



Miniature Circuit Breakers 10kA

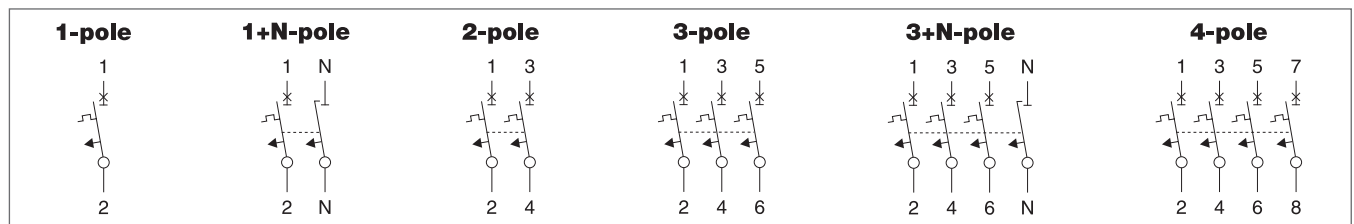


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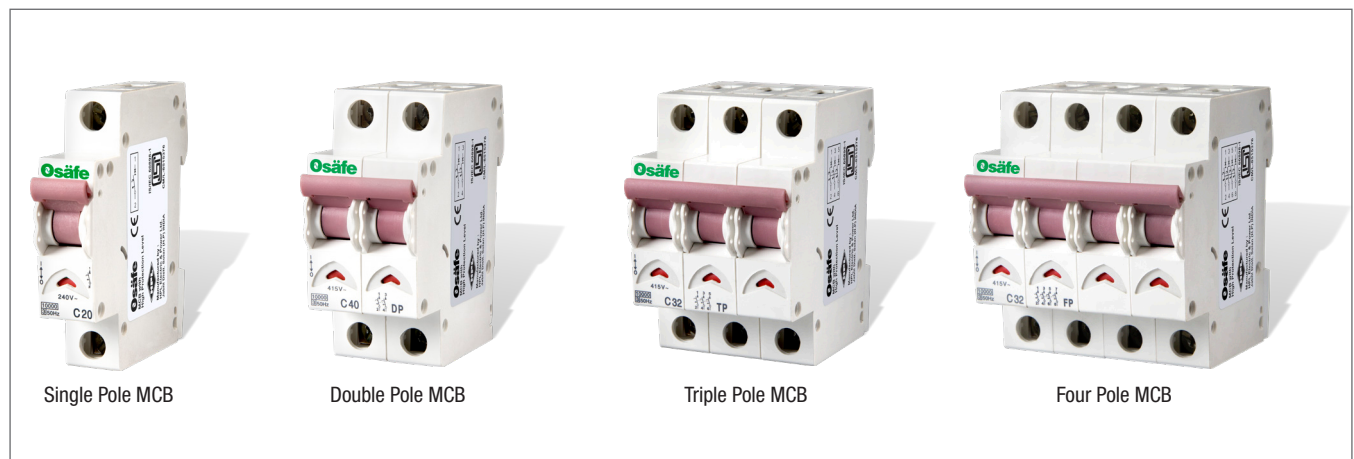
- Contact position indicator red / green
- Secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation
- Rated currents up to 63 A
- Tripping characteristics B, C, D
- Rated breaking capacity 10 kA
- Tested as per IS/IEC 60898-1 : 2002 & 2003
- IP20 degree of protection



Connection Diagrams



Range





Pad Lock

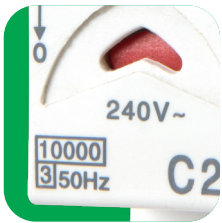
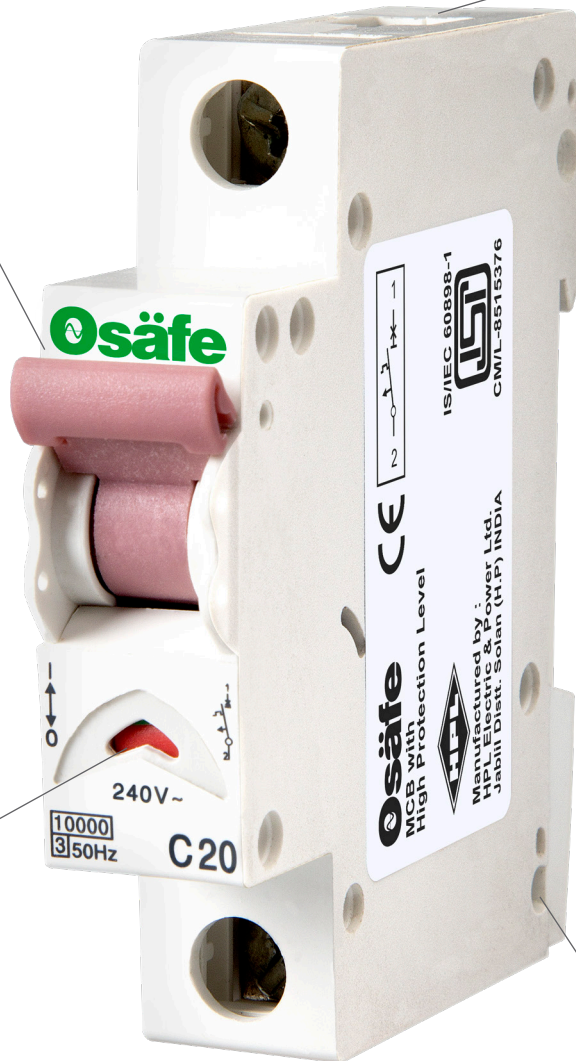
MCB Dolly can be pad locked in both ON/OFF conditions for safety during maintenance and to limit the electricity consumption.

Busbar



Wire

Cable Termination
upto 35mm² Cable



RED - ON

GREEN - OFF

Contact Position Indicator



3 Position Mounting Clip

Permits installation and removal without removing busbar.

Design according to

Osäfe : AC IS/IEC 60898-1

Osäfe : DC IS/IEC 60898-2

Breaking capacity

Osäfe : AC 10kA (as per IS/IEC 60898-1)

Characteristics B, C, D

Rated Voltage V_{AC} 240/415V

V_{DC} 24V, 48V, 60V, 110V & 220V (Per pole)



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- High selectivity between MCB and back-up device due to low let-through energy
- Compatible with standard busbar
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts > 4 mm, for secure isolation
- Rated breaking capacity 10 kA
Tested as per IS/IEC 60898-1: 2002.
- All range tested as per IEC 60898-1 : 2003.
- Tested at 16kA Icu as per IEC 60947-2, SPC 16A

| | ACCESSORIES: | TECHNICAL SPECIFICATIONS | CODE |
|---|------------------------|---|----------------------|
| A | AUXILIARY SWITCH* | 6A 1NO+1NC | O AUX61NO+1NC |
| B | SHUNT TRIP RELEASE* | OPERATIONAL VOLTAGE a) 12-110-AC/12-60 VDC b) 110-415V AC/110-220 VDC | OSTR24 OSTR240 |
| C | UNDER VOLTAGE RELEASE* | a) 240 V/WITHOUT DELAY b) 415 V/WITHOUT DELAY | O UVR240 O UVR415 |

*Under Development

Technical Data Osäfe

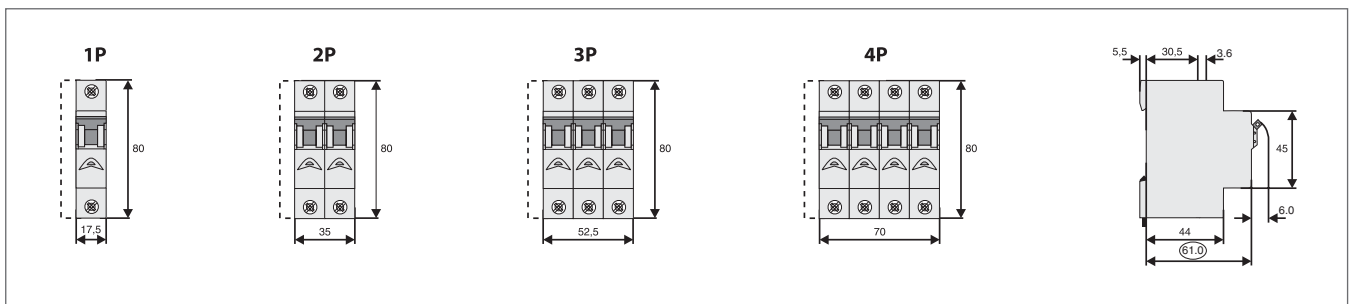
Electrical

| | |
|---|--|
| Design according to | IS/IEC 60898-1 IS/IEC 60898-2 |
| Current test marks as | printed on the device |
| Rated voltage | AC: 240/415V DC: 24V, 48V, 60V, 110V & 220V (per pole) |
| Rated frequency | 50 Hz |
| Rated breaking capacity according to IS/IEC 60898 | 10 kA |
| Characteristic | B, C, D |
| Back-up fuse | max. 125 A gG |
| Selectivity class | 3 |
| Endurance | 4000 operating cycles On Load & Off Load |
| Terminal | Un marked (Line/Load) reversible |

Mechanical

| | |
|---------------------------|---|
| Frame size | 45 mm |
| Device height | 80 mm |
| Device width | 17.5 mm per pole (1MU) |
| Mounting | quick fastening with 3 lock-in positions on DIN rail EN 50022 |
| Degree of protection | IP20 |
| Upper and lower terminals | open mouthed/lift terminals |
| Terminal protection | finger and hand touch safe, |
| Terminal capacity | 1-35 mm ² |
| (1p+N, 1.5MU) | 1-35 mm ² / 1-2x10 mm ² (N) |
| Terminal fastening torque | 2-2.4 Nm |
| (1p+N, 1.5MU) | 2-2.4 Nm / 1,2-1,5 Nm (N) |
| Busbar thickness | 0.8 - 2 mm |
| Mounting | independent of position |

Connection Diagrams



all dimension are in mm.

DC MCB UPTO 63 AMPS

Osäfe 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.

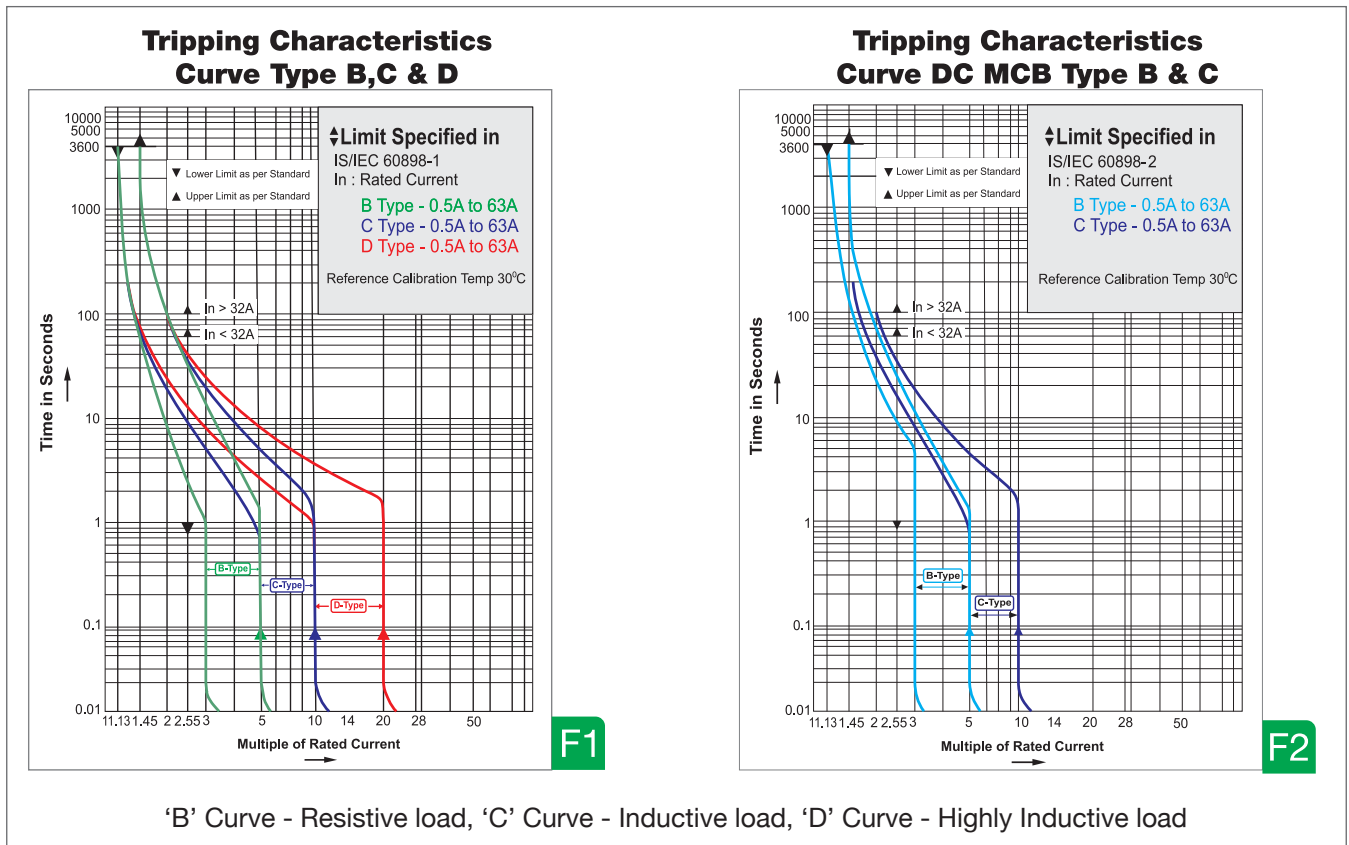
AVAILABILITY

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 and non-hygroscopic PBT/Nylon.
- Contacts are made up of silver inlaid copper, which ensure low resistance and longer life of circuit breaker.

Tripping Characteristics (IS/IEC 60898)





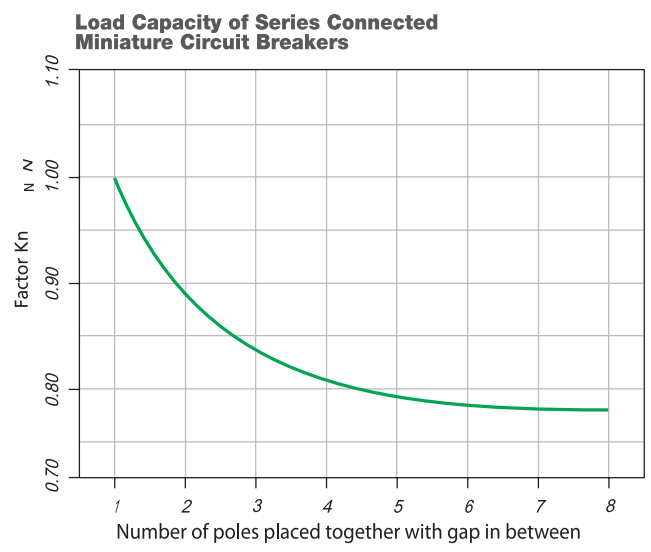
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Effect of the Ambient Temperature on Thermal Tripping Behaviour

Adjusted rated current values according to the ambient temperature

| I _n [A] | Ambient temperature T [°C] | | | | | | | | | | | | |
|--------------------|----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| | -25 | -20 | -10 | 0 | 10 | 20 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 0.5 | 0.61 | 0.60 | 0.58 | 0.56 | 0.54 | 0.52 | 0.50 | 0.49 | 0.48 | 0.47 | 0.46 | 0.45 | 0.44 |
| 1 | 1.2 | 1.2 | 1.2 | 1.1 | 1.1 | 1.0 | 1.0 | 0.99 | 0.97 | 0.95 | 0.93 | 0.90 | 0.89 |
| 1.5 | 1.8 | 1.8 | 1.7 | 1.7 | 1.6 | 1.6 | 1.5 | 1.5 | 1.5 | 1.4 | 1.4 | 1.4 | 1.3 |
| 1.6 | 2.0 | 1.9 | 1.9 | 1.8 | 1.7 | 1.7 | 1.6 | 1.6 | 1.5 | 1.5 | 1.5 | 1.4 | 1.4 |
| 2 | 2.4 | 2.4 | 2.3 | 2.2 | 2.2 | 2.1 | 2.0 | 2.0 | 1.9 | 1.9 | 1.9 | 1.8 | 1.8 |
| 2.5 | 3.1 | 3.0 | 2.9 | 2.8 | 2.7 | 2.6 | 2.5 | 2.5 | 2.4 | 2.4 | 2.3 | 2.3 | 2.2 |
| 3 | 3.7 | 3.6 | 3.5 | 3.4 | 3.3 | 3.1 | 3.0 | 3.0 | 2.9 | 2.8 | 2.8 | 2.7 | 2.7 |
| 3.5 | 4.3 | 4.2 | 4.1 | 3.9 | 3.8 | 3.7 | 3.5 | 3.4 | 3.4 | 3.3 | 3.2 | 3.2 | 3.1 |
| 4 | 4.9 | 4.8 | 4.7 | 4.5 | 4.3 | 4.2 | 4.0 | 3.9 | 3.9 | 3.8 | 3.7 | 3.6 | 3.5 |
| 5 | 6.1 | 6.0 | 5.8 | 5.6 | 5.4 | 5.2 | 5.0 | 4.9 | 4.8 | 4.7 | 4.6 | 4.5 | 4.4 |
| 6 | 7.3 | 7.2 | 7.0 | 6.7 | 6.5 | 6.3 | 6.0 | 5.9 | 5.8 | 5.7 | 5.6 | 5.4 | 5.3 |
| 8 | 9.8 | 9.6 | 9.3 | 9.0 | 8.7 | 8.4 | 8.0 | 7.9 | 7.7 | 7.6 | 7.4 | 7.2 | 7.1 |
| 10 | 12 | 12 | 12 | 11 | 11 | 10 | 10 | 9.9 | 9.7 | 9.5 | 9.3 | 9.0 | 8.9 |
| 12 | 15 | 14 | 14 | 13 | 13 | 13 | 12 | 12 | 12 | 11 | 11 | 11 | 11 |
| 13 | 16 | 16 | 15 | 15 | 14 | 14 | 13 | 13 | 13 | 12 | 12 | 12 | 12 |
| 15 | 18 | 18 | 17 | 17 | 16 | 16 | 15 | 15 | 15 | 14 | 14 | 14 | 13 |
| 16 | 20 | 19 | 19 | 18 | 17 | 17 | 16 | 16 | 15 | 15 | 15 | 14 | 14 |
| 20 | 24 | 24 | 23 | 22 | 22 | 21 | 20 | 20 | 19 | 19 | 19 | 18 | 18 |
| 25 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 25 | 24 | 24 | 23 | 23 | 22 |
| 32 | 39 | 38 | 37 | 36 | 35 | 33 | 32 | 32 | 31 | 30 | 30 | 29 | 28 |
| 40 | 49 | 48 | 47 | 45 | 43 | 42 | 40 | 39 | 39 | 38 | 37 | 36 | 35 |
| 50 | 61 | 60 | 58 | 56 | 54 | 52 | 50 | 49 | 48 | 47 | 46 | 45 | 44 |
| 63 | 77 | 76 | 73 | 71 | 68 | 66 | 63 | 62 | 61 | 60 | 58 | 57 | 56 |



Let-through Energy 10kA

