

Description

Single pole thermal-magnetic circuit breaker with tease-free, trip-free, snap action mechanism and two button operation (M-type TM CBE to EN 60934). Featuring a flange for panel mounting, and optional auxiliary contacts and unprotected shunt tap terminal. Type 4000 offers lower internal resistance values and is fitted as standard with auxiliary contacts and an intermediate reset position in which all contacts are isolated.

Approved to CBE standard EN 60934 (IEC 60934).

Typical applications

Control systems, instrumentation, medical equipment, machine tools, robotics, communications systems.

Ordering information

Type No.	
3500	standard version
4000	low resistance version
Mounting (optional)	
F11	flange with additional M3 insertion nuts
Terminal design	
P10	blade terminals 6.3-0.8 (QC .250), tinned
K20	screw terminals M3.5x5.5 with clamp (not with -Si or type 4000)
Shunt terminal (optional)	
A3	same as main terminals (up to $I_N = 7$ A, max. load 5 A)
Auxiliary contacts (optional with type 3500)	
Si	auxiliary contacts, silver plated terminals one each N/O and N/C
ZR-Si	auxiliary contacts with intermediate position (standard with type 4000)
Current ratings	
0.05...16 A (type 3500)	
0.05...10 A (type 4000)	
3500 - .. - P10 - A3 - Si - 10 A ordering example	

The exact part number required can be built up from the table of choices shown above. Ordering references for optional features should be omitted if not required.

Standard current ratings and typical internal resistance values

Current ratings (A)	Internal resistance (Ω)		Current ratings (A)	Internal resistance (Ω)	
	3500	4000		3500	4000
0.05	447	211	3	0.19	0.054
0.1	131	48	4	0.090	0.035
0.2	40	12.4	5	0.061	0.025
0.3	19.3	5.4	6	0.041	≤ 0.02
0.4	10.4	3.1	7	0.034	≤ 0.02
0.5	7.1	2.0	8	≤ 0.02	≤ 0.02
0.6	4.3	1.32	10	≤ 0.02	≤ 0.02
0.8	2.5	0.76	12	≤ 0.02	
1	1.67	0.49	14	≤ 0.02	
1.5	0.61	0.21	15	≤ 0.02	
2	0.38	0.101	16	≤ 0.02	
2.5	0.24	0.078			



3500
standard type

4000
low-resistance type

Technical data

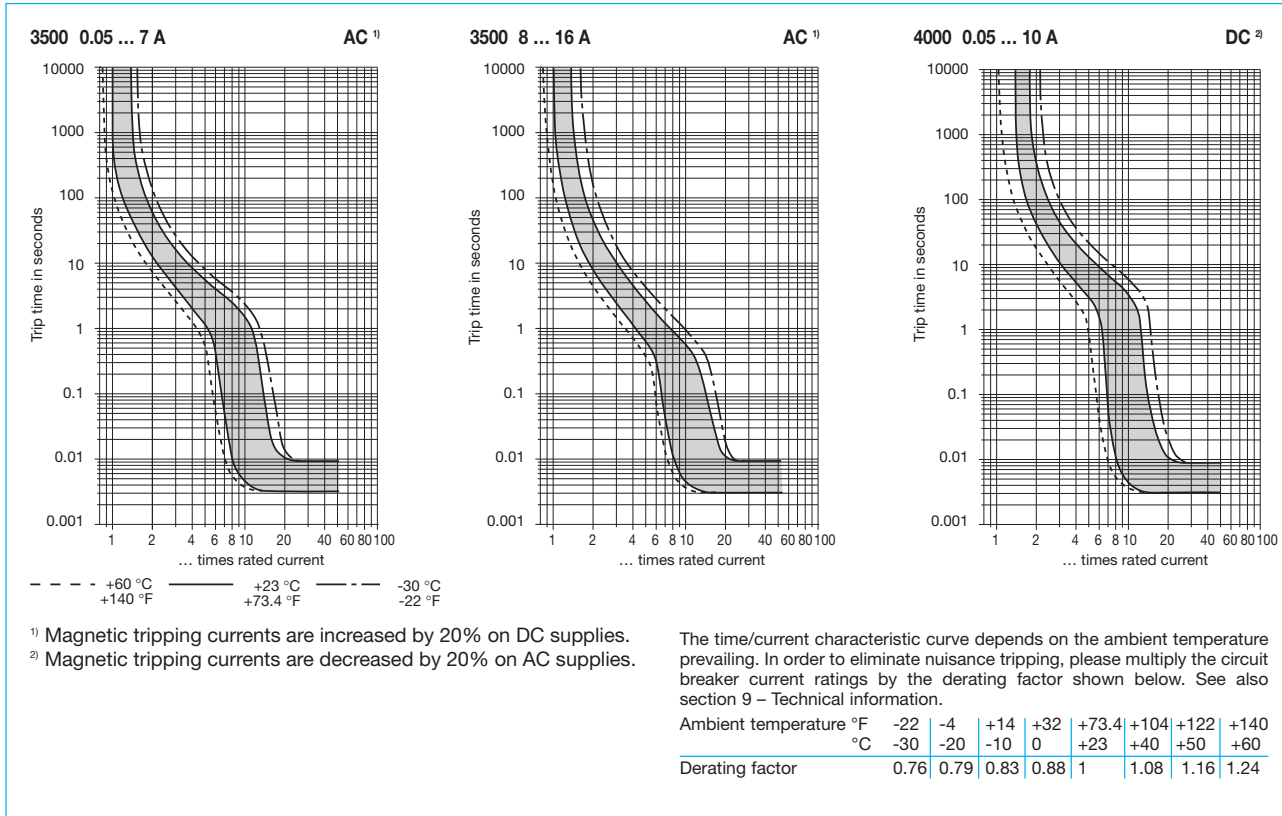
For further details please see chapter: Technical Information

Voltage rating	AC 240 V, 50/60 Hz; DC 65 V (UL: AC 250 V; DC 80 V)	
Current rating range	3500: 0.05...16 A 4000: 0.05...10 A	
Auxiliary circuit	1 A, AC 240 V / DC 65 V	
Typical life	5,000 operations at $1 \times I_N$, inductive 5,000 operations at $2 \times I_N$, resistive	
Ambient temperature	-30...+60 °C (-22...+140 °F)	
Insulation co-ordination (IEC 60664 and 60664 A)	rated impulse withstand voltage 2.5 kV	pollution degree 2 reinforced insulation in operating area
Dielectric strength (IEC 60664 and 60664A)	test voltage	
	operating area AC 3,000 V	
	main/aux. circuit AC 1,500 V	
	aux. circuit 4-5/6-7 AC 840 V	
Insulation resistance	> 100 M Ω (DC 500 V)	
Interrupting capacity I_{cn}	3500 0.05...0.8 A 1...2 A 2.5...16 A	4000 0.05...0.2 A 0.3...2 A 2.5...10 A 400 A
Interrupting capacity (UL 1077)	I_N 0.05...16 A type 3500: 0.05...16 A	U_N AC 250 V DC 80 V 1,000 A 1,000 A
Degree of protection (IEC 60529/DIN 40050)	operating area IP40 terminal area IP00	
Vibration	5 g (57-500 Hz), ± 0.38 mm (10-57 Hz) to IEC 60068-2-6, test Fc 10 frequency cycles/axis	
Shock	25 g (11 ms) to IEC 60068-2-27, test Ea	
Corrosion	96 hours at 5 % salt mist to IEC 60068-2-11, test Ka	
Humidity	240 hours at 95 % RH to IEC 60068-2-78, test Cab	
Mass	approx. 40 g	

Approvals

Authority	Voltage ratings	Current ratings
3500:		
VDE (EN 60934)	AC 240 V; DC 65 V	0.05...16 A
CSA, UL	AC 250 V; DC 80 V	0.05...16 A
UL	DC 65 V	0.05...25 A
4000:		
VDE (EN 60934)	AC 240 V; DC 65 V	0.05...10 A
CSA	AC 250 V; DC 80 V	0.05...10 A

Typical time/current characteristics



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All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

Special version 3500-...-2100

Single pole thermal-magnetic overcurrent circuit breaker with slow magnetic trip curve, suitable for high inrush currents (up to $12 \times I_N$). Suffix -2100 is also available for types 3400 and 3600. Enquire for further details.

Typical applications

Industrial control systems, telecommunications, etc.

Standard current ratings and typical internal resistance values

Current rating (A)	Internal resistance (Ω)	Current rating (A)	Internal resistance (Ω)
0.06	292	3	0.18
0.1	165	4	0.11
0.2	41.7	5	0.067
0.3	19.7	6	0.052
0.4	12.1	7	0.035
0.5	7.9	8	0.031
0.6	5.5	10	0.022
0.8	2.6	12	≤ 0.02
1	1.88	14	≤ 0.02
1.5	0.77	15	≤ 0.02
2	0.42	16	≤ 0.02
2.5	0.24		

Special version 3500-...-2350

Single pole thermal-magnetic circuit breaker suitable for high ambient temperatures. The special rating of the circuit breaker allows resetting at no load in ambient temperatures up to $+80^\circ\text{C}$. Suffix -2350 is also available for types 3400 and 3600. Enquire for further details.

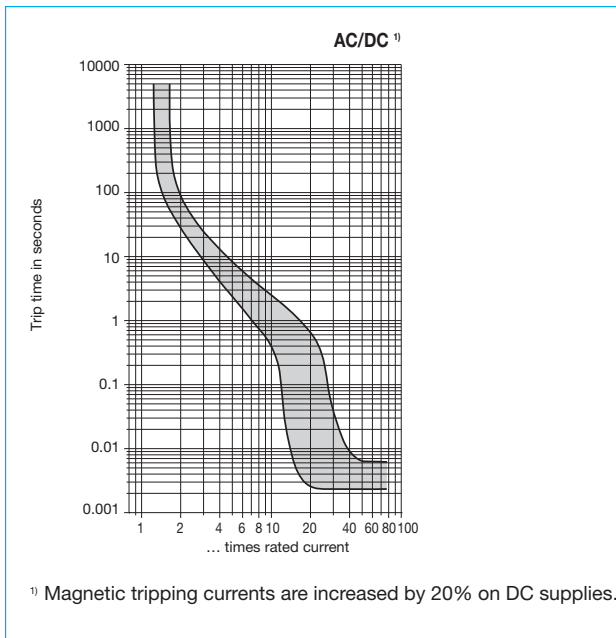
Typical applications

Industrial control systems.

Standard current ratings and typical internal resistance values

Current rating (A)	Internal resistance (Ω)	Current rating (A)	Internal resistance (Ω)
0.05	583	2.5	0.42
0.1	167	3	0.21
0.2	49.9	4	0.13
0.3	23.1	5	0.11
0.4	12.8	6	0.056
0.5	8.7	10	0.022
0.8	3.45	12	≤ 0.02
1	2.3	15	≤ 0.02
1.5	0.89	16	≤ 0.02
2	0.48		

Typical time/current characteristics at $+23^\circ\text{C}$



Typical time/current characteristics

