

MINIATURE CIRCUIT BREAKERS (MCBs)



- ▶ “Makel” branded Miniature Circuit Breakers produced according to TS 5018-1 EN 60898-1 and IEC 60947-2 Standards.
- ▶ “B” and “C” types exist in accordance with related sudden switching characteristics.



GENERAL FEATURES OF MINIATURE CIRCUIT BREAKERS (MCBs) :

► Provide ideal protection on electricity distribution systems by means of the latest technology. ► Protect electricity lines in Magnetic and Thermic methods. ► Protect electricity lines in case of excessive current and short circuit. ► Used at Automatic asynchronous electrical motor control units. ► Automatically separate related circuit from the network system. ► Terminals have been protected against finger touches, these products comply with TN and IT earthing methods. ► Generally used at constructions, production facilities and for protection of inductive loads.

GENERAL CHARACTERISTICS :

► Protection for main electricity lines. ► Thermic and magnetic protection. ► Rated Nominal Voltage, 230/400 V AC to 400 V AC. ► In case of natural disaster condition, MCBs are providing extra protection against to vibration by means of its special mechanism. ► All contacts made by 100 % Electromechanical Copper (Cu) and Silver (Ag)

ACCORDING TO TS 5018-1, EN 60898-1 STANDARDS,

Rated Nominal Current A : 2,4, 6, 10, 16, 20, 25, 32, 40, 50 and 63
Number of Poles : 1, 1+N, 2,3,3+N, 4 poles
Rated Nominal Voltage V : 230/400 V AC, 1, 1+N poles,
for 400 V AC 2, 3,3+N and 4 poles.

Conditional Declared Short
Circuit Current I_{nc} : 6000 A

SUITABLE FOR EN 60947-2, EN 60898-1 INTERNATIONAL STANDARDS.

Ağırlık (gr) : 115,220,228,348,460,463
Kutup Sayısı : 1P ,1+N,2P ,3P ,3+N, 4P

“B” TYPE CIRCUIT-BREAKERS ACCORDING TO SUDDEN SWITCHING CHARACTERISTIC:

“B” type circuit-breakers are generally used in order to protect lines at homes, offices and home lightning, socket and control circuits. Magnetic protection range at “B” type MCBs are 3 to 5 times of Nominal Current.

“C” TYPE CIRCUIT-BREAKERS ACCORDING TO SUDDEN SWITCHING CHARACTERISTIC:

“C” type circuit-breakers are generally used at production facilities, constructions, in order to protect conductor insulations

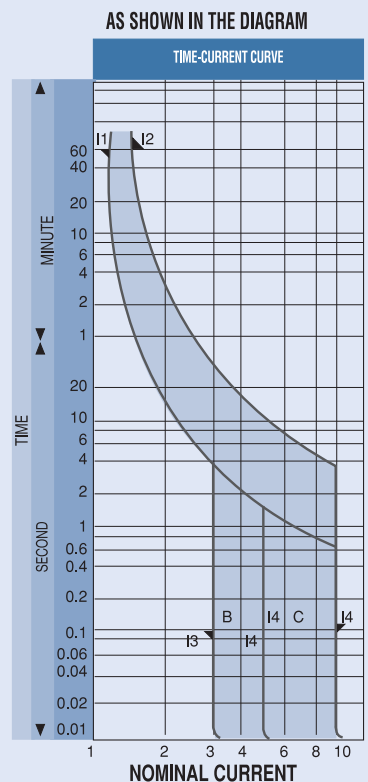
and inductive load and to protect electrical devices such as transformers, motors etc. Magnetic protection range at “C” type

MCBs are 5 to 10 times of Nominal Current.

TECHNICAL FEATURES

- Rated Nominal Current : Between 6A– 40 A at 30° C.
- Rated Nominal Current : Between 50-63 A at 40° C
- Rated Nominal Voltage : 230/400 V AC 1, 1+N poles,
400 V AC 2, 3, 3+N, 4 poles.
- Time-Current Curve : B and C type.
- Protection Class : IP 20

- Cross-Section of the Conductor : 0,5÷25 mm²
- Mounting Method : According to DIN EN 50022
fit on the rail 35 mm,
- Mechanical Life : 40 000 periods
- Electrical Life : 20 000 periods
- Operating Frequency : 50/60 Hz



1 Pole Type B				
Code No.	Nominal Current	T.Box	T.Package	Measurement mm
60004	2	12	120	470x165x225
60006	4	12	120	470x165x225
60007	6	12	120	470x165x225
60009	10	12	120	470x165x225
60011	16	12	120	470x165x225
60012	20	12	120	470x165x225
60013	25	12	120	470x165x225
60014	32	12	120	470x165x225
60015	40	12	120	470x165x225
60016	50	12	120	470x165x225
60017	63	12	120	470x165x225

1 Pole Type C				
Code No.	Nominal Current	T.Box	T.Package	Measurement mm
60104	2	12	120	470x165x225
60106	4	12	120	470x165x225
60107	6	12	120	470x165x225
60109	10	12	120	470x165x225
60111	16	12	120	470x165x225
60112	20	12	120	470x165x225
60113	25	12	120	470x165x225
60114	32	12	120	470x165x225
60115	40	12	120	470x165x225
60116	50	12	120	470x165x225
60117	63	12	120	470x165x225

1 + N Pole Type B				
Code No.	Nominal Current	T.Box	T.Package	Measurement mm
60024	2	12	120	470x165x225
60026	4	12	120	470x165x225
60027	6	12	120	470x165x225
60029	10	12	120	470x165x225
60031	16	12	120	470x165x225
60032	20	12	120	470x165x225
60033	25	12	120	470x165x225
60034	32	12	120	470x165x225
60035	40	12	120	470x165x225
60036	50	12	120	470x165x225
60037	63	12	120	470x165x225

1 + N Pole Type C				
Code No.	Nominal Current	T.Box	T.Package	Measurement mm
60124	2	12	120	470x165x225
60126	4	12	120	470x165x225
60127	6	12	120	470x165x225
60129	10	12	120	470x165x225
60131	16	12	120	470x165x225
60132	20	12	120	470x165x225
60133	25	12	120	470x165x225
60134	32	12	120	470x165x225
60135	40	12	120	470x165x225
60136	50	12	120	470x165x225
60137	63	12	120	470x165x225

2 Poles Type B				
Code No.	Nominal Current	T.Box	T.Package	Measurement mm
60044	2	6	60	470x165x225
60046	4	6	60	470x165x225
60047	6	6	60	470x165x225
60049	10	6	60	470x165x225
60051	16	6	60	470x165x225
60052	20	6	60	470x165x225
60053	25	6	60	470x165x225
60054	32	6	60	470x165x225
60055	40	6	60	470x165x225
60056	50	6	60	470x165x225
60057	63	6	60	470x165x225

2 Poles Type C				
Code No.	Nominal Current	T.Box	T.Package	Measurement mm
60144	2	6	60	470x165x225
60146	4	6	60	470x165x225
60147	6	6	60	470x165x225
60149	10	6	60	470x165x225
60151	16	6	60	470x165x225
60152	20	6	60	470x165x225
60153	25	6	60	470x165x225
60154	32	6	60	470x165x225
60155	40	6	60	470x165x225
60156	50	6	60	470x165x225
60157	63	6	60	470x165x225

3 Poles Type B				
Code No.	Nominal Current	T.Box	T.Package	Measurement mm
60064	2	4	40	470x165x225
60066	4	4	40	470x165x225
60067	6	4	40	470x165x225
60069	10	4	40	470x165x225
60071	16	4	40	470x165x225
60072	20	4	40	470x165x225
60073	25	4	40	470x165x225
60074	32	4	40	470x165x225
60075	40	4	40	470x165x225
60076	50	4	40	470x165x225
60077	63	4	40	470x165x225

3 Poles Type C				
Code No.	Nominal Current	T.Box	T.Package	Measurement mm
60164	2	4	40	470x165x225
60166	4	4	40	470x165x225
60167	6	4	40	470x165x225
60169	10	4	40	470x165x225
60171	16	4	40	470x165x225
60172	20	4	40	470x165x225
60173	25	4	40	470x165x225
60174	32	4	40	470x165x225
60175	40	4	40	470x165x225
60176	50	4	40	470x165x225
60177	63	4	40	470x165x225

3+N Poles Type B				
Code No.	Nominal Current	T.Box	T.Package	Measurement mm
60084	2	4	40	470x165x225
60086	4	4	40	470x165x225
60087	6	4	40	470x165x225
60089	10	4	40	470x165x225
60091	16	4	40	470x165x225
60092	20	4	40	470x165x225
60093	25	4	40	470x165x225
60094	32	4	40	470x165x225
60095	40	4	40	470x165x225
60096	50	4	40	470x165x225
60097	63	4	40	470x165x225

3+N Poles Type C				
Code No.	Nominal Current	T.Box	T.Package	Measurement mm
60184	2	4	40	470x165x225
60186	4	4	40	470x165x225
60187	6	4	40	470x165x225
60189	10	4	40	470x165x225
60191	16	4	40	470x165x225
60192	20	4	40	470x165x225
60193	25	4	40	470x165x225
60194	32	4	40	470x165x225
60195	40	4	40	470x165x225
60196	50	4	40	470x165x225
60197	63	4	40	470x165x225

4 Poles Type B				
Code No.	Nominal Current	T.Box	T.Package	Measurement mm
60204	2	3	30	470x165x225
60206	4	3	30	470x165x225
60207	6	3	30	470x165x225
60209	10	3	30	470x165x225
60211	16	3	30	470x165x225
60212	20	3	30	470x165x225
60213	25	3	30	470x165x225
60214	32	3	30	470x165x225
60215	40	3	30	470x165x225
60216	50	3	30	470x165x225
60217	63	3	30	470x165x225

4 Poles Type C				
Code No.	Nominal Current	T.Box	T.Package	Measurement mm
60304	2	3	30	470x165x225
60306	4	3	30	470x165x225
60307	6	3	30	470x165x225
60309	10	3	30	470x165x225
60311	16	3	30	470x165x225
60312	20	3	30	470x165x225
60313	25	3	30	470x165x225
60314	32	3	30	470x165x225
60315	40	3	30	470x165x225
60316	50	3	30	470x165x225
60317	63	3	30	470x165x225



1 Pole Type B



1 Pole Type C



1 + N Pole Type B



1 + N Pole Type C



2 Poles Type B



2 Poles Type C



3 Poles Type B



3 Poles Type C



3 + N Poles Type B



3 + N Poles Type C



4 Poles Type B



4 Poles Type C