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 17.0043X**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 2	Issue 1 (2023-06-12) Issue 0 (2018-01-29)
Date of Issue:	2025-08-04		

Applicant: **Fonteck Industries B.V.**
Glasblazerstraat 12E
2984 BL, Ridderkerk
Netherlands

Equipment: **Three-Phase Asynchronous Motor - Type: EX4M-180 **-* and EX4M-160 **-***

Optional accessory:

Type of Protection: **Ex db and Ex tb**

Marking: Ex db IIB or IIC T4 Gb

Ex tb IIIC T130°C Db

IECEx LCIE 17.0043X

(See Annex for complete marking)

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

Position: **Certification Officer**

Signature: (for printed version)

LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES
S.A.S au capital de 15.745.984 €
RCS Nanterre B 408 363 174
33 avenue du Général Leclerc
F - 92260 FONTENAY AUX ROSES

Date: (for printed version) 2025-08-04

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

IECEx Certificate of Conformity

Manufacturer: **BoxFonteck B.V.**
Glasblazerstraat 12E
2984 BL, Ridderkerk
Netherlands

Manufacturing locations: **BoxFonteck B.V.**
Glasblazerstraat 12E
2984 BL, Ridderkerk
Netherlands

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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

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

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

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 Reports:

FR/LCIE/ExTR18.0004/00 FR/LCIE/ExTR23.0023/00

Quality Assessment Report:

GB/CSAE/QAR24.0021/00

IECEx Certificate of Conformity

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

Type EX4M motor is three-phase asynchronous motor. It comprises a main enclosure and a terminal box. The protection type for both the main enclosure and the terminal box is “Ex db” (flameproof) and “Ex tb” (dust protection). The material is grey cast iron minimum quality grade 250.

Flameproof bushings are used between the frame and the terminal box.

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 per phase for temperature control. The lead cables are connected to the main 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 main terminal box.

Refer to attachment for more details.

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 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 (when the paint thickness might exceed 0.2 mm) and for Dust Group IIIC: Clean the motor with a wet rag or by non-fractional means.
- All special fasteners used for the assembly of the parts of the flameproof enclosure shall have at least a property class 8.8 (carbon steel) with a minimum tensile strength of 800 MPa and a minimum yield stress of 640 MPa.

IECEx Certificate of Conformity

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Issue 2:

Update of Quality Assessment Report (LCIE File #27252891).

Annex:

Annex 01 to Certificate IECEx LCIE 17.0043X issue 2.pdf

Annex 01 to Certificate
IECEx LCIE 17.0043X issue 2

MARKING

BoxFonteck B.V.
Address: …
Type: EX4M-180 **-* or EX4M-160 **-*
Serial number: …
Year of construction: …
Ex db IIB or IIC T4 Gb
Ex tb IIIC T130°C Db
IECEx LCIE 17.0043X

IP55 or IP65 for Gas Group IIB
IP56 or IP66 for Gas Group IIC

-20°C ≤ T_{amb} ≤ +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 motor. It 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.

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

For Gas Group IIC applications (when the paint thickness > 0.2 mm) and for Dust Group IIIC:
WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD: clean the motor with a wet rag or by non-frictional means.

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

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

RATINGS

Rated voltage supply: 220/380 V, 230/400 V, 240/415 V, 255/440 V, 265/460 V, 277/480 V, 525 V, 575 V, 600 V, 380/660 V, 400/690 V, 415/720 V, 660/1140 V.
Rated frequency: 50 Hz or 60 Hz or variable (with frequency converter).
Number of poles: 2, 4, 6 or 8.
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.

Frame Size		Synchronous Speed (r/min)			
	50Hz	3000	1500	1000	750
	60Hz	3600	1800	1200	900
		Power Output (kW)			
160L		18.5	15.0	11.0	7.5
160M		-	11.0	7.5	-
160M1		11.0	-	-	4.0
160M2		15.0	-	-	5.5
180M		22.0	18.5	-	-
180L		-	22.0	15.0	11.0

The rated power of the motor could be derated according to manufacturer's instructions and as follow, when:

- Maximum ambient temperatures between +40°C to +60°C:

Ambient temperature °C	40	42.5	45	47.5	50	52.5	55	57.5	60
Derating factor of rated power	1	0.9825	0.965	0.9475	0.93	0.915	0.9	0.8825	0.865

This Annex is valid only in combination with certificate mentioned above and may only be reproduced in its entirety and without any change.

- Altitude above 1000m of the sea level:

m.a.s.l	1000	1500	2000	2500	3000	3500	4000
Derating factor of rated power	1	0.96	0.92	0.88	0.84	0.80	0.76

- It is used with 60Hz and voltage different from 400V, rated power must be multiplied by the following factor (motors are originally designed for 400 VAC, 50 Hz):

Rated voltage (V)	380	400	415	440	460	480
Factor	1	1	1.05	1.15	1.15	1.20

RANGE DETAILS

EX4M - * * * - *

Number of poles
- 2 = 2 poles
- 4 = 4 poles
- 6 = 6 poles
- 8 = 8 poles

Code of length of stator
- Type EX4M-180M-2 = 195 mm
- Type EX4M-180M-4 = 195 mm
- Type EX4M-180L-4 = 240 mm
- Type EX4M-180L-6 = 205 mm
- Type EX4M-180L-8 = 170 mm
- Type EX4M-160M1-2 = 145 mm
- Type EX4M-160M2-2 = 185 mm
- Type EX4M-160M-4 = 165 mm
- Type EX4M-160M-6 = 150 mm
- Type EX4M-160M1-8 = 85 mm
- Type EX4M-160M2-8 = 120 mm
- Type EX4M-160L-2 = 215 mm
- Type EX4M-160L-4 = 200 mm
- Type EX4M-160L-6 = 200 mm
- Type EX4M-160L-8 = 170 mm

Code of Frame length
- S = Small
- M = Medium
- L = Large

Height of shaft
- 160 = 160 mm
- 180 = 180 mm

Motor Type
- EX4M

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	1.5 MPa (15 bar)	1.5 MPa (15 bar)
Terminal box	1.0 MPa (10 bar)	1.2 MPa (12 bar)

This Annex is valid only in combination with certificate mentioned above and may only be reproduced in its entirety and without any change.
CERT-ATEX-FORM 14 Rev. 03