

Technical Data



MCB-AC

Specifications	MCB			Isolator
Type	'B'	'C'	'D'	
Standard Conformity	IS/IEC60898-1-2002 CM/L-8885716			IS/IEC60947-3
Rated Current (In)	6-63A	0.5-125A	0.5-63A	25-125A
Rated Voltage AC (Ue)	240/415V			240/415V
Utilization Category				AC22A
Rated Frequency Hz	50Hz			50Hz
No. of Poles (Execution)	1P, 1P+N, 2P, 3P, 3P+N & 4P			1P, 2P, 3P & 4P
Rated Short Circuit Breaking Capacity	10kA	10kA	10kA	
Rated Insulation Voltage (Ui)	660V			660V
Magnetic Release Setting	(3-5)In	(5-10)In	(10-20)In	
Rated Impulse Voltage (Uimp)	6kV			6kV
Electrical/Mechanical Life <32A	30,000			30,000
	10,000			10,000
Ambient Temperature	-5°C to +55°C			-5°C to +55°C
Energy Limiting Class	ELC 3			
Mounting	Clip on Din rail (35x7.5 mm)			Clip on Din rail (35x7.5 mm)
Line Terminal Capacity	35 mm²			35 mm²
Degree of Protection	IP 20			IP 20
Resistance to Shock	40mm free fall			40mm free fall

MCB-DC

Circuit Breakers for DC application are engineered to fulfill tough arc quenching conditions. DC MCB incorporates built in magnet to direct the arc into the arc quenching chamber.

Standard Conformity	IS/IEC60898-2-2002	
Current Rating	0.5-63A	
No. of Poles	1P & 2P	
Voltage Rating	220V (max.)	
Short Circuit Breaking Capacity	4kA	



Selection and Accessories



MCB

Description	Type 'B'	Type 'C'	Type 'D'
Single Pole	6/10/16/20/25/32/40/63	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63 80/100/125	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63
Single Pole+Neutral	6/10/16/20/25/32/40/63	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63
Double Pole	6/10/16/20/25/32/40/63	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63 80/100/125	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63
Three Pole Three Pole+Neutral	6/10/16/20/25/32/40/63	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63 80/100/125	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63
Four Pole	6/10/16/20/25/32/40/63	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63 80/100/125	0.5/1/2/3/4/5 6/10/16/20/25/32/40/63

Accessories

Auxiliary Contact: Attachment fitted with MCB (left side) used for interlocking, signaling and indication. The auxiliary switch is switched on or off along with the MCB through internal linkage.

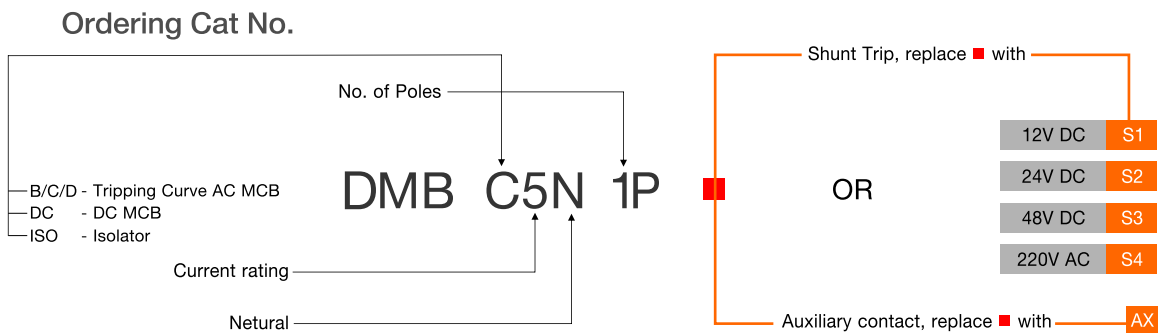
Specifications	
Standard Conformity	IS 13947-5
Current Rating	6A
Voltage Rating	240V AC
Contact Configuration	1NO + 1NC
Protection	IP 20
Electrical Endurance (nos)	10000
Fitment	Factory Fitted

Shunt Trip: Controls the remote tripping of the MCB to which it is attached (Right Side).

Specifications	
Standard Conformity	IS/IEC60947-2
Rated Voltage AC	220V
DC	12V, 24V, 48V
Operating Voltage	70-110% of Rated Voltage
Protection	IP 20
Electrical Endurance (nos)	10000

Isolator

Description	Reference
Single Pole	25/40/63
Double, Three & Four Pole	25/40/63/80/100/125



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Miniature Circuit Breaker



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Features & Benefits



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.
Padlocking Facility	Dolly can be padlocked in - OFF position for personal safety during maintenance - ON positing for extremely critical loads
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 35 sq mm cable.
Bi-connect Termination Possible	Choice to use Busbar and/or cable in the same terminal, 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 DACO MCBs is extremely low providing valuable energy savings over its entire life cycle.
Wide range	0.5 to 125A 1P, 1P+N, 2P, 3P, 3P+N & 4P configurations B, C & D Tripping Characteristic
Legend Plate	Ensures circuit identification and enhanced safety
Air circulation	When two poles are placed adjacent to each other, these channels form a tunnel resulting in effective air circulation around individual poles.
2 Position dolly	Clear indication of the operational status of device.



Constructional Details



Constructional

Housing
DACO 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
DACO 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.

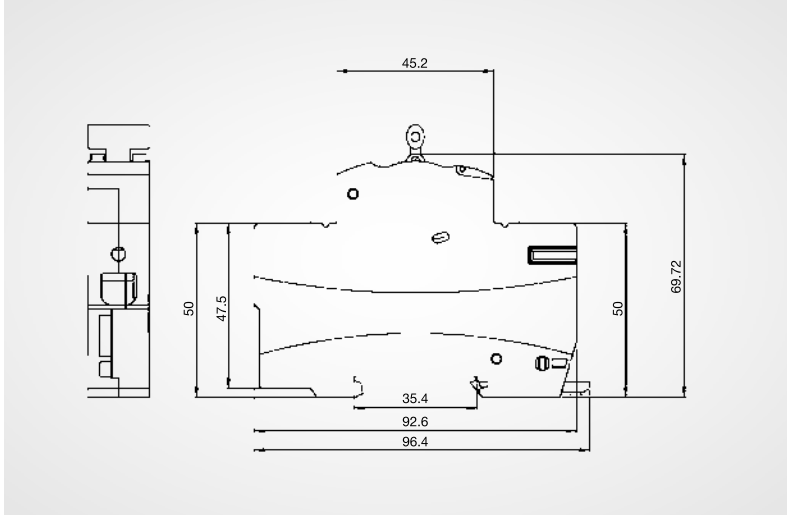
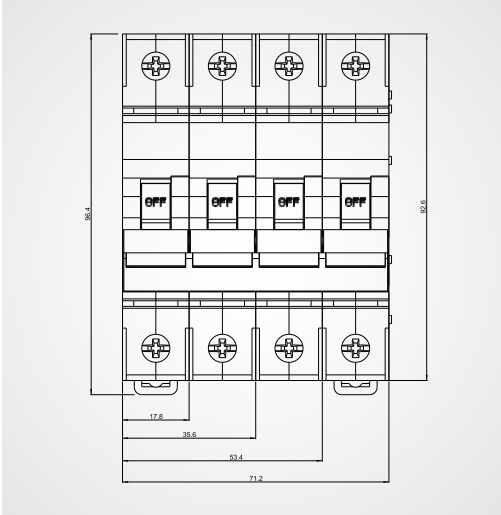
High Tech Arc Blower
Protects from hazards of overloads and short-circuits. The arc under the influence of magnetic field is moved into the arc chute where it is quickly extinguished and quenched.

Maximum Backup Protection
To protect the DACO 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.

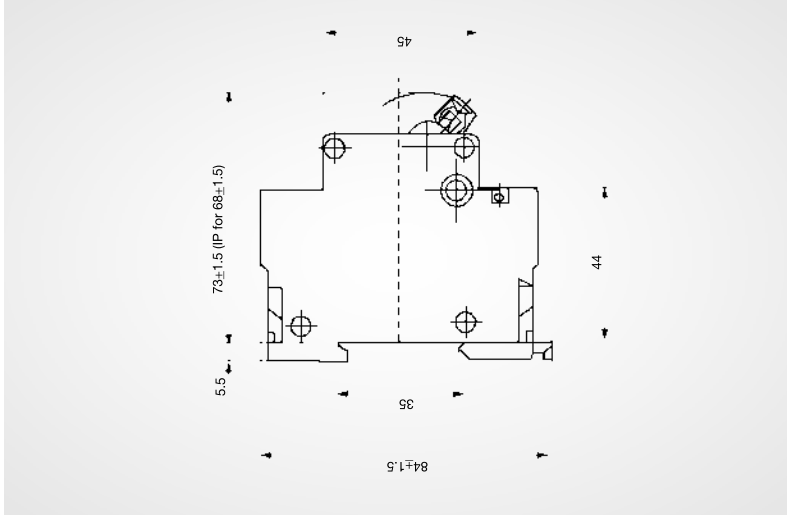
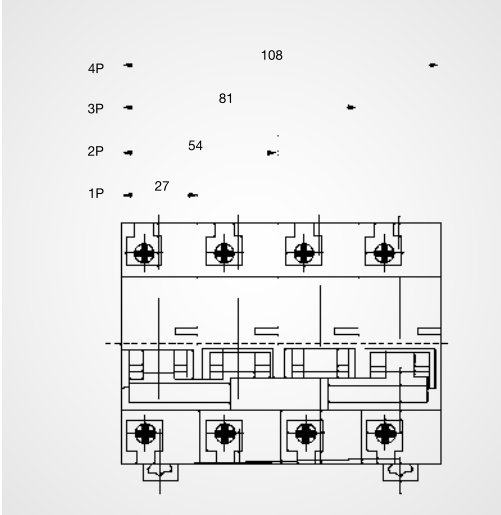
MCB Rating	Back-up Fuse Rating
1A	25A
4A	50A
6A	80A
10A	100A
63A	100A

Integrated label channel holders
Easy identification of circuits irrespective of position on the Distribution Board. Enhanced safety during maintenance.

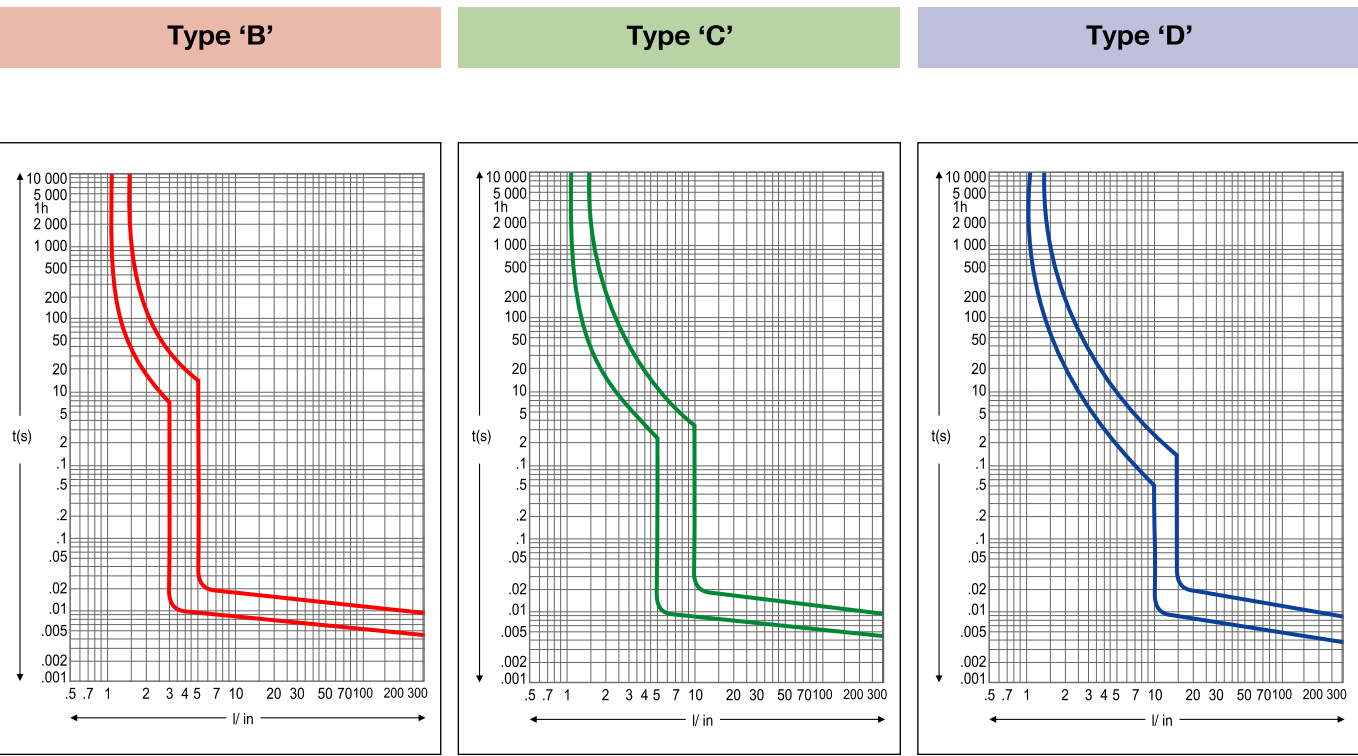
Installation Dimensions MCB (0.5 to 63A) / Isolator (25 to 125A)



Installation Dimensions MCB (80 to 125A)



Tripping Characteristics



MCB Selection based on Application - Tripping Characteristics

Type	Application	Thermal Test Current		Tripping Time In≥63A	Electro Magnetic Test Current		Tripping Time (t)
		Low	High				
‘B’	Lighting & Distribution with no surge Current	1.13xIn		>1hour	3xIn		≥0.1s
			1.45xIn	<1hour		5xIn	<0.1s
‘C’	Inductive Load with surge Current	1.13xIn		>1hour	5xIn		≥0.1s
			1.45xIn	<1hour		10xIn	<0.1s
‘D’	High Inductive Load & High Inrush Current	1.13xIn		>1hour	10xIn		≥0.1s
			1.45xIn	<1hour		20xIn	<0.1s

Temperature deration

MCBs are calibrated at an ambient temperature of 30°C. In an industrial environment where ambient temperature is higher than the regulatory reference temperature of 30°C, the circuit breakers may be subjected to untimely tripping (nuisance tripping). 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 at a higher ambient.

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

Temperature

In(A)	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
63	64.89	63	61.79	60	58	56.07