

Description

Single, two, three and four pole magnetic and hydraulic-magnetic circuit breakers with trip-free mechanism and toggle actuation. A choice of fast magnetic only or hydraulically delayed switching characteristics (S-type MO or HM CBE to EN 60934) ensures suitability for a wide range of applications. Featuring a combi-foot design for symmetric and asymmetric rail mounting. Low temperature sensitivity at rated load. Approved to CBE standard EN 60934 (IEC 60934).

Typical applications

Power supplies, control equipment, communication systems, EDP systems.

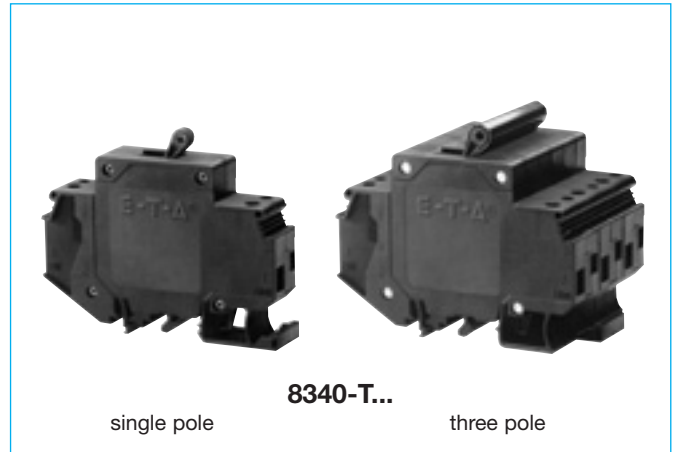
Standard current ratings and typical internal resistance values

Current rating (A)	Curves and internal resistance per pole (Ω)			
	F1	F2	K1, M1, T1, K2, M2, T2	
0.02	1493	953	2669	2457
0.05	276	152	452	376
0.1	58	37	100	94
0.25	8.2	6.0	15.5	14.7
0.5	2.3	1.47	3.9	3.2
0.75	0.98	0.63	1.65	1.56
1	0.58	0.35	0.95	0.90
2	0.145	0.096	0.26	0.20
2.5	0.096	0.061	0.15	0.15
3	0.065	0.048	0.10	0.10
5	0.025	< 0.02	0.042	0.040
6	< 0.02	< 0.02	0.029	0.028
8	< 0.02	< 0.02	< 0.02	< 0.02
10	< 0.02	< 0.02	< 0.02	< 0.02
12	< 0.02	< 0.02	< 0.02	< 0.02
15	< 0.02	< 0.02	< 0.02	< 0.02
16	< 0.02	< 0.02	< 0.02	< 0.02
20	< 0.02	< 0.02	< 0.02	< 0.02
25	< 0.02	< 0.02	< 0.02	< 0.02
30	< 0.02	< 0.02	< 0.02	< 0.02
40	≤ 0.01	-	≤ 0.01	-
50	≤ 0.01	-	≤ 0.01	-

Approvals

Authority	Voltage ratings	Current ratings
VDE (EN 60934)	3 AC 415 V; AC 240 V; DC 80 V	0.02...30 A 1 to 6-pole 0.02...50 A 1-pole
UL1077, CSA	DC 80 V 3 AC 250 V; AC 250 V	0.02...50 A 1 to 6-pole 0.02...30 A 1 to 6-pole
UL 489 A	DC 80 V	0.05...30 A 1, 2-pole
CCC	3 AC 415 V; AC 240 V DC 80 V	0.02...30 A 0.02...50 A 1, 2-pole

Humidity	240 hours at 95 % RH, to IEC 60068-2-3, test Ca
Mass	approx. 98 g per pole



single pole

8340-T...

three pole

Technical data

For further details please see chapter: Technical Information

Voltage rating	3 AC 415V; AC 240V (50/60Hz); DC 80V (higher DC voltages to special order)	
Current rating range	0.02...50 A single pole (40 + 50 A DC only) 0.02...30 A multipole	
Auxiliary circuit	1 A, AC 240 V/DC 65 V; 0.5 A DC 80 V	
Typical life	3 AC 415 V AC 240 V: 0.02...30 A 6,000 operations at 1 x I _N , inductive 10,000 operations at 1 x I _N , resistive	
DC 80 V:	0.02...25 A 6,000 operations at 1 x I _N , inductive 0.02...30 A 10,000 operations at 1 x I _N , resistive 40 + 50 A 6,000 operations at 1 x I _N , resistive	
Ambient temperature	-40...+85 °C (-40...+185 °F)	
Insulation co-ordination (IEC 60664 and 60664A)	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 pole to pole main to aux. circuit
	AC 3,000 V	AC 1,500 V AC 1,500 V
Insulation resistance	> 100 M Ω (DC 500 V)	
Interrupting capacity I _{cn}	1,200 A at AC 2,000 A at DC	
Interrupting capacity (UL 1077)	I _N	0.02...20 A 25...30 A
	AC:	1-pole AC 250 V/3,500A AC 250 V/3,500A 2-pole AC 250 V/3,500A AC 250 V/5,000A 3-pole 3AC 250V/3,500A 3AC250V/5,000A
	DC:	1-pole 0.02...50 A DC 80 V/3,500 A 2-pole 0.02...30 A DC 80 V/3500 A
Interrupting capacity (UL 489A)	2000 A	
Degree of protection (IEC 60529/DIN 40050)	operating area IP40 terminal area IP20	
Vibration	with toggle down: 10 g at 0.9 I _N directions 1,2,3,4,5: 10 g at 1 x I _N with curves F1, F2: 10 g at 0.8 x I _N in all planes. (57-2000 Hz) ± 0.76 mm (10-57 Hz) to IEC 60068-2-6, test Fc 10 frequency cycles/axis	
Shock	100 g (11 ms) at 1 x I _N , directions 1,2,3,4,5 100 g (11 ms) at 0.8 x I _N , direction 6 with curves F1, F2: 100 g (11 ms) at 0.8 x I _N to IEC 60068-2-27, test Ea	
Corrosion	96 hours at 5 % salt mist, to IEC 60068-2-11, test Ka	

Ordering information

Type No.

8340 circuit breaker with toggle actuator

Mounting

T rail mounting

Configuration

1 snap-on installation

Number of poles

- 0 single pole, switch only
- 1 single pole protected
- 2 two pole protected
- 3 three pole protected
- 4 four pole protected
- 5 two pole, protected on one poly only
- 6 four pole, protected on poles 1, 2 and 3 only
- 7 two pole, switch only

} magnetic,
hydraulic-magnetic

Panel hardware

0 without panel hardware

Terminal design (main contact)

K1 recessed screw/pressure plates M4

Characteristic curve

Curve F, instantaneous trip:

- F1 DC trip at $1.01-1.5 \times I_N$
- F2 AC 60/50Hz trip at $1.01-1.5 \times I_N$

Curve K, short delay:

- K1 DC trip at $2 \times I_N$ 0.16-1.2s
- K2 AC 60/50Hz trip at $2 \times I_N$ 0.13-1.6s

Curve M, medium delay:

- M1 DC trip at $2 \times I_N$ 0.6-7.5s
- M2 AC 60/50Hz trip at $2 \times I_N$ 2.2-20 s

Without characteristic curve

Q0 switch only

Curve T, long delay:

- T1 DC trip at $2 \times I_N$ 10-70s
- T2 AC 60/50Hz trip at $2 \times I_N$ 15-150s

Other characteristic curves to special order

(e.g. pulse-delayed, high inrush currents, capacitive loads)

Actuator colour / design

- A black, long toggle
- B white, long toggle
- C blue, long toggle
- K black, short toggle
- L white, short toggle
- M blue, short toggle

other colours to special order

Marking on actuator

- 0 without marking
- L I-O; ON-OFF
- M I-O; ON-OFF (I_N , U_N , trip curve, schematic diagram on housing top)
- N I-O; ON-OFF (I_N , on housing top)

Auxiliary contacts

- H0 without auxiliary contacts
- H1 with auxiliary contact
- H2 with auxiliary contact on one pole only (multipole)

Auxiliary contact function

(see internal connection diagrams)

- 2 1 N/O contact
- 3 1 N/C contact

Auxiliary contact terminal design

6 screw/pressure plate M3

Current ratings

0.02...50 A

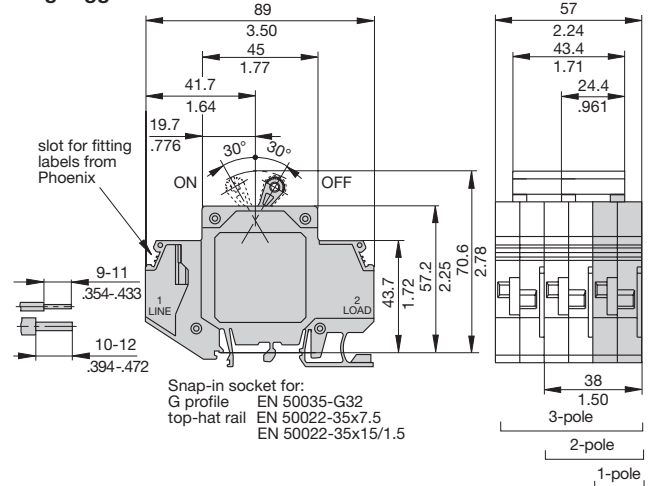
Approval (optional)

U UL 489 A

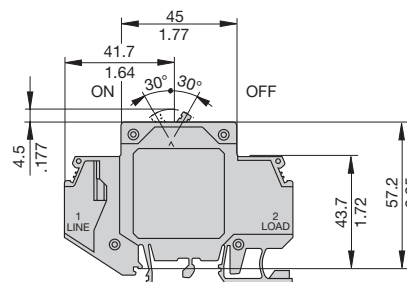
8340 - T 1 1 0 - K1 M1 - A L H1 2 6 - 10 A - U ordering example

Dimensions

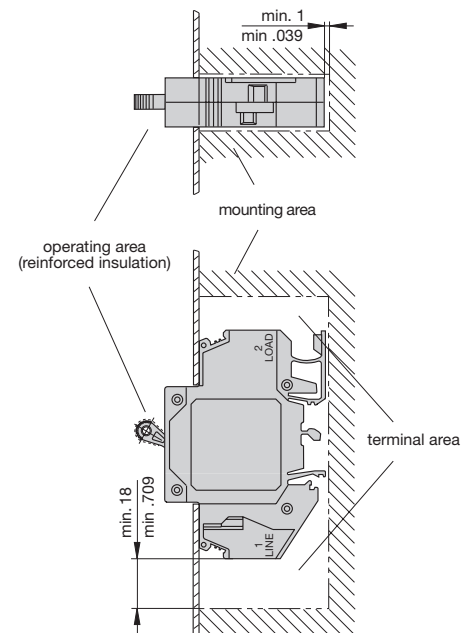
long toggle



short toggle

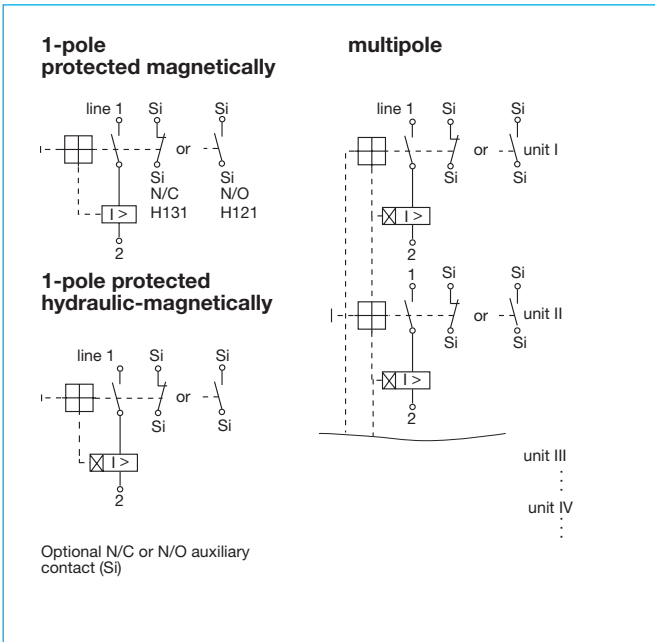


Installation drawing

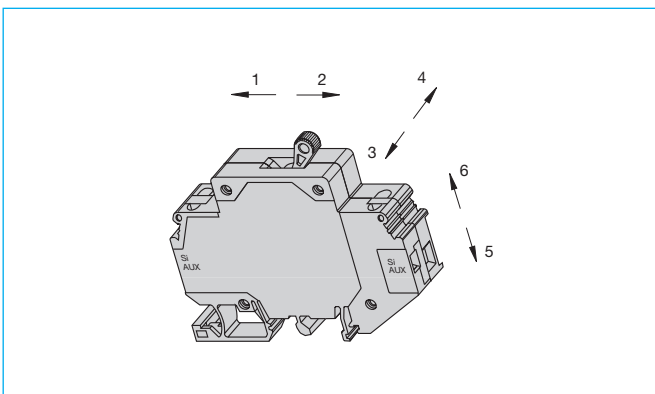


This is a metric design and millimeter dimensions take precedence (mm)
inch

Internal connection diagrams



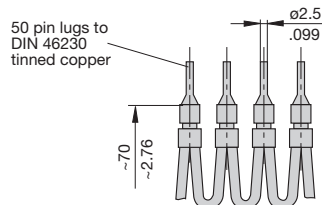
Shock directions



Accessories

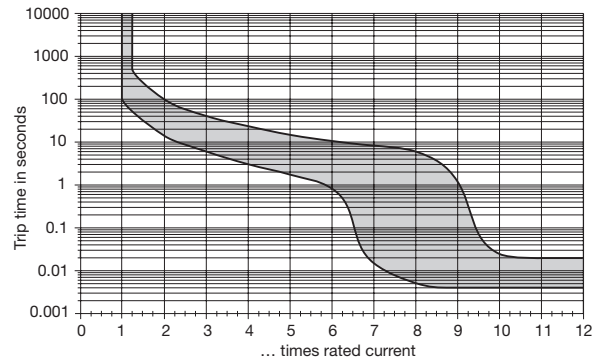
Connector bus links -K10

X210 589 01/2.5 mm², (AWG 14) (black) up to 20 A max. load
X210 589 02/1.5 mm², (AWG 16) (brown) up to 13 A max. load

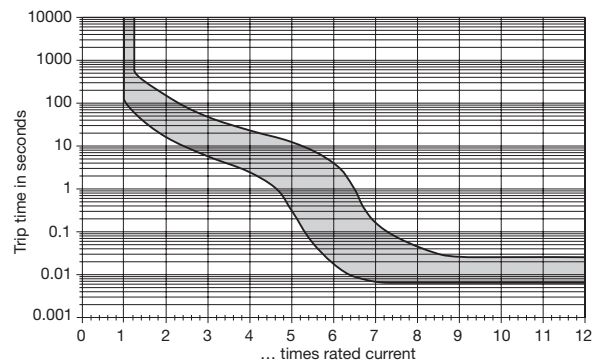


Typical time/current characteristics at 23 °C / +73.4 °F

Curve T1 (long delay) for DC



Curve T2 (long delay) for AC 50/60 Hz

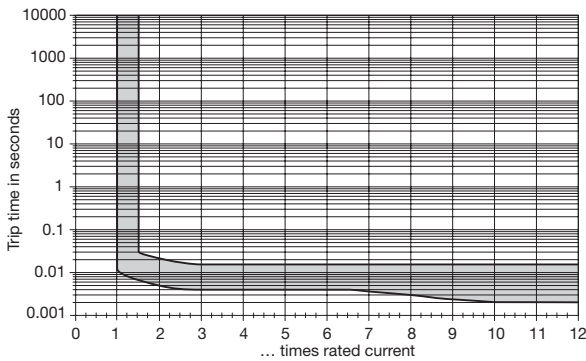


N.B. All curves will only be maintained if the escutcheon is mounted on a vertical surface.

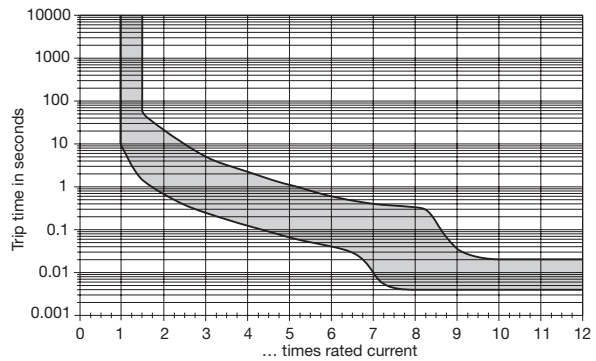
Other characteristic curves to special order (e. g. with impulse delay for inrush peaks).

Typical time/current characteristics at 23 °C / +73.4 °F

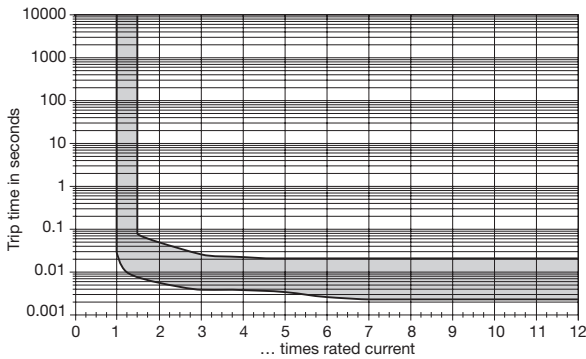
Curve F1 (instantaneous) for DC



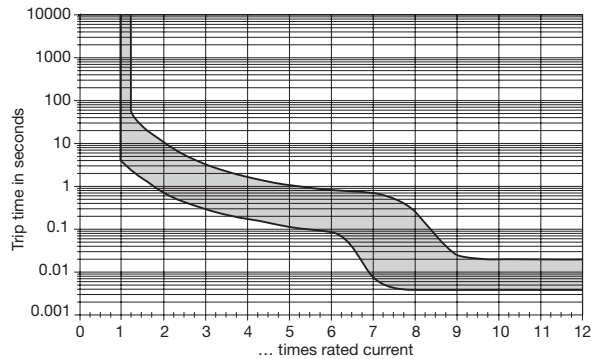
Curve M0 (medium delay) for AC/DC



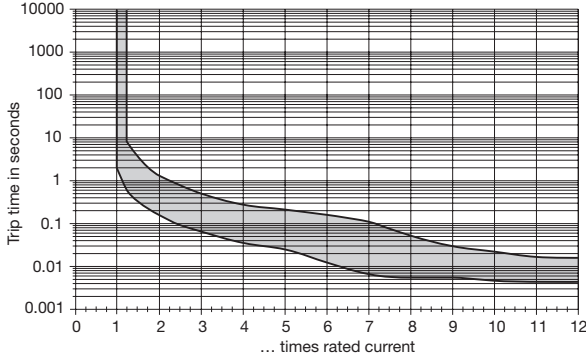
Curve F2 (instantaneous) for AC 50/60 Hz



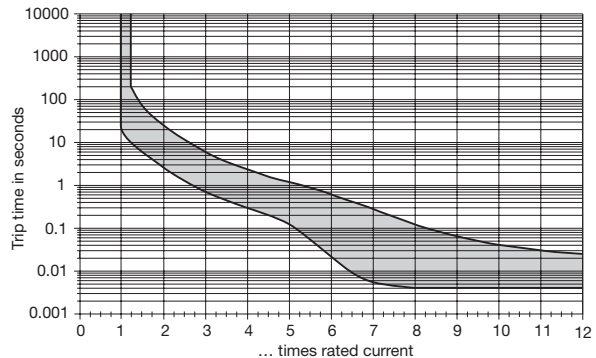
Curve M1 (medium delay) for DC



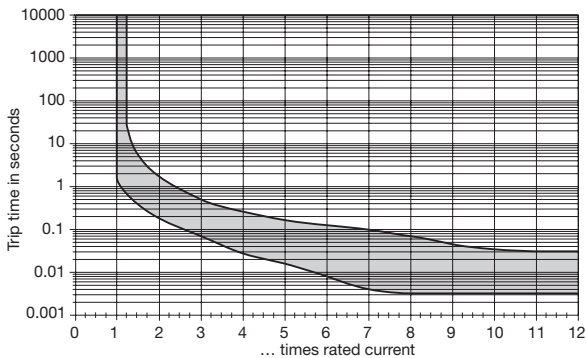
Curve K1 (short delay) for DC



Curve M2 (medium delay) for AC 50/60 Hz



Curve K2 (short delay) for AC 50/60 Hz



N.B. All curves will only be maintained if the escutcheon is mounted on a vertical surface.
Other characteristic curves to special order (e. g. with impulse delay for inrush peaks).

3