

Circuit Breaker/Switch Combination 3120-N

New Generation



3120-N circuit breaker/switch combination

Protecting and switching in a single component



Are reliable and cost-effective designs important to you? The 3120-N circuit breaker/switch combination helps you significantly reduce mounting and wiring time as well as expenses for material planning and stocking expenses.

E-T-A's **3120-N** is a single pole or double pole thermal circuit breaker with a bimetal trip element that also serves as an ON/OFF switch. After tripping due to overcurrent, the **3120-N** can easily, reliably and quickly be reset. Time-consuming replacement of fuses is eliminated.



3120-N circuit breaker/switch combination with rocker actuation

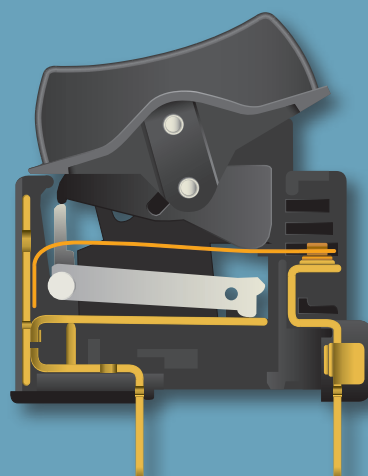
Integral overcurrent protection

The 3120-N circuit breaker/switch combination contains a high-end bimetal strip tripping element. The trip time depends on the peak and duration of the overcurrent as well as the ambient temperature.

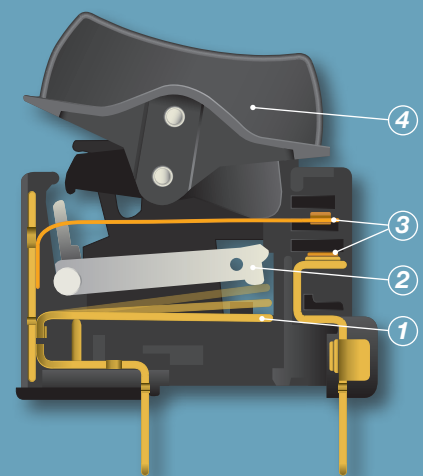
Advantages of bimetal trip elements:

- They offer optimal overload protection.
- They tolerate inrush current peaks from motors, transformers and magnetic valves.
- They trip faster at high ambient

Switching status **ON** (contact closed)



Switching status **OFF** (contact open)



temperatures. This is a major advantage for all electrical loads where resistance strongly depends on the ambient temperature.

The overcurrent heats up the bimetal (1). The bimetal bends upwards and actuates the trip lever (2): The contacts (3) open and the rocker actuator snaps (4) into the OFF position.

The 3120-N rocker version is available as non-lighted or lighted (12 V - 400 V) and offers various actuator colours as well as marking choices. The 3120-N push button includes the traditional red/green option as well as a unique offering of protection from accidental operation.

Add-on modules for undervoltage release, magnetic trip, remote trip and auxiliary contacts are also available. Appliance inlet modules, plug-in connectors, terminal adapters and a range of additional accessories guarantee solutions for your challenging applications.



3120-N circuit breaker/switch combination with push button actuation

Your benefits

- **No fuse replacement required**
After tripping due to overcurrent, the 3120-N can easily, reliably and quickly be reset.
- **Reduced mounting and wiring time**
You only mount one component. In addition, cables to connect switch and blade fuse are eliminated.
- **Reduced planning and storage costs**
3120-N replaces a switch, a fuse-holder and blade fuses. This makes purchasing logistics much easier.
- **Space-saving design**
The 3120-N features space-saving integral overcurrent protection. This leaves room for creativity and ideas in terms of space design, even in constricted areas.
- **Enhanced reliability**
Less single components always mean: less sources of error. E-T-A's 3120-N helps you consistently increase the overall reliability of your products.



3120-N circuit breaker/switch combination with rocker actuation

The **3120-N** circuit breaker/switch combination with rocker actuation is available in three basic versions: A standard version, a version with actuator guard and a version with an innovative IP65 rated accordion-style seal. All three versions have powerful clamping arms for a no-slip fit in the panel and a tamper printed marking. The versions with actuator guard and accordion-style seal can also easily and reliably be operated with gloves.



Standard version

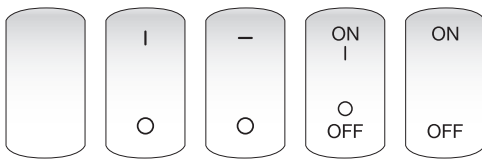


Version with actuator guard



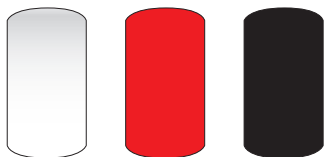
Version with innovative IP65 rated accordion-style seal

Rocker actuator markings

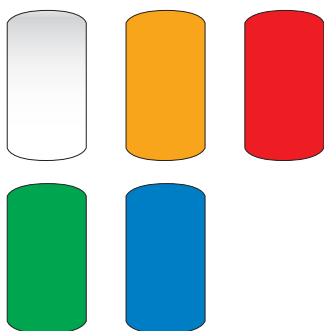


Rocker actuator colours

without illumination



with illumination



Illumination voltage range:

DC 12 V, DC 24 V, DC 48 V
AC 115 V, AC 230 V, AC 400 V

Technical data of 3120 circuit breaker/switch combination with rocker actuation

Short description

Thermal circuit breaker, also serving as ON/OFF switch for equipment and machines. A switch-only version is also available upon request.

Voltage ratings	AC 240 V, AC 415 V (2-pole up to 16 A only) DC 50 V
Current rating range	0.1...20 A
Mounting method	fast snap-in mounting
Terminals	blade, screw or push-in
Compliances	REACH RoHS

Approvals



Enhanced machine uptime

The seal is rated to IP65 according to DIN EN 60529 (VDE 0470, part 1). Even fine dust or water jets will not cause the device to fail or damage the equipment. When mounting the circuit breaker, the rubber gasket encloses the bezel and tightly presses to the panel, so the mounting cut-out is also protected.

Non-polluting silicone

The seal is made of environment-friendly silicone. It does not contain any toxic plasticisers. In addition, it is significantly more flexible in a cold climate. Switching operations at low temperatures are as smooth as at normal ambient temperatures. Additionally, the silicone seal is tolerant to ozone, ultraviolet light and most oils and acids.

Easy actuation

The seal of E-T-A's **3120-N** makes the rocker easily accessible. Switching the device is simple, even when the user is wearing gloves.



Ease of actuation,
even when wearing
work gloves



The **non-polluting silicone seal** does not contain any toxic plasticisers



Worldwide unique:
circuit breaker/switch combination
with innovative accordion-style seal

Double protection: The innovative accordion-style seal not only seals the actuating area.

A **rubber gasket** encloses the bezel and reliably protects the mounting hole against ingress of water or dust



Your benefits

- **Unrivalled uptime of machinery and devices** due to sealing of rocker and mounting cut-out
- **Ease of actuation** thanks to a freely accessible rocker actuator
- **Non-polluting,** since it does not contain any noxious plasticisers

3120-N circuit breaker/switch combination with push button actuation

The **3120-N** circuit breaker/switch combination includes the traditional 2 button red/green option as well as a unique selection for accidental operation prevention. It has three basic versions: a standard version, a version with splash cover and a purely reset version with only one push button. All versions have powerful clamping arms for a no-slip fit in the panel and an integral actuator guard. Thanks to large push buttons, the breakers can easily be switched on and off even when wearing gloves.



Standard version



Version with splash cover

Marking options / colour combinations



without
illumination



with
illumination

Illumination voltage range:

DC 12 V, DC 24 V, DC 48 V
AC 115 V, AC 230 V, AC 400 V



Reset version with only one push button

Worldwide unique
Double pole protection in a resettable
circuit breaker with reset button

Technical data of 3120 circuit breaker/switch combination with push button actuation

Short description

Thermal circuit breaker, also serving as ON/OFF switch for equipment and machines. A switch-only version is also available upon request.

Voltage ratings	AC 240 V, AC 415 V (2-pole up to 16 A only) DC 50 V
Current rating range	0.1 ... 20 A
Mounting method	fast snap-in mounting
Terminals	blade, screw or push-in
Compliances	REACH RoHS
Approvals	

Enhanced uptime of equipment and machinery

The 3120-N circuit breaker/switch combination is also available with a robust and easy to clean PVC water splash cover. It seals both the operating area and the mounting hole.

Easy and reliable actuation

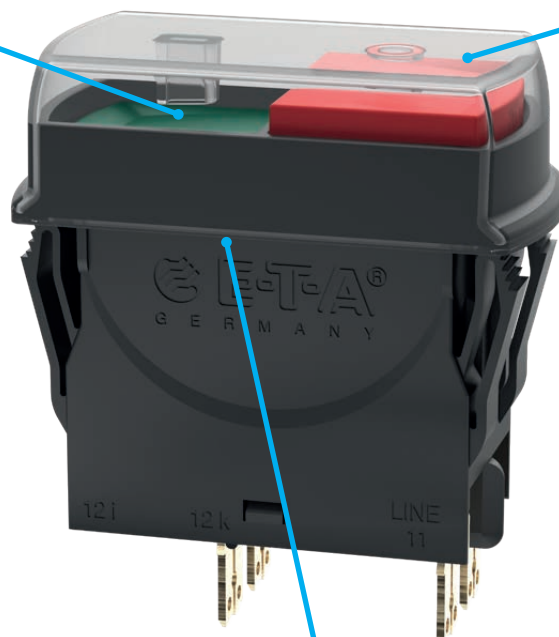
Thanks to large push buttons, the 3120-N circuit breaker/switch combination is easy to actuate even with a PVC splash cover. And even if the operator wears gloves. Another plus: The crystal-clear cap ensures the switching status is easy to see.



Thanks to large push buttons, the 3120-N circuit breaker/switch combination is easy to actuate even with a PVC splash cover. **Even with gloves!**



No health hazard!
The PVC splash cover is 100% free of harmful DEHP plasticisers.



A **rubber gasket** encloses the bezel and reliably protects the mounting hole against ingress of water or dust



Your benefits

- **Easy and reliable actuation** thanks to large push buttons
- **Increased machine and equipment uptime** through sealing of push buttons and mounting hole
- **Enhanced safety** through integral actuator guard
- **Clear visibility** of switching status

3120-N circuit breaker/switch combination

Add-on modules and connection options

Easily mounted add-on modules are available for undervoltage release, magnetic trip, remote trip and auxiliary contact function.

By default, the undervoltage release modules are electrically connected to the main circuit. They can also be supplied with terminals separated from the main circuit

if necessary. They allow easy and cost-effective realisation of safety circuits.

The magnetic trip module trips the circuit

breaker/switch combination at overload currents from four times rated current within milliseconds.



3120-N with undervoltage release module



3120-N with remote trip module



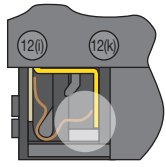
3120-N with fast magnetic trip module



3120-N with auxiliary contact module (change-over contact)

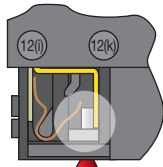
Add-on modules and their functionalities

- **Undervoltage release modules:** They reliably prevent personal injury through automatic re-start after voltage dip or power failure.
- **Fast magnetic trip modules:** The magnetic trip module trips the circuit breaker/switch combination at overload currents from four times rated current within milliseconds.
- **Auxiliary contact modules:** They serve for cost-effective initiation of alarm or consecutive circuitries or for status indication of main contacts.
- **Remote trip modules:** They trip the circuit breaker/switch combination with an impulse signal.



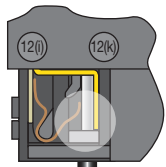
1

Rigid or flexible conductors with wire end ferrules can be pushed in directly - **without using any tools**



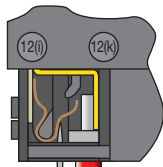
2

The contact spring **opens** automatically when pushing in the conductor and provides the required pressure force against the current bar.



3

The high-end spring made of chromium nickel steel ensures a **permanently constant** contacting of conductors.



4

The conductors can very easily be released again with a **standard screw driver**.

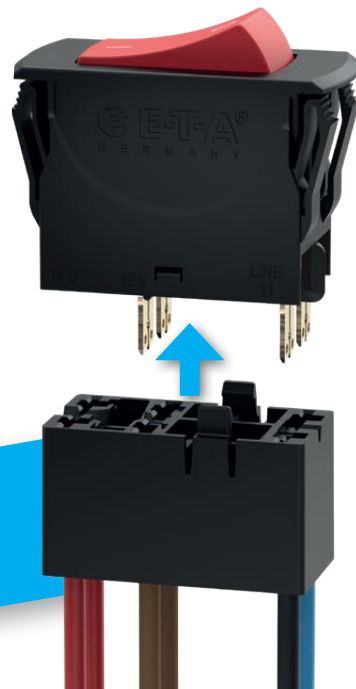
E-T-A is the first manufacturer in the world to launch a circuit breaker/switch combination with push-in connection technology - the **3120 N...-PT**. This design allows the quick, easy, and reliable connection of conductors. There are no tools required. The conductor can very easily be pushed in because of the special spring contour. This reduces wiring

times and prevents fatigue symptoms. The connection will withstand harsh shock and vibration conditions due to the high surface pressure of the contact spring that is made of a special spring steel. **This type of connection is 100% protected against brush contact.**



Worldwide unique
Circuit breakers for equipment protection with push-in connection technology

As an accessory, E-T-A offers a plug-in connector for easily wiring the connecting cables. Two retaining clips provide a tight connection between the plug-in connector and the breaker. The dimensions of the female contacts (tab width 6.3) are in accordance with DIN 46340 part 3, shape A. E-T-A standard delivery scope is without female contacts.



Worldwide unique
Plug-in connector for circuit breakers for equipment protection

Your benefits

Push-in connection technology

- **Reduced costs** through quick and easy wiring
- **Less maintenance and repair efforts** through permanently constant cable connections
- Enhanced **user safety** due to protection against brush contact

Plug-in connectors

- **Reduction of wiring time** during final installation saves time and costs.
- **Breakers can be changed quickly and easily**

3120-N circuit breaker/switch combination

Appliance inlet modules

Systematic reduction of components is a major reason for a successful cost-saving design. And fewer components normally help save space and allow for designing compact products.

The appliance inlet module **X3120-B** combines three functions within a single component: A C14 appliance inlet, a rocker switch and resettable overcurrent protection

protection. In this module the two latter functions are provided by E-T-A's well-proven **3120-N** circuit breaker/switch combination.



Three functions combined in a single device:
IEC inlet plug, ON/OFF switch, resettable overcurrent protection



Technical data of appliance inlet module X3120-B

Mounting method	screw-type mounting
Appliance inlet	C20 to IEC 60320
Current rating of appliance inlet	16 A (IEC), 20 A (UL/CSA)
Voltage rating of the appliance inlet	AC 240 V
Terminals	blade terminals 6.3 x 0.8 mm
Integral circuit breaker	3120-N5
Approvals	ENEC, UL/CSA, CQC

The appliance inlet module **X3120-A** combines four functions within a single component: An IEC inlet plug, an ON/OFF switch, resettable overcurrent protection and a line filter. The 3120-N circuit breaker/

switch combination provides the function of an ON/OFF switch and ensures over-current protection.

The 3120-N thermal circuit breaker/switch combination protects the line filter in the event of an overload.



Combining four functions in a single device:
IEC inlet plug, ON/OFF switch, resettable overcurrent protection, line filter

Ten in one

Example of components reduction in the event of 2-pole protection



Technical data of appliance inlet module type X3120-A	
Mounting method	screw-type mounting
Appliance inlet	C14 according to IEC60320-1, UL 498
Current rating of appliance inlet	10 A (IEC), 15 A (UL/CSA)
Voltage ratings	AC 240 V
Terminals	blade terminals 6.3 x 0.8 mm
Integral circuit breaker	3120-N5
Line filter version	standard filter, filter for medical equipment
Current ratings of line filter	1 A, 3 A, 6 A, 8 A, 10 A, 12 A, 15 A
Approvals	ENEC, UL/CSA, CQC

Your benefits

- **Reduced planning and storage costs**
- **Reduced mounting and wiring time**
- **High availability:**
The circuit breakers can easily, quickly and reliably be reset after tripping. Fuse replacement is eliminated.

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