

Description

Combination of single pole circuit breaker and ON/OFF switch with soft-touch rocker actuation. Contoured rockers are available with a choice of colours and legends, with optional illumination. The 3131 is sealed to provide IP66 rated front of panel water splash protection. It meets the requirements of circuit breaker standard EN 60934 (IEC 60934): S type, TO.

Typical applications

Motor protection, transformer protection, household appliances and office equipment, electrical tools, mobile homes, watercraft, construction vehicles, medical equipment.

Current ratings and typical internal resistance values

| Current rating (A) | Internal resistance (Ω) | Current rating (A) | Internal resistance (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 (LED) | |
|-------------------|-------------------------|----------|
| | Y = yellow | T = blue |
| 12 V | 10 mA | 10 mA |
| 24 V | 10 mA | 10 mA |
| 115 V | < 1 mA | - |
| 230 V | < 1 mA | - |

Approvals

| Authority | Standard | Rated voltage | Current ratings |
|-----------|--|--------------------------------|--|
| VDE | IEC 60934 | AC 240 V DC 32 V | 0.05 A...20 A 0.05 A...20 A |
| UL | UL 1077 C22.2 No 235 UL 1500 Ignition Protected | AC 250 V DC 50 V DC 32 V | 0.1 A...20 A 2 A...20 A 0.1 A...20 A |



Technical data

For further details please see: http://www.e-t-a.de/ti_e

| | |
|--------------------------------------|---|
| Voltage rating | AC 240 V; DC 28 V |
| Current rating range | 0.1...20 A |
| Typical life | 0.1...20 A 30,000 operations at $1 \times I_N$, inductive |
| Ambient temperature | -20...+60 °C (-4...+140 °F) |
| Insulation co-ordination (IEC 60664) | 2.5 kV/2 re-inforced insulation in the operating area |
| Dielectric strength operating area | test voltage AC 3,000 V |
| current path/current path | test voltage AC 1,500 V |
| Insulation resistance | > 100 M Ω (DC 500 V) |
| Interrupting capacity I_{cn} | 0.1...2 A $10 \times I_N$ 2.5...20 A 200 A |
| Interrupting capacity (UL 1077) | 0.1...16 A: AC 240 V 3,000 A DC 32 V 2,500 A |
| Protection class (IEC 60529) | operating area IP66 terminal area IP00 |
| Vibration | 5 g (57-500 Hz) \pm 0.38 mm (10-57 Hz) test to IEC 60068-2-6, test Fc, 10 frequency cycles/axis |
| Shock | 25 g (11 ms), test to IEC 60068-2-27, test Ea |
| Corrosion | 96 hours at 5 % salt mist, test to IEC 60068-2-11, test Ka |
| Humidity | 240 hours at 95 % RH, test to IEC 60068-2-78, test Cab |
| Mass | approx. 30 g |

Ordering Information

Type number

3131 single pole thermal circuit breaker

Function

- A circuit breaker single pole, latching switch
- C circuit breaker single pole, momentary switch

Mounting

F flange mounting

Accessories

1 with sealing IP66

Terminal design

H terminal 1: screws M3.5x5 ISO 1580 (DIN 85)
terminal 2: blade terminal for 1x6.3x0.8 mm or 2x2.8x0.8 EN 60934 connectors

N terminals 1,2 and 4: blade terminal for 1x6.3x0.8 mm or 2x2.8x0.8 EN 60934 connectors

P terminals 1 and 2: blade terminal for 1x6.3x0.8 mm or 2x2.8x0.8 EN 60934 connectors

Characteristic curve

T thermal 1.0 – 1.4 times rated current

Actuator style

0 without actuator
rocker X3131-W... must be ordered separately

Actuator colour

0 without actuator

Rocker legends

00 without

Rocker marking

0 without

Orientation

0 without

Illumination

- 1 illuminated when in position 1 (ON)
- 3 as 1, with dimmed illumination of window 1

Type of illumination

- T blue LED
- Y yellow LED

Illumination voltage range

- 0 without illumination
- 2 10 - 14 V DC
- 3 20 - 32 V DC
- 7 185 - 275 V AC

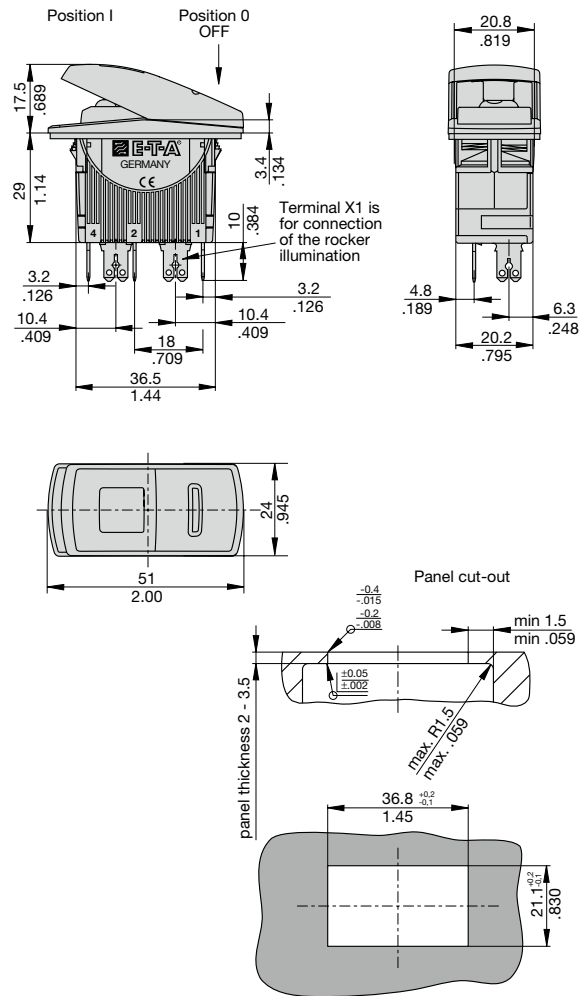
Current ratings

0.1...20 A

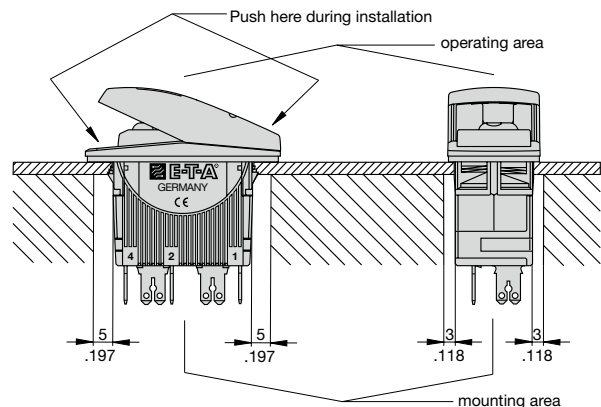
3131 - A F 1 P T - 0 0 00 0 0 - 1 Y 3 - 10 A ordering example

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

Dimensions



Installation drawing

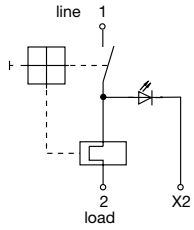


This is a metric design and millimeter dimensions take precedence (mm/inch)

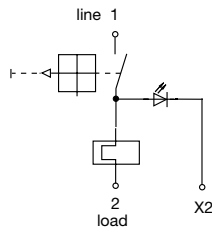
Internal connection diagrams

circuit breaker

1-pole switch

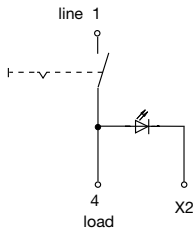


1-pole momentary switch

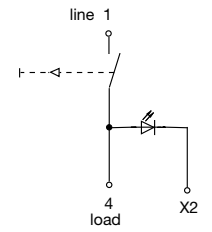


switch

1-pole switch

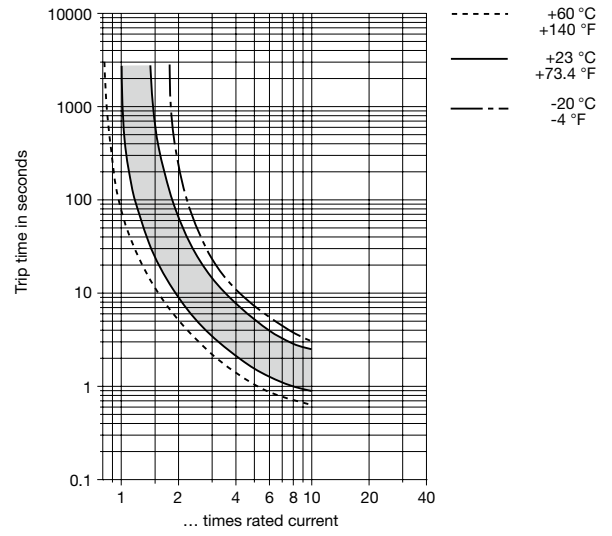


1-pole momentary switch

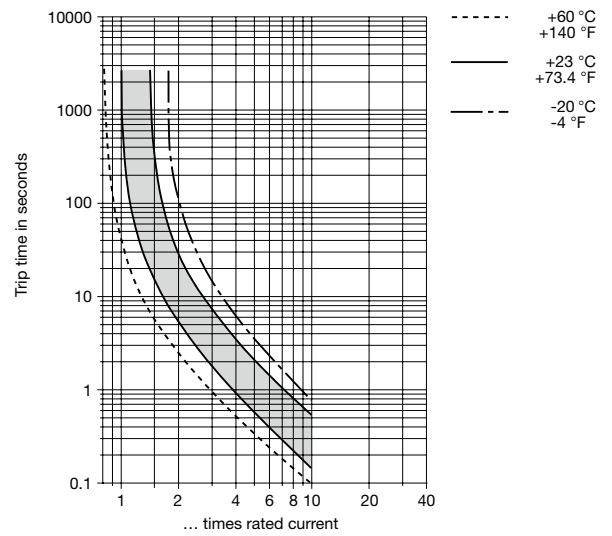


Typical time/current characteristics

0.1 ... 2 A



2.5 ... 20 A
































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 | -4 | +14 | +32 | +73.4 | +104 | +122 | +140 |
|------------------------|------|------|------|-------|------|------|------|
| °C | -20 | -10 | 0 | +23 | +40 | +50 | +60 |
| Derating factor | 0.84 | 0.88 | 0.92 | 1 | 1.08 | 1.14 | 1.23 |

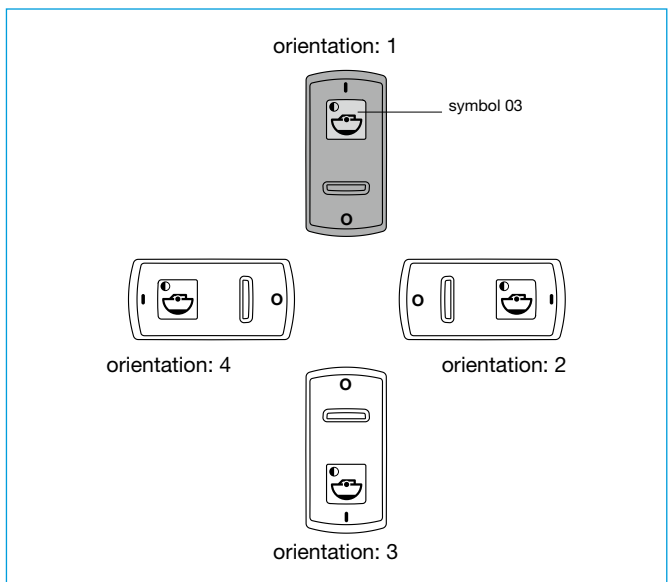


List of available legends

| | | Ordering information |
|------------------------|---|----------------------|
| Interior light |  | 01 |
| Anchor light |  | 02 |
| Cockpit light |  | 03 |
| Navigation light |  | 04 |
| UKW-radio |  | 05 |
| Refrigerator |  | 06 |
| Anchor |  | 07 |
| Windshield wiper |  | 08 |
| Bilge pump |  | 09 |
| Potable water |  | 10 |
| Horn |  | 11 |
| Ventilation fan |  | 12 |
| Panel light |  | 13 |
| Navigation instruments |  | 14 |
| Music |  | 15 |
| Heating |  | 16 |
| Shower pump |  | 17 |
| Icebox |  | 19 |
| Screenwash |  | 20 |
| Search light |  | 23 |
| Autopilot |  | 24 |
| Trim tabs |  | 25 |
| Mast lift |  | 26 |

| | | Ordering information |
|---------------------------------|---|----------------------|
| Navigation light (sailing ship) |  | 27 |
| Cockpit light (sailing ship) |  | 28 |
| Deck light (sailing ship) |  | 29 |
| Anchor light (sailing ship) |  | 30 |
| Toilet |  | 31 |
| Outlet |  | 41 |

Further symbols upon request



Ordering Information X3131-...

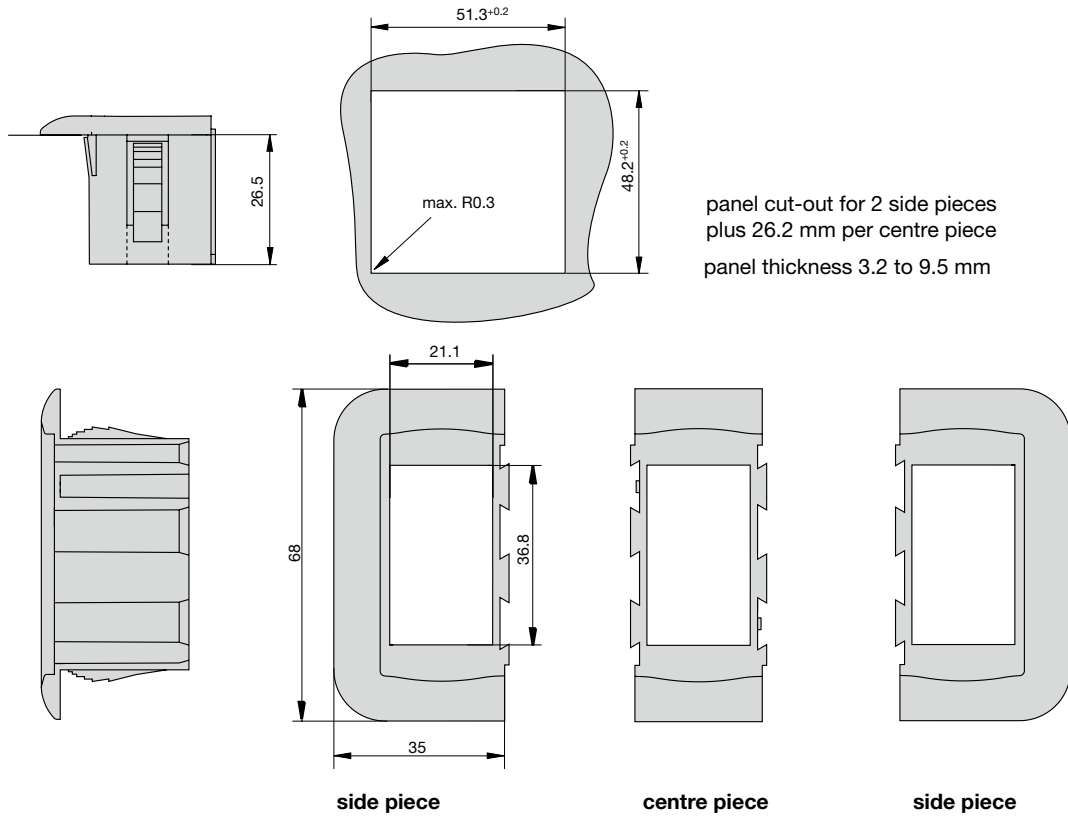
| | | |
|-------------------------|--------------------|---|
| Type number | X3131 | module for type 3131 |
| Actuator style | W | rocker soft-touch, two illumination windows |
| Actuator colour | A | blue / white translucent |
| | B | black / white translucent |
| | C | skyblue / white translucent |
| Rocker legends | 00 | without |
| | ... | see separate survey of legends |
| Rocker marking | 0 | without |
| | A | I and 0 |
| Orientation | 0 | without orientation |
| | 1 | orientation 1 (standard) |
| | 2 | orientation 2 |
| | 3 | orientation 3 |
| | 4 | orientation 4 |
| Ordering example | X3131 - W A 01 0 1 | |

Accessories

Mounting frame

Consisting of a left- and right-side piece, can be expanded by a centre piece.
 (Please order 2 side pieces per mounting frame)
 The pieces firmly engage when stuck together.

side piece Y 308 790 01
centre piece Y 308 791 01



1

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