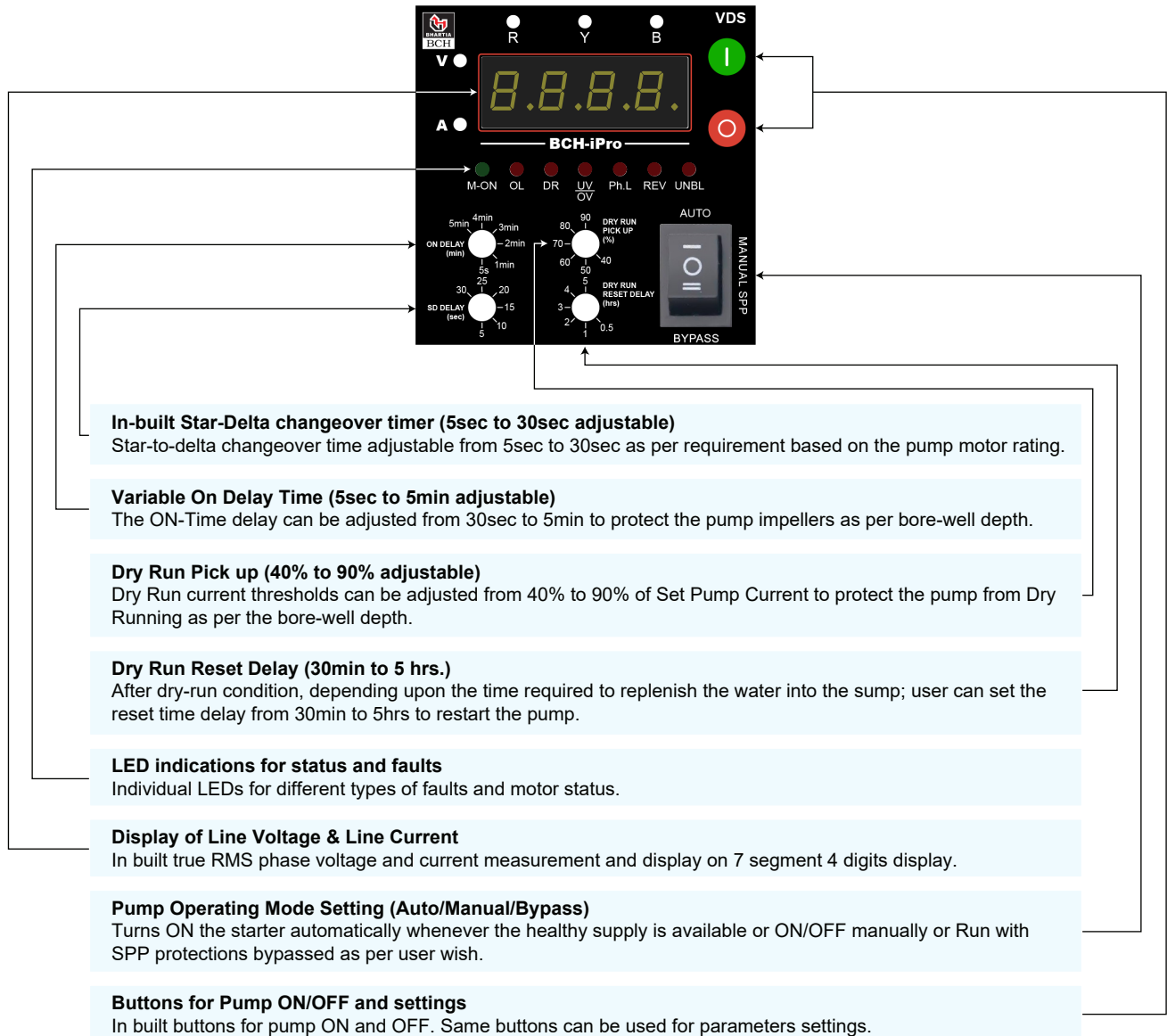
#### Warning

- Do not change the setting during motor running.
- Turn off the upstream breaker before installing or service to prevent electric shocks & burn due to short circuit.

## Protections



- Single phasing fault
- Phase reversal fault
- Under voltage fault
- Overvoltage fault
- Voltage unbalance fault from supply side
- Current unbalance fault from motor side (Available in ADS and ADD models)
- Dry-run fault
- Overload protection by In-built overload relay

## Features



## Operations

### Pump ON and OFF

- Press ON button  for 1 sec to turn ON the pump
- Press OFF button  for 1 sec to turn OFF the pump

### Pump Load Current Settings

- Turn ON the pump by pressing ON button.
- When the motor runs in stable condition then press ON button for 10 seconds, display shows Curr --> set --> "Actual current". If current is between set IFL current and 65% of set IFL current, then display shows "OK" otherwise "FAIL".
- If the display shows OK, then pump current set successfully and stored in internal memory.

## Pump IFL Settings

- Switch OFF the starter
- Press ON and OFF buttons together for 5 sec
- Display shows IFL--> IFL value (example. 6.0)
- To increase IFL value in the steps of 0.1A, press ON button
- To enter the set value, press the OFF button. Display turns into normal display
- (If buttons remain idle for 60 secs then value automatically set)
- Power ON delay time setting can be done by "ON DELAY" Preset on front panel from 30 sec to 300 sec (5 min)
- In auto mode motor will start automatically after set ON delay time.

## Current Unbalance Settings (Available in ADS and ADD models)

- Switch OFF the starter
- Press OFF button for 5 sec
- Display shows Cur-->set --> "Unbalance in %-Default value 50%"
- Press ON button to increment the value in steps of 1%
- To enter the set value, press the OFF button. Display turns into normal display
- (If buttons remain idle for 60 secs then value automatically set)

## Power ON Delay Time Setting

- Power ON delay time setting can be done by "ON DELAY" Preset on front panel from 30 sec to 300 sec (5 min)
- In auto mode motor will start automatically after set ON delay time.

## Star to Delta Change Over Time Setting

- Star to Delta change over time can be set by "SD DELAY" preset on front panel from 5 sec to 30 sec
- Pump connection changed from Star to Delta after set SD change over time with 100ms pause time

## Dry Run Current Setting

- Dry Run pick up current can be set by "DRY RUN PICK UP (%)" preset on front panel from 40% to 90% of set pump current

## Dry Run Reset Delay Time Setting

- Dry Run reset delay time can be set by "DRY RUN RESET DELAY (hrs)" preset on front panel from 0.5 to 5 hrs.
- Pump will turn ON automatically once the Reset Time Delay elapses in Auto mode. In Manual mode pump can be start after the Reset Time Delay elapses.

## STATUS AND FAULT INDICATIONS

Status/Faults	LED Indication	LED status
Motor ON	< M-ON > LED (Green)	OFF - Motor OFF
		Blink - Motor ON during Star Phase
		Steady Glow - Motor ON in Delta Phase
Overload Fault	< OL > LED (Red)	Blink - Overload warning
		Steady Glow - Overload trip
Dry Run Fault	< DR > LED (Red)	Blink - Dry Run warning
		Steady Glow - Dry Run trip
Under Voltage / Over Voltage Fault	< UV/OV > LED (Red)	Blink - Under Voltage trip
		Steady Glow - Over Voltage trip
Phase Loss Fault	< Ph.L > LED (Red)	Steady Glow when trip
Phase Reversal Fault	< REV > LED (Red)	Steady Glow when trip
Input Voltage Unbalance / Output Current Unbalance Fault	< UNBL > LED (Red)	Blink - Trip due to Output Current Unbalance
		Steady Glow - Trip due to Input Voltage Unbalance

## MODE OF OPERATION

### AUTO MODE

In this mode the system operates automatically once the healthy supply resumes without fault. Motor starts with set ON delay time with SPP protection. ON delay time can be bypass by pressing ON button.

### MANUAL MODE

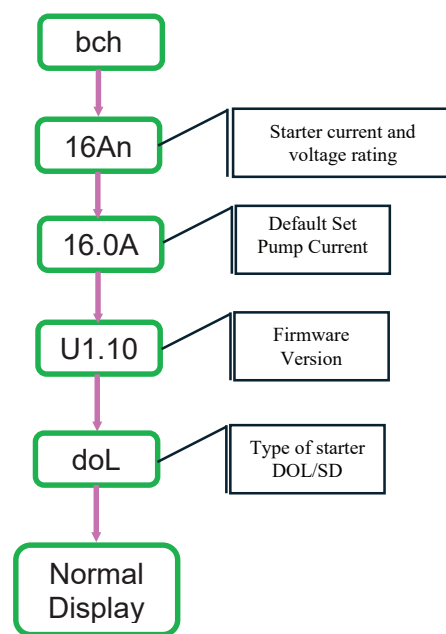
In this mode user has to press the Start button to start the motor. Motor starts immediately by pressing Start button without ON delay time if supply is healthy. Motor is protected with SPP protections. To stop the motor user has to press Stop button.

### BYPASS MODE

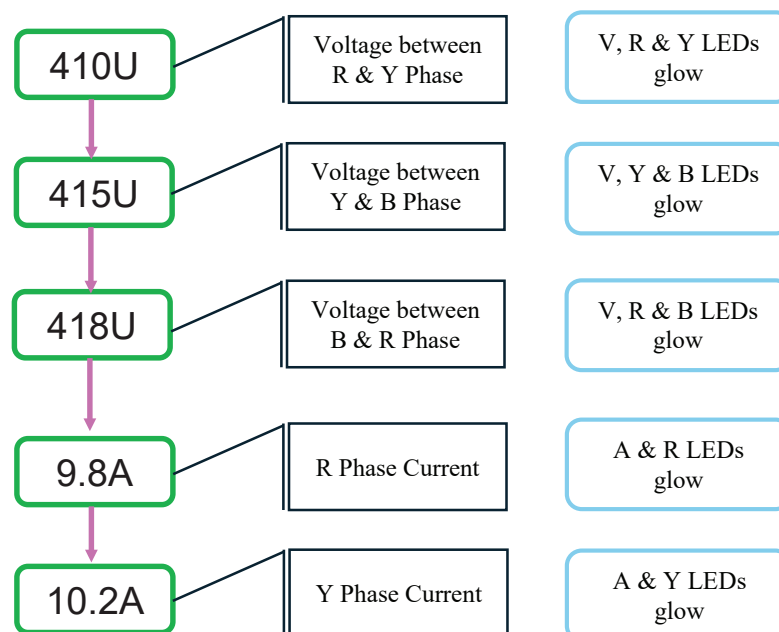
In this mode all the protections are bypassed except Overload. User can operate the system with ON and OFF buttons without any protection.

## Display Navigation

### Power Up Display

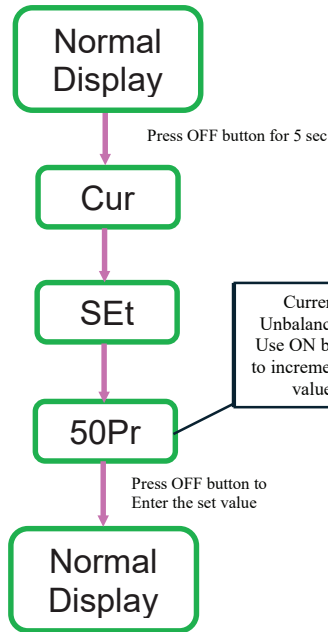


### Normal Display



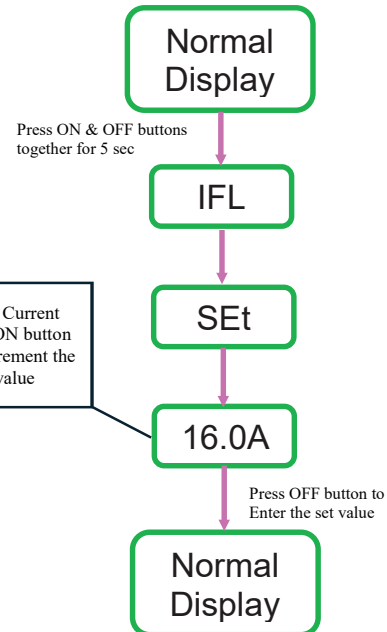
## Normal Display

### Current Unbalance Setting (Available in ADS and ADD models)



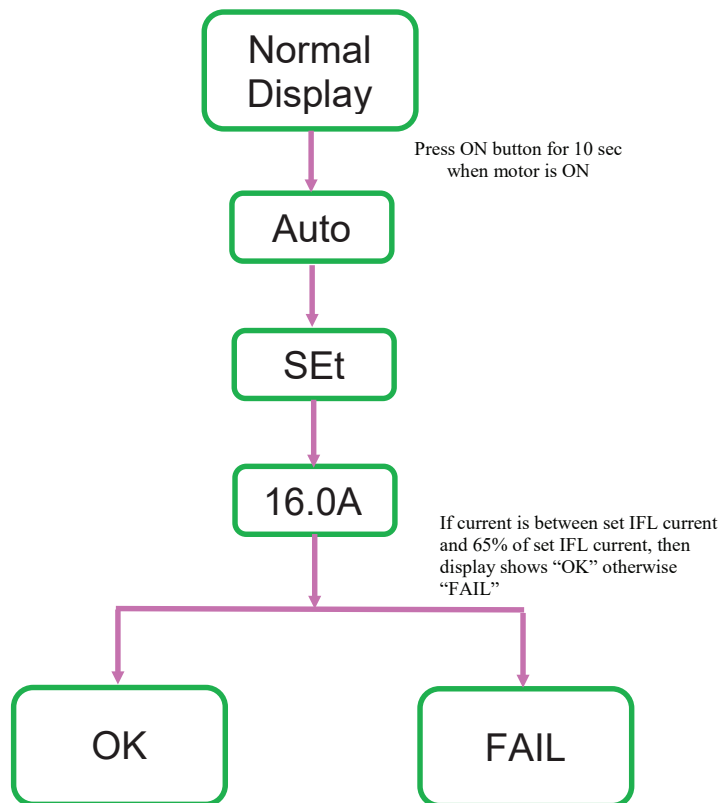
Current Unbalance %.  
Use ON button to increment the value

### IFL (Full Load Current) Setting

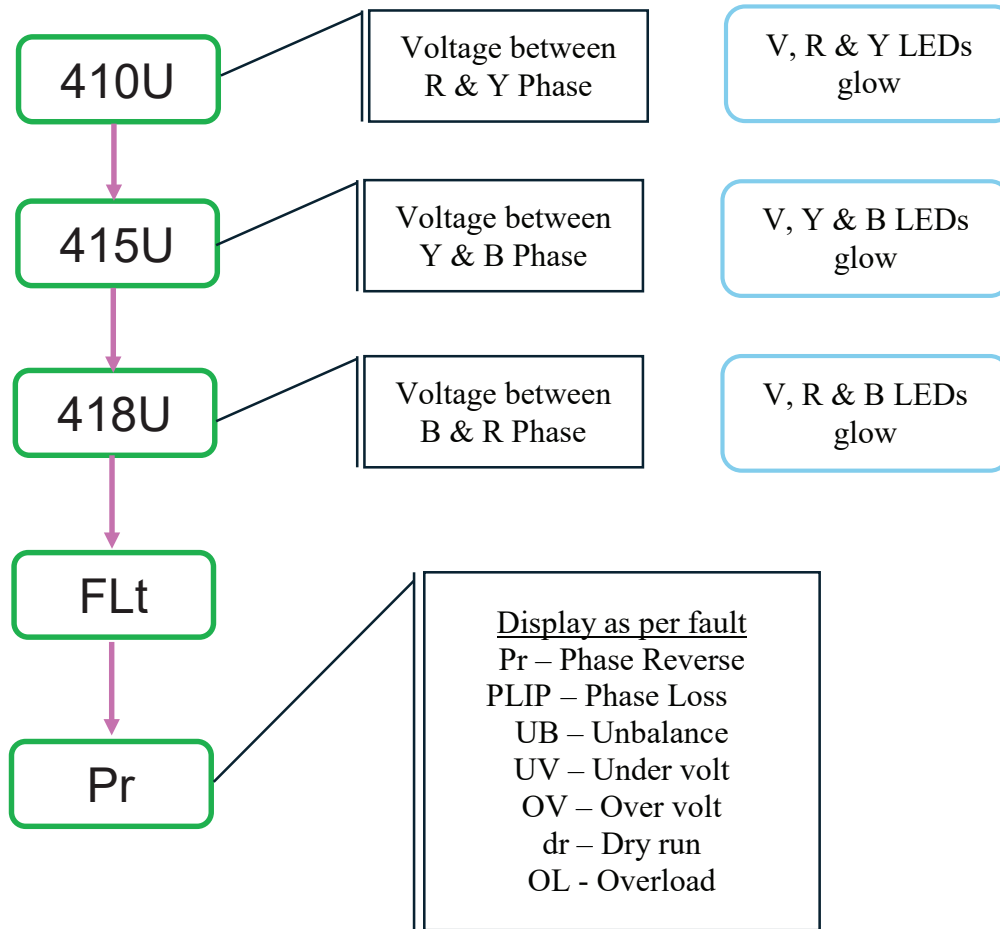


IFL Current  
Use ON button to increment the value

## Automatic Pump Current Setting



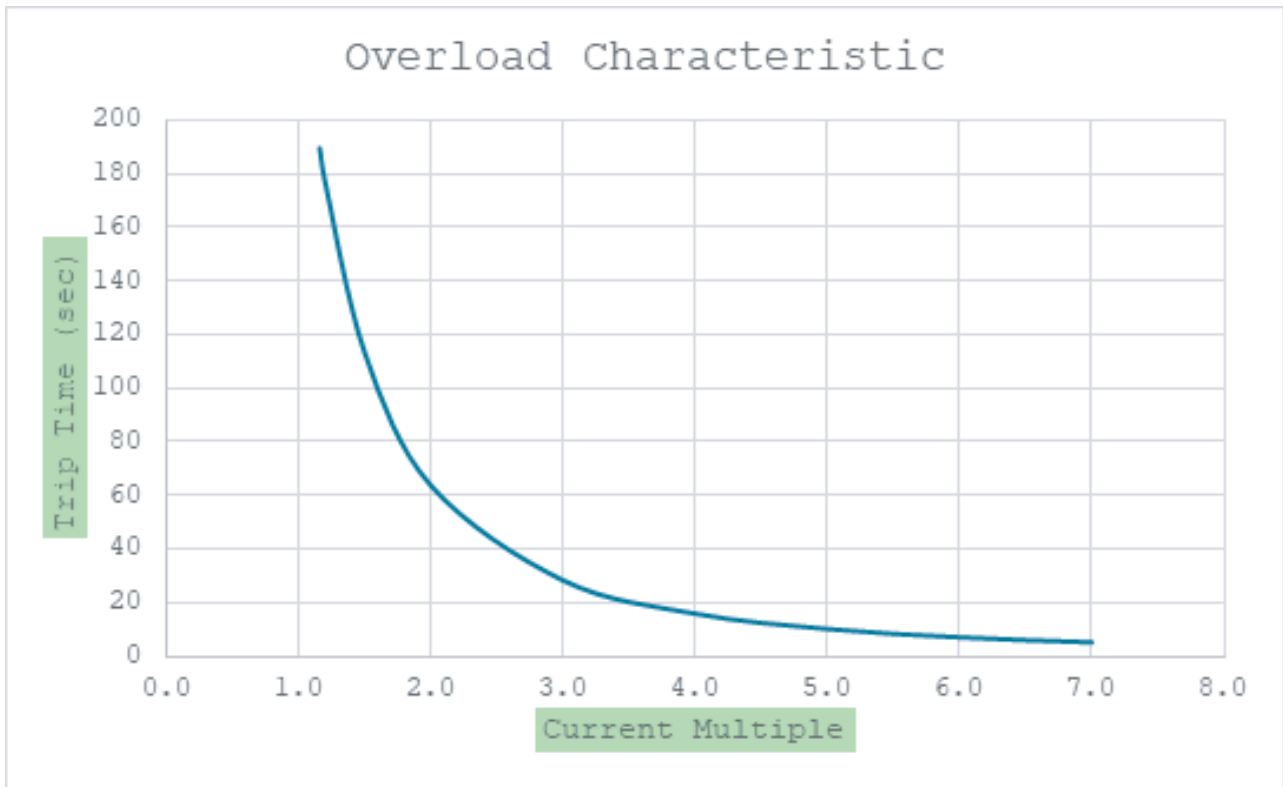
## Fault Display



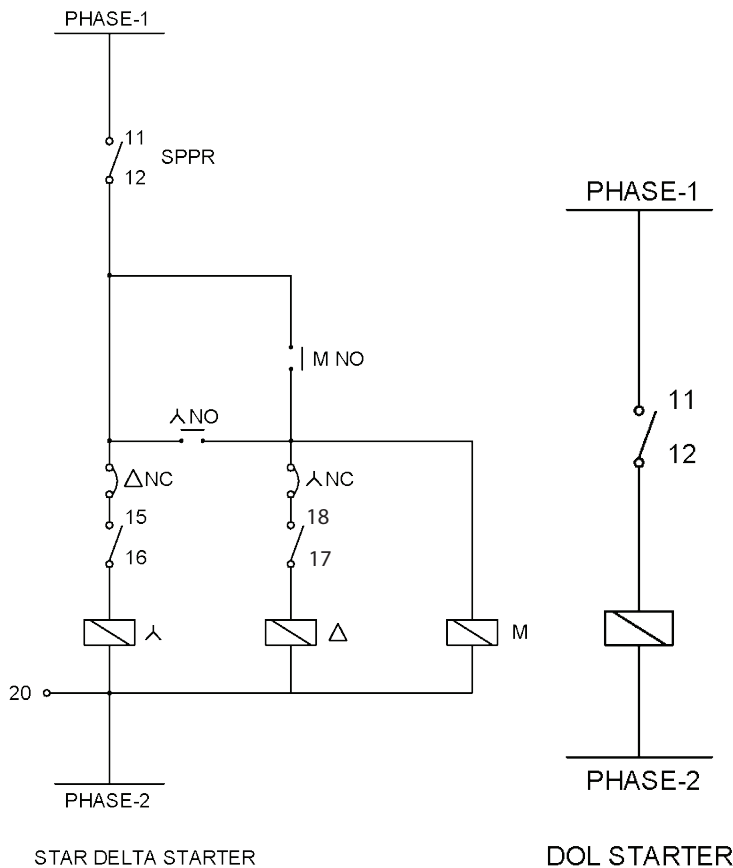
## Product Specifications

Parameters	BCH-iPro
System Supply Voltage	380-415Vac, 3Ph, 50 Hz 230-400Vac, 3Ph, 50 Hz
Modes of Operation	AUTO / MANUAL / BYPASS - Via Front Rocker Switch
Metering	Voltage-(180-500 VAC), Current-(1-60 A)
Contact Rating	5A @ 240 Vac (RESISTIVE LOAD)
On Time Delay	30 sec to 5 min (+/-) 10%
Trip Time Delay	UV/OV/PR/PL/UB - <3sec, Overload-As per Inverse characteristics Dry Run- 60 sec
Auto Manual Bypass Switch	SPDT, 250 Vac, 5A (RESISTIVE)
Current Unbalance Trip Setting	10% to 90% (+/-) 5%
Voltage Unbalance Trip Setting	50V (+/-)10V
Under Voltage Trip	UV Setting For 380-415 model - 235-250V, For 240-400 model - 175-195,
Over Voltage Trip Setting	475 Vac (+/-) 10 Vac
Dry Run Setting	40% to 90% (+/- 5%) OF SET CURRENT
Overload Setting	Overload Protection will start from 1.2 times of Pump Auto Set current & Trip time will follow Overload Characteristic.
Reset	1) <b>AUTO RESET</b> FOR OV/UV/PL/PR/UB (10sec +/- 2sec) 2) <b>AUTO RESET</b> FOR DRY RUN FAULT (30min to 5hrs +/-10%) 3) <b>MANUAL RESET</b> FOR OVERLOAD (BY POWER RESET)
Star - Delta Time	5 - 30 sec +/-10 % <b>Not Application for DOL Starter</b>
Max Pump Rating	3 - 20 HP (for 3Ph)
Pump Auto Current Setting (Load Set)	4- 42 A (Inbuilt CT)
Rated Current Range	4- 42 A (Inbuilt CT)
Inbuilt Control Button	Starter ON and OFF control by using front buttons
Metering	Line Voltage-(180-500 VAC), Line Current-(1-60 A) Display by 7 segment LED display
Fault annunciation on Display	Faults display on LED display
Fault annunciation on separate LEDs	LED indications for Motor ON, Overload, Dry Run, Under Voltage, Over Voltage, Input Phase Loss, Input phase reverse, Input Voltage Unbalance
Terminal Capacity	1.0 - 2.5 sq.mm
Mounting Dimension (WxH) (mm)	56 X 80
Overall Dimensions (HxWxD) (mm)	96 X 72 X 109
Weight	350gm
Standard Conformity	IEC 60947-4-1, IEC 61000-4-2/3/4/5

## Overload Characteristic

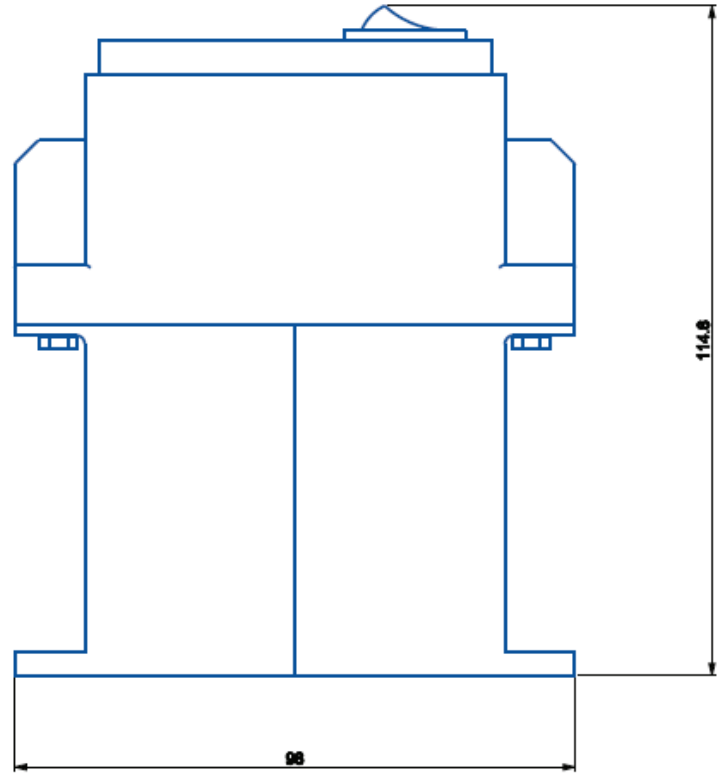
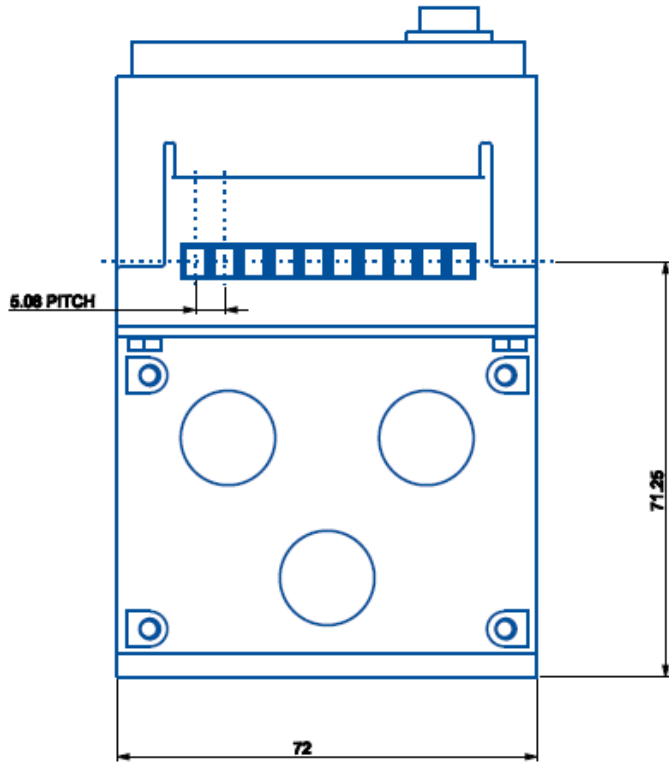


## Key Diagram



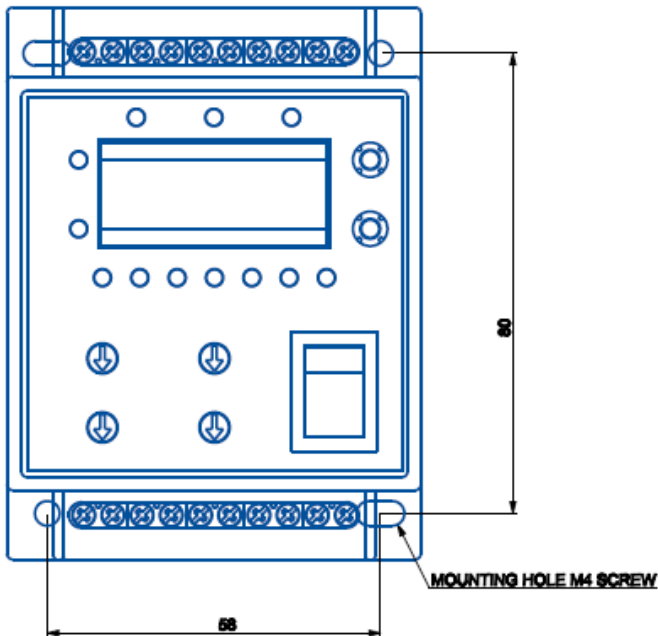
CONNECTION DETAIL	
Terminal No.	Connection
6	R-phase Input
8	Y-phase Input
10	B-phase Input
11 & 12	SPP contacts to be connect in series to Phase1 of control circuit
15 & 16	Relay NO to be connect in series to Star contactor coil
17 & 18	Relay NO to be connect in series to Delta contactor coil
20	Common for feedback to be connect to Phase2

## Dimensional Details



TERMINATION = 1 TO 2.5 BQ mm

TIGHTENING = 0.8 NM



### PASSING CABLE WIRES THROUGH CT HOLES

- Pass R-phase, Y-phase and B-phase cables through Unit's CT hole marked as "R", "Y" and "B".
- Power cables carrying Full Load Motor current from 4 A to 40 A can be passed through the unit

## Sales Offices

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