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[E-T-A](#)

[3130-F110-P7T1-W14QR3-5A](#)

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E-T-A® Thermal Overcurrent Circuit Breaker 3130

Description

Single, two and three pole rocker switch/thermal trip free circuit breakers (S-type TO CBE to EN 60934) of compact design for snap-in panel mounting. Available either with protection on one/both/all poles or, in the case of the double pole version, protection on one pole only. Illumination is optional and there is a choice of rocker colours. Approved to CBE standard EN 60934 (IEC 60934).

Typical applications

Motors, transformers, solenoids, household and office machines, electrical tools, mobile homes, boating, construction vehicles, medical equipment to EN 60601.

Standard current ratings and typical internal resistance values

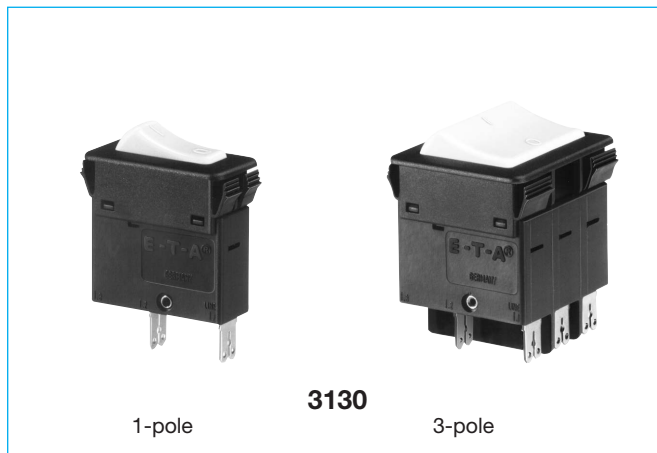
Current rating (A)	Internal resistance per pole (Ω)	Current rating (A)	Internal resistance per pole (Ω)
0.1	94	4	0.0435
0.2	24	5	0.0325
0.3	12	6	0.0215
0.4	5.30	7	0.0165
0.5	4.20	8	0.0165
0.8	1.50	10	< 0.02
1	0.9	12	< 0.02
1.2	0.80	14	< 0.02
1.5	0.45	15	< 0.02
2	0.27	16	< 0.02
2.5	0.0785	18	< 0.02
3	0.0595	20	< 0.02
3.5	0.0565		

Illumination voltage/power consumption

operating voltage	power consumption		
	1-pole	2-/3-pole	2-/3-pole
		Y+R	G
12 V	9 mA	2 mA	3.5 mA
24 V	9 mA	2 mA	3.5 mA
48 V	9 mA	2 mA	3.5 mA
115 V	< 1 mA	0.9 mA	2.8 mA
230 V	< 1 mA	0.9 mA	2.8 mA
400 V	-	0.9 mA	2.8 mA

Approvals

Authority	Voltage ratings	Current ratings
VDE (EN 60934)	AC 240/415 V	0.1...20 A <i>single pole</i> 0.1...16 A <i>multipole</i>
	DC 50 V	0.1...8 A <i>single pole</i> 0.1...16 A <i>multipole</i>
	DC 28 V	0.1...20 A <i>single pole</i>
UL, CSA	AC 250 V; DC 50 V	0.1...16 A <i>1-/2- pole</i>
	3 AC 250 V	0.1...12 A <i>3-pole</i>



Technical data

For further details please see chapter: Technical Information

Voltage rating	AC 240 V; 3 AC 415 V; DC 50 V (UL: AC 250 V; 3 AC 250 V; DC 50 V)	
Current ratings	0.1...20 A	1-pole 0.1...16 A 2- and 3-pole
Typical life	1-pole AC 240 V: 0.1...20 A 30,000 operations at $1 \times I_N$, inductive DC 50 V: 0.1...4 A 30,000 operations at $1 \times I_N$, inductive 4.5...16 A 30,000 operations at $1 \times I_N$, resistive DC 28 V: 0.1...20 A 30,000 operations at $1 \times I_N$, inductive 2-pole AC 240 V: 0.1...16 A 50,000 operations at $1 \times I_N$, inductive DC 50 V: 0.1...16 A 50,000 operations at $1 \times I_N$, inductive 3-pole 3 AC 415 V: 0.1...16 A 30,000 operations at $1 \times I_N$, inductive	
Ambient temperature	-30...+60 °C (-22...+140 °F)	
Insulation co-ordination (IEC 60664 and 60664 A)	rated impulse withstand voltage 2.5 kV reinforced insulation in operating area	pollution degree 2

Dielectric strength (IEC 60664 and 60664A)	test voltage operating area current path/current path	AC 3,000 V AC 1,500 V
Insulation resistance	> 100 M Ω (DC 500 V)	
Interrupting capacity I_{cn}	0.1...2 A 2.5...20 A 2.5...16 A 2.5...12 A 14 + 16 A	10 x I_N 150 A 250 A 150 A 130 A 1-pole 2-pole 3-pole 3-pole

Interrupting capacity (UL 1077)			
	I_N	U_N	I_{nc}
1, 2-pole	0.1...16 A	AC 250 V	3500 A
3-pole	0.1...12 A	3 AC 250 V	5000 A
1,2-pole	0.1...16 A	DC 50 V	2000 A

Degree of protection (IEC 60529/DIN 40050)	operating area IP40 terminal area IP00		
Vibration	5 g (57-500 Hz) $\pm$ 0.38 mm (10-57 Hz) to IEC 60068-2-6, test Fc 10 frequency cycles/axis		
Shock	1-pole: 25 g (11 ms) 2 + 3-pole: 20 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. 45 g (three pole) approx. 31 g (double pole) approx. 17 g (single pole)		

E-T-A® Thermal Overcurrent Circuit Breaker 3130

Ordering information - 1-pole

Type No.	3130	single pole thermal circuit breaker
Mounting	F	snap in frame
Frame	1	standard
Number of poles	1	single pole, thermally protected
Frame mounting	0	panel thickness 1-2.5 mm (.039-.099 in)
Terminal design	P7	blade terminals DIN 46244-C-Ms-S (QC 2x.110)
	H7	for terminals 1.1, 2.1 3.1 terminal screws M 3.5 for terminals 1.2, 2.2, 3.2 blade terminals (QC 2x.110)
Characteristic curve	T1	thermal 1.05-1.4 I _N
Actuator style	W	rocker switch with marking „I“ and „O“ moulded in
Actuator colour	01 Q	black opaque without illumination
	02 Q	white opaque without illumination
	04 Q	red opaque without illumination
	14 Q R	red translucent with LED-illumination
	15 Q Y	orange translucent with LED-illumination
	19 Q G	green translucent with LED-illumination
Illumination voltage range*	2	10 - 14 V DC
	3	20 - 28 V DC
	6	90 - 140 V AC
	7	185 - 275 V AC
Current ratings	0,1...20 A	
ordering example	3130 - F 1 1 0 - P7 T1 - W 14 Q R 3 - 5 A	

* N/A for non-illuminated version

Preferred types

Preferred types 3130 1-pole	Standard current ratings (A)									
	1	2	3	4	5	8	10	15	16	20
3130-F110-P7T1-W01Q-	x	x	x	x	x	x	x	x	x	x

Ordering information - multipole

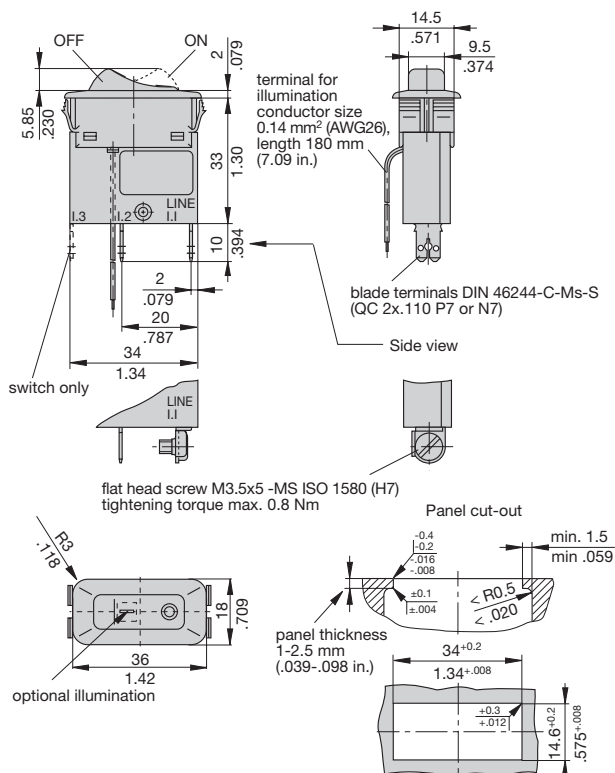
Type No.	3130	multipole thermal circuit breaker
Mounting	F	snap in frame
Frame	1	standard
	A	Version for X3130
Number of poles	2	2-pole thermally protected
	3	3-pole thermally protected
	5	2-pole, 1-pole thermally protected
Frame mounting	0	panel thickness 1-2.5 mm (.039-.099 in)
	A	2-pole, Version for X3130
Terminal design	P7	blade terminals DIN 46244-C-Ms-S (characteristic curve T1)
	H7	for terminals 1.1, 2.1 3.1 terminal screws M 3.5 for terminals 1.2, 2.2, 3.2 blade terminals (QC 2x.110)
Characteristic curve	T1	thermal 1.05-1.4 I _N
Actuator style	W	rocker switch with marking „I“ and „O“ moulded in
Actuator colour	01 Q	black opaque without illumination
	02 Q	white opaque without illumination
	04 Q	red opaque without illumination
	14 Q R	red translucent with LED-illumination
	15 Q Y	orange translucent with LED-illumination
	19 Q G	green translucent with LED-illumination
Illumination voltage range*	2	10 - 14 V DC
	3	20 - 28 V DC
	6	90 - 140 V AC
	7	185 - 275 V AC
	8	320 - 450 V AC
Current ratings	0,1...16 A	
ordering example	3130 - F 1 3 0 - P7 T1 - W 14 Q R 7 - 5 A	

* N/A for non-illuminated version

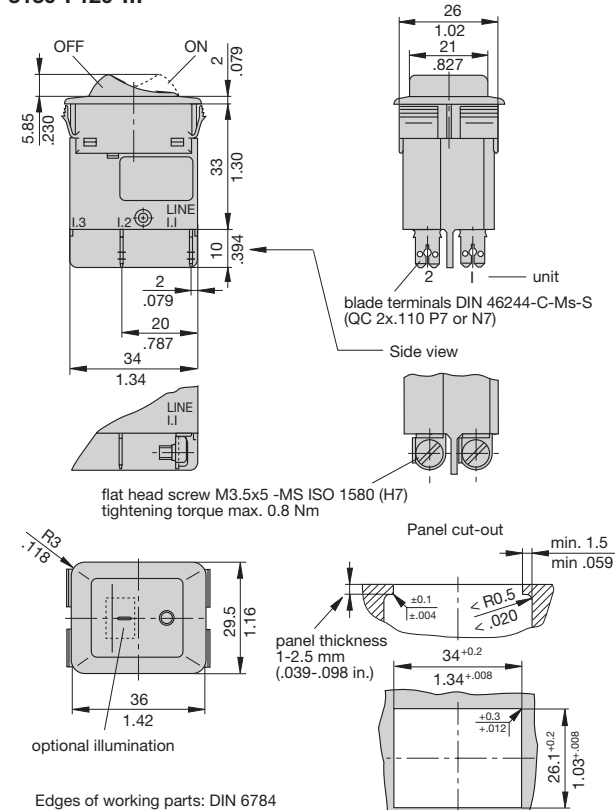
E-T-A Thermal Overcurrent Circuit Breaker 3130

Dimensions

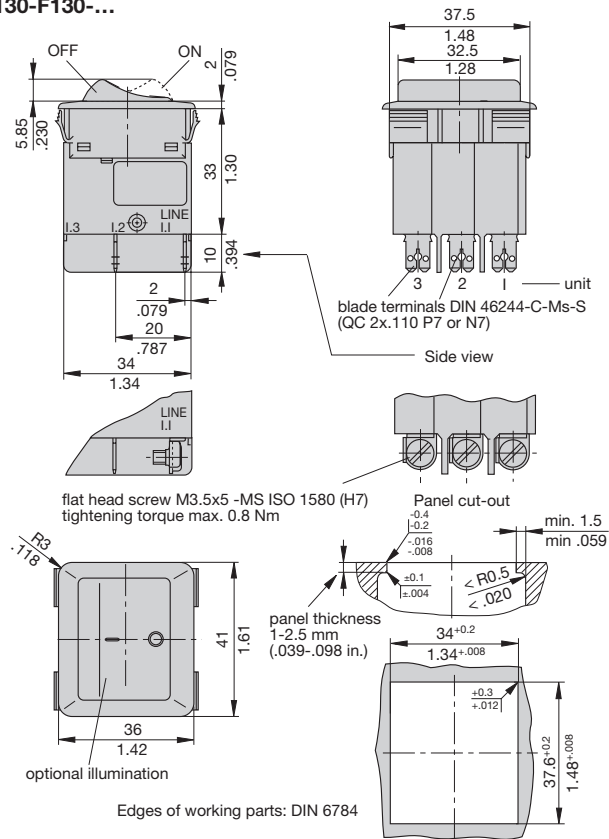
3130-F110-...



3130-F120-...

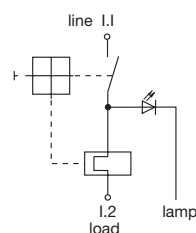


3130-F130-...

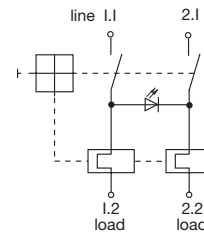


Internal connection diagrams

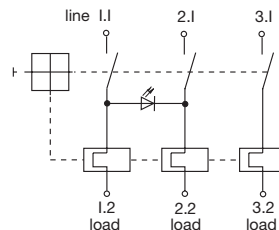
1-pole



2-pole



3-pole

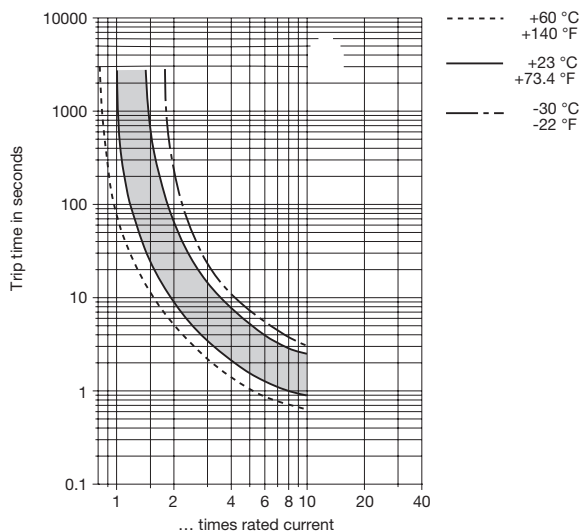


Thermal Overcurrent Circuit Breaker 3130

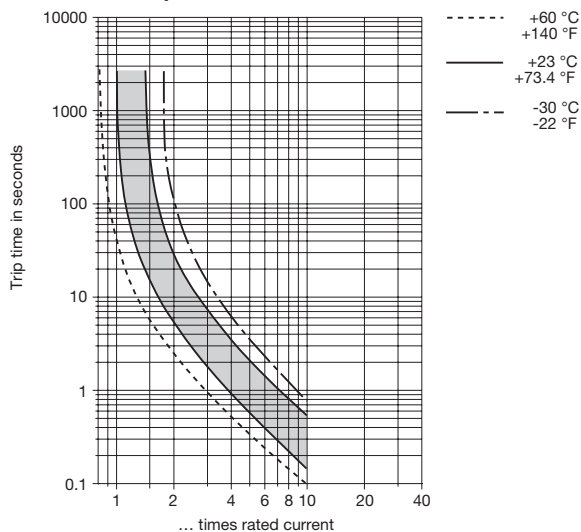
Typical time/current characteristics

Multipole types: all poles symmetrically loaded.
With single pole overload, thermal tripping will be at
approx. $1.54 \times I_N$ with 2-pole devices and at
approx. $1.68 \times I_N$ with 3-pole devices.

0.1...2 A



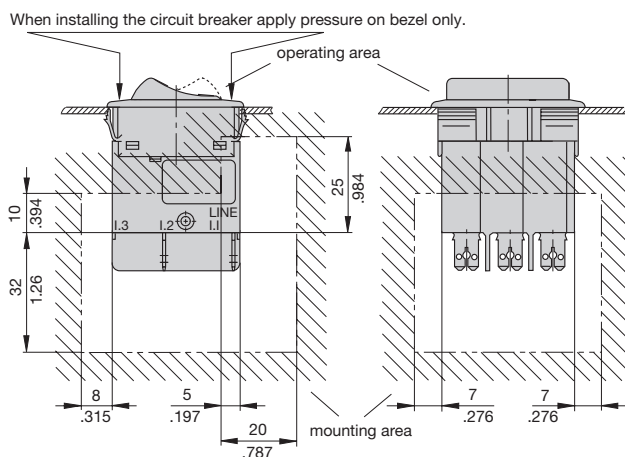
2.5...20 A 1-pole
2.5...16 A 2- and 3-pole



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.

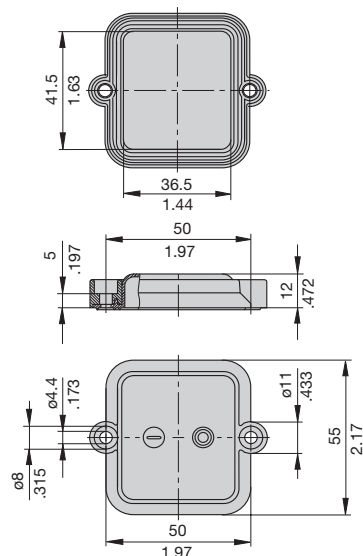
Ambient temperature	°F °C	-22 -30	-4 -20	+14 -10	+32 0	+73.4 +23	+104 +40	+122 +50	+140 +60
Derating factor		0.8	0.76	0.84	0.92	1	1.08	1.16	1.24

Installation drawing 3130-F1...



Accessories 3130-F130-...

Splash cover, transparent, for 3-pole version
X 221 258 01 (IP54), comprising bezel Y 306 109 01
 and transparent cover Y 306 108 01



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

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.

Appliance Inlet Module X3130 for 2-pole circuit breaker 3130-FA.A

Description

The appliance inlet module X3130 with double pole circuit breaker 3130-FA.A combines three functions within a single component: A C14 appliance inlet and rocker switch with resettable overcurrent protection; screw mounting from the front or the rear.

Typical applications

Electrical medical apparatus, laboratory equipment, professional audio equipment and office machines.

Ordering information

Type No.

X3130 Appliance inlet module for circuit breaker type 3130-FA.A

Module

A appliance inlet C14

Design

04 screw-type mounting

Accessories

00 without

Version

00 not wired; mounting position 3130: I to connector

01 not wired; mounting position 3130: 0 to connector (standard)

Delivery condition

M module supplied with circuit breaker FA.A

X3130 - A 04 00 01 - M Ordering example

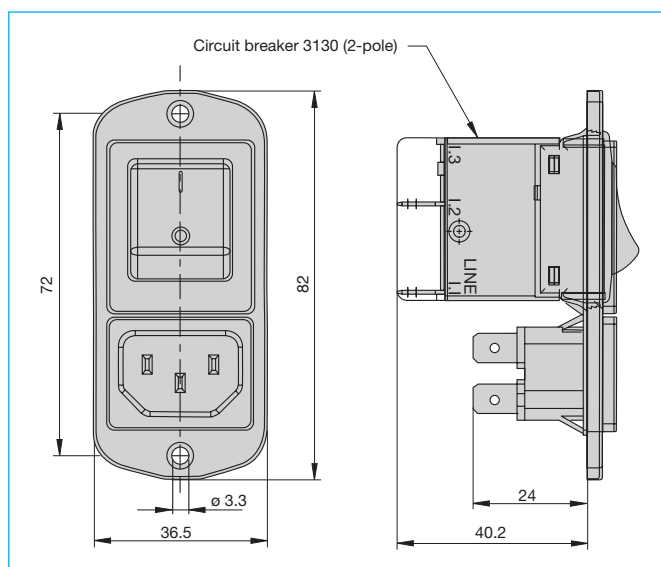
Approvals

VDE, CSA, UL, CCC

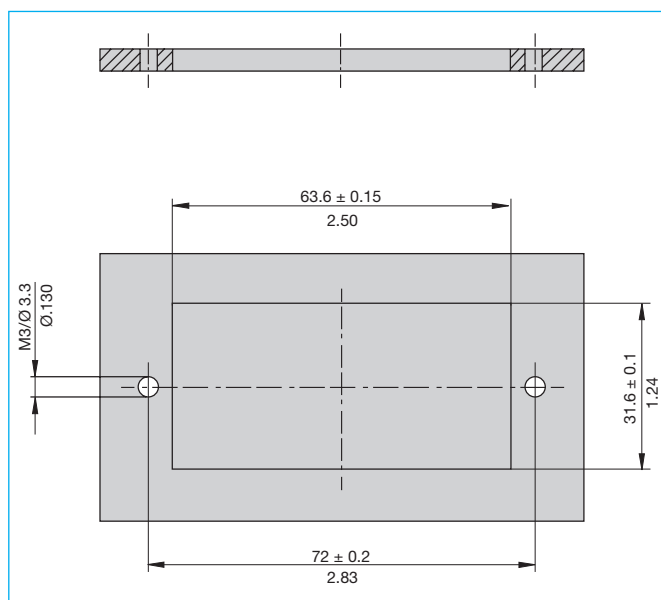
Technical data

Rated voltage	AC 240 V
Rated current	10 A (IEC) 15 A (UL/CSA)
Ambient temperature	-25°C ... 70°C
Number of poles	L, N + ground
Cable cross section	max. 1.5 mm ²
Degree of protection	Class I
Mounting method	screw-type mounting (front or rear)
Terminal design	blade terminals DIN 46244 A6.3 x 0.8
Housing material	thermoplastics, black UL94V-0
Appliance inlet	C14 according to IEC/EN 60320-1, UL 498
Switch	circuit breaker type 3130, 2-pole

Dimensions



Mounting hole X3130



Thermal Overcurrent Circuit Breaker 3130