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).

Upon request, the 1140 in combination with the C14 appliance inlet is also available as completely assembled power entry module (optionally with or without line filter).

Typical applications

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

Preferred types

Preferred types	Standard current ratings (A)												
	4	5	6	7	8	9	10	11	12	13	14	15	16
1140-G111-P1M1-	x	x	x	x	x	x	x	x	x	x	x	x	x

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	11	< 0.02
5	0.03	12	< 0.02
6	0.02	13	< 0.02
7	< 0.02	14	< 0.02
8	< 0.02	15	< 0.02
9	< 0.02	16	< 0.02

1140-E... 1140-F... 1140-G.1.

Compliances

CE UKCA RoHS REACH

Approvals

Authority	Standard	Rated voltage	Current ratings
VDE	IEC/EN 60934	AC 240 V DC 48 V	3.5 A...16 A 3.5 A...16 A
UL	UL 1077	AC 250 V DC 50 V	3.5 A...16 A 3.5 A...16 A
CSA	C22.2 No 235	AC 250 V DC 50 V	3.5 A...16 A 3.5 A...16 A

Ordering information

Type No.
1140 single pole thermal circuit breaker
Mounting
E2 integral mounting
F1 snap-in panel mounting
G0 threadneck mounting without nuts (combined with XR38 power entry module)
G1 threadneck panel mounting 3/8-27UNS with hex nut and knurled nut (hardware bulk shipped with 5 pcs plus)
Number of poles
1 1-pole protected
Actuator style
1 black push button
Terminal design
P1 blade terminals 6.3 x 0.8 mm to IEC 61210
Characteristic curve
M1 medium delay
Current ratings
3.5...16 A

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

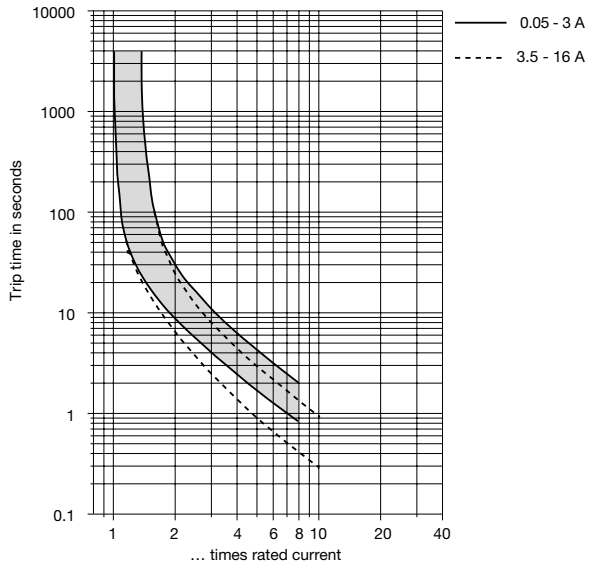
Please be informed that we have minimum ordering quantities to be observed.

1

Technical data

For further details please see: http://www.e-t-a.de/ti_e		
Voltage rating		AC 240 V; DC 48 V (UL: AC 250 V; DC 50 V)
Current ratings		3.5...16 A
Typical life AC + DC	3.5...8 A 9...16 A	200 operations at 2 x I_N, inductive 100 operations at 2 x I_N, inductive
Ambient temperature		-20...+60 °C (-4...+140 °F) T 60
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) operating area	test voltage AC 3,000 V	
Insulation resistance		> 100 MΩ (DC 500 V)
Rupture capacity I_{cn}	3.5...8 A 9...16 A	8 x I_N 120 A
Rupture capacity (UL 10777)	I_N 3.5...16 A 3.5...16 A	U_N DC 50 V 2,000 A AC 250 V 2,000 A
Degree of protection (IEC 60529/DIN 40 050)	operating area IP40 terminal area IP00	
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 60068-2-78, test Cab
Mass		approx. 10 g

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

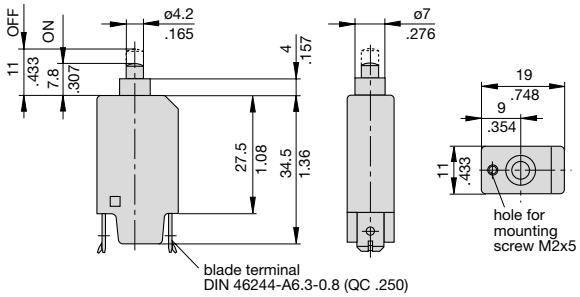


The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping, please multiply the circuit breaker current ratings by the derating factor shown below. See also section Technical information.

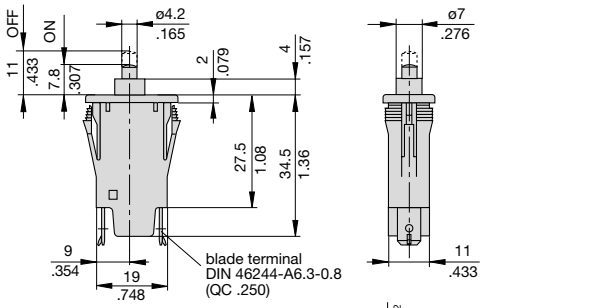
Ambient temperature °F °C	-4 -20	+14 -10	+32 0	+73.4 +23	+104 +40	+122 +50	+140 +60
Derating factor	0.76	0.84	0.92	1	1.08	1.16	1.24

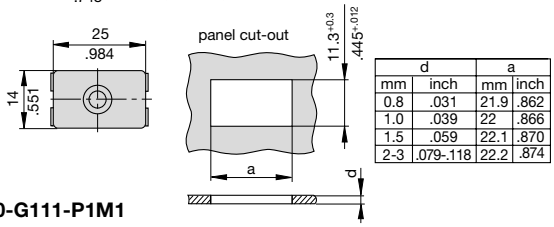
Dimensions

1140-E211-P1M1



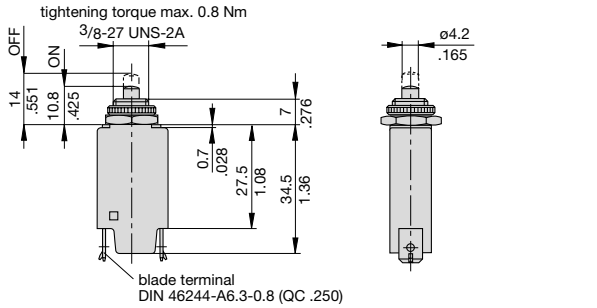
1140-F111-P1M1

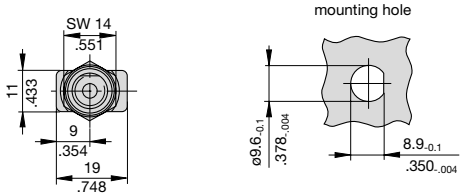




d		a	
mm	inch	mm	inch
0.8	.031	21.9	.862
1.0	.039	22	.866
1.5	.059	22.1	.870
2-3	.079-.118	22.2	.874

1140-G111-P1M1





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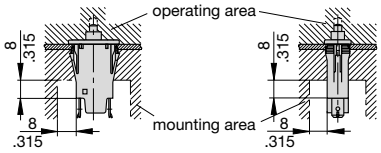
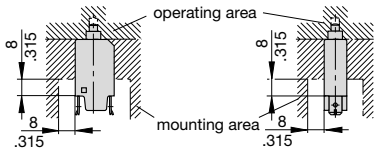
This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

Installation drawings

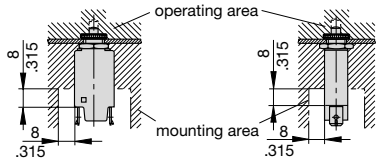
1140-F...



1140-E...

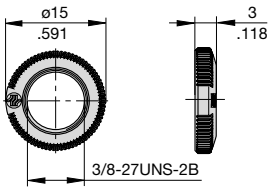


1140-G...

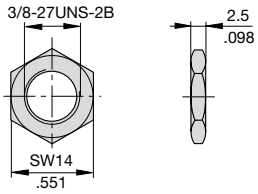


Accessory

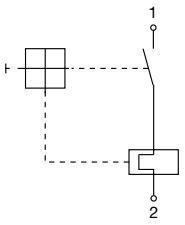
Knurled nut 3/8" plastic (standard) Y 307 117 02



Hex nut 3/8" nickel-plated brass Y 300 192 01

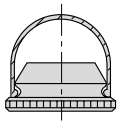


Internal connection diagram



Accessory

Water splash cover/knurled nut assembly, transparent X 201 285 01 (IP64)



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E-T-A 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 to CBE standard EN 60934 (IEC 60934).

Upon request, the 1140 in combination with the C14 appliance inlet is also available as completely assembled power entry module (optionally with or without line filter).

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
G0 threadneck mounting without nuts (combined with XR38 power entry module)
G1 threadneck panel mounting 3/8-27UNS, with hex nut and knurled nut (hardware bulk shipped with 5 pcs plus)
Number of poles
5 double pole, 1-pole protected
Actuator style
1 black push button
Terminal design
P7 blade terminals 6.3 x 0.8 mm to IEC 61210
Characteristic curve
M1 medium delay
Current ratings
0,05...16 A

1140 - G1 5 1 - P7 M1 - 16 A ordering example

Preferred types

Preferred types	Standard current ratings (A)											
	0.5	1	1.5	2	3	4	5	6	8	10	12	15
1140-G151-P7M1	x	x	x	x	x	x	x	x	x	x	x	x

1140-G15

Compliances

CE UKCA RoHS REACH

Approvals

Authority	Standard	Voltage ratings	Current ratings
VDE	IEC/EN 60934	AC 240 V DC 48 V	0.05 A...16 A 0.05 A...16 A
UL	UL 1077	AC 250 V DC 50 V	0.05 A...16 A 0.05 A...16 A
CSA	C22.2 No 235	AC 250 V DC 50 V	0.05 A...16 A 0.05 A...16 A

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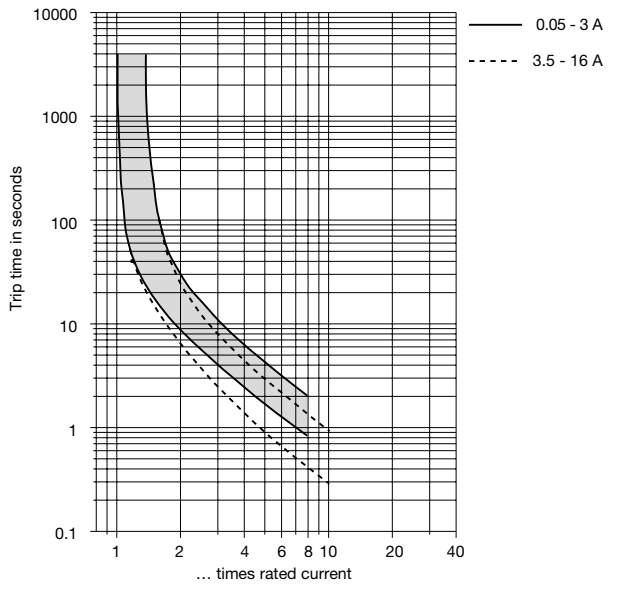
Technical data

For further details please see chapter: Technical Information		
Voltage rating		AC 240 V; DC 48 V (UL: AC 250 V; DC 50 V)
Current ratings		0.05...16 A
Typical life AC + DC	0.05...3 A 3.5...8 A 9...16 A	300 operations at 2 x I_N, inductive 200 operations at 2 x I_N, inductive 100 operations at 2 x I_N, inductive
Ambient temperature		-20...+60 °C (-4...+140 °F) T 60
Insulation co-ordination (IEC 60664 and 606664 A)	rated impulse withstand voltage 2.5 kV reinforced insulation in operating area	pollution degree 2
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)
Rupture capacity I_{cn}	0.05...3 A 3.5...8 A 9...16 A	6 x I_N 8 x I_N 120 A
Rupture capacity (UL 1077)	I_N 0.05...16 A 0.05...16 A	U_N DC 50 V AC 250 V
		2,000 A 2,000 A
Degree of protection (IEC 60529/DIN 40 050)	operating area IP40 terminal area IP00	
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 60068-2-78, test Cab
Mass		approx. 13 g

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	0.08
0.3	9.9	4	0.07
0.4	5.9	5	0.05
0.5	3.7	6	0.04
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

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 Technical information.

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

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

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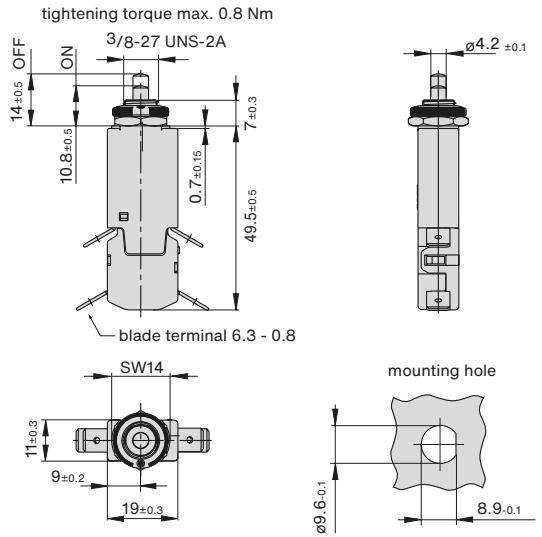
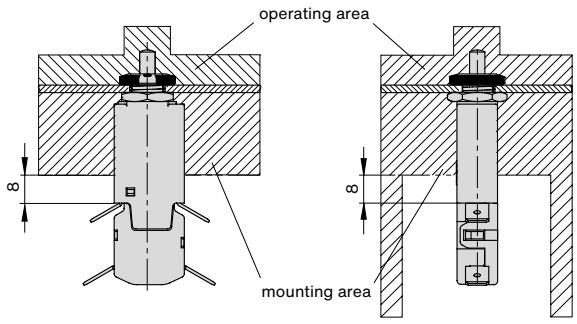
Dimensions

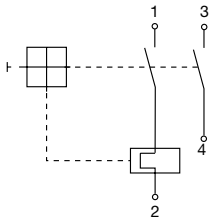
1140-G15...



Installation drawing

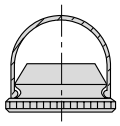


Internal connection diagram

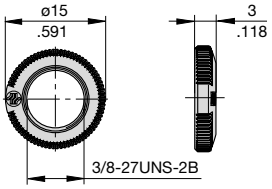


Accessories

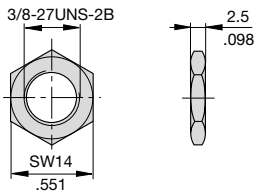
Water splash cover/knurled nut assembly, transparent
X 201 285 01 (IP64)



Knurled nut 3/8"
plastic (standard)
Y 307 117 02



Hex nut 3/8"
nickel-plated brass
Y 300 192 01



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