

Moulded Case Circuit Breakers (MCCB'S)

CRYSTAL MCCBs are precision-engineered to meet world-class standards, delivering superior protection and reliable performance across diverse applications. Designed to safeguard electrical systems, they provide comprehensive overload and short-circuit protection, ensuring the safety and efficiency of your power distribution and motor control systems.

Designed for compact efficiency, CRYSTAL MCCBs are ideal for space-constrained environments while providing robust protection. Engineered for AC-23A duty, they are built to withstand heavy operational demands, ensuring consistent, long-lasting performance in critical applications.



RANGE & FRAME SIZE

16 Amp – 800 Amps in fixed/adjustable type five frame sizes in three pole and four pole, breaking capacity upto **50kA**

| Frame | Rating (In Amps) | Breaking Capacity (Icu) | Poles | Release Setting | |
|---------|------------------------------|----------------------------|-------------------|-----------------|------------|
| | | | | Thermal | Magnetic |
| CMS 100 | 16,20,25,32,40,63,80,100,125 | 10 kA, Ics=100% Icu | SP,DP,TP,TPN & FP | Fixed | Fixed |
| CMS 125 | 50,63,80,100,125,160 | 25 kA, Ics=100% Icu | DP,TP,TPN & FP | Fixed/Adj. | Fixed |
| CMS 250 | 100,125,160,200,250 | 25 kA, Ics=100% Icu | TP,TPN & FP | Fixed/Adj. | Fixed |
| CMS 400 | 200,250,320,400 | 35 kA, Ics=50% Icu | TP,TPN & FP | Fixed/Adj. | Fixed |
| CMS 800 | 500,630,800 | 50 kA, Ics=50% Icu | TP,TPN & FP | Fixed/Adj. | Fixed/Adj. |

SPECIFICATIONS

Built to high performance specifications with high quality materials and meticulous quality process with assured best operation on the following parameters

| | |
|---------------------------------------|-------------|
| Rated Operational Voltage (V) | 415 |
| Rated Insulation Voltage (Ui) | 690V |
| Rated Frequency | 50/60 Hz AC |
| Utilization Category | AC 23 A |
| Rated impulse withstand Voltage(UIMP) | 8KV |

CONFORMS TO STANDARDS

IEC- 60947-2

SALIENT FEATURES

- Available in SS Enclosure.
- Adjustable thermal setting (80-100%).
- Suitable for protection of Distribution and Generating System. Shunt Release and Undervoltage release.
- Rotary handle with pad lock & door interlock facility. Auxiliary contact and alarm contact 1 C/O or 2 C/O.

APPLICATIONS

- * Power Distribution
- * Manufacturing Process
- * Industrial Building
- * Residential Building
- * Commercial Building
- * Healthcare
- * Internet Data Centers
- * HVAC
- * Tele Communications



OPERATING PRINCIPLE

Most Important function of the circuit breaker is protection of a circuit at abnormal operating conditions. Besides making, carrying and breaking currents. circuit breakers are equipped with some unit to carry out protection function. Opening units of low voltage circuit breakers are defined as a release according to IEC 60947/IS 13947 part 2 Standards.

OVERLOAD AND SHORT CIRCUIT PROTECTION

CRYSTAL MCCB's Overload protection is provided by combination of heater element and bimetallic strip in each pole which activates the trip mechanism. Short Circuit Protection by magnetic circuit compressing of fixed and moving core. In the event of the short circuit at any pole, the moving core is attracted towards the fixed core due to high electromagnetic forces.

ACCESSORIES

PHASE BARRIERS/SPREADERS

Phase barriers provide safety for maximum insulation at the power connection points. Slits provided to slide into the circuit breaker. Spreaders are provided as optional

ROTARY HANDLE

Three position off, on and tripped. Circuit breaker locking capabilities in the off position by one to three padlock. Direct rotary handle IP40. Extended rotary handle IP54, includes door interlock.

SWITCHING MECHANISM

Switching mechanism is Quick Make, Quick Break & Trip Free. The Contact mechanism compressing of fixed and moving contacts made of latest silver alloys for reliability long life and anti-welding properties. The Tripping Mechanism comprises of bimetallic and heater element for over load protection and fixed and moving core for magnetic protection in each pole coupled to a single trip bar unit.

ARC EXTINGUISHING

The arc extinguishing device comprises of arc chutes having grid plates mounted in parallel between supports of insulating material. the arc is divide between these grid plate which helps in its fast quenching. The arc is thus confined, divided and extinguish in arc chutes. The excellent insulation between conducting parts and better energy dissipation after short circuit makes it possible to make load line connection on either

SHUNT TRIP

This release is used to trip the circuit breaker from remote.

The operating voltage is 72-110 Ue % the rated voltage.

The voltage of both shunt.

UNDER VOLTAGE RELEASES

This release trip MCCB's when control voltage drops below tripping threshold. Tripping threshold between 0.35 & 0.75 times the rated voltage. It shall permit closing of MCCB's at supply voltage equal to or above 0.85 Ue. The upper limit of supply voltage will be 1.1 Ue. Ø Circuit breaker tripping by an UV release meets the requirement of standard IEC 60947-1 & 2 part