



## Industrial Starters

BCH range of DOL 3-Phase and 1-Phase industrial starters



- Equipped with rugged BCH Duros Freedom contactor
- Precise protection under overloads & single phasing
- Simple construction & easy maintenance
- High mechanical & electrical life
- Site selectable auto/manual reset option



BCH ELECTRIC LIMITED



## Single Phase Submersible Pump Starters



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# Starters

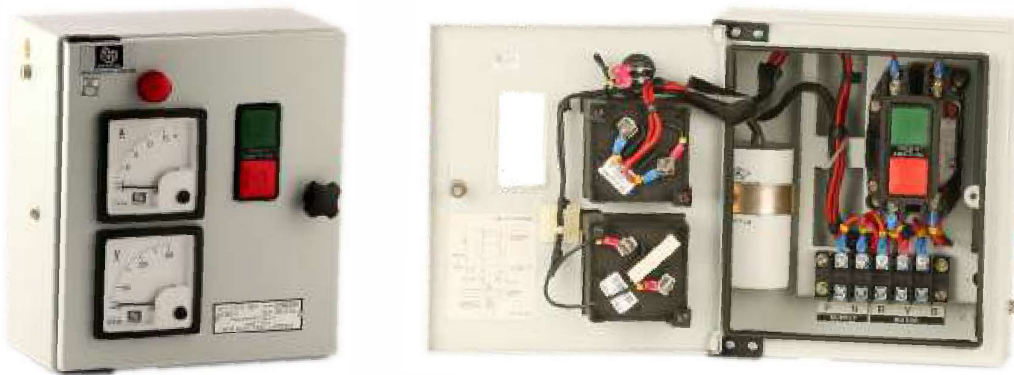
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## Single Phase Submersible Pump Starter

BCH Electric Limited manufactures a wide range of motor starters to suit every application in the field. BCH introduces an innovative product to meet the long standing need of the market for Single Phase Power Control.

### Features:

- ÷ Wide band encapsulated plug in coil
- ÷ High efficiency magnetics
- ÷ Metric terminations
- ÷ Total front accessibility for easy servicing without disturbing wiring
- ÷ Can be mount in any direction
- ÷ Wide ambient temp. range  $-5^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$
- ÷ Unique Mechanical Interlocking



## Contactors

BCH Two Pole Power Contactor type "CPG" is based on the proven design of NHD Contactor that has enjoyed the confidence of customers across various segments. These CPG contactors conform to IEC 60947-4-1 and have many distinctive features such as:

- ÷ High grade moulding which reduces tracking and prolong operational life.
- ÷ Precision ground magnet frame and armature surfaces ensure consistent quiet operation.
- ÷ Exposed metals are treated for corrosion resistance.
- ÷ Low bounce and weld resistant contacts of silver cadmium oxide.
- ÷ Contactors can be inspected and maintained without disturbing adjacent wiring or altering contractor mounting positions.
- ÷ Coil is totally encapsulated in resin, resisting moisture, Corrosive atmosphere and damage while handling.



## THREE PHASE SUBMERSIBLE PUMP STARTERS



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# Submersible Pump Starters

## BCH Submersible Pump Starters.

BCH make Submersible Pump Motor Starter Panels provide complete solution for the operation & protection requirements of Submersible Pump Motors.

These are extremely compact in size and elegant in looks.

Panel are available in two models,

- a) ECONOMY
- b) PREMIUM (Having provision for short circuit protection)

## Features

- Heavy duty 4 pole NHD Contactor with moulded coil
- Direct on line : upto 24 A relay rating
- Star Delta : upto 135 A relay rating
- Wide band operating coil
- Protections : Phase failure, Phase imbalance, Phase reversal
- Short Circuit Protection through MCB (In Premium models)
- Ammeter and Voltmeter
- Voltmeter with phase selector switch
- On/Off and Trip indications

## TECHNICAL DATA

Reference Standard	IEC 60947 - 4 -1
Operating Voltage	380-415V, 50Hz(wide band available)
Insulation Voltage	600V
AC3 Current Rating	16/25/32/40 Amp.
Enclosure Category	IP-40
On Time Delay	5 - 10 seconds

### Note :

- The material of Fuse wire should be electrolytic tough pitched ( ETP ) copper ( tinned ).



Economy Model



Premium Model

## Contactor :

The contactors used in starters are NHD and Citation. This contactors confirms to IEC 60947-4-1 and have many distinctive features such as :

- High grade moulding which reduces tracking and prolong operational life.
- Precision ground magnet frame and armature surfaces ensure consistent quiet operation.
- Exposed metals are treated for corrosion resistance.
- Low bounce and weld resistant contacts of silver cadmium oxide.
- Contactors can be inspected and maintained without disturbing adjacent wiring or altering contactor mounting positions.
- Coil is totally encapsulated in resin resisting moisture, corrosive atmosphere and damage while handling.
- Mechanical interlocking is provided between Star and Delta Contactors in case of Starter ratings 40HP and above

## Electronic Agro Timer:

Solid state Star to Delta change over timer is used with the range of 1 - 100 seconds, It is suitable for operation at low voltage as well.

It resets fast and the timing is not affected by variation in Ambient temperature and voltage.

## Overload Relay :

**Overload Protection:** The relay fitted in the starter protects the motor from operational overload as per relevant standards established for the protection of motors. The range of current setting on any relay is between 100% to 160% of its minimum setting.

**Single Phasing Protection :** The relay offers protection against single phasing through its sensitive differential mechanism in excess of the requirements of specification IEC 60947-4-1 and trips when it carries in healthy phases 0.9 times the minimum current setting, regardless of the value to which the current adjustment lever is set. Full protection is provided on single phasing under varying operational loads up to 50% of the full load rating of the motor. No protection is required below this value.

**Protection against unbalanced voltage :** The relay allows minor imbalance in voltage conditions in the three phases within the limits motors are designed to withstand. Beyond these limits, the relay trips and protects the motor

- Excellent temperature compensation between  $-10^{\circ}\text{C}$  and  $+80^{\circ}\text{C}$  ( $+55^{\circ}\text{C}$  max. ambient).
- Facility for selection of either manual or automatic resetting of the trip switch.
- Snap-on cover to prevent inadvertent alteration to the setting of current adjustment or to the manual/auto lever.
- Test facility for tripping relay manually for checking of the circuit and wiring .

## Auto Unit :

The auto unit in BCH submersible panel primarily detects the presence or absence of all three phase. It has ON time delay of 5-10 Seconds. It activates an electro mechanical switch to stop the motor when:

- a. Any of the phase are missing
- b. Phase imbalance is present
- c. Phase sequence is not proper

It has inbuilt single phase protection feature as well