IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx LCIE 20.0015X**	Page 1 of 3	Certificate history:
Status:	**Current**	Issue No: 0	
Date of Issue:	2020-06-08		
Applicant:	**BEVI AB** Bevivägen 1, SE-384 30 Blomstermåla **Sweden**		
Equipment:	**Three-Phase Asynchronous Motor - type: 3DX-315**-* or 3DX-355**-***		
Optional accessory:			
Type of Protection:	**Ex db**		
Marking:	Ex db IIB or IIC T4 Gb See attachment for the complete marking		

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

Position: **Certification Officer**

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 www.iecex.com or use of this QR Code.

Certificate issued by:

Laboratoire Central des Industries Electriques (LCIE)
33 Avenue du General Leclerc
FR-92260 Fontenay-aux-Roses
France

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Certificate No.: **IECEx LCIE 20.0015X**

Date of issue: 2020-06-08 Issue No: 0

Manufacturer: **BEVI AB**
Bevivägen 1, SE-384 30 Blomstermåla
Sweden

Additional manufacturing locations:

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 equipment 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 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

This Certificate **does not** indicate compliance with 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/LCIE/ExTR20.0033/00

Quality Assessment Report:

FR/LCIE/QAR16.0010/03

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Type 3DX motor is three-phase asynchronous motor. It comprises a main enclosure a main terminal box and an auxiliary terminal box. The protection type for both the main enclosure and the terminal boxes is Ex db (flameproof).
The material is grey cast iron minimum quality grade 250.
Flameproof bushings are used between the frame and the terminal boxes.
The cooling system is IC411 (according to IEC 60034-6). Forced ventilation IC416 can be achieved by means of a certified auxiliary motor.
Motors supplied by converters are equipped inside of stator winding with thermal detectors PTC or PT100 per phase for temperature control. The lead cables are connected to the auxiliary terminal box.
As a variant the motors can be connected by power supply cable permanently connected (flying leads).
The motors may be fitted with anti-condensation heaters. The lead cables of heaters are connected to the auxiliary terminal box.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- Field repairs of flameproof joints should not be undertaken by the end user. In the event that flameproof joint must be repaired, contact the manufacturer. Repairs of flameproof joints must be made in compliance with the structural specifications in manufacturer's drawings. Repairs must NOT be made on the basis of values specified in tables 2 and 3 of IEC 60079-1.
- The anti-condensate heaters installed inside of stator winding have maximum power of 110W and are allowed to be in operation only when the motors are not powered.
- Motors supplied by converters are equipped inside of stator winding with PTC or PT100 thermal detectors per phase for temperature control. These are to be connected to a protection circuit so as to limit the stator temperature to maximum 120°C for temperature class T4.
- Motors intended for use with ambient temperature >50°C shall be fed with cable of thermal stability not less than 95°C.
- The motors when provided with cables permanently connected shall have these cables protected against the risk of damage due to mechanical stresses. The end connection shall be made according to one of the types of protection indicated in the IEC 60079-0 standard, certified for the intended use and in accordance with the installation rules in force in the site of installation.
- When the flying leads are adopted, the IECEx certified cable glands certified for the intended use shall be adopted.
- For Group IIC motors intended for marine application, the paint thickness might exceed 0.2mm. In this case clean the motor with a wet rag or by non-fractional means

Annex:

Annex 01 LCIE 20.0015 X issue 00 BEVI .pdf

Annex 01 to Certificate
IECEx LCIE 20.0015 X issue 00

FULL EQUIPMENT DESCRIPTION

Type 3DX motor is three-phase asynchronous motor. It comprises a main enclosure a main terminal box and an auxiliary terminal box. The protection type for both the main enclosure and the terminal boxes is Ex db (flameproof). The material is grey cast iron minimum quality grade 250.
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As a variant the motors can be connected by power supply cable permanently connected (flying leads).

The motors may be fitted with anti-condensation heaters. The lead cables of heaters are connected to the auxiliary terminal box.

MARKING

The marking of the product shall include the following :

BEVI AB
Address : …
Type : 3DX-355 **.* or 3DX-315 **-*
Serial number : …
Year of construction : …
Ex db IIB or IIC T4 Gb
IECEx LCIE 20.0015 X
IP55 or IP65 For Gas Group IIB
IP56 or IP66 For Gas Group IIC

T_{Amb} : -20°C to +40°C or +60°C

WARNINGS:
DO NOT OPEN WHEN ENERGIZED
DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT

For the motors driven by converters a second name plate will be fixed on the motors will mention the WARNING:"FOR CONVERTER SUPPLY", and mention the voltage, current speed range or frequency range, the type of torque application and relevant converter characteristics.

For IIC Gas Group applications when the paint thickness > 0.2 mm
WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD-clean the motor with a wet rag or by non-fractional means

For the motor equipped with space heater:
CAUTION: HEATER ENERGIZED

For the motor equipped by PTC Thermistors:
CAUTION: WINDING PROTECTED WITH PTC THERMISTORS.

For the motor equipped by PT100:
CAUTION: WINDING PROTECTED WITH PT100 CALIBRATED AT 120 °C.

RANGE DETAILS

Range details							
3DX	-	*	*	*	-	*	Description
							Motor Type
							Height of shaft (mm) 355 or 315
							Code of Frame length: S (Small) M (Medium) L (Large)
							Code of length of stator (Type 3DX-355S1-2) =305 mm ; (Type 3DX-355S2-2) =350 mm (Type 3DX-355M1-2) =360 mm ; (Type 3DX-355M2-2) =400 mm (Type 3DX-355L1-2) =425 mm ; (Type 3DX-355L2-2) =480 mm (Type 3DX-355S1-4) =400 mm ; (Type 3DX-355S2-4) =490 mm (Type 3DX-355M1-4) =510 mm ; (Type 3DX-355M2-4) =540 mm (Type 3DX-355L1-4) =570 mm ; (Type 3DX-355L2-4) =590 mm (Type 3DX-355S-6) =455 mm ; (Type 3DX-355M1-6) =490 mm (Type 3DX-355M2-6) =520 mm ; (Type 3DX-355L1-6) =590 mm (Type 3DX-355L2-6) =675 mm ; (Type 3DX-355S-8) =410 mm (Type 3DX-355M-8) =500 mm ; (Type 3DX-355L1-8) =580 mm (Type 3DX-355L2-8) =650 mm ; (Type 3DX-355L3-8) =660 mm (Type 3DX-355S-10) =335 mm ; (Type 3DX-355M1-10) =410 mm (Type 3DX-355M2-10) =500 mm ; (Type 3DX-355L1-10) =620 mm (Type 3DX-355L2-10) =715 mm ; (Type 3DX-355L-12) =650 mm (Type 3DX-315S-2) =275 mm ; (Type 3DX-315M-2) =310 mm (Type 3DX-315L1-2) =370 mm ; (Type 3DX-315L2-2) =450 mm (Type 3DX-315S-4) =310 mm ; (Type 3DX-315M-4) = 350 mm (Type 3DX-315L1-4) =400 mm ; (Type 3DX-315L2-4) =560 mm (Type 3DX-315S-6) =280 mm ; (Type 3DX-315M-6) =305 mm (Type 3DX-315L1-6) =390 mm ; (Type 3DX-315L2-6) =470 mm (Type 3DX-315S-8) =240 mm ; (Type 3DX-315M-8) =320 mm (Type 3DX-315L1-8) =380 mm ; (Type 3DX-315L2-8) =450 mm (Type 3DX-315S-10) =235 mm ; (Type 3DX-315M-10) =290 mm (Type 3DX-315L1-10) =375 mm ; (Type 3DX-315L2-10) =440 mm
							Number of poles 2= 2 poles 4= 4 poles 6= 6 poles 8= 8 poles 10= 10 poles 12= 12 poles

RATINGS

Number of poles : 2, 4, 6,8,10 or 12
Duty : S1 to S9 (*)

(*) The associated ratings for duties S2 to S9 are adjusted to ensure a winding temperature rise below the temperature rise of specific duty S1.

Electrical parameters :
Rated voltage supply: 220/380V, 230/400V, 240/415V, 255/440V, 265/460V, 277/480V, 440V, 460V, 480V, 525V, 575V, 600V, 380/660V, 400/690V, 415/720V, 660/1140V
Rated frequency: 50 or 60Hz or variable (with frequency converter)

Frame Size		Synchronous Speed (r/min)					
	50Hz	3000	1500	1000	750	600	300
	60Hz	3600	1800	1200	900		
		Power Output (kW)					
315S		110	110	75	55	45	-
315M		132	132	90	75	55	-
315L1		160	160	110	90	75	-
315L2		200	200	132	110	90	-
355S		-	-	160	132	90	-
355S1		185	185	-	-	-	-
355S2		200	200	-	-	-	-
355M		-	-	-	160	-	-
355M1		220	220	185	-	110	-
355M2		250	250	200	-	132	-
355L1		280	280	220	185	160	-
355L2		315	315	250	200	185	-
355L		-	-	-	-	-	132

The motor output could be derated according to manufacturer's instructions when:
- Maximum ambient temperatures between +40°C to +60°C
- Altitude above 1000m

FULL CONDITIONS OF CERTIFICATION

a) Field repairs of flameproof joints should not be undertaken by the end user. In the event that flameproof joint must be repaired, contact the manufacturer. Repairs of flameproof joints must be made in compliance with the structural specifications in manufacturer's drawings. Repairs must NOT be made on the basis of values specified in tables 2 and 3 of IEC 60079-1.

b) The anti-condensate heaters installed inside of stator winding have maximum power of 110W and are allowed to be in operation only when the motors are not powered.

c) Motors supplied by converters are equipped inside of stator winding with PTC or PT100 thermal detectors per phase for temperature control. These are to be connected to a protection circuit so as to limit the stator temperature to maximum 120°C for temperature class T4.

d) Motors intended for use with ambient temperature > 50°C shall be fed with cable of thermal stability not less than 95°C.

e) The motors when provided with cables permanently connected shall have these cables protected against the risk of damage due to mechanical stresses. The end connection shall be made according to one of the types of protection indicated in the IEC 60079-0 standard, certified for the intended use and in accordance with the installation rules in force in the site of installation.

f) When the flying leads are adopted, the IECEx certified cable glands certified for the intended use shall be adopted.

g) For Group IIC motors intended for marine application, the paint thickness might exceed 0.2mm. In this case clean the motor with a wet rag or by non-fractional means.

ROUTINE TESTS

According to clause 16.1 of standard IEC 60079-1, each equipment shall be submitted to an overpressure test for a duration of at least 10 seconds under:

Part	Gas Group	
	IIB	IIC
Main frame	2 MPa (20 Bar)	2.3 MPa (23 Bar)
Main Terminal box	1.1 MPa (11 Bar)	1,5 MPa (15 Bar)
Auxiliary Terminal box	0.8 MPa (8 Bar)	0,9 MPa (9 Bar)