

State of the art Manufacturing Facilities



WiNtrip1



C&S Electric Limited

Corporate Office: 222, Okhla Industrial Estate, Phase - III, New Delhi - 110020, India
Tel.: +91-11 3384 9000-09, Fax +91 11 26847342

International Business Division: Tel.: +91 11 3384 9000-09, Fax +91 11 26847342
E-mail: exports@cselectric.co.in



Miniature Circuit Breaker 6kA



Miniature Circuit Breaker



WiNtrip1

Miniature Circuit Breaker

As power distribution needs play a pivotal role in all the significant sectors namely Commercial, Industrial and Residential, improved Breaker performance through better electrical safety, higher operational endurance, continued service and reduced cost have become of paramount importance. C&S WiNtrip1 MCBs have been engineered to constantly fulfill the above requirements. With these features C&S is setting new standards for user friendly and superlative electrical circuit protection.

The C&S WiNtrip1 MCB is a high performing Thermal Magnetic current limiting device with the ability to disconnect short circuits up to 6kA. The range is available in tripping characteristics types B & C for 1P, 1P+N, 2P, 3P, 3P+N & 4P configurations in 0.5A - 40A current ratings.

All metal components for operating mechanism of WiNtrip circuit breaker are specially treated for high self lubrication leading to repeat accuracy during service life. The MCBs conform to Standards: IEC 60898-1995 and IS/IEC 60898-1:2002 and stand guaranteed for best quality for optimum performance.

Also includes

- Auxiliary Contacts & Shunt Trip
- Distribution Boards





We touch your electricity everyday!



DECLARATION OF CONFORMITY

WE: C&S ELECTRIC LTD.

PLOT NO. 1B, SECTOR -8C
IIE, SIDCUL, RANIPUR
HARIDWAR-249408 (UTTRAKHAND) INDIA .

Declare under our own responsibility that the product(s)
Product: **Miniature Circuit Breaker**

B CURVE : 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A & 63A.
C CURVE : 0.5A, 1A, 2A, 3A, 4A, 5A, 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A & 63A
SINGLE POLE ,SINGLE POLE WITH NUETRAL, TWO POLE , THREE POLE
THREE POLE WITH NUETRAL& FOUR POLE

To which the declaration refers conform to:
STANDARD OR NORMATIVE DOCUMENTS:

Low -Voltage Switchgear and Control gear,
General rules IEC PUB 60898-1,2008

Following The Provisions Of The Low-Voltage Directives 73/23/ EEC As Last Amended By
IEEC Directive 93/68/ EEC
The CE Marking On The Product And /or Their Packing Signifies That Control & Switchgear Electric,
Holds The Reference Technical File Available To The Union Authorities.
Signed At Haridwar On 20/06/09

Signature : 

R. MANIMARAN
(UNIT HEAD)



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.

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.

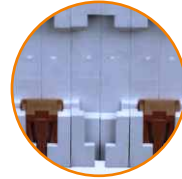
High Terminal Capacity with Deep Serrations

Ensures proper termination and firm connection to accommodate 25 sq mm cable.



Bi-connect Termination Possible

Choice to use Busbar / cable in the same terminal on Line side, provides reliable termination



Din Rail Mounting

Two stage snapping device for simple effortless and firm seating on 35 mm Din Rail, easy & efficient mounting.

Combination Head Captive Screws

Safe and provides the flexibility of both +/- Head screw driver.

Low Power Consumption

Cost effective and energy saving. The Watt loss of WiNtrip MCBs is extremely low providing valuable energy savings over its entire life cycle.



Wide range

0.5 to 40A
1P, 1P+N, 2P, 3P, 3P+N & 4P configurations
B & C Tripping Characteristic

2 Position dolly

Clear indication of the operational status of device.



Housing

WiNtrip1 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

WiNtrip1 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 graphite for surety, 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.

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 WiNtrip 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.

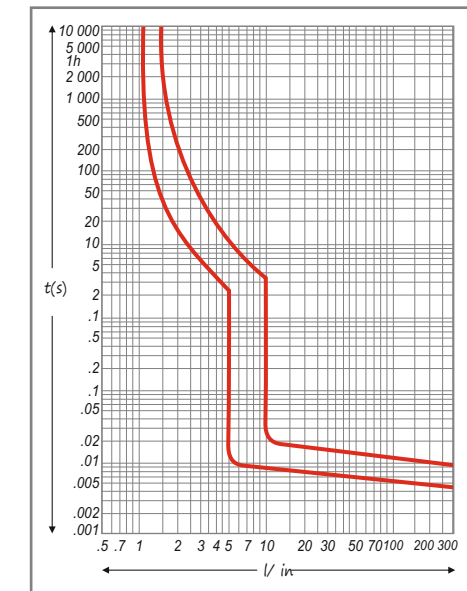
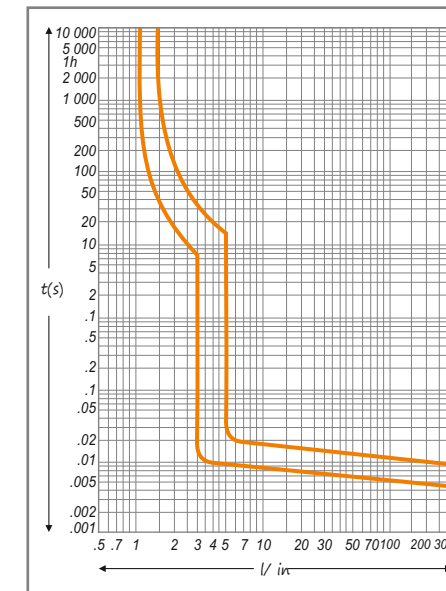
| MCB Rating | Back-up Fuse Rating |
|------------|---------------------|
| 1A | 25A |
| 4A | 50A |
| 6A | 80A |
| 10A | 100A |
| 40A | 100A |

Watt Loss

| Rating (Amp) | As per IS/IEC60898-1:2015 Maximum watt loss | Maximum watt loss in SP |
|--------------|---|-------------------------|
| 6 | 3.0W | 0.76W |
| 10 | 3.0W | 1.83W |
| 16 | 3.5W | 2.44W |
| 20 | 4.5W | 3.07W |
| 25 | 4.5W | 2.80W |
| 32 | 6.0W | 3.92W |
| 40 | 7.5W | 3.96W |

| MCB | Wintrip1 MCB | |
|---------------------------------|------------------------------|----------------------|
| Standard Conformity | IS/IEC60898-1 | 2015 |
| Type | 'B' | 'C' |
| Rated Current | 6A ~ 40A | 0.5A ~ 40A |
| No. of poles (Execution) | 1P,1P+N, 2P, 3P, 3P+N, 4P | |
| Rated Operational Voltage (AC) | 240/415V | |
| Rated Insulation Voltage | 660V | |
| Rated Frequency | 50/60Hz | |
| Rated Impulse Voltage | 4KV | |
| Short circuit Breaking capacity | 6KA | |
| Short circuit service capacity | 6KA | |
| Magnetic Release Setting | (3-5)I _n | (5-10)I _n |
| Type of release | Thermal/magnetic | |
| Energy Limiting Class | ELC 3 | |
| Electrical/Mechanical Life <32A | 30,000 | |
| >32A | 10,000 | |
| Ambient Temperature | 30°C | |
| Storage Temperature | -5°C to 55°C | |
| Mounting | Clip on Din rail (35x7.5 mm) | |
| Mounting Position | Vertical/ Horizontal | |
| Pollution Degree | 2 | |
| Material Group | IIIa | |
| Line/Load Terminal Capacity | 25 mm ² | |
| Terminal Type | Screw | |
| Degree of Protection | IP20 | |
| Resistance to Shock | 40mm free fall | |
| Terminal Torque | 2.5N | |
| Bi-Connect Terminal | Line side | |

'B' Characteristic 'C' Characteristic



| Type | Application | Thermal Test Current | | Tripping Time I _n ≤63A | Electro Magnetic Test Current | | Tripping Time (t) |
|------|---|----------------------|---------------------|-----------------------------------|-------------------------------|-------------------|-------------------|
| | | Low | High | | | | |
| B | Lighting & Distribution with no surge Current | 1.13xI _n | | >1hour | 3xI _n | | ≥0.1s |
| | | | 1.45xI _n | <1hour | | 5xI _n | <0.1s |
| C | Inductive Load with surge Current | 1.13xI _n | | >1hour | 5xI _n | | ≥0.1s |
| | | | 1.45xI _n | <1hour | | 10xI _n | <0.1s |


Temperature derating

In plant engineering situations, where ambient temperature is higher than the regulatory reference temperature of 30°C, the circuit breakers may be subjected to untimely tripping, i.e. opening when not required, since the increase in temperature is interpreted as a current surge. Ambient temperature, as a matter of fact, affects the initial deformation of the bimetal. At a temperature above 30°C the thermal release trips faster, behaving like a relay with a lower nominal current. It is therefore imperative to take into account nominal current derating if the circuit breaker is installed in an ambient temperature above 30°C.


The table gives the max. operating current referring to the different temperatures.

| I _n (A) | Temperature | | | | | |
|--------------------|-------------|------|-------|------|------|------|
| | 25°C | 30°C | 35°C | 40°C | 45°C | 50°C |
| 2 | 2.04 | 2 | 1.96 | 1.9 | 1.86 | 1.82 |
| 6 | 6.24 | 6 | 5.82 | 5.52 | 5.28 | 4.98 |
| 10 | 10.40 | 10 | 9.7 | 9.2 | 8.8 | 8.3 |
| 16 | 16.5 | 16 | 15.5 | 15 | 14.4 | 14.1 |
| 20 | 20.6 | 20 | 19.4 | 18.8 | 18 | 17.6 |
| 25 | 25.8 | 25 | 24.3 | 23.5 | 22.5 | 22 |
| 32 | 33 | 32 | 31.04 | 30.1 | 28.8 | 28.2 |
| 40 | 41.2 | 40 | 38.8 | 37.6 | 36 | 35.2 |




| Description | In(A) | Reference | |
|--|-------|-----------|------------|
| | | 'B' Curve | 'C' Curve |
| Single Pole  | 0.5 | | CSMBL1C0.5 |
| | 1 | | CSMBL1C1 |
| | 2 | | CSMBL1C2 |
| | 3 | | CSMBL1C3 |
| | 4 | | CSMBL1C4 |
| | 5 | | CSMBL1C5 |
| | 6 | CSMBL1B6 | CSMBL1C6 |
| | 10 | CSMBL1B10 | CSMBL1C10 |
| | 16 | CSMBL1B16 | CSMBL1C16 |
| | 20 | CSMBL1B20 | CSMBL1C20 |
| | 25 | CSMBL1B25 | CSMBL1C25 |
| | 32 | CSMBL1B32 | CSMBL1C32 |
| | 40 | CSMBL1B40 | CSMBL1C40 |




| | | | |
|--|----|------------|------------|
| Single Pole + Neutral  | 1 | | CSMBL1C1N |
| | 2 | | CSMBL1C2N |
| | 3 | | CSMBL1C3N |
| | 4 | | CSMBL1C4N |
| | 5 | | CSMBL1C5N |
| | 6 | CSMBL1B6N | CSMBL1C6N |
| | 10 | CSMBL1B10N | CSMBL1C10N |
| | 16 | CSMBL1B16N | CSMBL1C16N |
| | 20 | CSMBL1B20N | CSMBL1C20N |
| | 25 | CSMBL1B25N | CSMBL1C25N |
| | 32 | CSMBL1B32N | CSMBL1C32N |
| | 40 | CSMBL1B40N | CSMBL1C40N |

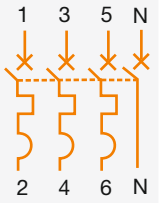


| | | | |
|--|----|-----------|-----------|
| Double Pole  | 1 | | CSMBL2C1 |
| | 2 | | CSMBL2C2 |
| | 3 | | CSMBL2C3 |
| | 4 | | CSMBL2C4 |
| | 5 | | CSMBL2C5 |
| | 6 | CSMBL2B6 | CSMBL2C6 |
| | 10 | CSMBL2B10 | CSMBL2C10 |
| | 16 | CSMBL2B16 | CSMBL2C16 |
| | 20 | CSMBL2B20 | CSMBL2C20 |
| | 25 | CSMBL2B25 | CSMBL2C25 |
| | 32 | CSMBL2B32 | CSMBL2C32 |
| | 40 | CSMBL2B40 | CSMBL2C40 |




| Description | In(A) | Reference | |
|---|-------|-----------|------------|
| | | 'B' Curve | 'C' Curve |
| Three Pole  | 0.5 | | CSMBL3C0.5 |
| | 1 | | CSMBL3C1 |
| | 2 | | CSMBL3C2 |
| | 3 | | CSMBL3C3 |
| | 4 | | CSMBL3C4 |
| | 5 | | CSMBL3C5 |
| | 6 | CSMBL3B6 | CSMBL3C6 |
| | 10 | CSMBL3B10 | CSMBL3C10 |
| | 16 | CSMBL3B16 | CSMBL3C16 |
| | 20 | CSMBL3B20 | CSMBL3C20 |
| | 25 | CSMBL3B25 | CSMBL3C25 |
| | 32 | CSMBL3B32 | CSMBL3C32 |
| | 40 | CSMBL3B40 | CSMBL3C40 |



| | | | |
|---|----|------------|------------|
| Three Pole + Neutral  | 1 | | CSMBL3C1N |
| | 2 | | CSMBL3C2N |
| | 3 | | CSMBL3C3N |
| | 4 | | CSMBL3C4N |
| | 5 | | CSMBL3C5N |
| | 6 | CSMBL3B6N | CSMBL3C6N |
| | 10 | CSMBL3B10N | CSMBL3C10N |
| | 16 | CSMBL3B16N | CSMBL3C16N |
| | 20 | CSMBL3B20N | CSMBL3C20N |
| | 25 | CSMBL3B25N | CSMBL3C25N |
| | 32 | CSMBL3B32N | CSMBL3C32N |
| | 40 | CSMBL3B40N | CSMBL3C40N |



| | | | |
|--|-----|-----------|------------|
| Four Pole  | 0.5 | | CSMBL4C0.5 |
| | 1 | | CSMBL4C1 |
| | 2 | | CSMBL4C2 |
| | 3 | | CSMBL4C3 |
| | 4 | | CSMBL4C4 |
| | 5 | | CSMBL4C5 |
| | 6 | CSMBL4B6 | CSMBL4C6 |
| | 10 | CSMBL4B10 | CSMBL4C10 |
| | 16 | CSMBL4B16 | CSMBL4C16 |
| | 20 | CSMBL4B20 | CSMBL4C20 |
| | 25 | CSMBL4B25 | CSMBL4C25 |
| | 32 | CSMBL4B32 | CSMBL4C32 |
| | 40 | CSMBL4B40 | CSMBL4C40 |

