



# CERTIFICATE

## [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 12 ATEX 068 X Rev.2**

[4] Equipment or Protective System: Electrical motor Series MIA (CAT2)

[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 12 EX 038

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

**EN 60079-0:2012 + A11:2013 ; 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 eb IIC T6...T4 Gb**

**II 2D Ex tb IIIC T85°C..T135°C Db**

This certificate may only be reproduced in its entirety and without any change, schedule included.

Issue date: 02<sup>nd</sup> April 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 722178354-1.

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[13]

SCHEDULE

[14]

EU-TYPE EXAMINATION CERTIFICATE  
No. TÜV IT 12 ATEX 068 X Rev.2



Italia

Certificate History

Revision:	Description:	Report rev.:	Issue Date:
-	First issued	-	08/02/2013
1	Constructive update	01	03/03/2014
2	Standard update	02	02/04/2019

[15]

Description of equipment

The electric motors covered by this certificate are asynchronous three-phase squirrel-cage 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 and terminal box is designed in Ex eb type of protection.  
The motor enclosure satisfies also Ex tb type of protection, mechanical protection IP6X.

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

		XX	2G	T4	63	A	Poli	3F	230/50	B35
Motor series										
Motor Ex Category:										
2G	zone 1 e 2 (protection Ex eb IP55)									
2D	zone 21 e 22 (protection Ex tb IIIC IP66)									
Temperature class										
T4/T5/T6	Motor 2G									
T135°C/T100°C/T85°C	Motor 2D									
Motor shaft height (mm):										
56, 63, 71, 80, 90, 100, 112, 132, 160										
Measure lamellar pack:										
A, B	56, 63, 71, 80									
S, L	90									
LA, LB	100									
M	112									
SA, SB, MA, ML	132									
MA, MB, L	160									
Polarity:										
2, 4, 6, 8	Motors 3ph 1 speed									
2/4, 4/8;4/6;4/8	Motors 3ph 2 speed									
Motor Type:										
3F	3ph 1 speed									
3FCT	3ph 2 speed constant torque									
3FQT	3ph 2 speed quadratic torque									
Power supply										
Voltage Δ / Y / Frequency	Motors 3ph 1speed									
Voltage / Frequency	Motors 3ph 2speed									
Mounting arrangements IM (code I):										
B3, B5, B14, B35, B34										
V5, V1, V18, V15										
V6, V3, V19, V36										

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Rated characteristics

- Ambient temperature range -40°C to +60°C.
- Asynchronous three-phase squirrel-cage motors frame sizes 56, 63, 71, 80, 90, 100, 112, 132, 160.
- Degree of protection IP55 version 2G, IP66 version 2D.
- Class F insulation.
- 2, 4, 6, 8, 2/4, 4/8 4/6 6/8 poles.
- Power Supply Voltage: up to 690V ±10% at 50Hz; up to 830V ±10% at 60Hz
- Max Power: 18.5 kW.
- Frequency 50/60 Hz.
- Service S1, S2.
- Optional use of applied heat protectors on the top of the coils.
- Polyamide fan 6ST1 with thermal stability – 40°C to + 105°C (only for gases).
- For engines to use in the presence of combustibile dusts: plastic fan with surface resistance not exceeding 10<sup>9</sup> 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 motors driven by variable frequency inverters

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

The terminal box, made of aluminum, shall be:

- ATEX enclosure with protection by enclosure for motors in category 2D
- ATEX enclosure with increased safety for motors in category 2G.

The cable ingress used for use in potentially explosive gases or vapors atmosphere are compliant to EN 60079-0 and EN 60079-7.

Warning label

“DO NOT OPEN WHEN ENERGIZED”

“TO BE ENERGIZED WITH CABLE SUITABLE FOR TEMPERATURE ≥80°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 without specification of tE:

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

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[16] **Report no.** R 12 EX 038

**Routine tests**

Dielectric strength test according to EN60079-7 with voltage (2Un+1000)V in period of at least 60 s or 1.2×(2Un+1000)V for at least 100 ms.

[17] **Special conditions for safe use**

- Cable Glands: in case of delivery of the motor without cable glands the user must use proper ATEX certified devices.
- Heaters: allowed according to the size of the motor.
- Brake: the use of motor with brake is not possible without the ATEX certification of the assembly.
- Service motor: it is possible the category S1 and S2.
- Inverter Category 2 G: the electric motors of the series can be powered by inverter certified as a safety device under the ATEX Directive 2014/34/EU. These inverters must display the following minimum marking

Ⓔ II (2)GD

These inverters must guarantee an overcurrent protection in compliance with the  $t_E$  time or a maximum temperature protection through the acquisition of the signal to be installed on the thermal motor protection.

[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 + 722178354-1)

Title:	Description:	Pag.:	Rev:	Date:
00 Dossier di certificazione	Documents list	01	00	16/01/2019
01 Safety instruction	Safety and assembly instruction manual	05	05	14/12/2018
02 Nota tecnica Motori Ex e	Asynchronous motor series MIA and MIA1 Technical note	14	02	14/12/2018
03 Dettaglio morsettiera tipo e	DWG: Details terminal box type "e"	01	00	04/01/2011
04 Passaggio cavi serie MIA	DWG: Cable entries MIA series	01	00	16/01/2019
05 ass Ex e	DWG: Assembly Ex eb /ec	01	00	01/02/2011
06 Targa MIA Exe	Motor description plate	01	05	14/01/2019
07 EU Declaration MIA	Example of EU Declaration of conformity atex 2014/34/EU	01	06	14/01/2019

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

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