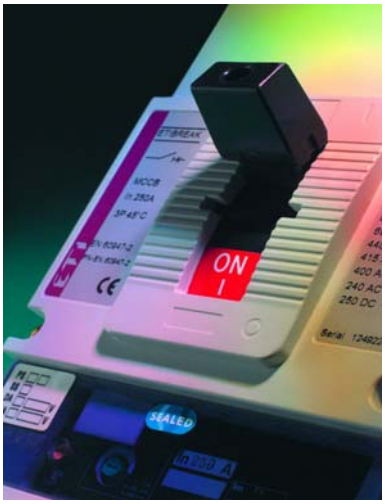

New generation of low-voltage Moulded Case Circuit Breaker, MCCB

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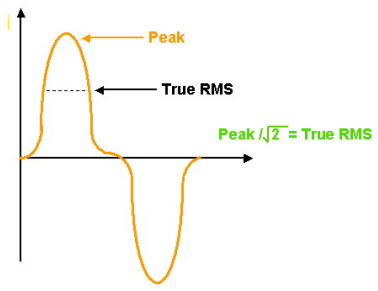
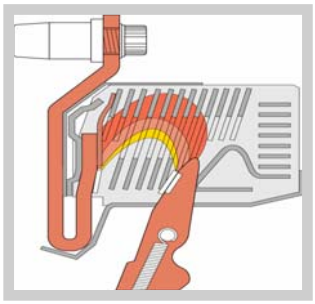
MCCB is used for protecting of low-voltage electrical wires and connected equipment, against overloads and short-circuits.
It is generally installed on secondary side of transformer stations (main switch or for protecting individual branches). In industry we can use it in switchgears or for protecting the motors as well we have big requirements in shipbuilding. For building applications you can find it as main protection switch.

Now days we can find two version of MCCBs on the market, one is with thermal-magnetic meanwhile other is with microprocessor release.
Thermal-magnetic is working on base of bimetal and electro-magnetic trigger. When you have overload current running through MCCB the trigger is using bimetal's nature and start to bend till circuit breaking. The bimetal trigger is calibrated at 45°C and for lower or higher temperatures of ambient we can expect longer or shorter delay at breaking. For precise results it's necessary to consider compensation factor, which is provided from manufacturer. At short circuit we have big electro magnetic field, which is a cause for reaction of electro-magnetic trigger.
Microprocessor or electronic release is working on monitoring of current true R.M.S value. It is simulated and calculated from peak values, which installed microprocessor, can detect.



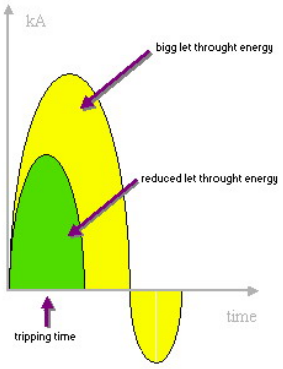


F.B.M.→fast breaking mechanism, means that whit special contact construction and the way of current flowing we can reach quick-breaking performance and exceptional current-limiting characteristics.

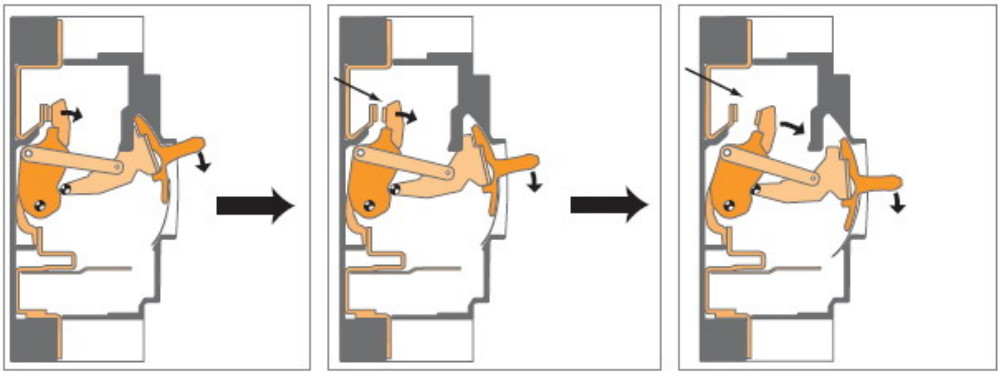
- **Reduced Energy Let Through I^2t**
- minimise thermal stresses

- **Reduced Peak Current Amp city**
- minimise electrodynamics stresses on conductors or protected equipment

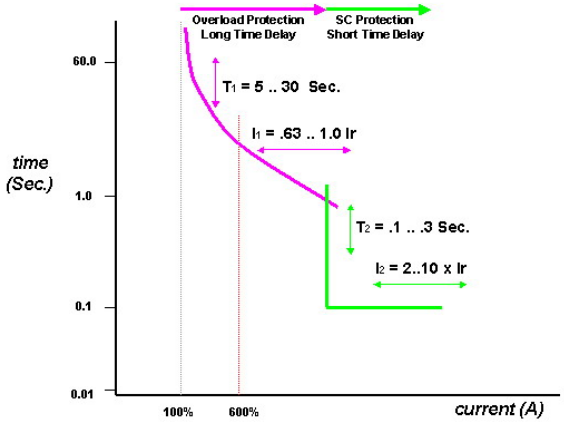
- **Reduce Tripping Time** - minimise damage after fault



Direct opening mechanism→ Operating force is coupled directly from the toggle to the main contacts. Springs are used to ensure manual independent operation, but the opening action does not depend on springs. A direct opening mechanism is required for disconnect switches, emergency stop switches, safety limit switches, safety gate interlock switches.

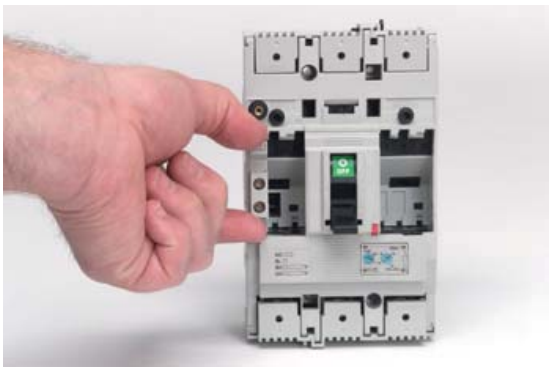


The most important technical data are rated current (Ir), rated voltage (Ur), short-circuit capability (Icu, Ics) and tripping time. We can easily define working overload or short-circuit range of MCCB from time-current curves. Thermal magnetic MCCB have adjustable overload characteristic (0,63-1 x Ir), as well magnetic one (6-13 x Ir). Electronic MCCBs have also adjustable both part of characteristic, but with a little bit different values. Overload values are 0,4-1 x Ir and 7 different already pre-adjusted magnetic curves for several applications (generator, motors class 10, 20, 30, etc.).

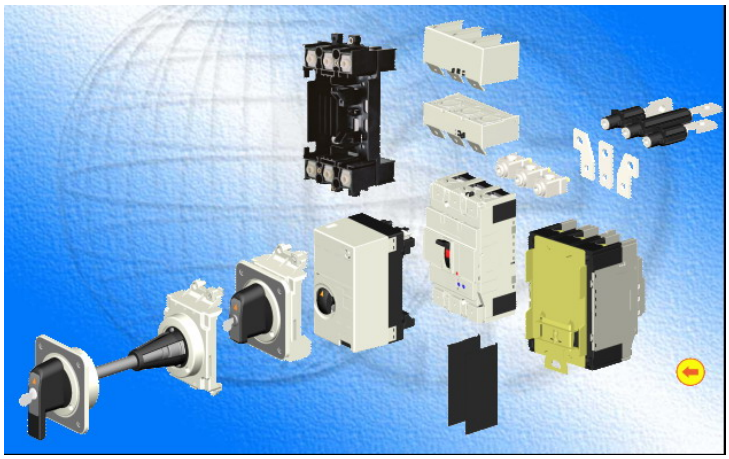


Standard version of MCCBs cover current range from 20 up to 2500A with short-circuit capability from 36 up to 100kA at rated operational voltage Ur=400V in 6 different frames. There are 3- and 4-pole versions with rated insulation voltage Ui=800V and rated impulse withstand voltage Uimp=8kV. We can also choose an economical version, as cheaper solution with lower short-circuit values, but still with all adjustable parameters.

The MCCB can be also equipped with different accessories, which are in combination very important part for successful range of different applications.
Shunt trip, under voltage trip, alarm and auxiliary switch are known as *internal accessories*, which can be easily mounted from customer himself.



External accessories are combined from different shape of handles, plug-in equipment, interpol barriers, rear connections, DIN-rail adapters, motor operators, covers, terminals, etc.



MCCBs feature are high level of compatibility and high short-circuit capability. With their construction's characteristics, MCCBs assure confident functionality and minimum maintenance, therefore they have an important role in low-voltage systems.