



## Product manual Z0511

Series explosion-proof  
Circuit breakers



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Z0511-rev.13.12.17



## Purpose of these instructions

- Working in hazardous areas, the safety of personnel and plant depends on complying with all relevant safety regulations.
- Assembly and maintenance staff working on installations therefore have a particular responsibility. They require precise knowledge of the applicable standards and regulations.
- These instructions give a brief summary of the most important safety measures. It supplements the corresponding regulations which the staff must study.



## SAFETY INSTRUCTIONS

- Use the explosion-proof circuit breaker only for its intended purpose.
- Explosion-proof circuit breakers are not suitable for zone 0 hazardous areas!
- Incorrect or impermissible use or non-compliance with these instructions invalidates our warranty provision.
- No changes to the device impairing its explosion protection are permitted.
- Use the circuit breaker only if they are clean and undamaged.
- Any damage can invalidate the Ex-protection.
- Observe the following during installation and operation:
  - National safety regulations;
  - National accident prevention regulations;
  - National installation regulations (e.g. IEC 60079-14);
  - Generally recognized technical regulations;
  - Safety guidelines in these operating instructions;
  - Characteristic values given on the components.

## Conformity to standards

The explosion-proof circuit breaker is designed and manufactured according to standard of ISO 9001.

The explosion-proof circuit breaker is conformity to the directive 94/9/EC, ATEX and the following standards:

EN60079-0 : 2012  
EN60079-1 : 2007  
EN60079-7 : 2007

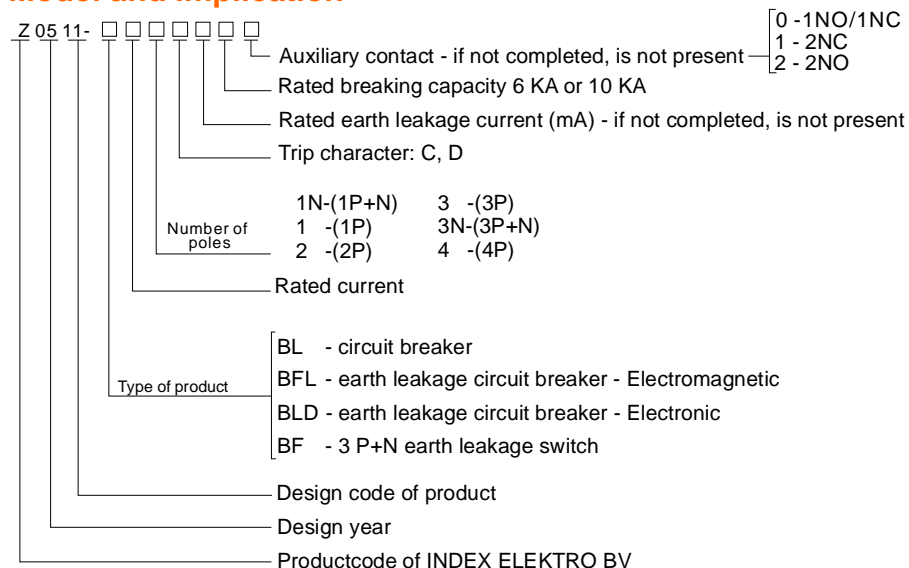
## Applicable scope

To ensure that the explosion-proof circuit breaker can be operated normally and safely, user shall observe the following:

- The products are applicable for use in hazardous areas zone 1 and zone 2.
- The products are used for isolation the power. Do not use as manual operated isolation switch.
- The products which are Ex components can't be used separately but with the explosion-proof enclosure suitable for the environment.



## Model and implication



## Main technical data

Ex- mark: II 2G Ex de IIC Gb (-20°C ≤ Ta)  
 II 2G Ex de IIB Gb (-40°C ≤ Ta)

Testcertificate: TÜV 14 ATEX 7618 U

Ambient temperature: -20°C/-40°C ≤ Ta ≤ +60°C

Degree of protection : IP20

Terminals: main contacts 1 to 10 mm<sup>2</sup> (6 to 10 mm<sup>2</sup> used in conjunction with compression lug) Auxiliary contacts 1 to 2.5 mm<sup>2</sup>

The current related to the cross sectional area should comply with IEC 60947, EN60947 stipulations

Proposed tightening screw torque of terminals:

Major contact 1.5Nm, Aux contact 1.1Nm

See figure one and table one for the outline and mounting dimensions

BL - circuit breaker

Rated current: Max 40A, rated voltage: 230/400VAC, 50/60Hz; 250VDC, rated breaking capacity 6KA or 10KA

Trip character: C or D Characteristic curve

Auxiliary contact: 250/440V, 50/60Hz, 4A; 110VDC 0.5A 1NO+1NC

BFL - electromagnetic earth leakage circuit breaker

Rated current: Max 40A, rated earth leakage current: 30, 100 or 300 mA.

Rated voltage: 230/400VAC - 50Hz

Rated breaking capacity: 6 KA or 10 KA, trip character: C characteristic curve

BLD - earth leakage circuit breaker module (electronic)

Rated current: Max 40A, rated earth leakage: 30, 100 or 300 mA.

Rated voltage: 230/400V 50Hz

Rated breaking capacity: 6 KA or 10 KA

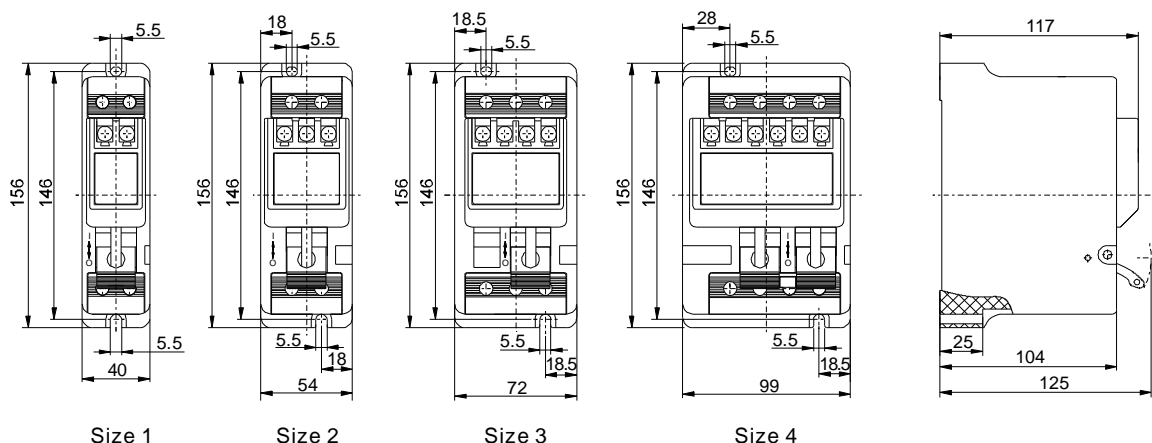
Trip character: C or D Characteristic curve

BF - earth leakage switch

Rated current: max. 40A, rated earth leakage current: 30, 100 or 300 mA.

Rated voltage: 230/400VAC - 50Hz

Rated breaking capacity: 6 KA or 10 KA



Size	Size 1	Size 2	Size 3	Size 4
Number of poles	1P 1P+N	2P 1P + Auxiliary contact	3P 2P + Auxiliary contact	3P+N - 4P 3P + Auxiliary contact 3P + Auxiliary contact 4P + Auxiliary contact

## Operation/installation

Transport and storage in original packaging only. National safety and installations regulations and the generally accepted rules of engineering practice must be observed when mounting and operating this equipment.

For the sake of the normal operation and the safety of explosion-proof circuit breaker, the user shall observe the following provisions:

Explosion-proof circuit breaker is suitable for use in hazardous areas, zones 1 and 2.

The circuit breaker should be used under the following atmospheric condition:

The pressure is 80kPa (0.8bar)~110kPa (1.1bar)

The volume ratio of standard oxygen content is 21% air.

The ambient air relative humidity is less than: 95%

There is no obvious shake and impact vibration

Under the environment of gas or vapor that there is no obvious destruction insulation;

The products shall be mounted according to the standards given in IEC60947-5-1.

The electric principle for the product is given on the their nameplates

The series products which are Ex components can't be used separately but with the explosion-proof enclosure suitable for the environment.

The module mounting should be firm and reliable.

The supply terminals are designed for the connection of copper conductors. If multi-or fine-wire connecting cables are used, the wire ends will have to be handled in accordance with the applicable national and international rules.

The conductor itself shall not be damaged.

The wire should be pre treatment before connected to the terminals when wiring. The standard compression lug or the standard tubiform preinsulated connector should be added to the wire connection. The connection should be reliable and the false connection of conductor is not permitted.



## Repairs / Maintenance

- Observe the relevant national regulations for your country!
- Only parts from our company that can be used to replace or maintain, and the operation should be carried out by professional electrician!
- The test button "T" of earth leak circuit breaker shall be pressed once (recommendation every month) to check its normal function.
- When (earth leak) circuit breaker has switched off be sure that no short circuit is present before switching the circuit breaker to the on position.
- The following points must be checked during maintenance:
  - \* Compliance with permitted temperatures;
  - \* Check if there is any crack in the components.
  - \* Check if the component has been fixed reliably.
  - \* Check if the wiring is not loose or fixed.
  - \* Check if the flame-proof joints is damaged.

## Schedule of limitations

Service ambient temperature:  $-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$  (Ex d e IIC Gb)  
 $-40^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$  (Ex d e IIB Gb)

The surface temperature on the component in worst condition (at max. current and max. ambient temperature) is expected to be maximum  $80^{\circ}\text{C}$  and the circuit breaker is designed for a maximum temperature resistance (service temperature) of  $110^{\circ}\text{C}$ .

When assembly, operation and maintenance, the operator should follow the requirements of EN 60079-14

The circuit breaker (component) is intended to be installed in a certified explosion-proof enclosure, certified as equipment.

## Recycling / Disposal

- The respective valid national regulations for waste disposal shall be observed when disposing of apparatus!
- We are pleased to answer any questions. In this case you can contact INDEX ELEKTRO BV.