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Aurangabad	Bhopal	Gorakhpur	Kanyakumari	Mysore	Siliguri	Vapi
Amravati	Bilaspur	Gulbarga	Kolhapur	Nagercoil	Surat	Varanasi
Akola	Bijapur	Hubli	Kota	Nasik	Sholapur	Vellore
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HPL Techno N MCB 10-24



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# Technology packed to Protect your home

- Range : 0.5A to 63A.
- Version : SP, SPN, DP, TPN & FP.
- Type Classification : B, C & D.
- Short Circuit Breaking Capacity : 10KA.
- Specification : IS/IEC 60898-1.
- Rated Voltage : 240/415 V: 50 HZ.
- Degree of Protection : IP20.



**MCB UPTO 63A | ISOLATOR UPTO 125A | MCB CHANGEOVER | AUXILIARY SWITCH**



## INTRODUCTION

HPL is India's leading electric equipment manufacturer with a formidable presence across six key verticals: Metering Solutions, Switchgears, LED Lighting, Wire & Cables, Modular Switches & Solar.

Our backward integrated facilities have capabilities across product design and development, component designing, tool manufacturing and commercial production. An established brand with a proven track record of over four decades.

HPL enjoys strong recall across various customer segments. Through our innovative offerings, certified to conform to Indian and International standards such as ISI, CE and KEMA, we are proud to partner emerging India's electrical requirements.

**As India's most trusted and reliable brand in the electrical space, we are delighted to be electrifying this energised India and move in step with the nation's growth agenda.**



### ELECTRICITY: THE POETRY BEHIND MODERN DAY LIVES.

The sheer importance of electricity cannot but be overstated in our daily lives. Be it the joy of watching your favourite sport or merely charging that smart phone which keeps your life buzzing life, as we know it today is just not possible without it. So much so that a day without electricity is akin to a day without much engagement, productivity or entertainment. This wide and significant use of electricity requires ever greater levels of safety equipment. It demands confirmations to the most stringent international quality standards as per the latest national and international specifications.

### HPL MCBS MAGNIFICENT. CAPABLE. BANKABLE.

That's why we proudly present to you our wide range of Miniature Circuit Breakers with a unique combination of personalised safety, reliability and trouble free service. Nothing more needs to be said about them because they are a direct outcome of the kind of attention to detail which has made the HPL brand a name to reckon with not only in industry circles but even with the wider segment of its end consumers.

## Safe | Convenient | Energy Saving | Wide range

IP 20 Degree Protection	Terminals are finger touch proof. Prevents electrical shock by accidental touch.	
Trip Free Mechanism	MCB trips even if held in ON position.	
Padlocking Facility	Dolly can be padlocked in - OFF position for personal safety during maintenance - ON positing for extremely critical loads	
Current Limiting Design - Class 3	Minimum let through energy under fault condition due to ultra fast contact separation and rapid quenching of the arc. This reduces stress on connected loads and cables.	
High Terminal Capacity with Deep Serrations	Ensures proper termination and firm connection to accommodate 35 sq mm cable.	
Bi-connect Termination Possible	Choice to use Busbar and/or cable in the same terminal, provides reliable termination	
Din Rail Mounting	Two stage snapping device for simple effortless and firm seating on 35 mm Din Rail, easy & efficient mounting.	
Low Power Consumption	Cost effective and energy saving. The Watt loss of Techno N MCBs is extremely low providing valuable energy savings over its entire life cycle.	
Wide range	0.5 to 63A SP, SPN, DP, TP, TPN & FP configurations B, C & D Tripping Characteristic	
2 Position dolly	Clear indication of the operational status of device.	
Combination Head Captive Screws	Safe and provides the flexibility of both +/- Head screw driver.	

They are switch disconnectors with independent manual operation, capable of making, carrying and breaking currents under normal circuit conditions, which may includes operating under overload condition and also carry currents under specified abnormal circuit conditions such as those of short circuit for a specified time.

**Features**

- Low W Loss
- Longer Electrical Life
- Wide Range
- Value for Money
- Low power consumption, thus cost effective & energy saving
- Dual termination for simultaneous connection fo bus-bar and wires.
- Cable termination upto 35sq.mm

**Range**

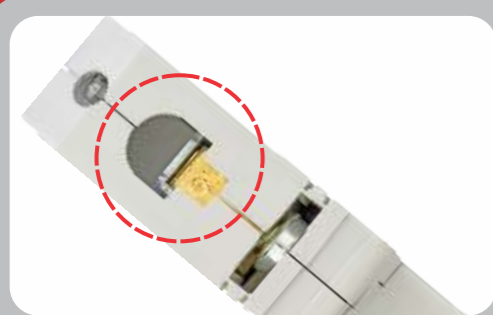
0.5A-63A

**Specification**

IS : 60898-1

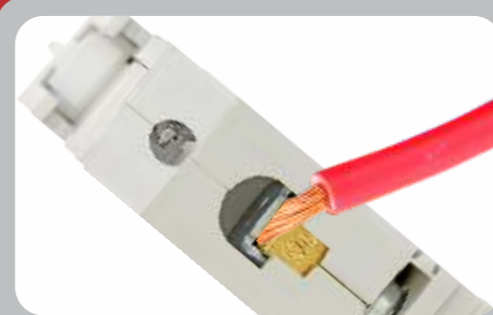
**Execution**

- Single Pole
- Single Pole Neutral
- Double Pole
- Three Pole
- Three Pole Neutral
- Four Pole



**Safety Terminals**

To avoid improper cable termination, the safety terminals guide the cable towards the cage terminal for systematic termination



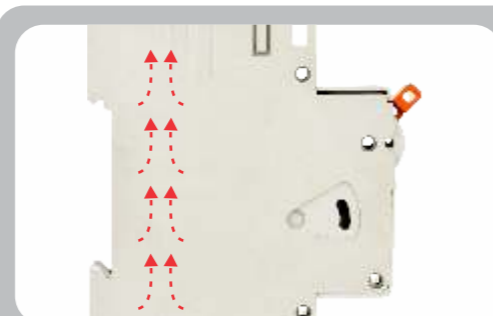
**Large Cable Terminals**

Suitable for copper and aluminum cables, these terminals are compatible with cables having cross-section area upto 35mm<sup>2</sup> from 0.5A - 63A).



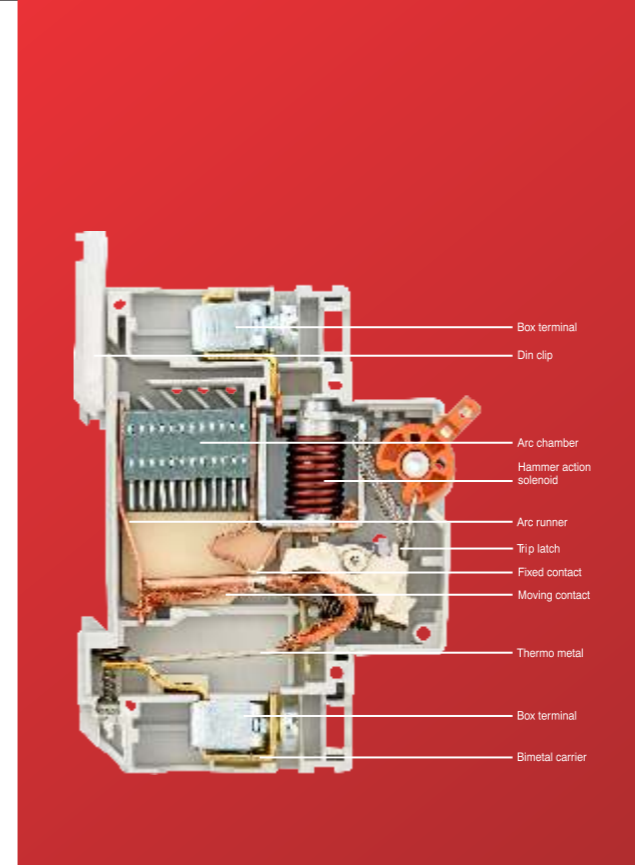
**Bi Stable Clip**

Every device is provided with a dual position DIN rail clip, so it becomes much easier to change a device from a device bank connected to a bus-bar, without disturbing the existing wiring



**Cooler Operation**

Grooves provided on outer body, so that when individual poles are placed adjacent to each other in a distribution board it forms a very effective channel for better air circulation, resulting into a cooler operation



**High Tech Arc Blower**

Protects from hazards of overloads and short-circuits. The arc under the influence of magnetic field is moved into the arc chute where it is quickly extinguished and quenched.

**Maximum Backup Protection**

To protect the Techno N circuit breakers against higher short circuit current, fuses should be installed at the incoming side. The current rating of these fuse links should not be more than the values stated in the table.

MCB Rating	Back-up Fuse Rating
1A	25A
4A	50A
6A	80A
10A	100A
63A	100A

**Features - Construction**

**Housing**

Techno N MCBs are made up of engineered thermo plastic for self lubrication and critical performance. The housing and other moulded components are fire retardant having high melting point, low water absorption and high dielectric strength therefore enabling it to withstand high temperature.

**Operating Mechanism**

Techno N Circuit Breakers are based on Thermal Magnetic technology. The protection is ensured by combining a temperature receptive mechanism (bimetal) and a current sensitive electro-magnetic device. The thermal operation provides protection from normal overload and the electro-magnetic device against large overloads and short circuits.

**Superior Contact Mechanism**

The mechanism comprises of fixed and moving contacts made up of silver inlaid extended life span and anti-weld properties. These contacts have low contact resistance resulting in reduced voltage drop and low watt loss commensurating to energy savings.

**Watt Loss**

Rating Amp	As per IS/IEC60898-1 : 2015 Maximum watt loss	Maximum watt loss in SP
6	3.0W	1.5W
10	3.0W	2.4W
16	3.5W	3W
20	4.5W	3.2W
25	4.5W	3.5W
32	6.0W	4W
40	7.5W	4.5W
63	13.0W	6.5W



### Tripping Characteristics

Techno MCB	Type	Non-Tripping Current Min. (1 Hr.)	Tripping Current Max. (1 Hr.)	Magnetic Min	Tripping Max.
1 – 63A	B	1.13 In	1.45 In	3 In	5 In
1 – 63A	C	1.13 In	1.45 In	5 In	10 In
1 – 63A	D	1.13 In	1.45 In	10 In	20 In

### Recommended Applications

**B TYPE:** For protection of Resistive load such as bulb, heater, etc.

**C TYPE:** For protection of Inductive load such as motor, air conditioner, etc.

**D TYPE:** For protection of Cables and highly Inductive load which have high starting current such as transformers etc.

### TECHNO MCB – TP&N 63 Amp



### AUXILIARY SWITCH

#### TECHNO MCB with Auxiliary Switch

Auxiliary switch can be supplied factory fitted with any MCB (SP, SPN, DP, TP, TPN, FP) to give indication of 'ON' or 'OFF' position of MCB.

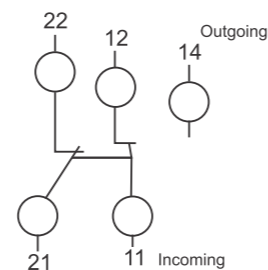


### FUNCTION

The auxiliary switch is used for remote indication of the circuit condition (ON/OFF) of the MCB. All the connecting terminals are easily accessible from the top position. The auxiliary switch is connected to the tripping mechanism of MCB and operates along with the MCB. It is available in factory fitted module. Auxiliary switch can be supplied factory fitted with any MCB (SP, SPN, DP, TP, TPN, FP) to give indication of 'ON' or 'OFF' position of MCB. This can be used in following outgoing combination modes depending upon user requirement.

Configuration	Combination of Terminals to be used
N.C. & N.O.	21-22, 11-14
N.C. & Changeover	21-2 2, 11-12, 14
N.C. & N.C.	21-22, 11-12

### Wiring Diagram



### Technical Data

Configuration	Combination of Terminals to be used
Rated Voltage	220 V AC/110 V DC
Rated Current	6 A AC/1 A DC
Conductor Crossover	Upto 1mm <sup>2</sup>
Tightening Torque	2 Nm

### ISOLATOR



80Amp and 125Amp Isolator have been designed, keeping in mind every customer's needs and so boasts of magnificent features:

- Conforms to IS/IEC 60947-3
- A standard thickness of 17.5mm, similar to lower rating of MCB (0.5A to 63A) to facilitate easy mounting in any distribution box without requiring any extra space or special distribution boards.
- Box type terminal for easy termination of cable up to 50mm.
- Heavy duty screws for better tightening of contacts. Heavy duty ETP copper terminals and extra thick silver inlaid contacts to ensure low temperature rise and low watt loss.
- Isolator Range : 40 Amp. to 125 Amp. in DP, TP, & FP configuration.

### DC MCB Upto 63 Amps

TECHNO MCB specially designed for DC application has been developed by HPL's world class R&D to meet the market's stringent requirements for DC circuits.

### Availability

DC MCBs are available in SP & DP configuration from 0.5 Amp to 63 Amp in various voltages such as 12V, 24V, 48V, 60V, 110V, & 220V.

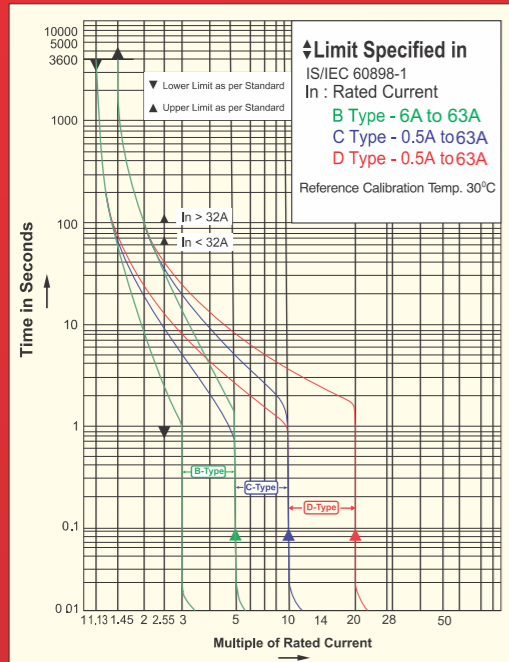
### Features

- Dual tripping system-overload through precisely calibrated bimetal and short circuit through electromagnetic coil.
- DC MCB incorporates a built in permanent magnet, which directs the arc into the arc quenching chamber.
- Free from nuisance tripping caused by vibrations.
- Time constant < 5ms
- Housing of DC MCB is made up of fire retardant, anti-cracking Nylon.
- Contacts are made up of silver inlaid copper, which ensure low resistance and longer life of circuit breaker.

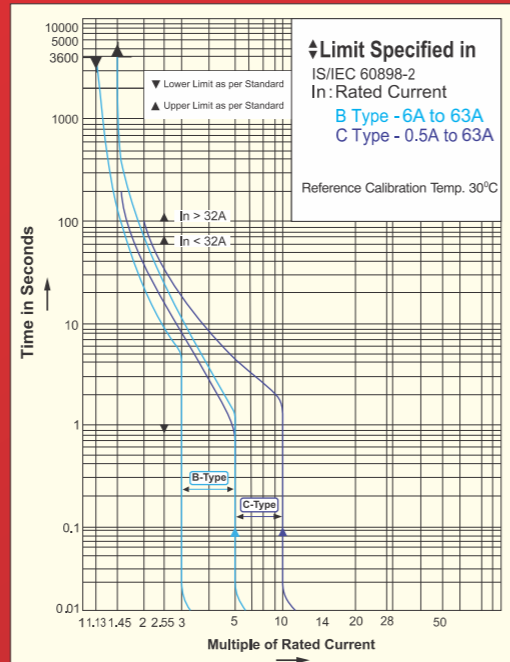


## Tripping Characteristics Curves

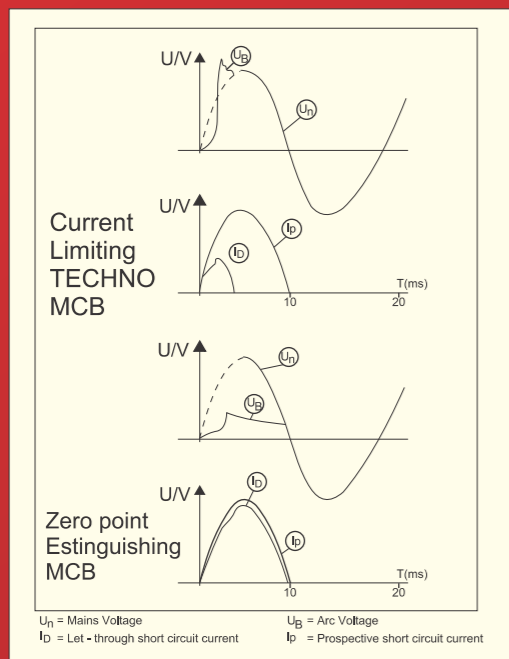
### Tripping Characteristics Curve AC MCB Type B, C & D



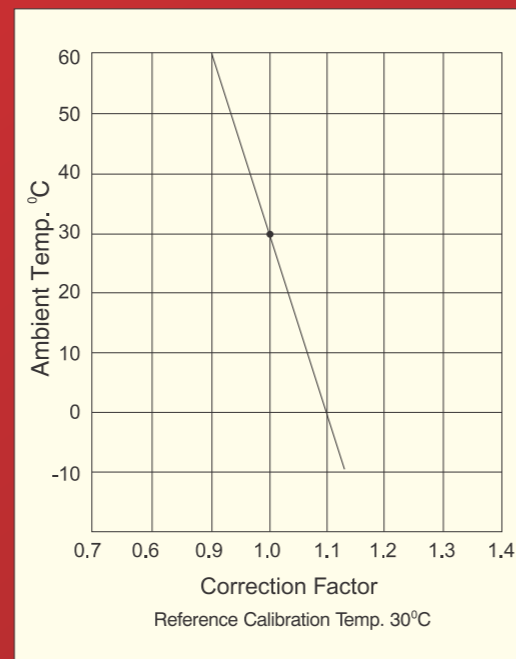
### Tripping Characteristics Curve DC MCB Type B & C



### Techno MCB Vs Zero Point Extinguishing MCB



### Temperature Compensation Graph



## Technical Specification

Specifications	: IS/IEC 60898-1
Number of poles	: 1, 1+N, 2, 3, 3+N & 4
Tripping Characteristics & Rating	: B, C, D characteristics - 0.5A to 63A
Currents (In)	: 0.5A to 63A
Rates breaking capacity (I <sub>cn</sub> )	: 10,000 A
Energy Limiting Class	: Class 3 as per BS EN 60898
Rated Voltages (U <sub>e</sub> ) Single Pole	: 240V
Multi Pole	: 415V AC
Insulation Voltage (U <sub>i</sub> )	: 660V
Rated Frequencies	: 50Hz
Impulse withstand voltage (U <sub>imp</sub> )	: 4 KV (1.2/50 μs)
Impulse power frequency voltage	: 2 KV (50 Hz)
Housing material	: Nylon in Grey Color
Degree of protection	: IP 20 as per IS/IEC 60898-1
Mounting Position	: Any position
Mounting	: Quick snap to mounting rails, 35 mm
Connecting Terminals	: Combination box terminals on incoming and outgoing sides. Suitable for single-core, stranded and flexible conductors upto 35sq.mm, combination crosshead screw, max tightening torque 2 Nm.
Electrical Service Life	: Min. 4,000 make/break operating cycles
Ambient Temperature	: T <sub>max</sub> - 5°C To 55°C (with de-rating factor)
Impact Resistance	: 3g, At least 2 impacts duration 13 ms
<b>DC MCB</b>	
Specifications	: IEC 60947-2
No. of Poles	: Single pole, Double pole
Rated Current	: 0.5A - 63A
Rated Voltage	: 220V DC
Rated short circuit breaking capacity	: 1kA
Insulation Voltage	: 660V
Degree of protection	: IP 20
Mounting Position	: Any position
Connecting Terminals	: Combination box type terminals on both sides
Electrical Service Life	: 4000 Cycles Operating Cycles
Impact Resistance	: 3g, At least 2 impacts duration 13 ms.
<b>ISOLATOR</b>	
Specifications	: IS 13947 Part 3/IEC-60947-3, 2012
No. of Poles	: DP, TP & FP
Utilization Category	: AC 22A
Rated Current	: 40A - 125A
Rated Voltage	: 240/415V AC

