(1) EC TYPE-EXAMINATION CERTIFICATE

(2) Equipment and Protective Systems intended for use in Potentially Explosive Atmosphere - **Directive 94/9/EC**

(3) EC Type-Examination Certificate Number

TÜV 14 ATEX 7618 U

(4) **Equipment:** **Explosion-proof circuit breaker module Z0511 – □/□/□/□/□/□-□**

(5) **Manufacturer:** **INDEX ELEKTRO BV**

(6) **Address:** **Harregatplein 15-3214VP Zuidland**

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The TÜV Rheinland Zertifizierungsstelle for ex-protected products of TÜV Rheinland Industrie Service GmbH, Notified Body No. 0035 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmosphere, given in Annex II to the Directive. The examination and test results are recorded in the confidential report GC / Ex 7618.00 / 14

(9) Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:

EN 60079-0: 2012 **EN 60079-1:2007** **EN 60079-7:2007**

except the requirements, which are listed under item (18).

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type-Examination Certificate relates only to the design and specification for construction of the equipment or protective system. It does not cover the process for actual manufacture or supply of the equipment or protective system, for which further requirements of the directive are applicable.

(12) The marking of the equipment shall include the following:

II 2 G Ex d e IIC Gb (-20°C≤Ta≤+60°C)
Ex d e IIB Gb (-40°C≤Ta≤+60°C)

TÜV Rheinland ExNB for explosion protected equipment

Cologne, 2015-05-27

Dipl.-Ing. Klauspeter Graffi

This EC-Type-Examination Certificate without signature and stamp shall not be valid.
This EC-Type-Examination Certificate may be circulated only without alteration. Extracts or alterations are subject to approval by the TÜV Rheinland Notified Body of TÜV Rheinland Industrie Service GmbH, Am Grauen Stein 51105 Köln
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TÜVRheinland® Precisely Right.

(13) Annex to

(14) # EC-Type Examination Certificate
TÜV 14 ATEX 7618 U

(15) **Description of equipment**

15.1 Equipment and type:

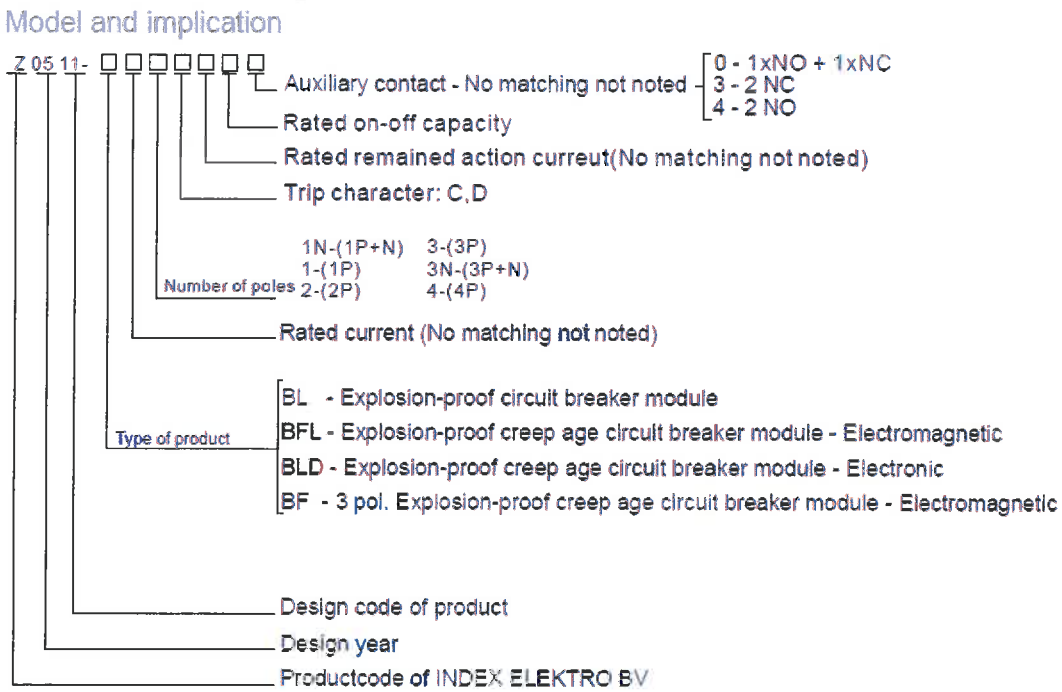
Explosion-proof circuit breaker module
Type: Z0511–□/□/□/□/□/□-□

15.2 Description

1. This report covers the following types:

Z0511–□/□/□/□/□/□-□, 230/400V AC, 50/60Hz; 250V DC, ≤40A

Model and implication of product:



Note: 1) The sample types of service temperature test is selected according to the maximum current for each circuit breaker module. The samples are:

Type Z0511-BL/40/1/C, 230/400V AC, 40A;

Type Z0511-BL/40/2/C, 230/400V AC, 40A:

Type Z0511-BL/40/3/D, 230/400V AC, 40A:

Type Z0511-BL/40/4/C, 230/400V AC, 40A.

2) The sample types of determination of explosion pressure (reference pressure) test is selected according to the Exd maximum net volume.

3) The sample types of other tests (besides terminal insulating material tests) are: Type Z0511- BL/16/1N/C, Type Z0511-BL/16/2/C, Type Z0511-BL/16/2/C/0, Type Z0511-BF/25/3N/30.

4) The sample types of terminal insulating material tests are: Type Z0511-BL/40/1/C, Type Z0511-BL/40/2/C, Type Z0511-BL/40/3/D, Type Z0511-BL/40/4/C, Type Z0511-BL/16/2/C/0.

3. Main technical date

3.1 BL Explosion-proof circuit breaker module

Rated current: Max 40A

Rated voltage: 230/400V, 50/60Hz; 250V DC

Rated on-off capacity: 6kA、10kA

Trip character: C, D Characteristic curve

Auxiliary contact: 250/440V, 50/60Hz, 4A, 110V, DC, 0.5A

1NO+1NC

Terminals: main contacts 1～10mm^2 (6～10mm^2 used in conjunction with compression lug)

auxiliary contacts 1～2.5mm^2

3.2 BFL Explosion-proof creep age circuit breaker module (electromagnetic)

Rated current: Max 40A

Rated voltage: 230/400V 50/60Hz

Rated remained action current: 0.01, 0.03, 0.3A

Rated on-off capacity: 6kA、10kA

Trip character: C Characteristic curve

Terminals: main contacts 1～10 mm^2 (6～10 mm^2 used in conjunction with compression lug)

3.3 BLD Explosion-proof creep age circuit breaker module(electronic)

Rated current: Max. 40A

Rated remained action current: 0.01, 0.03, 0.3A

Rated voltage: 230/400V 50/60Hz

Rated on-off capacity: 6kA, 10kA

Trip character: C, D Characteristic curve

Terminals: main contacts 1～10 mm^2 (6～10 mm^2 used in conjunction with compression lug)

3.4 BF Explosion-proof creep age circuit breaker module (electromagnetic)

Rated current: Max. 40A

Rated remained action curreut:0.01, 0.03, 0.3A

Rated voltage: 230/400V 50/60Hz

Rated short circuit strength: 10kA

Terminals: main contacts 1～10 mm^2 (6～10 mm^2 used in conjunction with compression lug)

4. Structure of production

4.1 General description

Z0511 series explosion-proof circuit breaker modules have types such as BL explosion-proof circuit breaker module, BFL explosion-proof creep age circuit breaker module (electromagnetic), BLD explosion-proof creep age circuit breaker module (electronic), BF type explosion-proof creep age circuit breaker module (electromagnetic). The series products can't be used separately but with the explosion-proof enclosure suitable for the environment. Those four types explosion-proof circuit breaker modules have the flameproof main body and increased safety terminals.

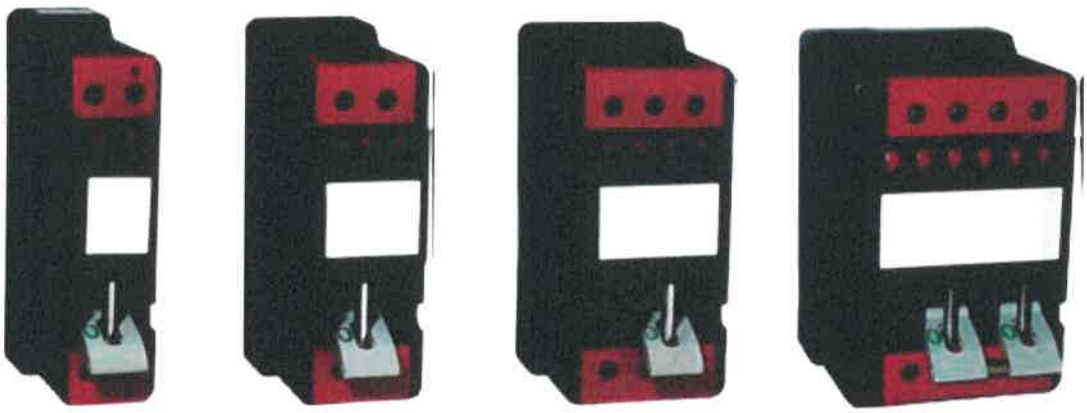
4.2 Z0511 series explosion-proof circuit breaker module (as drawing 2CZ0511.01N.000) is formed to a group by Item 1, the enclosure of the flameproof circuit breaker and Item 15, the bottom cover of circuit breaker after being fixed with the bolt, Item 19. A flameproof cavity is formed through adhesive bonding technology. There is a weather-proof circuit breaker module mounted in the flameproof cavity. The explosion-proof circuit breaker module to be switched on or off is achieved by pushing and pull back the hook, Item 4.

4.3 One flameproof joint of Z0511 series explosion-proof circuit breaker module (as drawing 2CZ0511.01N.000) is composed of metal flameproof shaft (Item3, the control shaft of circuit

breaker) and the plastic explosion-proof enclosure (Item 1, the enclosure of circuit breaker). Another is formed by flameproof metal shaft(Item 9, the terminal pillar of circuit breaker) and the plastic explosion-proof enclosure(Item 1, the enclosure of circuit breaker). If there is auxiliary contact, the auxiliary terminal pillar and the enclosure of circuit breaker can form one flameproof joint of which length L≥12.5mm, ic ≤0.15mm. The enclosure of circuit, Item 1, and the bottom cover, Item 15 is glued after fixed with the bolt, Item 19. Its length is L≥ 10mm, and the net cavity velum is less than 500cm3. It' s increased safety terminal. The degree of protection for the shield is IP20. M10 stopping plug, and the enclosure are sealed into a whole with sealant to ensure their mechanical strength. This length is L≥10mm.

4.4 The explosion-protected structure of Z0511 explosion-proof creepage breaker module (as drawing 2CZ0511.02L.000), such as the terms 2.3, the difference is that there is one more flameproof joint which is formed by flameproof metal shaft (Item six, the leakage test pressed pole) and metal inserting parts(Item 5, the bushing), specified in the drawing. The flameproof joint is: L≥12.5mm, ic≤0.15mm.

5. Explosion-proof circuit breaker module Photos:



Z0511-BL/40/1/C Z0511-BL/40/2/C Z0511-BL/40/3/D Z0511-BL/40/4/C

15.3 Technical Data

Rated voltage	230/400V AC, 50/60Hz; 250V DC, ≤40A
Ambient temperature range	-20 C° ≤Ta≤ +60 C° (Ex d e IIC Gb) -40 C° ≤Ta≤ +60 C° (Ex d e IIB Gb)
Ingress protection	IP20

(16) **Test-Report No.** GC / Ex 7618.00 / 14

Parts of the device, which already fulfil the requirements for the category, were not approved and assessed by TÜV Rheinland Industrie Service.

The applicability and assembly of mechanical and electrical parts and components were assessed and approved by TÜV Rheinland Industrie Service with respect to the requirements of explosion protection.

(17) **Schedule of Limitations**

1. Ambient temperature: -20°C ≤Ta≤ +60°C (Ex d e IIC Gb),
   -40°C ≤Ta≤ +60°C (Ex d e IIB Gb)

2. The surface temperature on the component in worst condition (at max. current and max. ambient temperature) is expected to be maximum 110 DegC and the circuit breaker is designed for a maximum temperature resistance (service temperature) of 110 DegC.

3. When assembly, operation and maintenance, the operator shall follow the requirements of EN 60079-14 Electrical apparatus for explosive gas atmospheres - Part 14: Electrical installations in hazardous areas (other than mines), beside of the Series Z0511series Explosion-proof load circuit breaker module product operating instruction.

4. Repair and overhaul shall comply with EN 60079-19.

5. The sign 'U', (component certificate), is placed behind the certificate number indicates that this certificate should not be confounded with certificates issued for equipment or protective systems. This component certificate only serves as a basis for the issuing of certificates for equipment or protective systems. The overhaul temperature classification and CE marking requirement is the responsibility of the equipment manufacturer.

6. The circuit breaker (component) is intended to be installed in a certified explosion proof enclosures certified as equipment.

(18) **Basic Safety and Health Requirements**

Covered by afore mentioned standard

TÜV Rheinland ExNB für explosion protected equipment Cologne, 2015-05-27

Dipl.-Ing. Klauspeter Graffi