

ETA® Thermal Overcurrent Circuit Breaker 1140-...

Description

Miniaturised single pole thermal circuit breaker with push-to-reset tease-free, trip-free, snap action mechanism (R-type TO CBE to EN 60934). Available in versions for panel mounting, snap-in or threadneck, or as an integral type. For lower current ratings see types 104, 105, 106. Approved to CBE standard EN 60934 (IEC 60934).

Typical applications

Motors, transformers, solenoids, hand-held machines and appliances.

Ordering information

Type No.	Description
1140	single pole thermal circuit breaker
Mounting	
E2	integral mounting
F1	snap-in panel mounting
G1	threadneck panel mounting 3/8-27UNS with hex nut and knurled nut *
G2	threadneck panel mounting 3/8-27UNS for standard fuseholder cut-out with plastic knurled nut
Number of poles	
1	1 pole protected
Actuator style	
1	black push button (standard)
Terminal design	
P1	blade terminals A6.3-0.8 (QC .250)
Characteristic curve	
M1	medium delay
Current ratings	
	3.5...16 A

1140 - F1 1 1 - P1 M1 - 10 A ordering example

*mounting hardware bulk shipped

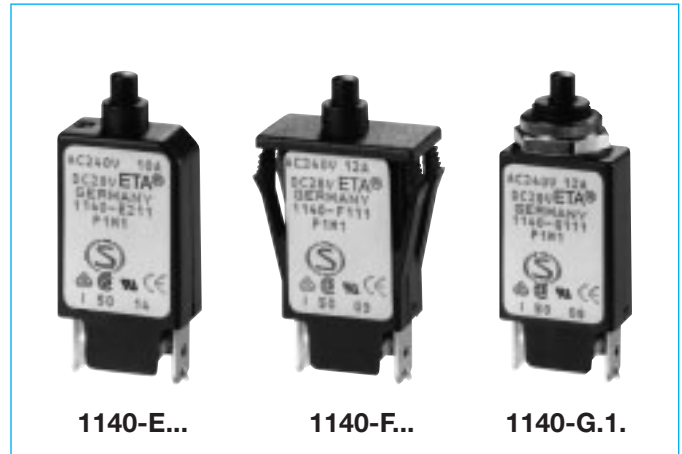
Packaging quantity: 125 pcs

Standard current ratings and typical internal resistance values

Current rating (A)	Internal resistance (Ω)	Current rating (A)	Internal resistance (Ω)
3.5	0.06	10	< 0.02
4	0.04	12	< 0.02
5	0.03	13	< 0.02
6	0.02	15	< 0.02
7	< 0.02	16	< 0.02
8	< 0.02		

Approvals

Authority	Voltage ratings	Current ratings
VDE	AC 240 V; DC 28 V	7 ...16 A
UL / CSA	AC 250 V; DC 50 V	3.5...16 A
Semko	AC 240 V	7 ...16 A
Kema (EN 60934)	AC 240 V; DC 48 V	3.5...16 A



Technical data

Voltage rating	AC 240 V; DC 48 V (AC 250 V; DC 50 V UL/CSA)	
Current ratings	3.5...16 A	
Typical life	3.5...8 A 1000 operations at 2 x I _N 10...16 A 50 operations at 2 x I _N	
Ambient temperature	-20...+60 °C (-4...+140 °F) T 60	
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) operating area	Test voltage AC 3,000 V	
Insulation resistance	> 100 MΩ (DC 500 V)	
Interrupting capacity I _{cn}	3.5... 8 A 8 x I _N 10...16 A 120 A	
Interrupting capacity (UL 1077)	I _N	U _N
	3.5...16 A	DC 50 V 200 A
	3.5 ... 7A	AC 250 V 1,000 A
	8 ...16 A	AC 250 V 2,000 A
Degree of protection (IEC 60529/DIN 40 050)	operating area IP 40 terminal area IP 00	
Vibration	10 g (57-500 Hz) ±0.76 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 60068-2-3, test Ca	
Mass	approx. 10 g	

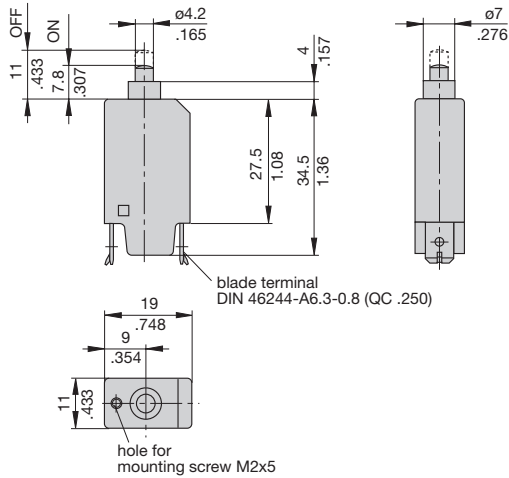
All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.



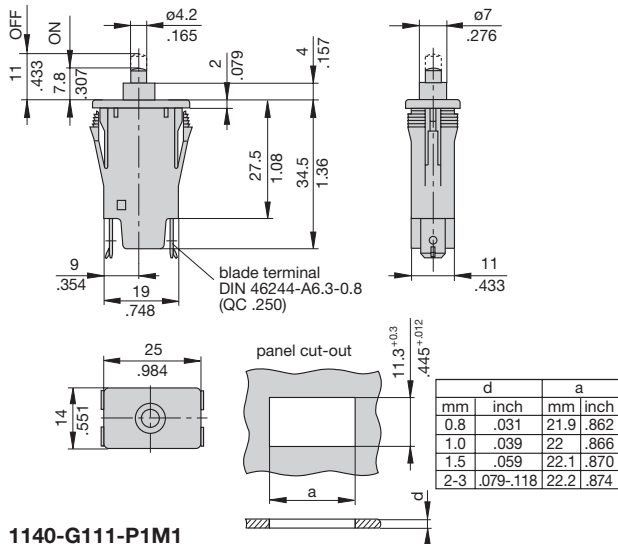
Thermal Overcurrent Circuit Breaker 1140-...

Dimensions

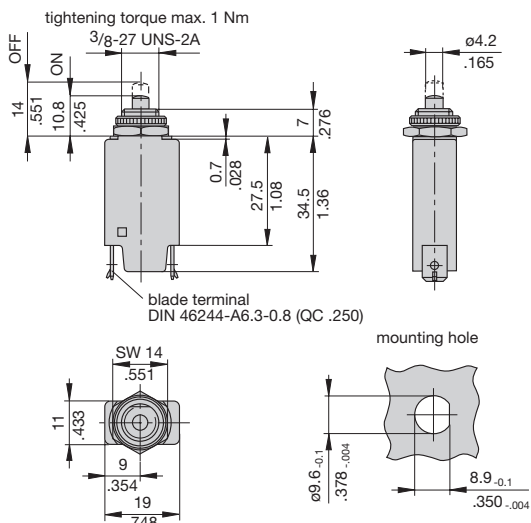
1140-E211-P1M1



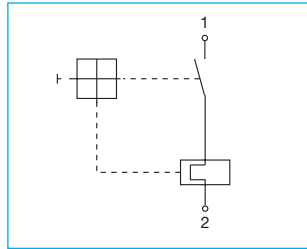
1140-F111-P1M1



1140-G111-P1M1

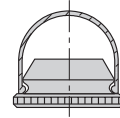


Internal connection diagram

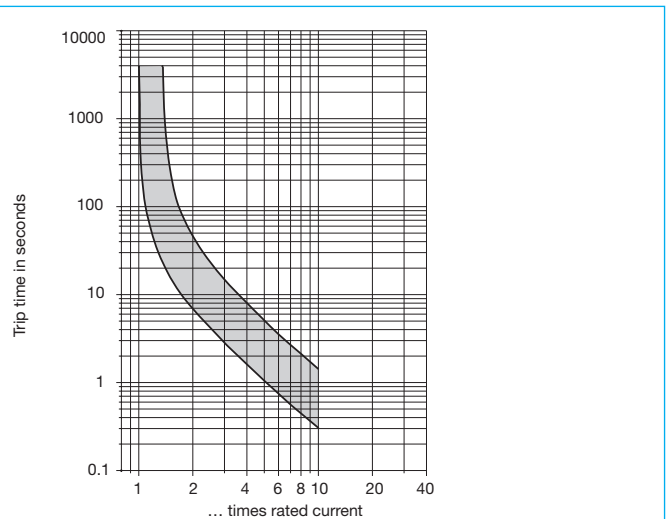


Accessory

Water splash cover/knurled nut assembly, transparent X 201 285 01 (IP 64)



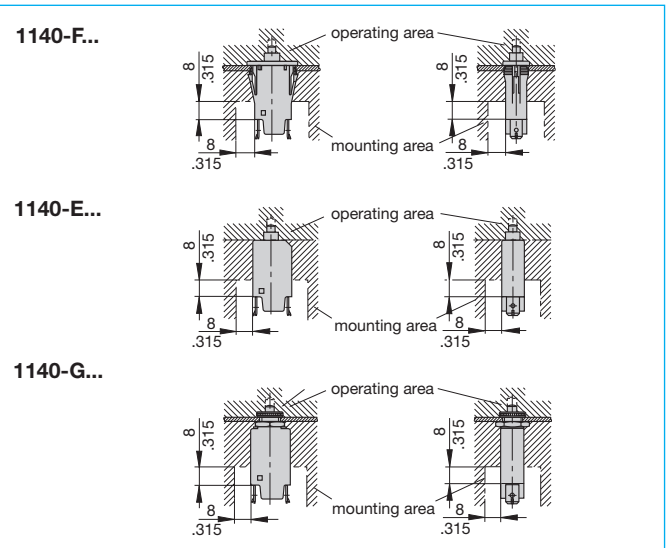
Typical time/current characteristics at +23°C/+73.4°F



The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping, please multiply the circuit breaker current ratings by the derating factor shown below. See also section 9 – Technical information.

Ambient temperature °F	-4	+14	+32	+73.4	+104	+122	+140
°C	-20	-10	0	+23	+40	+50	+60
Multiplication factor	0.76	0.84	0.92	1	1.08	1.16	1.24

Installation drawings



This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

ETA® Thermal Overcurrent Circuit Breaker 1140-... (2 pole)

Description

Miniaturised double pole thermal circuit breaker with push-to-reset tease-free, trip-free, snap action mechanism (R-type TO CBE to EN 60934). Threadneck panel mounting. Suitable for line and neutral switching - the thermal actuator operating on one pole simultaneously opens both poles under overload conditions. Approved on CBE standard EN 60934 (IEC 60934).

Typical applications

Motors, transformers, solenoids, hand-held machines and appliances. Especially suited to AC duties where the correct orientation of line/neutral is not known/cannot be guaranteed.

Ordering information

Type No.	1140	double pole threadneck panel mounting
Mounting	G1	threadneck panel mounting 3/8-27UNS, with hex nut and knurled nut *
G2	threadneck panel mounting 3/8-27UNS, with plastic knurled nut *	
Number of poles	5	double pole, 1 pole protected
Actuator style	1	black push button (standard)
Terminal design	P7	blade terminals DIN 46244-C (QC 2x.110)
Characteristic curve	M1	medium delay
Current ratings	0.05...16 A	
1140 - G1 5 1 - P7 M1 - 16 A ordering example		

*mounting hardware bulk shipped

Packaging quantity: 125 pcs

Standard current ratings and typical internal resistance values

Current rating (A)	Internal resistance (Ω)	Current rating (A)	Internal resistance (Ω)
0.05	345	1.8	0.3
0.06	240	2	0.3
0.08	142	2.5	0.2
0.1	88	3	0.1
0.2	24	3.5	0.06
0.3	9.9	4	0.04
0.4	5.9	5	0.03
0.5	3.7	6	0.02
0.6	2.2	7	< 0.02
0.7	1.9	8	< 0.02
0.8	1.4	10	< 0.02
1	0.9	12	< 0.02
1.2	0.6	15	< 0.02
1.5	0.5	16	< 0.02

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1140-G.5.

Technical data

Voltage rating	AC 240 V; DC 48 V (AC250 V; DC 50 V UL/CSA)		
Current ratings	0.05...16 A		
Typical life	0.05...3 A	3,000 operations at 2 x I _N	
	3.5... 8 A	1,000 operations at 2 x I _N	
	10... 16 A	50 operations at 2 x I _N	
Ambient temperature	-20...+60 °C (-4...+140 °F) T 60		
Insulation co-ordination (IEC 60664 and 60664A)	Rated impulse withstand voltage	Pollution degree	
	2.5 kV	2	
	reinforced insulation in operating area		
Dielectric strength (IEC 60664 and 60664A) operating area pole/pole	Test voltage		
	AC 3,000 V		
	AC 1,500 V		
Insulation resistance	> 100 MΩ (DC 500 V)		
Interrupting capacity I _{cn}	0.05...3 A	6 x I _N	
	3.5... 8 A	8 x I _N	
	10... 16 A	120 A	
Interrupting capacity (UL 1077)	I _N	U _N	
	0.05...16 A	DC 50 V	200 A
	0.05...7 A	AC 250 V	1,000 A
	8...16 A	AC 250 V	2,000 A
Degree of protection (IEC 60529/DIN 40050)	operating area IP 40 terminal area IP 00		
Vibration	10 g (57-500 Hz) ±0.76 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 60068-2-3, test Ca		
Mass	approx. 13 g		

Approvals

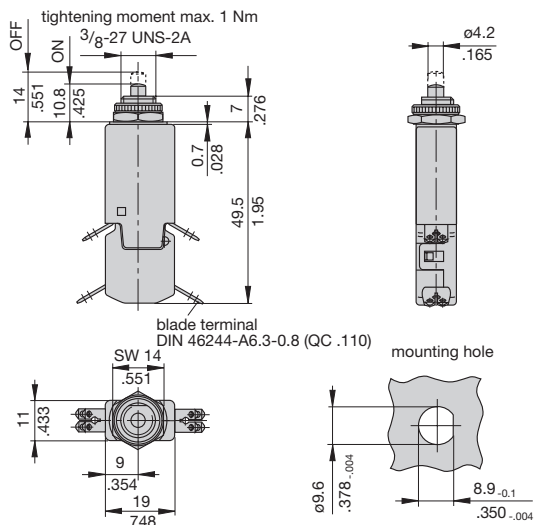
Authority	Voltage ratings	Current ratings
VDE	AC 240 V; DC 28 V	0.05...16 A
UL, CSA	AC 250 V; DC 50 V	0.05...16 A
Kema (EN 60934)	AC 240 V; DC 48 V	0.05...16 A



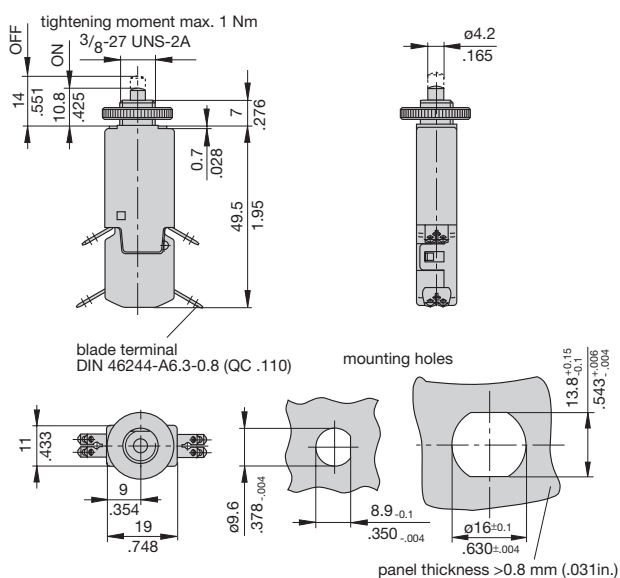
Thermal Overcurrent Circuit Breaker 1140-... (2 pole)

Dimensions

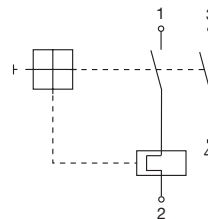
1140-G15...



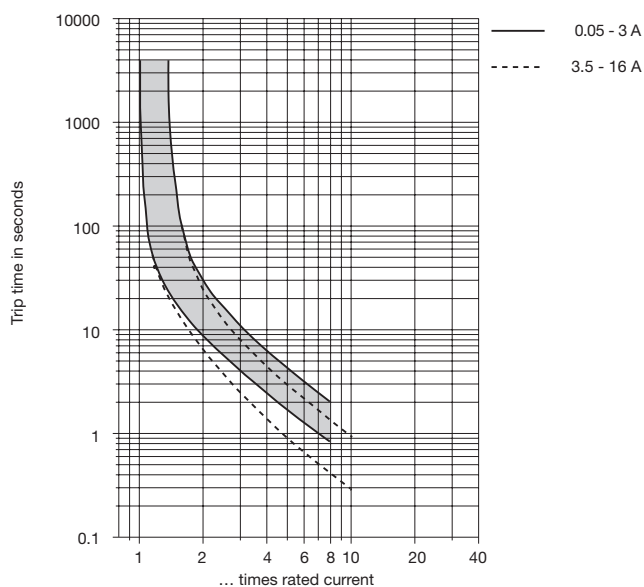
1140-G25...



Internal connection diagram



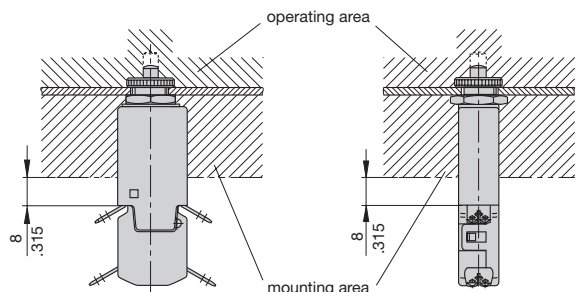
Typical time/current characteristics at +23°C/+73.4°F



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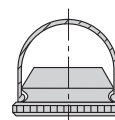
Ambient temperature °F	-4	+14	+32	+73.4	+104	+122	+140
°C	-20	-10	0	+23	+40	+50	+60
Multiplication factor	0.76	0.84	0.92	1	1.08	1.16	1.24

Installation drawing



Accessories

Water splash cover/knurled nut assembly, transparent X 201 285 01 (IP 64)



This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)