MerCs Miniature Circuit Breakers (MCB) 6kA

MerCs
SAFE · PRODUCTIVE · RELIABLE

Data Sheet

Features

- DIN Mount
- Over Current Protection
- Sealable
- SAA Approved - SAA-190155-EA
- 1, 2 and 3 Pole options

Applications

- Used in domestic and commercial electrical systems for Over Current protection.
- Used to protect electrical circuits and electrical equipment from over current and short circuit conditions that may damage equipment or lead to electrical fires.

Description

A miniature circuit breaker (MCB) automatically switches off an electrical circuit during an abnormal condition of the network this could be either an overload condition as well as faulty or short circuit condition. MCB are used in low voltage electrical networks instead of using a fuse. The miniature circuit breaker can detect over current and short circuit conditions in a more reliable way. MCB is more sensitive to an overcurrent condition than a fuse. Handling an MCB is electrically safer than a fuse. Quick restoration of supply is safer and quicker when compared with a fuse because a fuse must be re-wired or replaced in order to restore the power supply. With Circuit breakers (MCBs), restoration is easily possible by just switching the circuit breaker to the ON position.

Part Numbers

Current Rating	Part Number		
	1 Pole	2Pole	3Pole
4 Amp	MMCB6-C1-04	MMCB6-C2-04	MMCB6-C3-04
6 Amp	MMCB6-C1-06	MMCB6-C2-06	MMCB6-C3-06
10 Amp	MMCB6-C1-10	MMCB6-C2-10	MMCB6-C3-10
16 Amp	MMCB6-C1-16	MMCB6-C2-16	MMCB6-C3-16
20 Amp	MMCB6-C1-20	MMCB6-C2-20	MMCB6-C3-20
25 Amp	MMCB6-C1-25	MMCB6-C2-25	MMCB6-C3-25
32 Amp	MMCB6-C1-32	MMCB6-C2-32	MMCB6-C3-32
40 Amp	MMCB6-C1-40	MMCB6-C2-40	MMCB6-C3-40
50 Amp	MMCB6-C1-50	MMCB6-C2-50	MMCB6-C3-50
60 Amp	MMCB6-C1-63	MMCB6-C2-63	MMCB6-C3-63

Technical Data

Electrical Features

Rated current In	4,6,10,13,16,20,25,32,40,50,63A
Poles	1P, 2P, 3P
Rated voltage Ue	240/415V
Insulation voltage Ui	500V
Rated frequency	50/60Hz
Rated breaking capacity	6,000A
Energy limiting class	3
Rated impulse withstand voltage(1.2/50) Uimp	4,000V
Dielectric test voltage at ind. Freq. for 1 min	2kV
Pollution degree	2
Thermo-magnetic release characteristic	B,C,D

Mechanical Features

Electrical life	8,000 Cycles
Mechanical life	20,000 Cycles
Contact position indicator	Yes
Protection degree	IP20
Rated frequency	50/60Hz
Rated breaking capacity	6,000A
Energy limiting class	3
Reference temperature for setting of thermal element	30°C
Ambient temperature (with daily average≤35°C)	-5°C~+40°C
Storage temperature	-25°C~+70°C

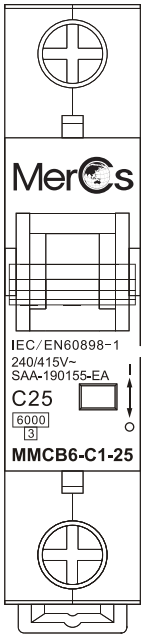
Installation

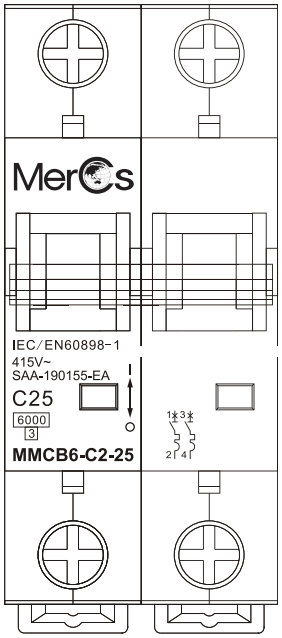
Terminal connection type	Cable/U-type busbar/Pin-type busbar
Terminal size top/bottom for busbar	25mm² 18-3AWG
Contact position indicator	25mm² 18-3AWG
Tightening torque	2.0 N*m 22 In-lbs
Mounting	On DIN rail EN 60715 (35mm) by means of fast clip device
Connection	From top and bottom

Combination with accessories

Auxiliary contact	Yes
Shunt release	Yes
Under voltage release	Yes
Alarm contact	Yes

Dimensions


MerCs
IEC/EN60898-1
240/415V~
SAA-190155-EA
C25
6000
3
MMCB6-C1-25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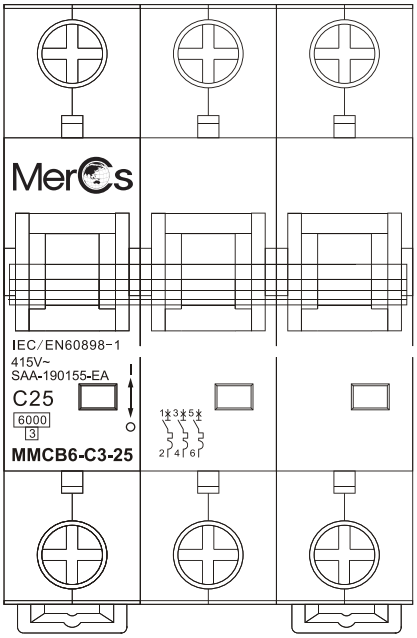
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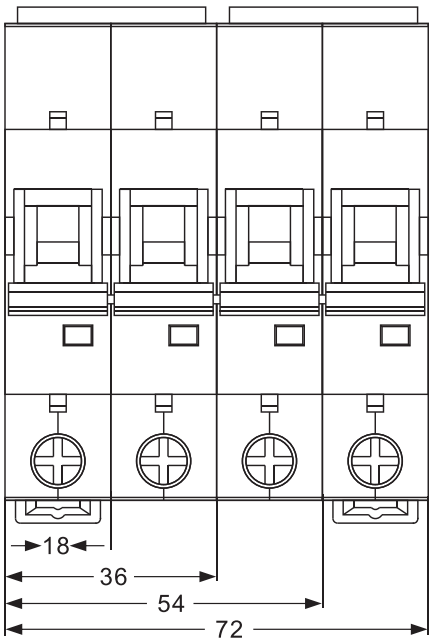
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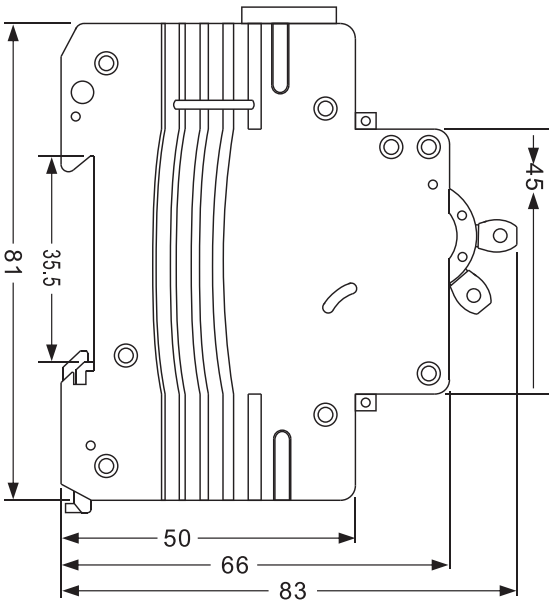
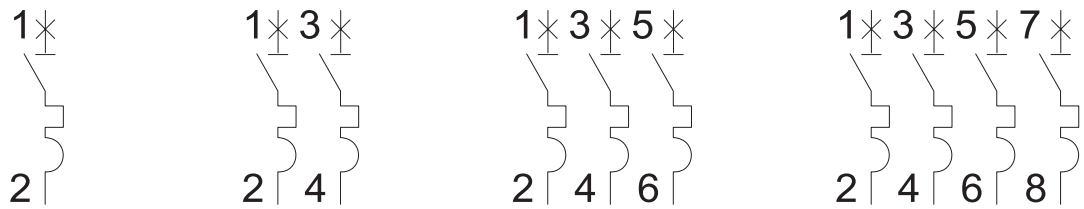
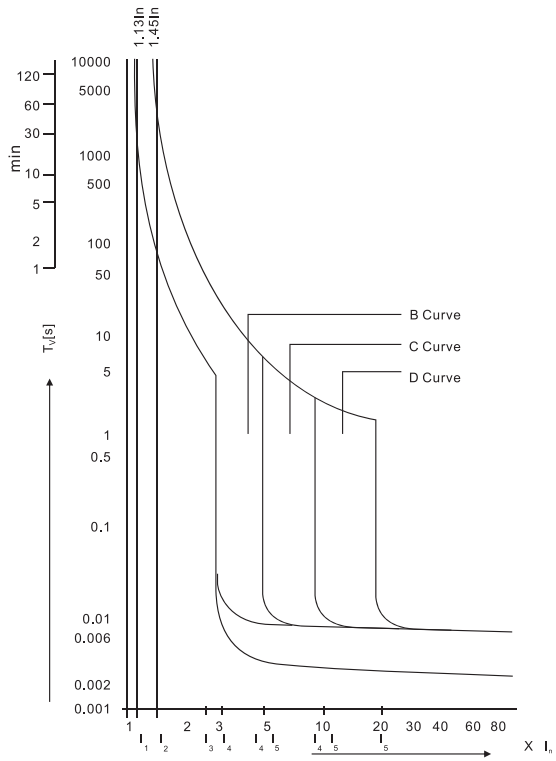

81
35.5
45
50
66
83

Wiring Diagram

MMCB wiring diagram



Characteristics Curves

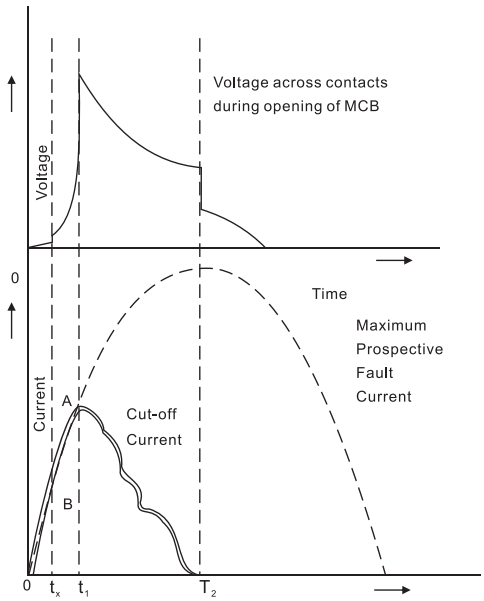


	Thermal Tripping			Magnetic Tripping		
As per IEC60898	No tripping current	Tripping current I_2	Time Limits t	Hold current I_4	Trip current I_5	Time Limits t
B Curve	1.13× I_N	1.45× I_N	⩾1h <1h	3× I_N	5× I_N	⩾0.1s <0.1s
C Curve	1.13× I_N	1.45× I_N	⩾1h <1h	5× I_N	10× I_N	⩾0.1s <0.1s
D Curve	1.13× I_N	1.45× I_N	⩾1h <1h	10× I_N	20× I_N	⩾0.1s <0.1s
I_3=2.55× I_N		1s<t<60s for IN<32A 1s<t<60s for IN<32A				

Tripping characteristics

Based on the Tripping Characteristics, MCBs are available in “B”,“C”and “D”curve to suit different types of applications.
“B”Curve for protection of electrical circuits with equipment that does not cause surge current (lighting and distribution circuits) Short circuit release is set to (3-5)In.
“C”Curve for protection of electrical circuits with equipment that cause surge current (inductive loads and motor circuits) Short circuit release is set to (5-10)In.
“D”Curve for protection of electrical circuits with cause high inrush current ,typically 12-15 times the thermal rated current (transformes, x-ray machines etc,)Short circuit release is set to (10-20)In.

Current limiting design



Safety Precautions or Safety Instructions

1. The device must be installed and maintained by a suitably qualified person,
2. Disconnect all power before working on the device. Don't touch any terminal when the power is ON.
3. Verify correct terminal connection when wiring.
4. Don't dismantle or repair the device whether it operates normally or otherwise
5. Never use the device in a location which could be invaded by corrosive gas, strong sunshine light or rain.
6. Clean the device with a dry cloth.
7. Fail to follow these instructions will result in serious injury or death.