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
	DC 80 V	0.02...50 A	1-pole
UL1077, CSA	DC 80 V	0.02...50 A	1 to 6-pole
	3 AC 250 V; AC 250 V	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	0.02...30 A	
	DC 80 V	0.02...50 A	1, 2-pole

Humidity	240 hours at 95 % RH, to IEC 60068-2-78, test Cab
Mass	approx. 98 g per pole

8340-T...

single pole 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	AC 3,000 V		
pole to pole	AC 1,500 V		
main to aux. circuit	AC 1,500 V		
Insulation resistance	> 100 MΩ (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)	2,000 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		
directions 1, 2, 3, 4, 5:	100 g (11 ms) at 1 x I_N	
direction 6:	100 g (11 ms) at 0.8 x I_N	
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	

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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
} magnetic, hydraulic-magnetic
5 two pole, protected on one poly only
6 four pole, protected on poles 1, 2 and 3 only
7 two pole, switch only

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 x I_N
F2	AC 60/50 Hz	trip at 1.01-1.5 x I_N

Curve K, short delay:

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

Curve M, medium delay:

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

Without characteristic curve

Q0 switch only

Curve T, long delay:

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

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)

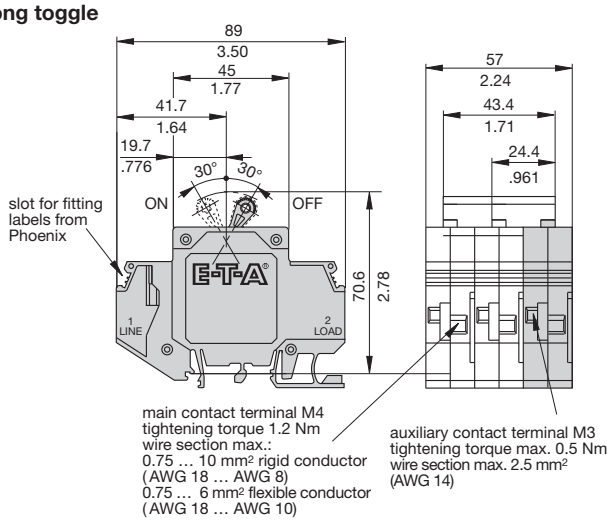
U UL 489 A

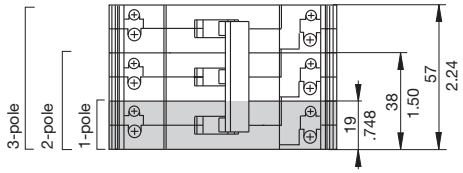
8340 - T 1 1 0 - K1 M1 - A L H1 2 6 - 10 A - U ordering example

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

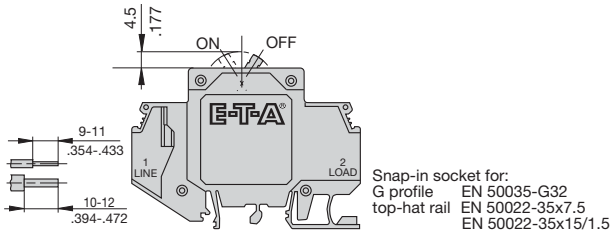
Dimensions

long toggle

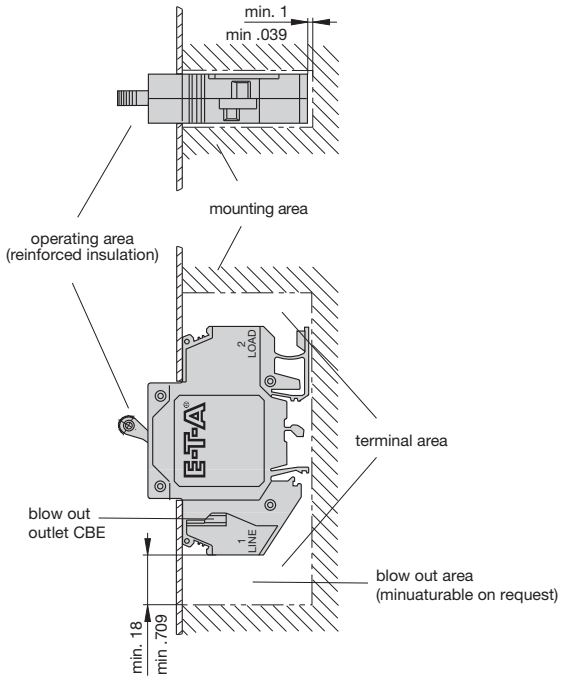




short toggle

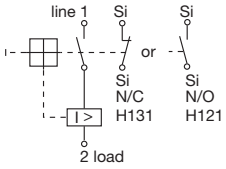


Installation drawing

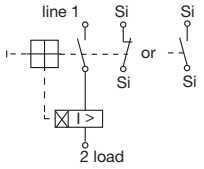


Internal connection diagrams

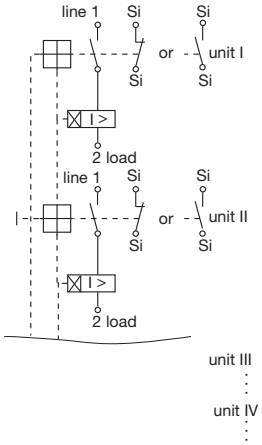
1-pole protected magnetically



1-pole protected hydraulic-magnetically

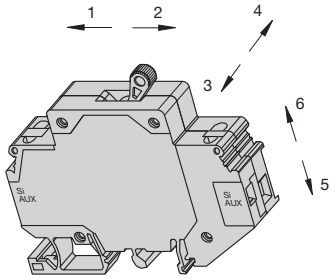


multipole



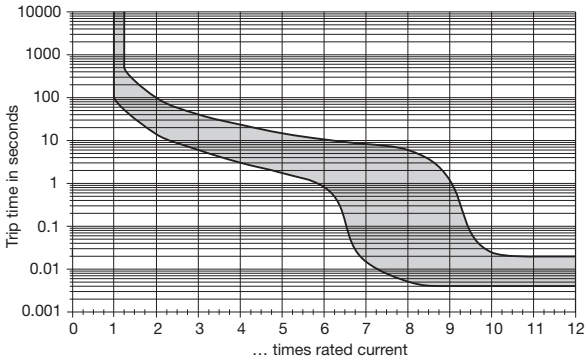
Optional N/C or N/O auxiliary contact (Si)

Shock directions

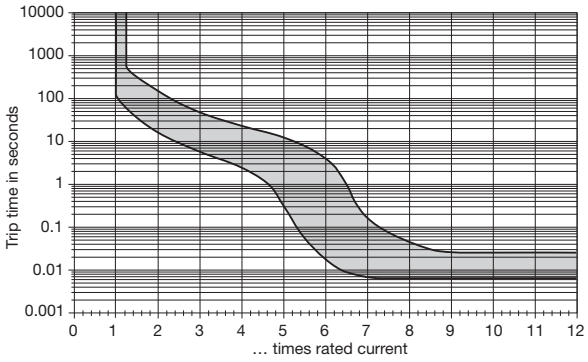


Typical time/current characteristics at 23 °C / +73.4 °F

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).

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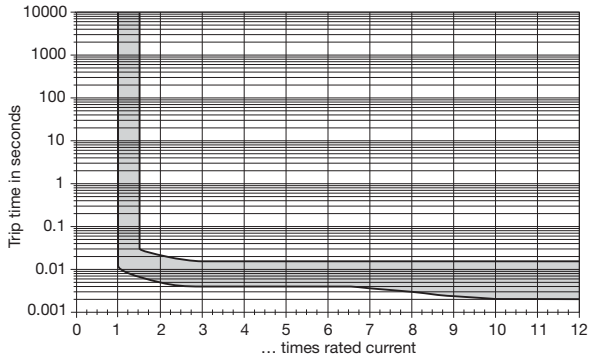
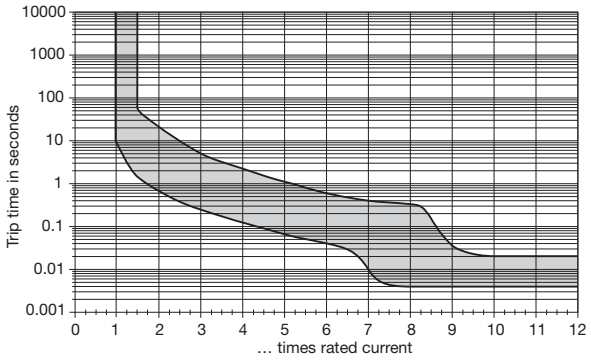
Typical time/current characteristics at 23 °C / +73.4 °F

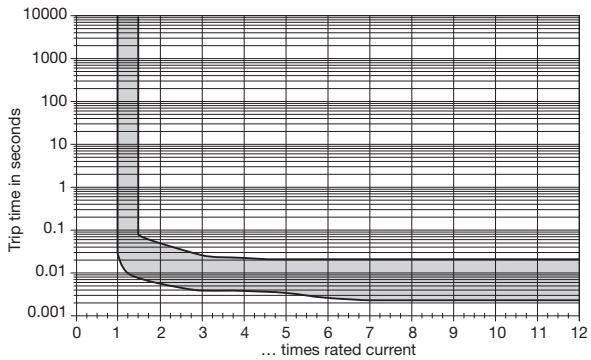
Curve F1 (instantaneous) for DC



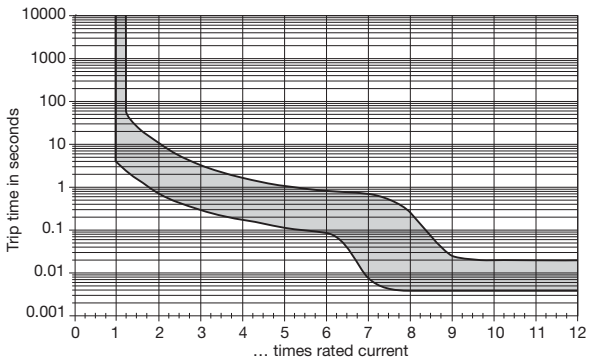
Curve M0 (medium delay) for AC/DC



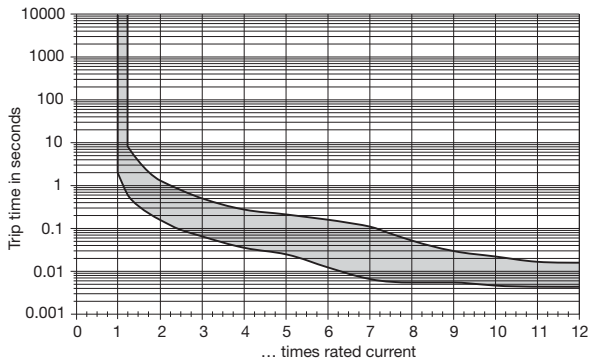
Curve F2 (instantaneous) for AC 50/60 Hz



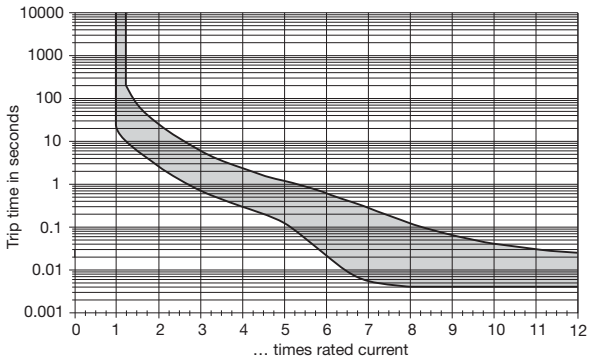
Curve M1 (medium delay) for DC



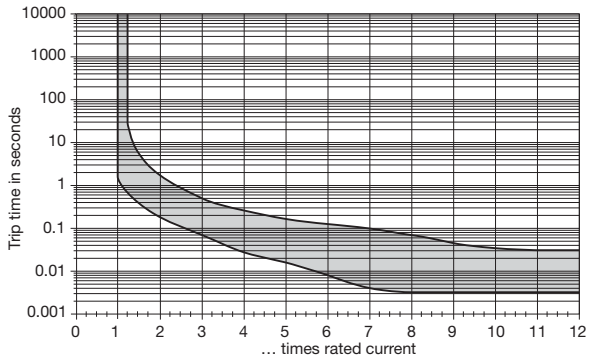
Curve K1 (short delay) for DC



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



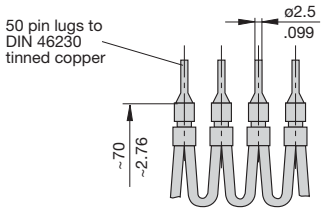
Curve K2 (short delay) for AC 50/60 Hz



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).

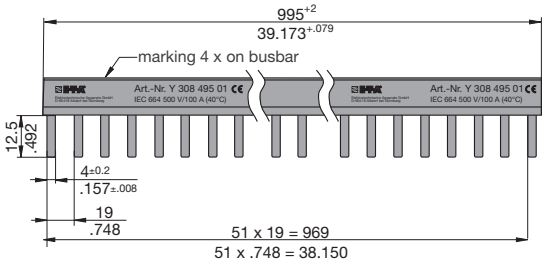
Accessories

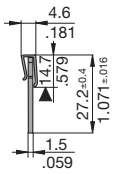
Connector bus links -K10
X210 589 01/2.5 mm², (AWG 14) (black) up to 20 A max. load
X210 589 02/1.5 mm², (AWG 16) (brown) up to 13 A max. load



Busbar 1-pole
Y 308 495 01

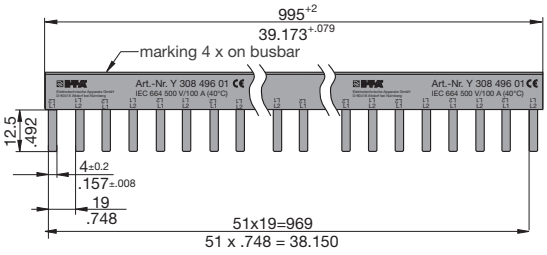
The one metre long busbars can be cut to suitable lengths. Plug-on caps can be fitted on the ends to provide brush contact protection.
I_{max} - busbar 100 A (40°C)

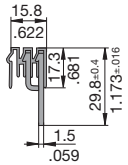




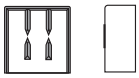
Plug-on cap, 1-pole
Y 307 851 01

Busbar 2-pole
Y 308 496 01
I_{max} - busbar 100 A (40°C)

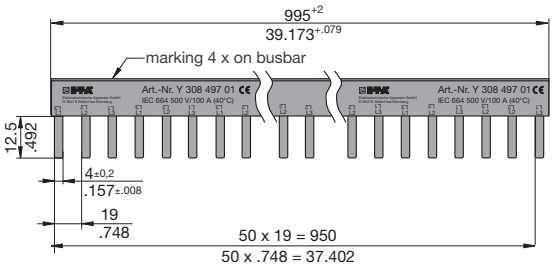


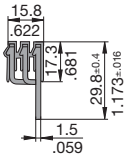


Plug-on cap, busbar 2/3-pole
Y 308 506 01

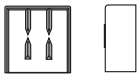


Busbar 3-pole
Y 308 497 01
I_{max} - busbar 100 A (40°C)

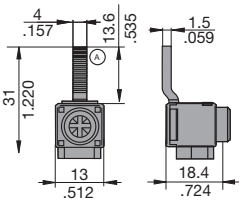




Plug-on cap, busbar 2/3-pole
Y 308 506 01



Supply terminal I_{max} 63 A
Y 308 504 01
Max. tightening torque of terminal screw 2 Nm
Max. cable cross section: 25 mm² / single strand
16 mm² / multistrand
with wire end ferrule



Caution:
When using multipole busbars please leave at least one pole's width between two adjacent line entry terminals.

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

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.