



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 CES 14.0009X** issue No.: **0** Certificate history:

Status: **Current**

Date of Issue: **2014-09-30** Page 1 of 3

Applicant: **KONCAR - MES d.d.
(KONCAR - MALI ELEKTRICNI STROJEVI d.d.)
Falerovo setaliste 22,
HR - 10002 Zagreb
Croatia**

Electrical Apparatus: **Three-phase asynchronous motors series 7AT 132-160-180-200-225-250-280-315**
Optional accessory:

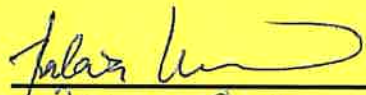
Type of Protection: **Flameproof enclosures 'd'; increased safety "e"**

Marking: **Ex de IIC T4, T3 Gb or
Ex d IIC T4, T3 Gb**

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

Position: **Head of IECEx CB**

Signature:
(for printed version)


30-09-2014

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.

Certificate issued by:

CESI
Centro Elettrotecnico
Sperimentale Italiano S.p.A.
Via Rubattino 54
20134 Milano
Italy

CESI
CESI S.p.A.
Testing & Certification Division
Business Area Certification
Il Responsabile


Fiorenzo Gregazzi

PAD B4025407 (2012260) - USO RISERVATO





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Manufacturer: **KONCAR - MES d.d.**
(KONCAR – MALI ELEKTRICNI STROJEVI d.d.)
Falerovo setaliste 22,
HR – 10002 Zagreb
Croatia

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 60079-7 : 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:

IT/CES/ExTR14.0011/00

Quality Assessment Report:

IT/CES/QAR10.0010/04



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The three-phase asynchronous motors series 7AT 132-160-180-200-225-250-280-315 are manufactured by different constructive typologies. The motors can be supplied by mains or by inverter with simple or double polarity, self-ventilated or with forced ventilation. The motors can be equipped with auxiliary devices such as heaters (with max. power of 130 W) , thermal detectors, brake and encoder.

The motors are manufactured with two separate compartments: motor (Ex d) and terminal box (Ex d or Ex e) for supply and auxiliary circuits connection or can be provided with permanently connected cables.

The cable entry devices used on the enclosure shall be suitably certified.

See annex for further description.

CONDITIONS OF CERTIFICATION: YES as shown below:

- Supply cables of motors size 315LB, motors without terminal box and motors for the ambient temperature +60°C shall be suitable for an operating temperature equal or greater than 92°C;
- Screws used for fastening the parts of motor enclosure, shields and terminal box shall have a yield strength equal or higher than:
 - 800 N/mm² for motors size 132, 160, 180, 280 and 315;
 - 1200 N/mm² for motors size 200, 225 and 250.
- The motor provided with the cables permanently connected, shall have these cables protected against the risk of damage due to mechanical stresses. The free end connections shall be made according to one of the types of protection indicated in the IEC 60079-0 standard according to the installation rules in force in the site of installation.
- The flamepaths are specified in the manufacturer drawings. For information regarding the dimensions of the flameproof joints the manufacturer shall be contacted.



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Prot: B4025407

Annex to certificate:
Applicant:

IECEx CES 14.0009X Issue No.0 of 2014-09-30
KONCAR - MES d.d.
(KONCAR – MALI ELEKTRICNI STROJEVI d.d.)
Falerovo setaliste 22, HR – 10002 Zagreb, Croatia
Electrical Apparatus:
Three-phase asynchronous motors series
7AT 132-160-180-200-225-250-280-315

Description of equipment

Three-phase asynchronous motors series 7AT 132-160-180-200-225-250-280-315 are manufactured by different constructive typologies; they can be supplied by mains or by inverter, with simple or double polarity, self-ventilated or with forced ventilation.

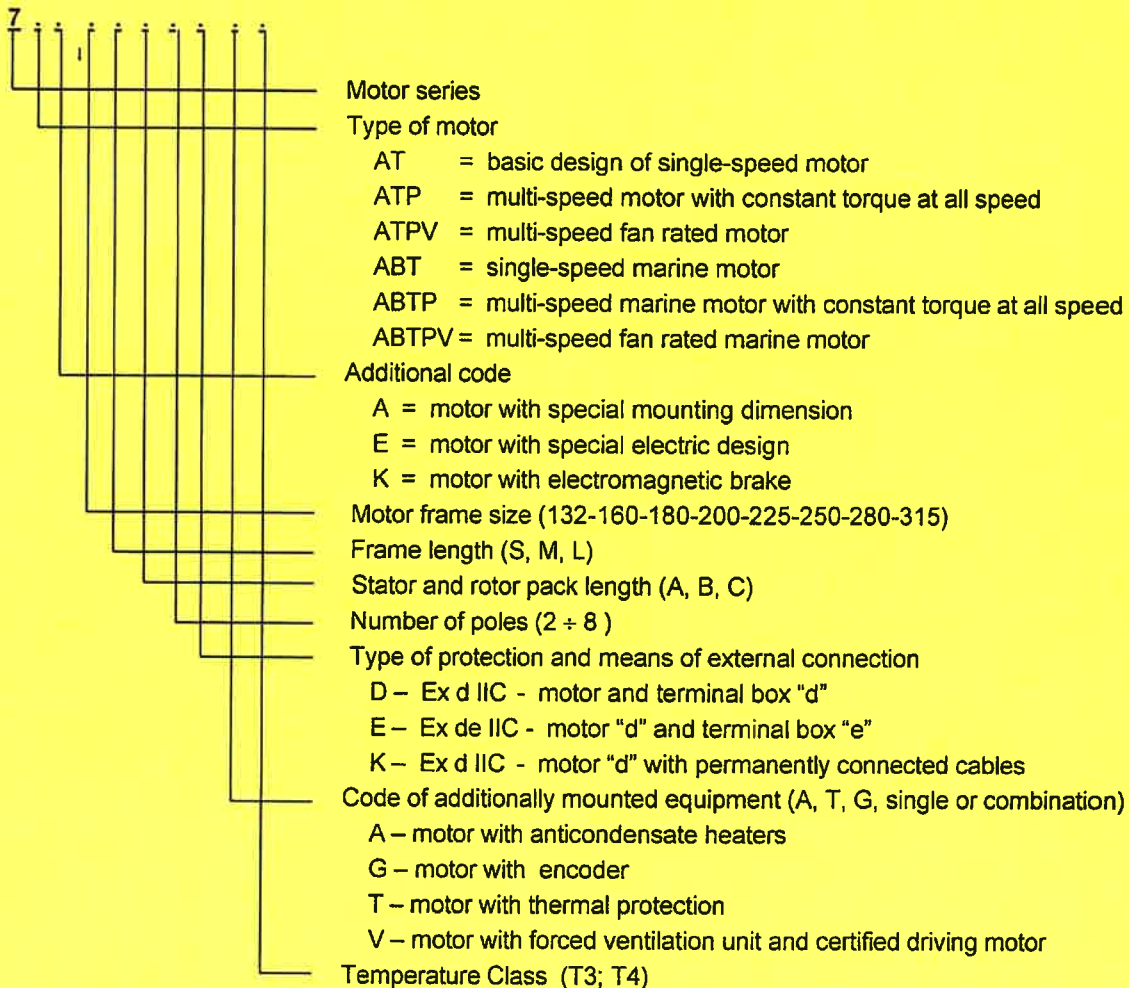
The motors are manufactured with two separate compartments: motor (Ex d) and terminal box (Ex d or Ex e) for supply and auxiliary circuits connection or can be provided with permanently connected cable.

The motors can be equipped with auxiliary devices such as heaters (with max. power of 130W), thermal detectors, brake and encoder.

Model identification

The various motors types are identified by a code as follows:

PAD B4025407 (2012261) - USO RISERVATO





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KONCAR - MES d.d.
(KONCAR – MALI ELEKTRICNI STROJEVI d.d.)
Falerovo setaliste 22, HR – 10002 Zagreb, Croatia
Three-phase asynchronous motors series
7AT 132-160-180-200-225-250-280-315

Electrical Apparatus:

Electrical characteristics

Supply by mains

Maximum voltage:	750	V
Maximum rated power (S1 duty)	225	kW
Maximum rated current:	335	A
Rated frequency:	50 / 60	Hz
Rated speed:	750 ÷ 3600	rpm
Insulation class:	F-H	(with Δt B)
Duty:	S1 ÷ S10	
Number of poles:	2 ÷ 8	
Ambient temperature:	-20 ÷ +40 °C or -20 ÷ +60 °C Motors provided with permanently connected cables: -20 ÷ +50°C	
Degree of protection:	IP 55 (IEC 60034-5) IP 54 or IP 56 or IP 65 or IP 66 optional	

The anticondensate heaters installed inside the motor can have a maximum power of 130 W.

Motors supplied by inverter

Maximum voltage:	750 V
Peak voltage maximum:	1060 V
Frequency range:	5 ÷ 87 Hz (motors 2p=2) 5 ÷ 100 Hz (motors 2p=4, 6, 8)

The three-phase asynchronous motors supplied by inverter are provided with a suitable label reporting electrical operating characteristics; they shall be provided, inside the stator winding, with thermal detectors (PTC); these thermal detectors shall be connected to suitable protection devices of the supply system.

The operation of the thermal detector shall guarantee the disconnection of the supply at:
- 150 °C maximum for motors with temperature class T3;
- 130 °C maximum for motors with temperature class T4.

The operation of the thermal detector shall guarantee the disconnection of the supply; the resetting of the supply shall not be automatic.

Motors with brake and/or encoder

Brake and/or encoder, coupled to the motor, shall be suitable for group, type of protection and ambient temperature range foreseen from the motor.

Motors with forced ventilation unit

These machines are provided with a motor-driven blower mounted on the primary motor. In these case the primary motor is provided with thermal detectors for the control of internal temperature. The operation of the primary motor shall be interlocked to the correct operation of the forced ventilation.



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Three-phase asynchronous motors series
7AT 132-160-180-200-225-250-280-315

Electrical Apparatus:

Cable entries

The cable entry devices used on the enclosure shall be suitably certified.

The accessories used for cable entries and for the unused holes shall be subject of a separate certification according to the applicable standards:

- in execution Ex d IIC or Ex de IIC for the terminal box in execution Ex d IIC or Ex de IIC respectively.

The degree of protection IP54 shall be guaranteed according to IEC 60034-5 and IEC 60529 standards.

If cylindrical threads are used the coupling between the cable gland and terminal box shall be provided with block to prevent loosening.

Warning label

Warning - Do not open when energized.

For motors size 315LB, motors without terminal box and motors with ambient temperature +60°C:

Supply cables of motors shall be suitable at least for an operating temperature of 92°C;

For motor supply by inverter:

Winding protected with PTC thermistors

In case of use of anticondensate heaters:

Warning – energised resistors.