



# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: IECEx CCVE 15.0003X Issue No: 0 Certificate history:  
Issue No. 0 (2015-12-11)

Status: **Current** Page 1 of 5

Date of Issue: **2015-12-11**

Applicant: **RAEL MOTORI ELETTRICI S.r.l**  
VIA PER RETORTO 7/1, PREDOSA (AL), ITALY  
**Italy**

Electrical Apparatus: **EXPLOSION PROOF MOTORS RL SERIES. THREEPHASE AND  
SINGLEPHASE, FRAMESIZES 56-160**

*Optional accessory:*

Type of Protection: **flameproof enclosure d, increased safety e, protection by enclosure t**

Marking:  
Ex d IIB T4/T5/T6 Gb or Ex de IIB T4/T5/T6 Gb  
Ex tb IIIC T135/T100/T85°C Db IP55/IP66 Ta -40/+60 °C  
  
Ex d IIC T4/T5/T6 Gb or Ex de IIC T4/T5/T6 Gb  
Ex tb IIIC T135/T100/T85°C Db IP55/IP66 Ta -20/+60 °C

*Approved for issue on behalf of the IECEx  
Certification Body:*

Alexander Zalogin

*Position:*

Head of NANIO "CCVE"

*Signature:  
(for printed version)*

*Date:*

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1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:



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**NANIO "CCVE"**  
109377, Moscow, P.O.Box 22,  
Russian Federation





# IECEx Certificate of Conformity

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Manufacturer: **RAEL MOTORI ELETTRICI S.r.l**  
VIA PER RETORTO 7/1, PREDOSA (AL), ITALY  
**Italy**

Additional Manufacturing  
location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

## STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

<b>IEC 60079-0 : 2011</b> Edition:6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-1 : 2014-06</b> Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-31 : 2013</b> Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
<b>IEC 60079-7 : 2006-07</b> Edition:4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

## TEST & ASSESSMENT REPORTS:

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

[RU/CCVE/ExTR15.0004/00](#)

Quality Assessment Report:

[IT/CES/QAR07.0003/08](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The range of three-phase and single-phase asynchronous motors with squirrel cage with frame size 56- 160 completely closed with protection degree IP66. The motors comprise a stator frame, endshields and terminal boxes. The housing is made of aluminium. For full description please see Annex.

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### CONDITIONS OF CERTIFICATION: YES as shown below:

The motor complete with integrated cable gland on the housing is suitable for use with cable diameter only as reported on the same cable gland rubber.

In case of replacement of the fixing screws of the various parts of the casing anti-deflagration you must choose:

- for the closing screws: steel or stainless steel quality 8.8 minimum;
- for tie-rods: stainless steel or steel minimum quality 4.8.

For the version with integral cable, you must connect the free end of the cable or in the safe zone or in a housing with protection Ex d or Ex e.

The step size 56 motor shaft has a maximum gap of 0, 20 mm (instead of 0, 25 mm as shown in table 2 of EN 60079-1)

For IPX6 marking it is mandatory to use a RING SEAL (e.g. brand Corteco) FLAME PATH  
For IPX5 marking a V-ring seal can also be used, redundant (e.g. brand Corteco)



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**Additional information:**

**Annex:**

[Annex to IECEx CCVE 15 0003X.pdf](#)

**NANIO "CCVE"**  
**109377, Moscow, P.O.Box 22,**  
**Russian Federation**



**Annex to IECEx CCVE 15.0003X**

**Issue No. 0**

**Date: 2015/12/11**

**General product information:**

- Three-phase and single-phase asynchronous motors with squirrel cage.
- Completely closed with protection degree IP66 for ventilated and unventilated.
- Insulation class F.
- 2, 4, 6, 8 poles.
- Supply voltage: up to 690V ± 10% to 50Hz or 830V ±10% at 60 Hz in Ex d version; up to 690V ± 10% to 50 Hz or 830V ±10% at 60 Hz in Ex de version.
- Frequency 50/60 Hz.
- Variable frequency from 1 to 200 Hz (power supply with inverter).
- Double speed with a winding and Dahlander connection or with two separate windings
- The motors type R2 56 up to 160 can be used without terminal box.
- Temperature class: T4, T5 and T6 (with T environment constraints mentioned in the marking paragraph).
- Thermal protectors are applied on the winding heads with a maximum number of 3.

N.B. Thermal protectors are optional except for the motors in the following version:

Variable-frequency motors controlled by inverter

Temperature class	T4	T5	T6
Security Temp.	120° C ± 5° C	90° C ± 5° C	70° C ± 5° C

In the case of single-phase motors the capacitors must be external to the motor and placed in safe area or placed inside a special explosion-proof enclosure.

- Polyamide 6ST1 fan with thermal stability from -40° C to + 105° C (gas only).
- For motors with size from 56 to 90 to use NBR O-ring Ø75x1 (terminal box lid) and O-ring in NBR Ø45x1 (motor terminal box joint).
- For motors with size from 100 to 112 to use NBR O-ring Ø100x1 (terminal box lid) and O-ring in NBR Ø. 45. x 1 (motor terminal box joint).
- For motors with size 160 to 132 to use NBR O-ring Ø135 x 2 (terminal box lid) and O-ring in NBR Ø. 65. x 1 (motor terminal box joint).

For engines to be used in the presence of combustible dust: metallic fan or plastic fan with surface resistance not exceeding 10<sup>9</sup> Ohm.

- Characteristics of heating devices:  
maximum input voltage: 550 Volts  
maximum power: 50 Watts