



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

Certificate No.: IECEx INE 14.0068X Issue No: 0 Certificate history:
Issue No. 0 (2016-02-22)

Status: **Current** Page 1 of 3

Date of Issue: **2016-02-22**

Applicant: **UMEB S.A.**
104A, Timisoara Blvd., district 6
Bucharest
Romania

Electrical Apparatus: **THREE-PHASE SQUIRREL CAGE INDUCTION MOTORS**
Optional accessory:

Type of Protection: **"d" "e" "tb"**

Marking: Ex d IIC T5 or T4 or T3 Gb or Ex d e IIC T5 or T4 or T3 Gb
Ex tb IIIC T100°C or T125°C or T200°C Db
Ex d I Mb or Ex d e I Mb

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

Dominique Charpentier

Position:

Certification division manager

*Signature:
(for printed version)*

Date:

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:

INERIS
Institut National de l'Environnement Industriel
et des Risques
BP n2
Parc Technologique ALATA
F-60550 Verneuil-En-Halatte
France



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Manufacturer: **UMEB S.A.**
104A, Timisoara Blvd., district 6
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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:

IEC 60079-0 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2007-04 Edition:6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2006-07 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:

[FR/INE/ExTR15.0026/00](#)

Quality Assessment Report:

[FR/INE/QAR15.0002/00](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Motors type ASA... frame size 63-355 are designed for use in potentially explosive atmospheres of group IIC, temperature class T5, T4 or T3 (EPL Gb), and group I (EPL Mb) and they are achieved in type of protection "d" – flameproof enclosure (both the enclosure of the motor and the terminal box).

Additionally, the terminal box can be designed also with increased safety "e" type of protection for frame size 80-355.

Motors type ASA... frame size 63-355 are also designed for use in air – dust atmospheres (group IIIC – conductive dusts EPL Db).

These motors can be produced in four designs :
ASA... and E2-ASA... for standard versions
ASA-VF... and E2-ASA-VF... for versions with forced ventilation
ASAF... and E2-ASAF... for versions with electromagnetic brake
ASAen... and E2-ASAen... for versions with encoders

CONDITIONS OF CERTIFICATION: YES as shown below:

- The width of flameproof joints is more than the values specified in the tables of the IEC 60079-1 standard.
- The gap of flameproof joints is less than the values specified in the table 2 of the IEC 60079-1 standard.
- The special conditions for safe use are complemented by those described into the certificates of conformities of encoders and/or electromagnetic brake, when relevant.
- For the risk from electrostatic discharge, the user will have to read the instructions.
- The screws used for the assembly of the various parts of explosion-proof enclosures must be of quality higher or equal to 8.8 in case of motors frame size 63 – 250.
- The screws used for the assembly of the various parts of explosion-proof enclosures must be of quality higher or equal to 12.9 in case of motors frame size 280 – 355.
- The equipment has to be used only under certain positions, the user will have to read the instructions.
- The surface temperature determination was based on operation within "Zone A" (IEC 60034-1), at $\pm 5\%$ of the rated voltage.

The other conditions are stipulated in the instructions.

Annex:

[IECEx INE 14.0068X-00_Annex.pdf](#)



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GENERAL DESCRIPTION

Three-phase squirrel cage induction motors in flameproof enclosure type ASA and E2-ASA frame size 63 – 355; these motors get the Ingress protection IP66 according to EN/IEC 60034-5

The motors can be manufactured with two terminal boxes. When two terminal boxes are provided, the main terminal box is intended for motor supply, while the additional terminal box is intended for connecting the protective or monitoring devices.

In standard version the motors are design to ambient temperature range of -20°C to +40°C, however this range can be increase until -55°C to +60°C. This range can be limited depending on the certified component and/or equipment used.

The motors can use the certified components below :

Line bushing, types 07-91...-.../..., IECEx EPS 13.0045U; this component can be used for motor sizes up to 250 at ambient temperature -55°C to 60°C; and it can be used for motor sizes 280 to 355 at ambient temperature -30°C to +60°C (with cable bushing usable at pressure until 47,3 bar with minimum operating temperature at -55°C); and it can be used for motor sizes 280 to 355 at ambient temperature -40°C to +60°C (with cable bushing usable at pressure until 48,6 bar with minimum operating temperature at -60°C).

Conductor bushings, type 8174/...-...-...-..., IECEx PTB 06.0081U (IEC 60079-0 : 2004, IEC 60079-1 : 2001); this component is certified according to IEC 60079-0 Edition: 4.0 and IEC 60079-1 Edition: 5.0, however there is no applicable technical differences for this component. This component can be used for motor sizes up to 250, they are not usable for sizes over 250. Concerning the operating temperatures of this component, it depends on the type of cable used, a complete list is available on the CoC IECEx PTB 06.0081U.

Conductor sealing bushings type TP..., IECEx CES 10.0003U. This component can be used for motor sizes up to 250, they are not usable for sizes over 250. Concerning the operating temperatures of this component, it can be used for minimal ambient temperature of -50°C for standard version and of -20°C for bushings made of carbon steel.

Type MK 3 Range of Terminal Strips IECEx SIR 05.0036U (IEC 60079-0 : 2004, IEC 60079-7 : 2001); this component is certified according to IEC 60079-0 Edition: 4.0 and IEC 60079-7 Edition: 3.0, however there is no applicable technical differences for this equipment. This component is limited to a use at a minimal ambient temperature of -50°C.



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These motors can be produced in four designs :

1/ Standard motors types ASA and E2-ASA frame size 63-355 defined above. With ingress protection IP66.

2/ Motors used as forced ventilation unit types ASA-VF – and E2-ASA-VF :

The denomination of the motors with forced ventilation (cooling) is ASA-VF – motors with efficiency IE1, respectively E2-ASA-VF when the motors efficiency comply with IE2 requirements. Ingress protection IP66.

3/ Motors used with electromagnetic brake, types ASAF – and E2-ASAF, :

The denomination of the motors with electromagnetic brake is ASAF – motors with efficiency IE1, respectively E2-ASAF when the motors efficiency comply with IE2 requirements.

The flameproof motors frame size 63-280 can be fitted with VIS II spring-applied flameproof brakes, mounted on the drive-end side of the motor. The brake is an independent unit mounted on the drive-end motor flange, outside of motor flameproof enclosure.

The VIS II electromagnetic brakes are IECEX certified : IECEX INE 11.0037X

Ingress protection IP66, maximum ambient temperature range can be reduced in accordance with certificate IECEX INE 11.0037X:

-50°C to 55°C or 60°C for the electromagnetic brake type VIS II 63 to VIS II 200 (depending on temperature class, see certificate IECEX INE 11.0037X)

-20°C to 55°C or 60°C for electromagnetic brake type VIS II 250 and VIS II 280 (depending on temperature class, see certificate IECEX INE 11.0037X)

-20°C to 55°C for Group I



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4/ Motors used with encoders, types ASAen – and E2-ASAen :

The denomination of the motors with encoder is ASAen – motors with efficiency IE1, respectively E2-ASAen when the motors efficiency comply with IE2 requirements.

The flameproof motors frame size 132-355 can be fitted with IECEX certified flameproof encoders, mounted on the non-drive end side of the motor :

- Encoder type 8.7000***, 8.7014***, 8.7053***, 8.7063***, 8.7058*** and 8.7068***, IECEX PTB 13.0026X.
- Encoder type 8.7100..., 8.7114..., 8.7153..., 8.7158..., 8.7163..., 8.7168..., IECEX IBE 14.0023X.
- Encoder type 8.71XX, IECEX IBE 15.0019X.
- Encoder type 8.70XX, IECEX IBE 15.0020X
- Encoder type REXM, IECEX ITS 10.0014X
- Encoder type 2REX, IECEX ITS 10.0015X
- Encoder ***78E Mining, IECEX ITS 15.0060X
- Encoder ***78E, IECEX ITS 15.0061X
- Encoder type GAUX or GEUX or NAUX or NEUX or CAUX or CEUX or PAUX or PEUX, IECEX LCIE 13.0030X

Ingress protection reduced to IP6X with encoders certified IECEX PTB 13.0026X, IECEX ITS 10.0014X, IECEX ITS 10.0015X and IECEX LCIE 13.0030X.

Ingress protection reduced at IP65 with encoders certified IECEX IBE 15.0020X or IECEX IBE 15.0019X

No Ingress protection with encoders certified IECEX IBE 14.0023X.

Maximum ambient temperature range reduced to -20°C to +40°C or -40°C to +60°C (see certificate IECEX PTB 13.0026X, IECEX IBE 14.0023X, IECEX IBE 15.0019X, IECEX IBE 15.0020X, IECEX ITS 10.0014X, IECEX ITS 10.0015X, IECEX ITS 15.0060X, IECEX ITS 15.0061X and IECEX LCIE 13.0030X for more details).



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PARAMETERS RELATING TO THE SAFETY

Ratings :

- Motors :

Voltage : 500 V in case of frame sizes 63 - 90
690 V in case of frame sizes 100 – 355

Power : 0,09 to 400 kW

Frequency: 50 Hz or 60 Hz

Speed : up to 3000 rpm

- The parameters relating to the safety are complemented by those described into the certificates of conformities of encoders and/or electromagnetic brake, when relevant.

MARKING :

Marking has to be readable and indelible; it has to include the following indications:

1 – For versions with junction box protected by flameproof enclosure, for group II, gas explosive atmosphere :

- UMEB S.A
- 104A, Timisoara Blvd., district 6
Bucharest, Romania
- ASA... or E2-ASA... (*)
- IECEX INE 14.0068X
- (Serial number)
- Ex d IIC T5 or T4 or T3 Gb (**)
- IP(***)
- Tamb = (****)
- **WARNING : DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT (*****)**



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2 – For versions with junction box protected by increased safety for group II, gas explosive atmosphere :

- UMEB S.A
- 104A, Timisoara Blvd., district 6
Bucharest, Romania
- ASA... or E2-ASA... (*)
- IECEX INE 14.0068X
- (Serial number)
- Ex d e IIC T5 or T4 or T3 Gb (**)
- IP(***)
- Tamb = (****)
- **WARNING** : DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT (****)

3 – For versions protected for group III, dust explosive atmosphere :

- UMEB S.A
- 104A, Timisoara Blvd., district 6
Bucharest, Romania
- ASA... or E2-ASA... (*)
- IECEX INE 14.0068X
- (Serial number)
- Ex tb IIIC T100°C or T135°C or T200°C Db (**)
- IP(***)
- Tamb = (****)
- **WARNING** : DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT (****)



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4 – For versions with junction box protected by flameproof enclosure for group I :

- UMEB S.A
- 104A, Timisoara Blvd., district 6
Bucharest, Romania
- ASA... or E2-ASA... (*)
- IECEX INE 14.0068X
- (Serial number)
- Ex d I Mb
- IP(***)
- Tamb = (****)
- **WARNING** : DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT (*****)

5 – For versions with junction box protected by increased safety for group I :

- UMEB S.A
- 104A, Timisoara Blvd., district 6
Bucharest, Romania
- ASA... or E2-ASA... (*)
- IECEX INE 14.0068X
- (Serial number)
- Ex d e I Mb
- IP(***)
- Tamb = (****)
- **WARNING** : DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT (*****)

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.



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(*) ASA... and E2-ASA... for standard versions
ASA-VF... and E2-ASA-VF... for versions with forced ventilation
ASAF... and E2-ASAF... for versions with electromagnetic brake
ASAen... and E2-ASAen... for versions with encoders
The dots are replaced by a codification according to the manufacturing variations described in the manufacturer's documents.

(**) :T5 (or T100°C) to T3 (or T200°C), in accordance with the table 8 of the manufacturer technical description TD 63 / 2015 Revision 0, and in accordance with the maximum class temperature of the encoders or electromagnetic brake when relevant.

Or

In case of motor for specific use, without cooling fan or motor in an air flow or motors designed to be supplied by frequency converter, the motors are fitted with thermal protection devices (PTC temperature sensor, Bimetallic thermal sensors or PT 100 (RTD) thermometric resistors) in the stator winding. With a view to keep the motor outside temperature within the values allowed by the temperature class, they are calibrated to cut off the motor supply at the winding temperature :

- maximum 90 °C for Group II motors with temperature class T5
- maximum 130 °C for motors Group II with temperature class T4
- maximum 150 °C for motors Group II with temperature class T3
- maximum 145 °C for Group I motors

In addition, the motors can be provided with thermistors or PT100 in the bearing sites, in order to disconnect the motor supply at maximum 90 °C for Group II motors with temperature class T5 and at maximum 120 °C for the other motors.

(***) : IP66 or IP65 or IP6X or nothing depending on version of motor and certified equipment use.

(****) : If different from -20°C to +40°C, in the range of -55°C to +60°C

(*****) :The warnings can be complemented by the warnings bellow :

In case of motors fitted with PTC, PT100, bimetallic sensors to ensure the temperature class:
„WARNING – WINDING PROTECTED WITH PTC / PT100 / BIMETALLIC SENSORS”

In case of forced-ventilated motors supplied from frequency converters:
„WARNING – START THE MOTOR ONLY AFTER THE FORCED VENTILATION UNIT”

In case of flameproof motors with electromagnetic brakes:
„WARNING – DO NOT SUPPLY THE MOTOR IF THE BRAKE IS NOT ENERGISED”



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In case of motors with paint thickness above 0.2 mm, for gas group IIC:
„WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS”

ROUTINE EXAMINATIONS AND TESTS

Each example of the terminal boxes protected by increased safety must have successfully passed before delivery a dielectric strength test carried out on each circuit of the equipment as specified in the relevant standards in accordance with § 7.1 of the IEC 60079-7 standard. The voltage being applied during one minute.

In accordance with § 16.1 of the IEC 60079-1 standard, each apparatus defined above must have successfully passed before delivery an overpressure test, of a period comprised between 10 and 60 seconds under the values of the tables below:

For Ex d Junction boxes :

	Up to Tamb min -20°C	Up to Tamb min -55°C
Size 80 up to Size 132	12,2 bars	17 bars
Size 160 up to Size 250	13 bars	15,5 bars
Size 280 up to Size 355	14,1 bars	18,5 bars

For Motor frame :

	Up to Tamb min -20°C	Up to Tamb min -55°C
Up to Size 71	14,1 bars	15,8 bars
Size 80 up to Size 132	11,8 bars	20 bars
Size 160 up to Size 250	13,7 bars	19,1 bars

	Up to Tamb min -20°C	Up to Tamb min -30°C	Up to Tamb min -40°C	Up to Tamb min -50°C	Up to Tamb min -55°C
Size 280 up to Size 355	33,15 bars	45,4 bars	48,1 bars	50,7 bars	52,2 bars