

## Description

An extremely versatile range of rocker switch/thermal circuit breakers (S-type TO CBE to EN 60934 with trip free mechanism) offering the choice of single pole, double pole with single pole protection, and double pole with protection on both poles. Designed for snap-in panel mounting with versions available for three different panel cut-out sizes. Illumination is optional and there is a range of colours and markings for the rocker.

Add on modules:

- Under voltage release coil (for double pole versions only).
- Magnetic trip coil for short circuit protection.
- Magnetic trip coil for remote relay trip.
- Auxiliary contacts for status signalling.

Approved to CBE standard EN 60934 (IEC 60934).

Meets the requirements regarding fire resistance of EN 60335-1 : 2007-02  
Safety of household and similar electrical appliances.

## Typical applications

Motors, transformers, solenoids, extra low voltage wiring systems, office machines, electro-medical equipment, power supplies, communications systems, 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                               | 4.5                | 0.0435                           |
| 0.3                | 12                               | 5                  | 0.0325                           |
| 0.4                | 5.30                             | 6                  | 0.0215                           |
| 0.5                | 4.20                             | 7                  | 0.0165                           |
| 0.6                | 2.90                             | 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 |        |        |
|-------------------|-------------------|--------|--------|
|                   | Y                 | R      | G      |
| 12 V DC           | 5,2 mA            | 2 mA   | 1,4 mA |
| 24 V DC           | 4,5 mA            | 2,2 mA | 1,6 mA |
| 115 V AC          | 2,8 mA            | 1,1 mA | 1 mA   |
| 230 V AC          | 2,2 mA            | 0,9 mA | 0,9 mA |



## Technical data

For further details please see chapter: Technical Information

|                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                     |  |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|--|
| Voltage rating                                                                            | AC 240 V; DC 50 V<br>(AC 415 V to special order)<br>(UL: AC 250 V; DC 50 V)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                     |  |
| Current ratings                                                                           | 0.1...20 A<br>(up to 30 A to special order, single pole only)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                     |  |
| 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 415 V: 0.1...16 A 10,000 operations at 1 x I <sub>N</sub> , inductive<br>AC 240 V: 0.1...16 A 50,000 operations at 1 x I <sub>N</sub> , inductive<br>17...20 A 30,000 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>17...20 A 10,000 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>between poles (2-pole) | 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 10 x I <sub>N</sub><br>2.5...20 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 250 A 2-pole, or 150 A 1-pole                                       |  |
| Interrupting capacity (UL 1077)                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                     |  |

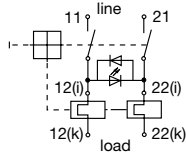
|           | I <sub>N</sub> | U <sub>N</sub> | I <sub>nc</sub> |
|-----------|----------------|----------------|-----------------|
| 1, 2-pole | 0.1...20 A     | AC 250 V       | 5000 A          |
| 1, 2-pole | 0.1...20 A     | DC 50 V        | 1000 A          |

|                                            |                                                                                                |
|--------------------------------------------|------------------------------------------------------------------------------------------------|
| Degree of protection (IEC 60529/DIN 40050) | operating area IP40<br>(IP54 with water splash protection)<br>terminal area IP00               |
| Vibration                                  | 8 g (57-500 Hz), ± 0.61 mm (10-57 Hz)<br>to IEC 60068-2-6, test Fc<br>10 frequency cycles/axis |
| Shock                                      | 30 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. 33 g (double pole)<br>approx. 27 g (single pole)                                       |

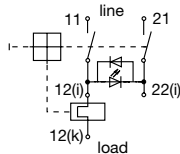
## Dimensions

## Internal connection diagrams

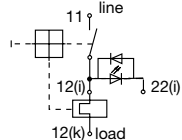
**2-pole,  
thermally protected on both poles**



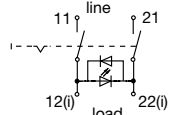
**2-pole,  
thermally protected on one pole only**



**1-pole,  
thermally protected**



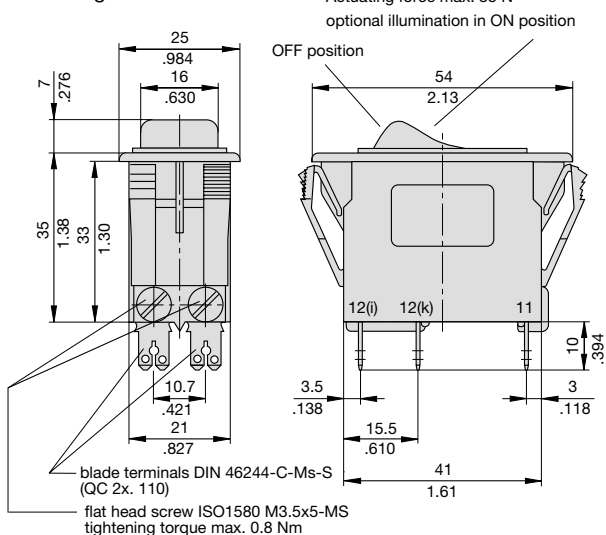
**2-pole,  
unprotected**



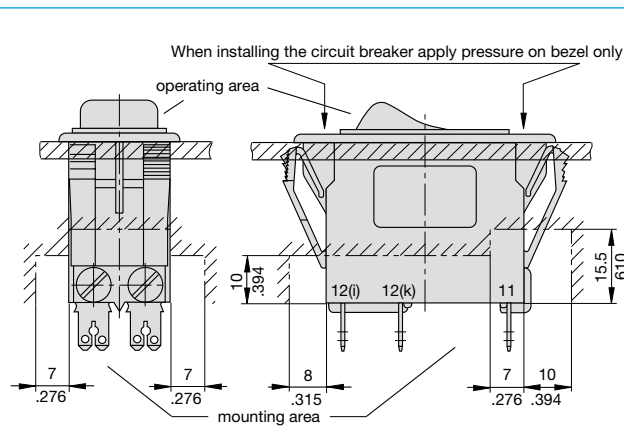
## Dimensions

**Style F3.1**

collar height 1 mm/.039 in.



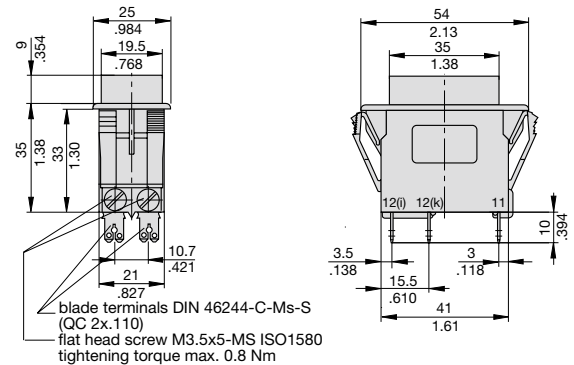
## Installation drawing



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

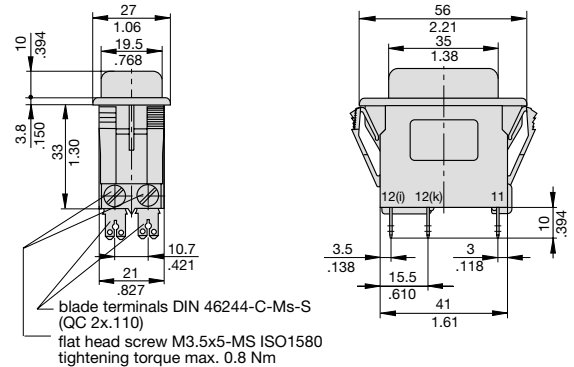
## Mounting style variants

**Style F 3.3** collar height 9 mm (.354 in.)

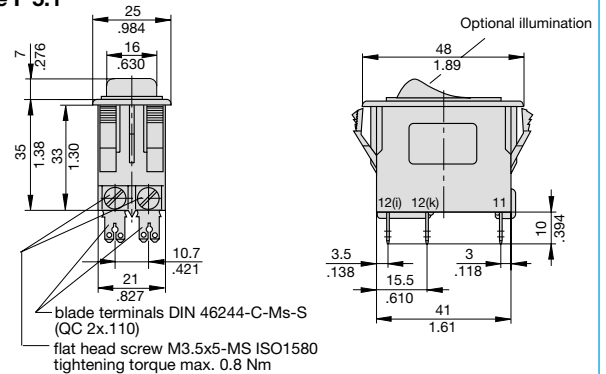


**Style F 3.4**

collar height 2 mm (.079 in.), with water splash protection

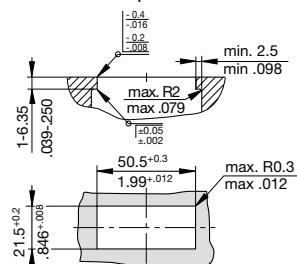


**Style F 5.1**

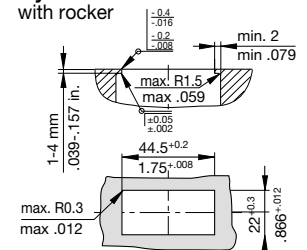


## Cut-out dimensions

**Cut-out for mounting style -F3  
with rocker and push button**



**Cut-out for mounting style -F5/-F7  
with rocker**



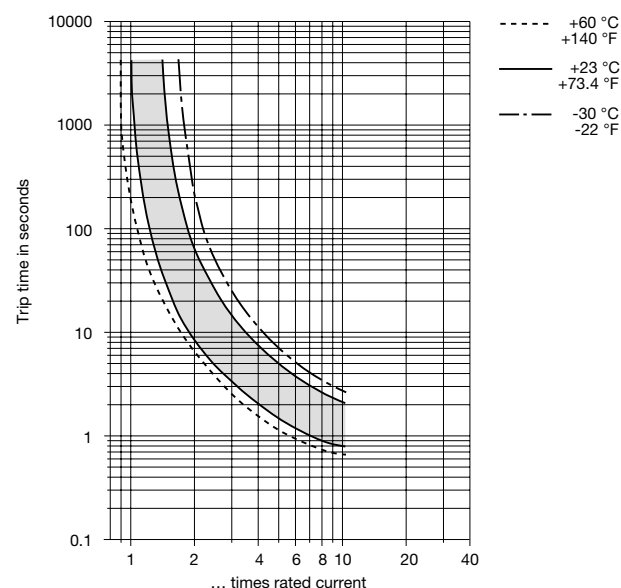
| panel thickness | mm   | 1.2 <sup>+0.4</sup>             | 1.6 <sup>+0.8</sup>             | 2.4 <sup>+1</sup>               |
|-----------------|------|---------------------------------|---------------------------------|---------------------------------|
|                 | inch | .047 <sup>+0.016</sup>          | .063 <sup>+0.031</sup>          | .094 <sup>+0.039</sup>          |
| dimension       | mm   | 45 <sup>+0.2</sup><br>-0.05     | 45 <sup>+1.1</sup><br>-0.05     | 45 <sup>+2.2</sup><br>-0.05     |
| "A"             | inch | 1.77 <sup>+0.008</sup><br>-.002 | 1.77 <sup>+0.043</sup><br>-.002 | 1.77 <sup>+0.087</sup><br>-.002 |

Edges of working parts: ISO 13715

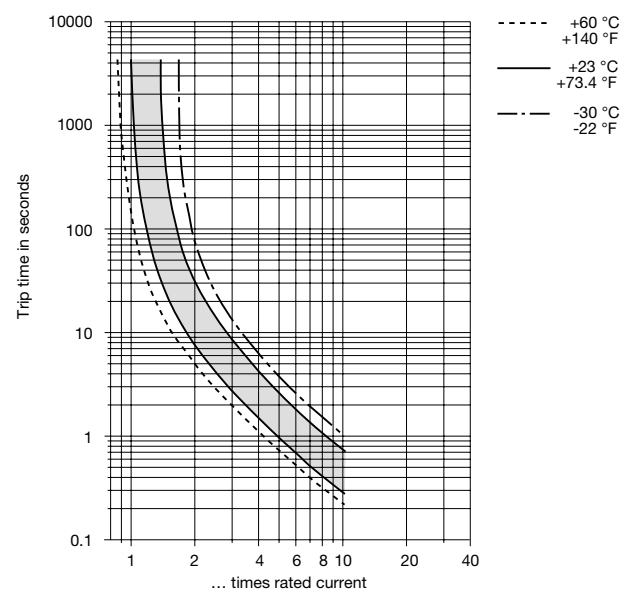
## Typical time/current characteristics

single or double pole load

**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 | -22 | -4   | +14  | +32  | +73.4 | +104 | +122 | +140 |
|---------------------|----|-----|------|------|------|-------|------|------|------|
| temperature         | °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 |

## Approvals

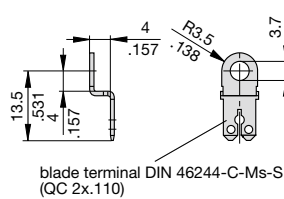
| Authority | Standard     | Rated voltage                                | Current ratings                                                                                        |
|-----------|--------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------|
| VDE       | IEC/EN 60934 | 3 AC 415 V<br>AC 240 V<br>DC 50 V<br>DC 28 V | 0.1 A...16 A (2-pole)<br>0.1 A...20 A<br>0.1 A...20 A (2-pole)<br>0.1 A...4 A (1-pole)<br>0.1 A...20 A |
| UL        | UL 1077      | AC 250 V<br>DC 50 V<br>AC 250 V              | 0.1 A...20 A<br>0.1 A...20 A<br>30 A (2 poles in parallel)                                             |
| CSA       | C22.2 No 235 | AC 250 V<br>DC 50 V<br>AC 250 V              | 0.1 A...20 A<br>0.1 A...16 A<br>30 A (2 poles in parallel)                                             |
| CQC       | GB 17701     | AC 240 V<br>DC 50 V                          | 0.1 A...20 A<br>0.1 A...20 A                                                                           |

## Accessories

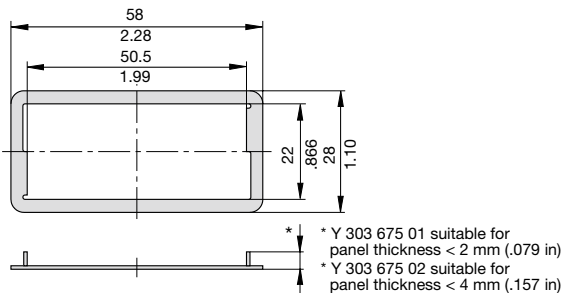
### Insulated cover Y 303 068 01



### Terminal adapter Y 303 862 01



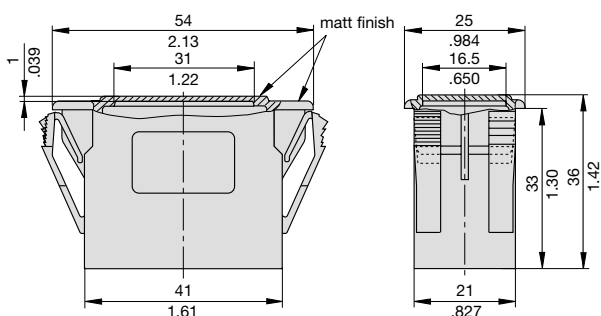
### Spacer for 3120-F3... Y 303 675 01/02



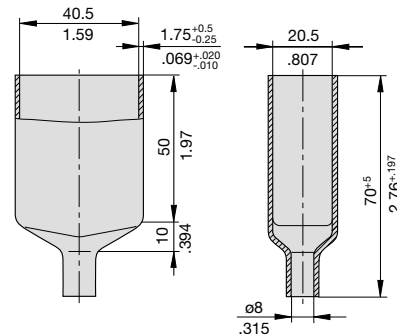
### Spacer for 3120-F5... Y 303 676 01



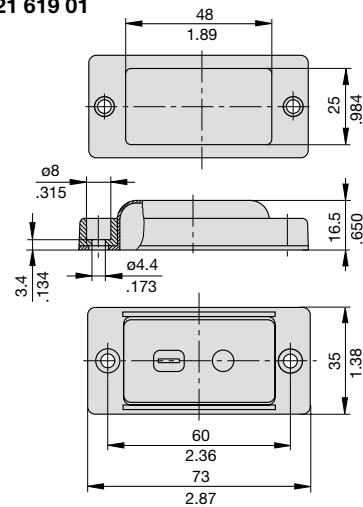
### Blanking piece in -F3 frame Y 303 885 31



### Rear terminal shroud black (IP64) Y 304 275 01



### Water splash cover, transparent (IP66) for style -F5.. X 221 619 01



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.

## Description

The appliance inlet module X3120 with circuit breaker type 3120-F5/-F7/-F8 combines three functions within a single component: A C20 appliance inlet, a rocker-actuated or push button switch and resettable overcurrent protection. Screw-type mounting from the front or from the rear.

## Typical applications

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

## Order numbering code

### Type No.

**X3120** Appliance inlet module for circuit breaker type 3120

### Module

**B** appliance inlet C20

### Version

**04** screw-type mounting

### Accessories

**00** without

### Version

**00** not wired; mounting position 3120: ON position to connector

**01** not wired; mounting position 3120: OFF position to connector (standard)

### Assembly status

**M** module supplied with circuit breaker 3120 fitted

**X3120-B 04 00 01 M** ordering example

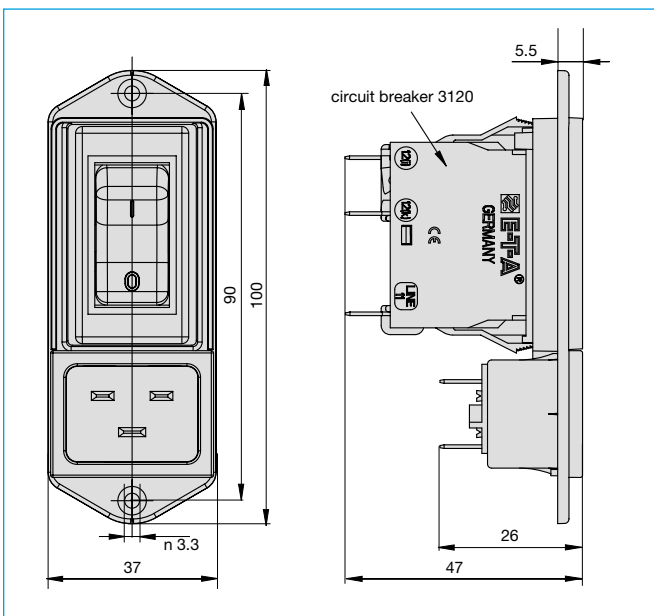
## Approvals

ENEC, UL, CCC

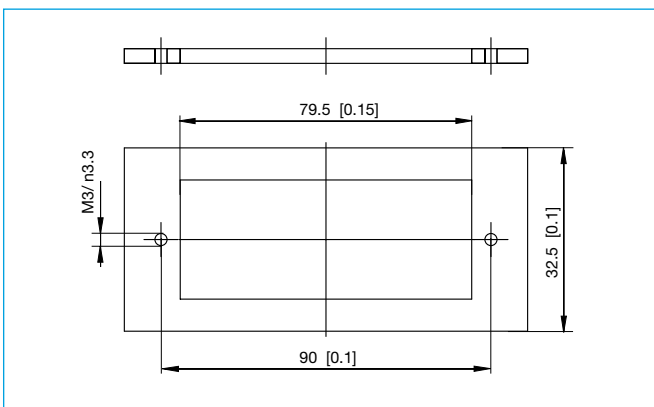
## Technical Data

|                     |                                                                                                         |
|---------------------|---------------------------------------------------------------------------------------------------------|
| Rated voltage       | AC 240 V                                                                                                |
| Current rating      | 16 A (IEC)<br>20 A (UL/CSA)                                                                             |
| Ambient temperature | -25°C ...+ 70°C                                                                                         |
| Number of poles     | L, N + earth                                                                                            |
| Protection class:   | I                                                                                                       |
| Mounting method:    | screw-type mounting<br>(front or rear)                                                                  |
| Connection:         | blade terminals DIN 46244<br>6.3mm x 0.8mm                                                              |
| Housing material:   | thermoplastics, black<br>UL94V-0                                                                        |
| Appliance inlet:    | C20 according to IEC/EN 60320-1,<br>UL498                                                               |
| Mains switch:       | Circuit breaker 3120-F5/-F7/-F8<br>(3120-F8 with push button actuation:<br>technical data upon request) |

## Dimensions



## Cut-out dimensions





**Стандарт  
Электрон  
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

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

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

**Наши контакты:**

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331