

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

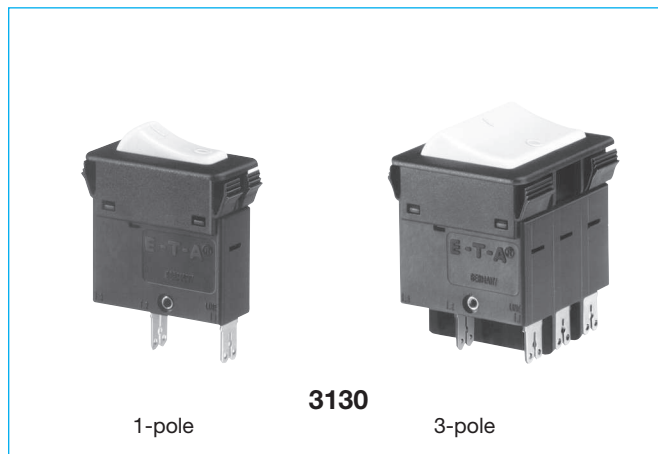
Current rating (A)	Internal resistance per pole (Ω)	Current rating (A)	Internal resistance per pole (Ω)
0.1	94	4	0.0435
0.2	24	5	0.0325
0.3	12	6	0.0215
0.4	5.30	7	0.0165
0.5	4.20	8	0.0165
0.8	1.50	10	< 0.02
1	0.9	12	< 0.02
1.2	0.80	14	< 0.02
1.5	0.45	15	< 0.02
2	0.27	16	< 0.02
2.5	0.0785	18	< 0.02
3	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 x I _N , inductive DC 50 V: 0.1...4 A 30,000 operations at 1 x I _N , inductive 4.5...16 A 30,000 operations at 1 x I _N , resistive DC 28 V: 0.1...20 A 30,000 operations at 1 x I _N , inductive 2-pole AC 240 V: 0.1...16 A 50,000 operations at 1 x I _N , inductive DC 50 V: 0.1...16 A 50,000 operations at 1 x I _N , inductive 3-pole 3 AC 415 V: 0.1...16 A 30,000 operations at 1 x 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) operating area current path/current path		test voltage AC 3,000 V AC 1,500 V	
Insulation resistance		> 100 MΩ (DC 500 V)	
Interrupting capacity I _{cn}		0.1...2 A 10 x I _N 2.5...20 A 150 A 2.5...16 A 250 A 2.5...12 A 150 A 14 + 16 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) ± 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)	

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	

3130 - F 1 1 0 - P7 T1 - W 14 Q R 3 - 5 A ordering example

* N/A for non-illuminated version

Ordering information - multipole

Type No.	3130	multipole thermal circuit breaker
Mounting	F	snap in frame
Frame	1	standard
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)
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	

3130 - F 1 3 0 - P7 T1 - W 14 Q R 7 - 5 A ordering example

* N/A for non-illuminated version

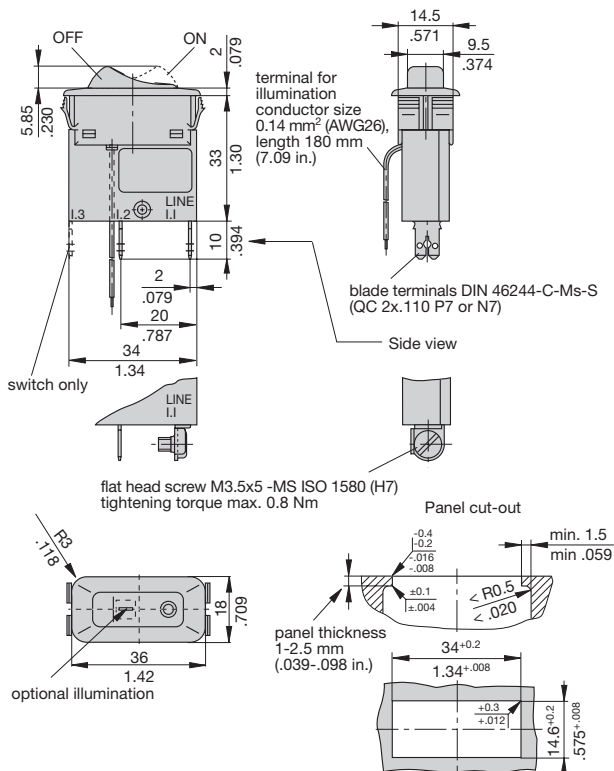
Preferred types

NEW

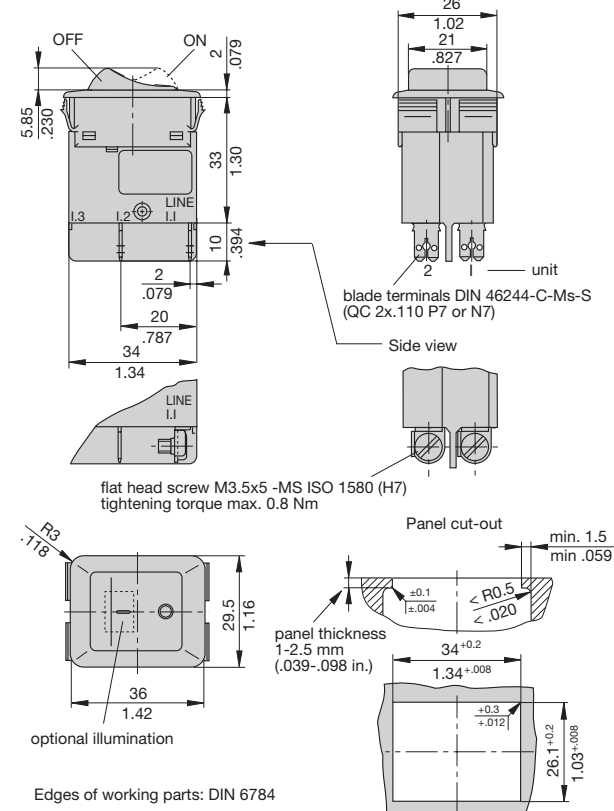
Preferred types 3130 1-pole	Standard current ratings (A)									
	1	2	3	4	5	8	10	15	16	20
3130-F110-P7T1-W01Q-	x	x	x	x	x	x	x	x	x	x

Dimensions

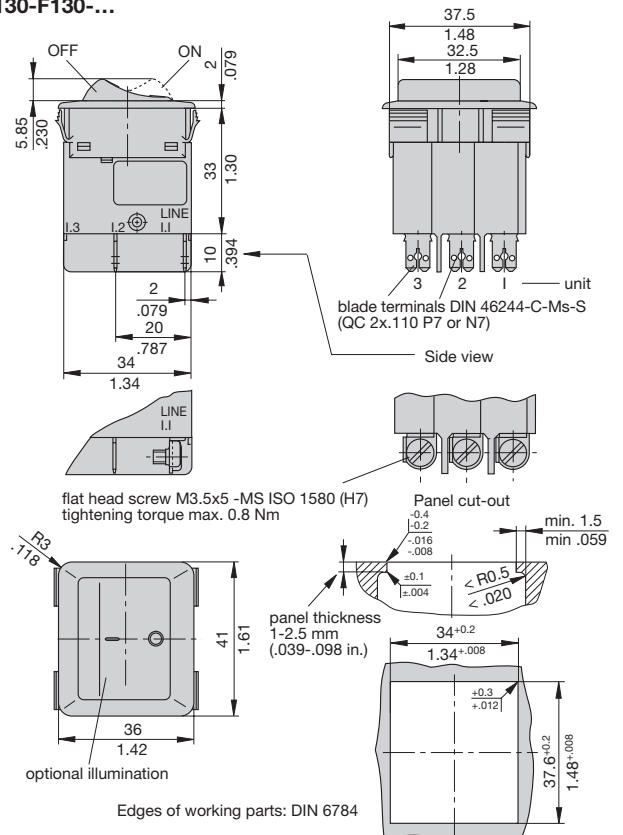
3130-F110-...



3130-F120-...

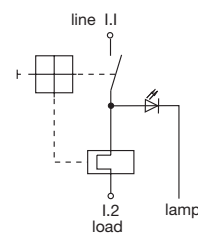


3130-F130-...

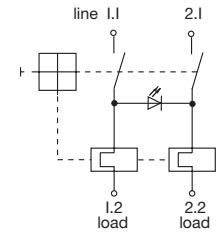


Internal connection diagrams

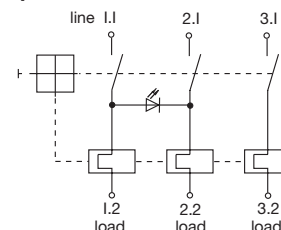
1-pole



2-pole



3-pole

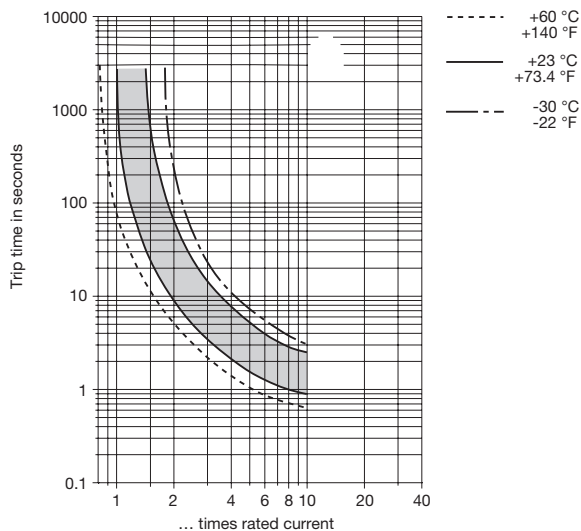


This is a metric design and millimeter dimensions take precedence (mm/inch)

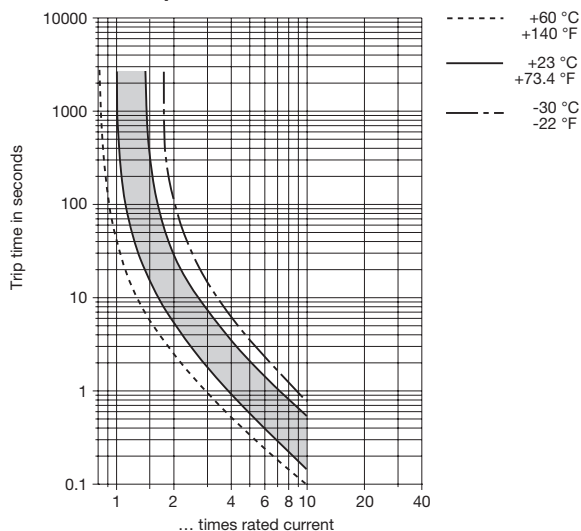
Typical time/current characteristics

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

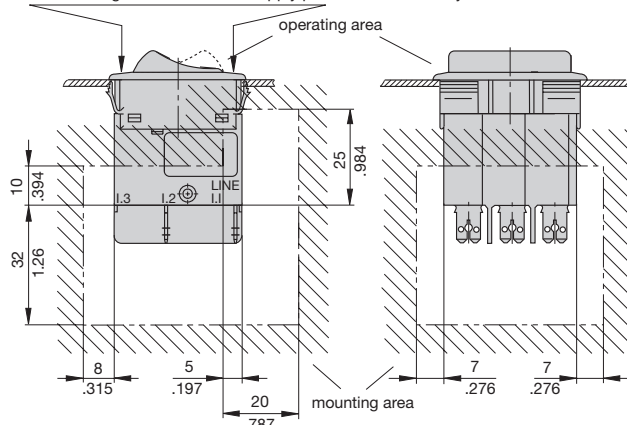


The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping, please multiply the circuit breaker current ratings by the derating factor shown below. See also section Technical information.

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

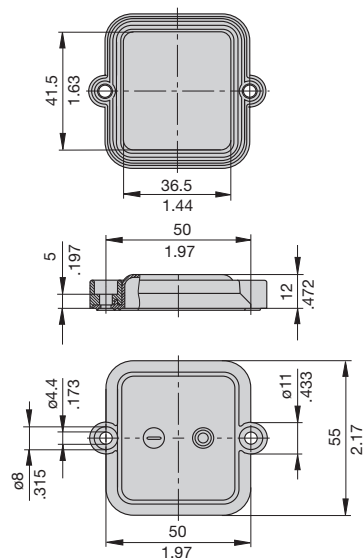
Installation drawing 3130-F1...

When installing the circuit breaker apply pressure on bezel only.



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.