

CERTIFICATE



Italia

[1] **EU-TYPE EXAMINATION CERTIFICATE**

[2] **Equipment or Protective System intended for use
in potentially explosive atmospheres
Directive 2014/34/EU**

[3] EU-Type Examination Certificate number:

TÜV IT 13 ATEX 039 X Rev.2

[4] Equipment or Protective System: Electrical motor RL Series (IIC)

[5] Manufacturer: RAEL motori elettrici S.r.l.

[6] Address: Via per Retorto 7/1
I-15077 Predosa (AL) - ITALY

[7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] TÜV Italia, notified body no. 0948 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. R 13 EX 022

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012+A11:2013 ; EN 60079-1:2014 ; EN 60079-7:2015 ; EN 60079-31:2014

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

[11] This EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

[12] The marking of the product shall include the following:



**II 2G Ex db IIC T6...T4 Gb
II 2G Ex db eb IIC T6...T4 Gb
II 2D Ex tb IIIC T85°C..T135°C Db**

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Issue date: 29th January 2019



PRD N° 081B

Membro degli Accordi di Mutuo Riconoscimento
EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual
Recognition Agreements



**TÜV Italia S.r.l.
Notified body N° 0948**

Alberto Carelli
Alberto Carelli

**Industry Service - Real Estate & Infrastructure
Managing Director**

TÜV Italia has been authorized by Italian government to operate as notified body for the certification of equipment or protective system intended for use in potentially explosive atmospheres. This document is not valid without official signature and logo. The internal reference code is 722178354-5.

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PEX-01-M002_r07 del 29/03/2018

[13]

SCHEDULE



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Certificate History

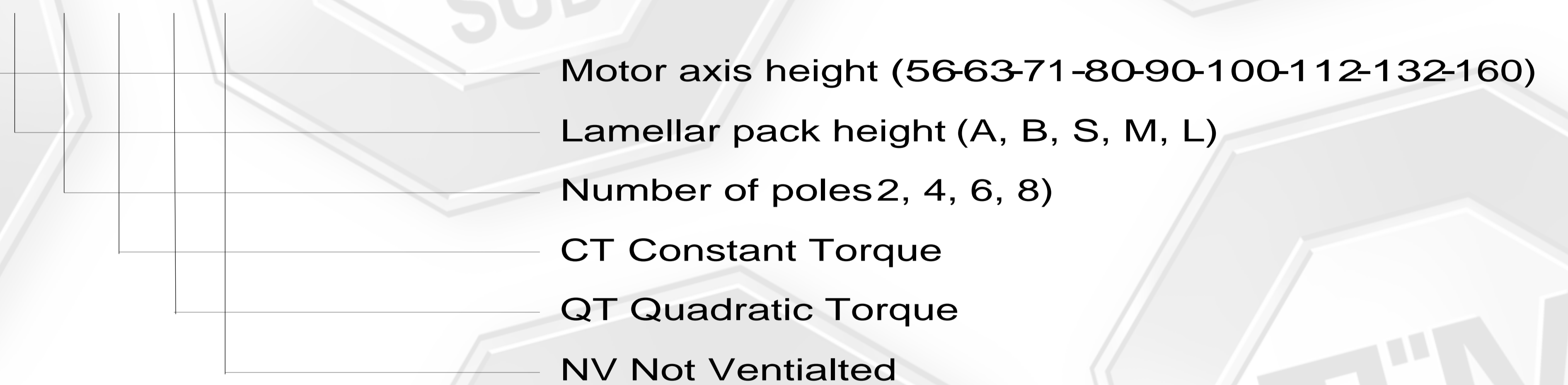
Revision:	Description:	Report rev.:	Issue Date:
-	First issued	-	18/06/2013
1	Constructive update	01	24/02/2014
2	Standard update	02	29/01/2019

[15] **Description of equipment**

The electric motors covered by this certificate are asynchronous three-phase and single phase motors AC series. The motors are made of aluminum alloy with separate compartments: motor enclosure and terminal box for supply and auxiliary circuits connection. Motor enclosure is designed in Ex d type of protection, while terminal box can be Ex d or Ex e type of protection. The motor enclosure satisfies also Ex tb type of protection, mechanical protection IP6X.

The identification code of the RL series electric motors covered by this certificate are:

RL



Rated characteristics

- Temperature class and Ambient Temperature Range have to be considered as in the following table and relevant indication is given on the marking plate.

Temperature Class for gas	T4	T5	T6
Temperature Class for dust	135°C	100°C	85°C
Ambient Temperature Range	-20 to +60°C	-20 to +50°C	-20 to +40°C

- Asynchronous three-phase and single phase squirrel cage.
- Fully enclosed with a degree of protection up to IP66 ventilated and unventilated.
- Insulation class F and H.
- 2, 4, 6, 8 poles.
- Supply Voltage: up to 690V ±10% at 50Hz; up to 830V ±10% at 60Hz.
- 50/60 Hz frequencies.
- Temperature class: T4, T5 e T6 (with constraints about cable written in safety instructions and warning marking)
- Double speed and connection with a winding Dahlander or two separate windings.
- The motors type RL56 up to RL160 can be used without terminal box.
- In case of single phase, capacitors must be external to the motor and located in safe area, or placed inside a special explosion-proof enclosure.
- Polyamide fan 6ST1 with thermal stability – 40°C to +105°C (only for gases).
- For engines to use in the presence of combustible dusts: metallic fan or plastic

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fan with surface resistance not exceeding 10^9 Ohm.

- Variable frequency from 1 to 200 Hz (power inverter):
 - Using of 3 thermal protectors applied on the end of the windings
- The thermal protectors are mandatory for the following version:
 - motors driven by variable frequency inverters

Temperature Class	T4	T5	T6
θ Temp. protection	120°C ±5°C	90°C ±5°C	70°C ±5°C

- Characteristics of heating devices:
 - maximum supply voltage: 550 volts
 - maximum power: 50 watts

Warning label

“DO NOT OPEN WHEN ENERGIZED”

“TO BE ENERGIZED WITH CABLE SUITABLE FOR TEMPERATURE $\geq 80^\circ\text{C}$ ”.

In case of use of anti-condensate heaters:

“HEATERS ...W ...V”

Only for motors without thermal protection:

“WAIT 30 MINUTES BEFORE OPENING”

For motors supplied by inverter:

“PTC xxx°C” (indication of calibrate temperature of PTC)

[16] **Report no.** R 13 EX 022

Routine tests

Motor enclosures satisfied overpressure test as per EN60079-1 with 4x Pref so it is not necessary to perform routine overpressure test.

Motor with Exe terminal box:

Dielectric strength test according to EN60079-7 with voltage $(2U_n+1000)\text{V}$ in period of at least 60 s or $1.2 \times (2U_n+1000)\text{V}$ for at least 100 ms.

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Special conditions for safe use

- The motor complete with integrated cable gland is suitable for use in the case of one cable diameter as shown on the rubber of the cable itself.
- When replacing the screws of the housing anti-explosion parts you will have to choose:
 - For locking screws: steel or stainless steel as a minimum quality class 8.8
 - For tie rods: steel or stainless steel as a minimum quality class 4.8
- For the integral cable version, the user must connect the free end of the cable or in a safe area or inside an enclosure with protection Ex d or Ex e.
- The size 56 step motor shaft has a maximum gap of 0.20 mm (instead of 0.25 mm as per table 2 of EN 60079-1).
- For IPx6 mandatory use of sealing rings on the motor shaft (Corteco) or V ring.
- For motor without cooling fan, output power is derated to 50%.

[18]

Essential Health and Safety Requirements

Assured by compliance with the standards set out in the [9].

[19]

Drawings and Documents

Listed documents (prot. 229382 + 722178354-5)

Title:	Description:	Pag.:	Rev:	Date:
00 Dossier de certificatione	Document list	02	-	08/11/2018
01 Safety notes	Motors RL series safety and assembling instructions manual	05	06	08/11/2018
02 Technical note	Technical note motors series RL	16	02	10/2018
03 MEC 56	DWG: Assembly motor RL56	01	00	23/10/2006
04 MEC 63	DWG: Assembly motor RL63	01	00	24/10/2006
05 MEC 71	DWG: Assembly motor RL71	01	00	25/10/2006
06 MEC 80	DWG: Assembly motor RL80	01	00	26/10/2006
07 MEC 90	DWG: Assembly motor RL90	01	00	27/10/2006
08 MEC 100	DWG: Assembly motor RL100	01	00	20/03/2007
09 MEC 112	DWG: Assembly motor RL112	01	00	21/03/2007
10 MEC 132	DWG: Assembly motor RL132	01	00	02/04/2008
11 MEC 160	DWG: Assembly motor RL160	01	00	01/04/2008
12 Tappo RL 56-63-71-80-90	DWG: Cap ,motors RL 56-63-71-80-90 without terminal box	01	00	09/03/2007
13 RAEL MEC D001	Wires cabling motor box RL 56-63-71-80-90 version 'd'	01	01	25/02/2005
14 RAEL MEC DE001	Wires cabling motor box RL 56-63-71-80-90 version 'd e'	01	02	18/06/2006
15 RL 100-112 versione 'd'	Wires cabling motor box RL 100-112 versione 'd'	01	00	19/02/2007
16 RL 100-112 versione 'd e'	Wires cabling motor box RL 100-112 versione 'd e'	01	00	19/02/2007

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17 RL 132-160 versione 'd'	Wires cabling motor box RL 132-160 versione 'd'	01	00	19/05/2008
18 RL 132-160 versione 'd e'	Wires cabling motor box RL 132-160 versione 'd e'	01	00	19/05/2008
19 FORATURA TBOX	Holes cables entries	01	00	19/05/2008
20 CABLE GLAND 1	RAEL Cable entries M22	01	01	15/12/2004
21 CABLE GLAND 2	Cable glands	01	01	01/01/2005
22 TARGA	Nameplate description	01	01	04/12/2018
23 TP100-112 NoTbox	Motori RL 100-112 without terminal box	01	02	13/09/2013
24 TP132-160 NoTbox	Motori RL 132-160 without terminal box	01	00	06/05/2013
25 EU Declaration RL	Example of EU Declaration of conformity	01	05	08/11/2018

One copy of all documents is kept in TÜV Italia files.

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