

## 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

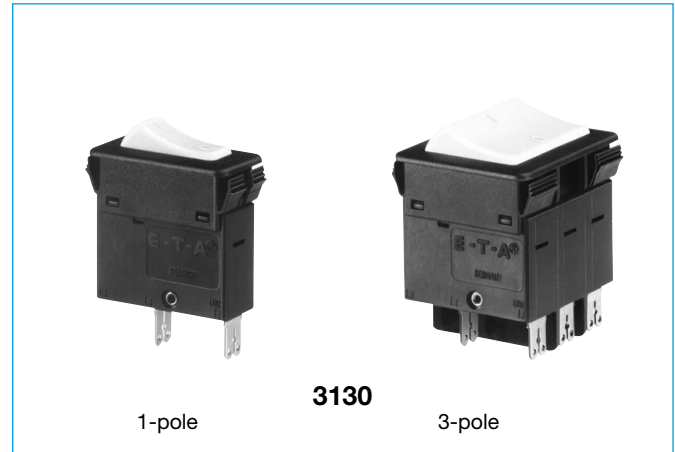
Motors, transformers, solenoids, household and office machines, electrical tools, mobile homes, boating, construction vehicles, medical equipment to EN 60601.

## Standard current ratings and typical internal resistance values

| Current rating (A) | Internal resistance per pole ( $\Omega$ ) | Current rating (A) | Internal resistance per pole ( $\Omega$ ) |
|--------------------|-------------------------------------------|--------------------|-------------------------------------------|
| 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 |
|                   |                   | <b>Y+R</b> | <b>G</b>  |
| 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    |



## Technical data

For further details please see chapter: Technical Information

|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                         |                                                                     |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------------|
| Voltage rating                                                                               | AC 240 V; 3 AC 415 V; DC 50 V<br>(UL: AC 250 V; 3 AC 250 V; DC 50 V)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                         |                                                                     |
| Current ratings                                                                              | 0.1...20 A 1-pole<br>0.1...16 A 2- and 3-pole                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                         |                                                                     |
| Typical life                                                                                 | <b>1-pole</b><br>AC 240 V: 0.1...20 A 30,000 operations at 1 x I <sub>N</sub> , inductive<br>DC 50 V: 0.1...4 A 30,000 operations at 1 x I <sub>N</sub> , inductive<br>4.5...16 A 30,000 operations at 1 x I <sub>N</sub> , resistive<br>DC 28 V: 0.1...20 A 30,000 operations at 1 x I <sub>N</sub> , inductive<br><b>2-pole</b><br>AC 240 V: 0.1...16 A 50,000 operations at 1 x I <sub>N</sub> , inductive<br>DC 50 V: 0.1...16 A 50,000 operations at 1 x I <sub>N</sub> , inductive<br><b>3-pole</b><br>3 AC 415 V: 0.1...16 A 30,000 operations at 1 x I <sub>N</sub> , inductive |                                                         |                                                                     |
| Ambient temperature                                                                          | -30...+60 °C (-22...+140 °F)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                         |                                                                     |
| Insulation co-ordination<br>(IEC 60664 and 60664 A)                                          | rated impulse<br>withstand voltage<br>2.5 kV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                         | pollution<br>degree<br>2<br>reinforced insulation in operating area |
| Dielectric strength<br>(IEC 60664 and 60664A)<br>operating area<br>current path/current path | test voltage<br>AC 3,000 V<br>AC 1,500 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                         |                                                                     |
| Insulation resistance                                                                        | > 100 MΩ (DC 500 V)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                         |                                                                     |
| Interrupting capacity I <sub>cn</sub>                                                        | 0.1...2 A<br>2.5...20 A<br>2.5...16 A<br>2.5...12 A<br>14 + 16 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10 x I <sub>N</sub><br>150 A<br>250 A<br>150 A<br>130 A | 1-pole<br>2-pole<br>3-pole<br>3-pole                                |
| Interrupting capacity (UL 1077)                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                         |                                                                     |
|                                                                                              | I <sub>N</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | U <sub>N</sub>                                          | I <sub>nc</sub>                                                     |
| 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<br>(IEC 60529/DIN 40050)                                                | operating area IP40<br>terminal area IP00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                         |                                                                     |
| Vibration                                                                                    | 5 g (57-500 Hz) ± 0.38 mm (10-57 Hz)<br>to IEC 60068-2-6, test Fc<br>10 frequency cycles/axis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                         |                                                                     |
| Shock                                                                                        | 1-pole: 25 g (11 ms) 2 + 3-pole: 20 g (11 ms)<br>to IEC 60068-2-27, test Ea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                         |                                                                     |
| Corrosion                                                                                    | 96 hours at 5 % salt mist,<br>to IEC 60068-2-11, test Ka                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                         |                                                                     |
| Humidity                                                                                     | 240 hours at 95 % RH,<br>to IEC 60068-2-78, test Cab                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                         |                                                                     |
| Mass                                                                                         | approx. 45 g (three pole)<br>approx. 31 g (double pole)<br>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<br>for terminals 1.2, 2.2, 3.2 blade terminals (QC 2x.110) |
| Characteristic curve        | T1         | thermal 1.05-1.4 I <sub>N</sub>                                                                             |
| Actuator style              | W          | rocker switch with marking „I“ and „O“<br>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<br>LED-illumination                                                                 |
|                             | 19 Q G     | green translucent with<br>LED-illumination (DC only)                                                        |
| 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

## Preferred types

| Preferred types<br>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  |

## Approvals

| Authority | Standard     | Rated voltage                                             | Current ratings                                                                                                                               |
|-----------|--------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| VDE       | IEC/EN 60934 | AC 240 V<br>AC 240/415 V<br>DC 50 V<br>DC 50 V<br>DC 28 V | 0.1 A...20 A (single pole)<br>0.1 A...16 A (multipole)<br>0.1 A...8 A (single pole)<br>0.1 A...16 A (multipole)<br>0.1 A...20 A (single pole) |
| UL        | UL 1077      | AC 250 V<br>AC 250 V<br>DC 50 V                           | 0.1 A...16 A (1 + 2 pole)<br>0.1 A...12 A (3 pole)<br>0.1 A...16 A (1 - 3 pole)                                                               |
| CSA       | C22.2 No 235 | AC 250 V<br>AC 250 V<br>DC 50 V                           | 0.1 A...16 A (1 + 2 pole)<br>0.1 A...12 A (3 pole)<br>0.1 A...16 A (1 - 3 pole)                                                               |

## Ordering information - multipole

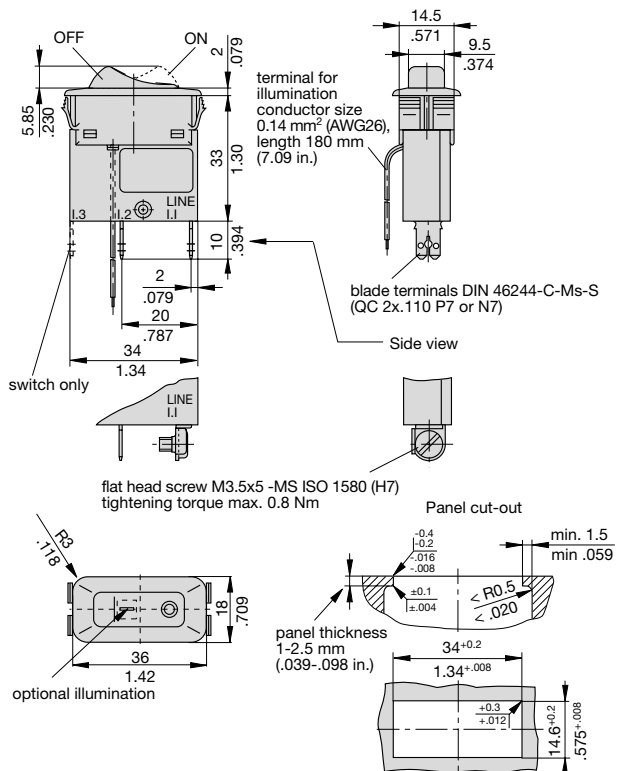
|                             |            |                                                                                                             |
|-----------------------------|------------|-------------------------------------------------------------------------------------------------------------|
| Type No.                    | 3130       | multipole thermal circuit breaker                                                                           |
| Mounting                    | F          | snap in frame                                                                                               |
| Frame                       | 1          | standard                                                                                                    |
| A version for X3130         | A          |                                                                                                             |
| 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 | A          |                                                                                                             |
| Terminal design             | P7         | blade terminals DIN 46244-C-Ms-S<br>(characteristic curve T1)                                               |
|                             | H7         | for terminals 1.1, 2.1 3.1 terminal screws M 3.5<br>for terminals 1.2, 2.2, 3.2 blade terminals (QC 2x.110) |
| Characteristic curve        | T1         | thermal 1.05-1.4 I <sub>N</sub>                                                                             |
| Actuator style              | W          | rocker switch with marking „I“ and „O“<br>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<br>LED-illumination                                                                    |
|                             | 15 Q Y     | orange translucent with<br>LED-illumination                                                                 |
|                             | 19 Q G     | green translucent with<br>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

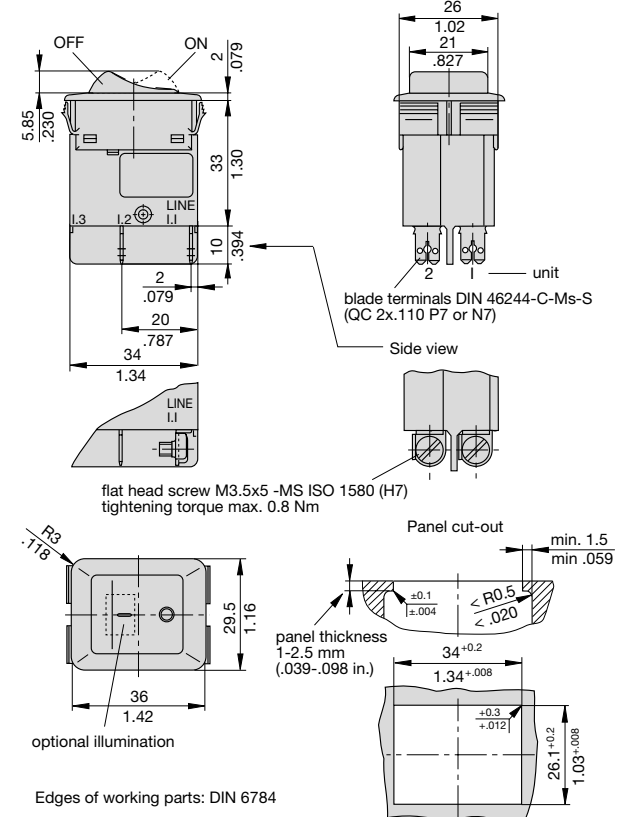
\* N/A for non-illuminated version

## Dimensions

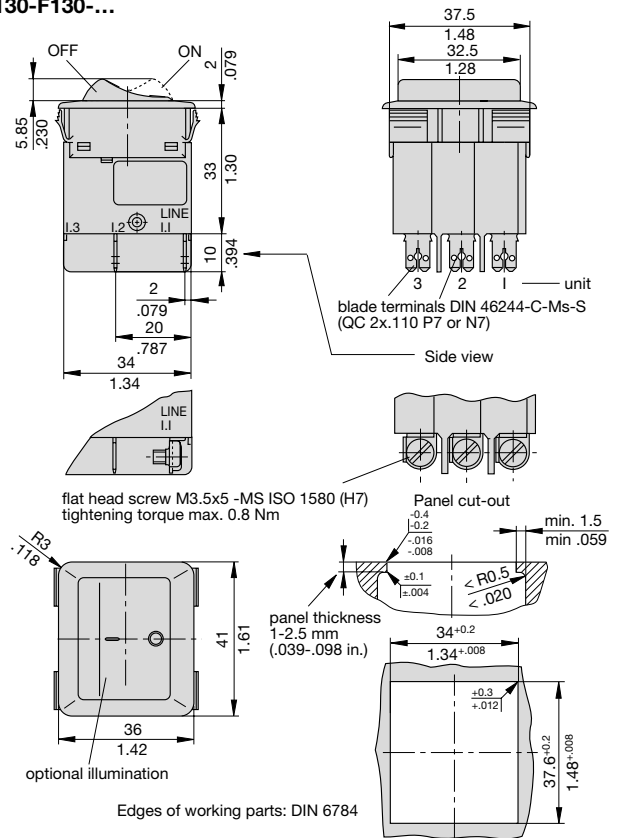
### 3130-F110-...



### 3130-F120-...

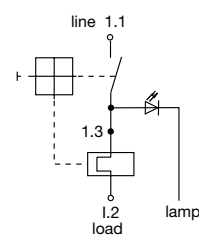


### 3130-F130-...

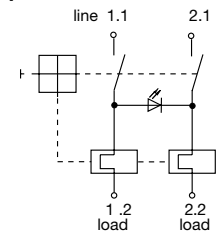


## Internal connection diagrams

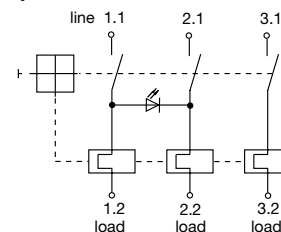
### 1-pole



### 2-pole



### 3-pole

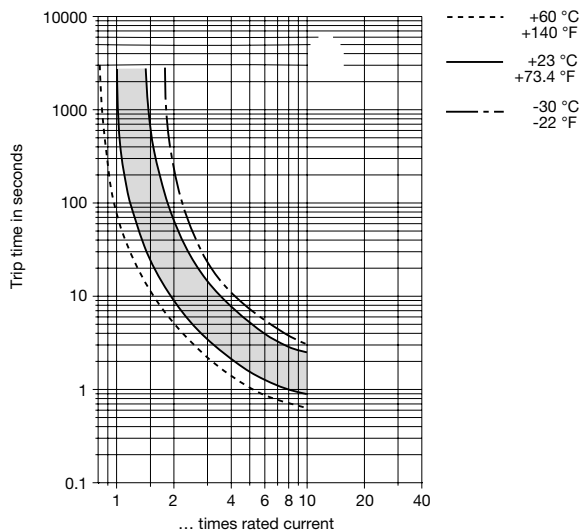


This is a metric design and millimeter dimensions take precedence (mm/inch)

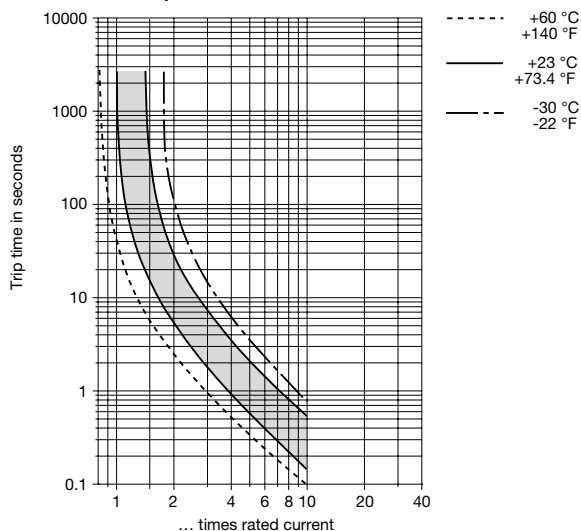
## Typical time/current characteristics

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

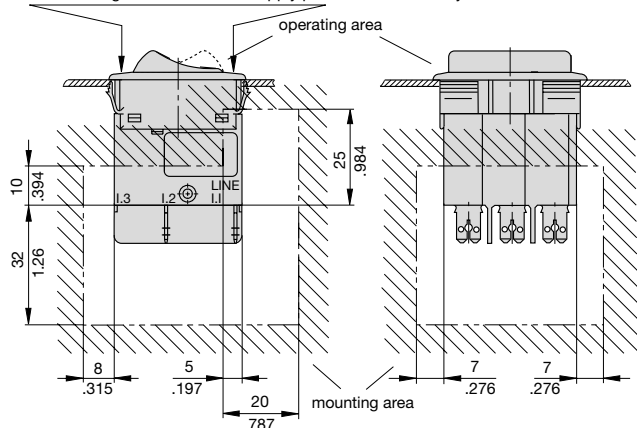


The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping, please multiply the circuit breaker current ratings by the derating factor shown below. See also section Technical information.

| 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 |

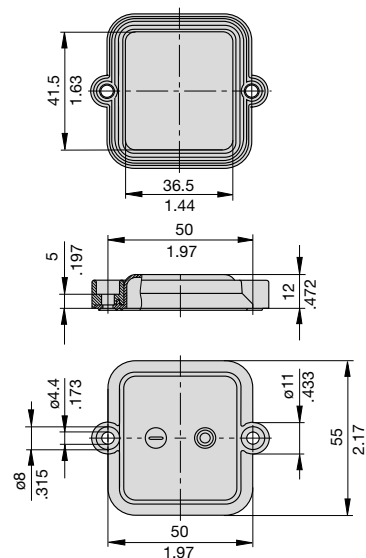
## Installation drawing 3130-F1...

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.

## 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

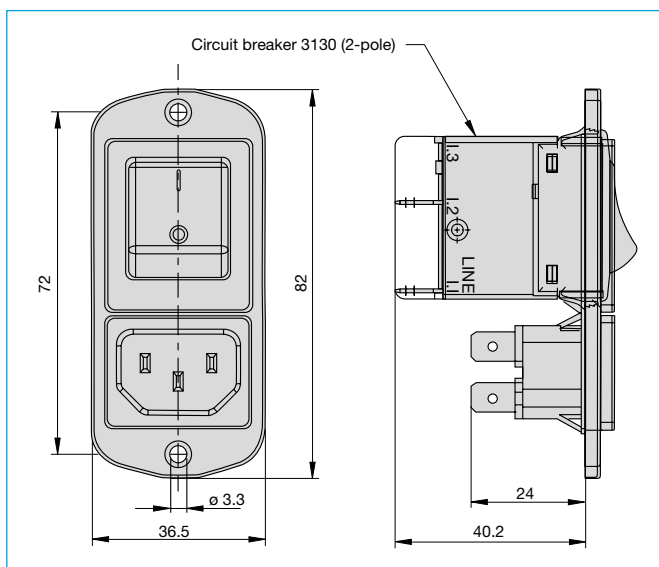
## Approvals

| Authority | Standard              | Rated voltage | Current ratings |
|-----------|-----------------------|---------------|-----------------|
| UL        | UL 489<br>C22.2 No 42 |               |                 |

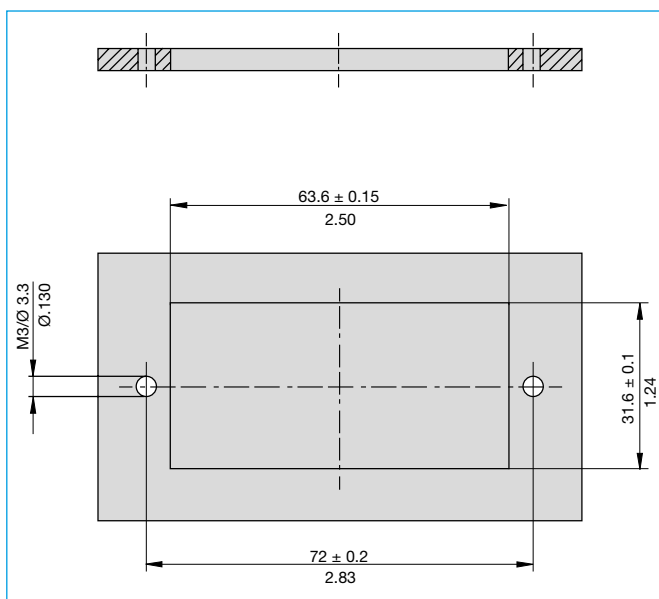
## Technical data

|                      |                                         |
|----------------------|-----------------------------------------|
| Rated voltage        | AC 240 V                                |
| Rated current        | 10 A (IEC)<br>15 A (UL/CSA)             |
| Ambient temperature  | -25°C ... 70°C                          |
| Number of poles      | L, N + ground                           |
| Cable cross section  | max. 1.5 mm <sup>2</sup>                |
| 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







**Стандарт  
Электрон  
Связь**

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Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

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