

CE	S	N	SAA
EU	Sweden	Spain	Australia

EB Miniature Circuit Breaker

1. General

- 1.1 Application: For protecting cables and equipment against overload and short circuit.
- 1.2 General rules for choosing MCB.
 - a. Technical data of the network at the point considered:
 - The earthing systems (TNS, TNC),
 - Short-circuit current at the circuit-breaker installation point, which must always be less than the breaking capacity of this device,
 - Network normal voltage.
 - b. There are 3 curve characteristics for magnetic operation:
 - B curve (3-5 I_n) protection and control of the circuits against overloads and short-circuits; protection for people and big length cables in TN and IT systems.
 - C curve (5-10 I_n) protection and control of the circuits against overloads and short-circuits; protection for resistive and inductive loads with low inrush current.
 - D curve (10-14 I_n) protection and control of the circuits against overloads and short-circuits; protection for circuits which supply loads with high inrush current at the circuit closing (LV/LV transformers, breakdown lamps).
- 1.3 Detailed certificates information, please refer to Certificates Table on P153.



2. Ordering Information

- 2.1 Fully comply with IEC/EN 60898-1

★ 1P, I_{cs}=4500A



In (A)	CTN	Order Code					
		Curve B		Curve C		Curve D	
		Standard	RoHS	Standard	RoHS	Standard	RoHS
1	120	135017	981911	135197	982091	135377	982271
2	120	135018	981912	135198	982092	135378	982272
3	120	135019	981913	135199	982093	135379	982273
4	120	135020	981914	135200	982094	135380	982274
5	120	135021	981915	135201	982095	135381	982275
6	120	135022	981916	135202	982096	135382	982276
10	120	135023	981917	135203	982097	135383	982277
15	120	135024	981918	135204	982098	135384	982278
16	120	135025	981919	135205	982099	135385	982279
20	120	135026	981920	135206	982100	135386	982280
25	120	135027	981921	135207	982101	135387	982281
32	120	135028	981922	135208	982102	135388	982282
40	120	135029	981923	135209	982103	135389	982283
50	120	135030	981924	135210	982104	135390	982284
60	120	135031	981925	135211	982105	135391	982285
63	120	135032	981926	135212	982106	135392	982286

★ 1P, Ics=3000A



In (A)	CTN	Order Code					
		Curve B		Curve C		Curve D	
		Standard	RoHS	Standard	RoHS	Standard	RoHS
1	120	135001	981895	135181	982075	135361	982255
2	120	135002	981896	135182	982076	135362	982256
3	120	135003	981897	135183	982077	135363	982257
4	120	135004	981898	135184	982078	135364	982258
5	120	135005	981899	135185	982079	135365	982259
6	120	135006	981900	135186	982080	135366	982260
10	120	135007	981901	135187	982081	135367	982261
15	120	135008	981902	135188	982082	135368	982262
16	120	135009	981903	135189	982083	135369	982263
20	120	135010	981904	135190	982084	135370	982264
25	120	135011	981905	135191	982085	135371	982265
32	120	135012	981906	135192	982086	135372	982266
40	120	135013	981907	135193	982087	135373	982267
50	120	135014	981908	135194	982088	135374	982268
60	120	135015	981909	135195	982089	135375	982269
63	120	135016	981910	135196	982090	135376	982270

★ 2P, Ics=4500A



In (A)	CTN	Order Code					
		Curve B		Curve C		Curve D	
		Standard	RoHS	Standard	RoHS	Standard	RoHS
1	60	135062	981956	135242	982136	135409	982303
	60	135063	981957	135243	982137	135410	982304
3	60	135064	981958	135244	982138	135411	982305
	60	135065	981959	135245	982139	135412	982306
5	60	135066	981960	135246	982140	135413	982307
	60	135067	981961	135247	982141	135414	982308
10	60	135068	981962	135248	982142	135415	982309
	60	135069	981963	135249	982143	135416	982310
16	60	135070	981964	135250	982144	135417	982311
	60	135071	981965	135251	982145	135418	982312
25	60	135072	981966	135252	982146	135419	982313
	60	135073	981967	135253	982147	135420	982314
40	60	135074	981968	135254	982148	135421	982315
	60	135075	981969	135255	982149	135422	982316
60	60	135076	981970	135256	982150	135423	982317
	60	135077	981971	135257	982151	135424	982318

★ 2P, Ics=3000A



In (A)	CTN	Order Code					
		Curve B		Curve C		Curve D	
		Standard	RoHS	Standard	RoHS	Standard	RoHS
1	60	135046	981940	135226	982120	135393	982287
2	60	135047	981941	135227	982121	135394	982288
3	60	135048	981942	135228	982122	135395	982289
4	60	135049	981943	135229	982123	135396	982290
5	60	135050	981944	135230	982124	135397	982291
6	60	135051	981945	135231	982125	135398	982292
10	60	135052	981946	135232	982126	135399	982293
15	60	135053	981947	135233	982127	135400	982294
16	60	135054	981948	135234	982128	135401	982295
20	60	135055	981949	135235	982129	135402	982296
25	60	135056	981950	135236	982130	135403	982297
32	60	135057	981951	135237	982131	135404	982298
40	60	135058	981952	135238	982132	135405	982299
50	60	135059	981953	135239	982133	135406	982300
60	60	135060	981954	135240	982134	135407	982301
63	60	135061	981955	135241	982135	135408	982302

★ 3P, Ics=4500A



In (A)	CTN	Order Code					
		Curve B		Curve C		Curve D	
		Standard	RoHS	Standard	RoHS	Standard	RoHS
1	40	135107	982001	135287	982181	135441	982335
2	40	135108	982002	135288	982182	135442	982336
3	40	135109	982003	135289	982183	135443	982337
4	40	135110	982004	135290	982184	135444	982338
5	40	135111	982005	135291	982185	135445	982339
6	40	135112	982006	135292	982186	135446	982340
10	40	135113	982007	135293	982187	135447	982341
15	40	135114	982008	135294	982188	135448	982342
16	40	135115	982009	135295	982189	135449	982343
20	40	135116	982010	135296	982190	135450	982344
25	40	135117	982011	135297	982191	135451	982345
32	40	135118	982012	135298	982192	135452	982346
40	40	135119	982013	135299	982193	135453	982347
50	40	135120	982014	135300	982194	135454	982348
60	40	135121	982015	135301	982195	135455	982349
63	40	135122	982016	135302	982196	135456	982350

★ 3P, Ics=3000A



In (A)	CTN	Order Code					
		Curve B		Curve C		Curve D	
		Standard	RoHS	Standard	RoHS	Standard	RoHS
1	40	135091	981985	135271	982165	135425	982319
2	40	135092	981986	135272	982166	135426	982320
3	40	135093	981987	135273	982167	135427	982321
4	40	135094	981988	135274	982168	135428	982322
5	40	135095	981989	135275	982169	135429	982323
6	40	135096	981990	135276	982170	135430	982324
10	40	135097	981991	135277	982171	135431	982325
15	40	135098	981992	135278	982172	135432	982326
16	40	135099	981993	135279	982173	135433	982327
20	40	135100	981994	135280	982174	135434	982328
25	40	135101	981995	135281	982175	135435	982329
32	40	135102	981996	135282	982176	135436	982330
40	40	135103	981997	135283	982177	135437	982331
50	40	135104	981998	135284	982178	135438	982332
60	40	135105	981999	135285	982179	135439	982333
63	40	135106	982000	135286	982180	135440	982334

★ 4P, Ics=4500A



In (A)	CTN	Order Code					
		Curve B		Curve C		Curve D	
		Standard	RoHS	Standard	RoHS	Standard	RoHS
1	30	135152	982046	135332	982226	135473	982367
2	30	135153	982047	135333	982227	135474	982368
3	30	135154	982048	135334	982228	135475	982369
4	30	135155	982049	135335	982229	135476	982370
5	30	135156	982050	135336	982230	135477	982371
6	30	135157	982051	135337	982231	135478	982372
10	30	135158	982052	135338	982232	135479	982373
15	30	135159	982053	135339	982233	135480	982374
16	30	135160	982054	135340	982234	135481	982375
20	30	135161	982055	135341	982235	135482	982376
25	30	135162	982056	135342	982236	135483	982377
32	30	135163	982057	135343	982237	135484	982378
40	30	135164	982058	135344	982238	135485	982379
50	30	135165	982059	135345	982239	135486	982380
60	30	135166	982060	135346	982240	135487	982381
63	30	135167	982061	135347	982241	135488	982382

★ 4P, Ics=3000A



In (A)	CTN	Order Code					
		Curve B		Curve C		Curve D	
		Standard	RoHS	Standard	RoHS	Standard	RoHS
1	30	135136	982030	135316	982210	135457	982351
2	30	135137	982031	135317	982211	135458	982352
3	30	135138	982032	135318	982212	135459	982353
4	30	135139	982033	135319	982213	135460	982354
5	30	135140	982034	135320	982214	135461	982355
6	30	135141	982035	135321	982215	135462	982356
10	30	135142	982036	135322	982216	135463	982357
15	30	135143	982037	135323	982217	135464	982358
16	30	135144	982038	135324	982218	135465	982359
20	30	135145	982039	135325	982219	135466	982360
25	30	135146	982040	135326	982220	135467	982361
32	30	135147	982041	135327	982221	135468	982362
40	30	135148	982042	135328	982222	135469	982363
50	30	135149	982043	135329	982223	135470	982364
60	30	135150	982044	135330	982224	135471	982365
63	30	135151	982045	135331	982225	135472	982366

2.2 Fully comply with IEC/EN 60947-2

★ 1P Ics=3kA



In (A)	CTN	Standard	RoHS
1	30	139320	985484
2	30	139321	985485
3	30	139322	985486
4	30	139323	985487
6	30	139324	985488
10	30	139325	985489
16	30	139326	985490
20	30	139327	985491
25	30	139328	985492
32	30	139329	985493
40	30	139330	985494
50	30	139331	985495
60	30	139332	985496
63	30	139333	985497

★ 2P Ics=3kA



In (A)	CTN	Standard	RoHS
1	30	139334	985498
2	30	139335	985499
3	30	139336	985500
4	30	139337	985501
6	30	139338	985502
10	30	139339	985503
16	30	139340	985504
20	30	139341	985505
25	30	139342	985506
32	30	139343	985507
40	30	139344	985508
50	30	139345	985509
60	30	139346	985510
63	30	139347	985511

★ 3P Ics=3kA



In (A)	CTN	Standard	RoHS
1	30	139348	985512
2	30	139349	985513
3	30	139350	985514
4	30	139351	985515
6	30	139352	985516
10	30	139353	985517
16	30	139354	985518
20	30	139355	985519
25	30	139356	985520
32	30	139357	985521
40	30	139358	985522
50	30	139359	985523
60	30	139360	985524
63	30	139361	985525

★ 4P Ics=3kA



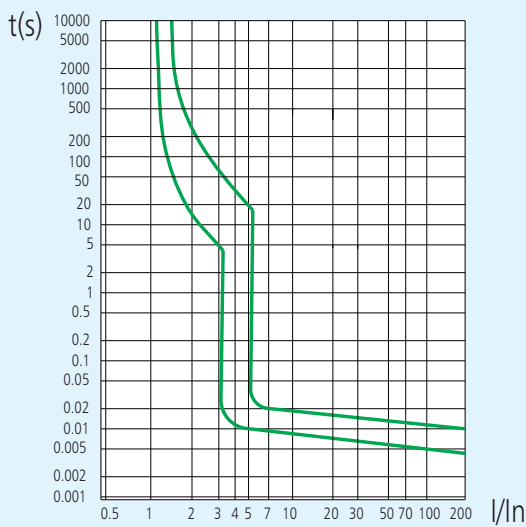
In (A)	CTN	Standard	RoHS
1	30	139362	985526
2	30	139363	985527
3	30	139364	985528
4	30	139365	985529
6	30	139366	985530
10	30	139367	985531
16	30	139368	985532
20	30	139369	985533
25	30	139370	985534
32	30	139371	985535
40	30	139372	985536
50	30	139373	985537
60	30	139374	985538
63	30	139375	985539

3. Technical Information

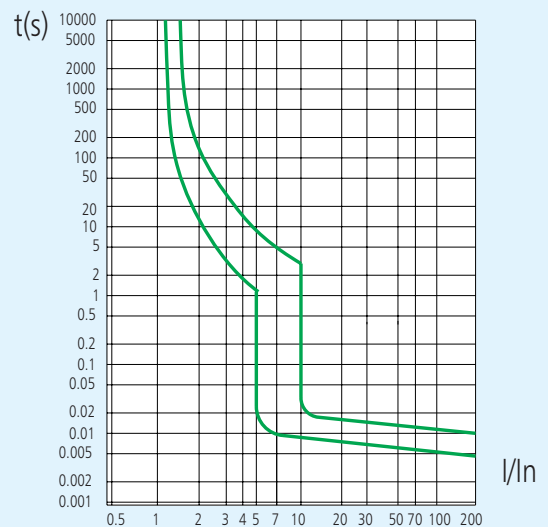
3.1 Curves

EB is of high current limiting performance to limit the destruction energy due to short circuit to the greatest extent.

B curve

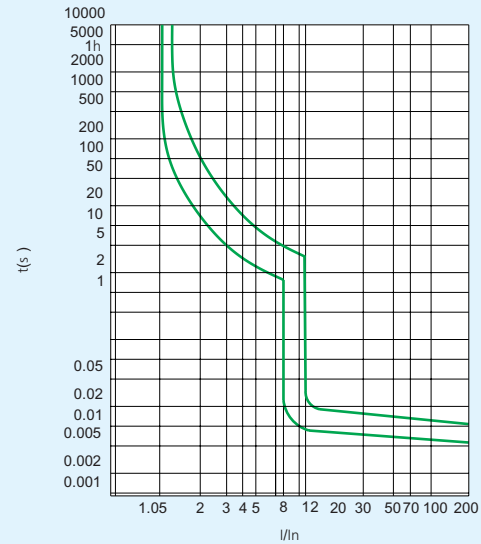
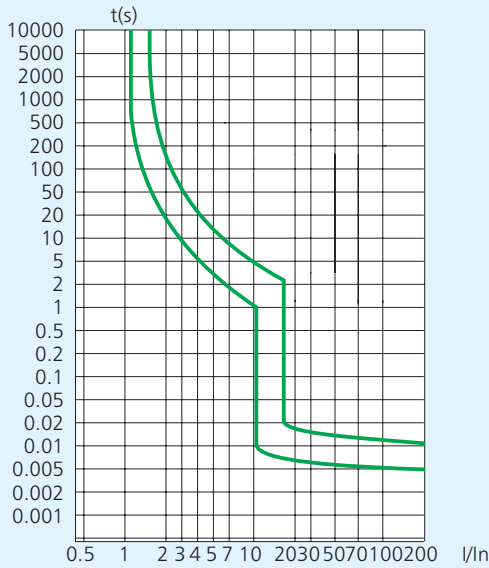


C curve



D curve

IEC/EN 60947



3.2

	Standard		IEC/EN 60898-1	IEC/EN 60947-2
Electrical features	Rated current I_n	A	1, 2, 3, 4, 6, 10, 13, 16, 20, 25, 32, 40, 50, 63	
	Poles		1P, 2P, 3P, 4P	
	Rated voltage U_e	V	230/400	240/415
	Insulation voltage U_i	V	500	
	Rated frequency		50/60Hz	
	Rated breaking capacity	A	3000/4500	3k/4.5k
	Rated impulse withstand voltage(1.2/50) U_{imp}	V	4000	
	Dielectric test voltage at ind. Freq. for 1 min	kV	2	
	Pollution degree		2	
	Thermo-magnetic release characteristic		B, C, D	8-12 I_n
Mechanical features	Electrical life		4, 000	
	Mechanical life		10, 000	
	Protection degree		IP20	
	Reference temperature for setting of thermal element	°C	30	
	Ambient temperature (with daily average $\leq 35^\circ\text{C}$)	°C	-5...+40(Special application please refer to P21 for temperature compensation correction)	
	Storage temperature	°C	-25...+70	
Installation	Terminal connection type		Cable/Pin-type busbar	
	Terminal size top/bottom for cable	mm ²	25	
		AWG	18-3	
	Terminal size top/bottom for busbar	mm ²	25	
		AWG	18-3	
	Tightening torque	N*m	2	
		In-lbs.	18	
Mounting		On DIN rail EN 60715 (35mm) by means of fast clip device		
Connection		From top and bottom		

3.3 Temperature derating

Please refer to table below for temperature compensation correction

Rated current In (A)	Temperature compensation coefficient under various operational temperature									
	-10°C	0°C	10°C	20°C	30°C	40°C	50°C	55°C	60°C	
1~6	1.20	1.14	1.09	1.05	1.00	0.96	0.80	0.75	0.70	
10~32	1.18	1.12	1.08	1.04	1.00	0.96	0.92	0.88	0.84	
40~60	1.16	1.12	1.07	1.03	1.00	0.97	0.87	0.83	0.80	

4. Overall and Mounting Dimensions (mm)

