




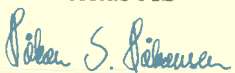
# DET NORSKE VERITAS

## EC-TYPE EXAMINATION CERTIFICATE

- [2] **EQUIPMENT OR PROTECTIVE SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC**
- [3] EC-Type Examination Certificate Number: **DNV 12 ATEX 11790X**
- [4] Equipment or Protective System: **Ex d motors**
- [5] Applicant – Manufacturer or Authorized representative: **HIGEN MOTOR CO., LTD.**  
[6] Address: **74-5, SEONGSAN-DONG, CHANGWON-SI  
KOREA**
- [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] DNV, notified body number 0575 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
- The examination and test results are recorded in confidential reports listed in section 14.
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN 60079-0: 2009 and EN 60079-1: 2007**
- [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 EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protected system. If applicable, further requirements of this Directive apply to the manufacturer and supply of this equipment or protective system.
- [12] The marking of the equipment or protective system shall include the following:

 **II 2 G Ex d IIC/IIB T5/T6 Gb -20°C ≤ Ta ≤ +50°C**

Høvik, 2012-05-21  
for Det Norske Veritas AS

  
for Marianne Spæren  
Certification Manager



Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

The digitally signed and electronically distributed document is the original and valid certificate. Ref.: [www.dnv.com/digitalsignatures](http://www.dnv.com/digitalsignatures)

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 300 000. In this provision 'Det Norske Veritas' shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.





[13]

## Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE No.: DNV 12 ATEX 11790X

### Certificate History

Revision	Description	Report no.	Issue date
-	Original certificate	2012-9241	2012-05-21

[15] Description of Equipment or Protective System

Three-phase one speed ac squirrel cage induction motor intended to be used with a variable speed drive. The temperature limitation is based on the torque limiting capacity of the drive and temperature sensing elements in the windings. Cooling is an external blower. The windings are of class F insulation.

Duty Types: TEFC(S1 and S3~S6) , TENV(S2 30min.), TEAO(S1)

TEFC: External fan is attached to the shaft end for the circulation of air around the enclosure.

TENV: Cooling without using a fan. (Duty Type: S2 30min.)

TEAO: Cooling air is blown over the totally enclosed motor surface by a separately fan.

Motors without fan can deliver same output power provided installation is according to IC418.

(Direct driven fan motors without cooling fan on the motor.)

### The 2 pole to 8 poles protection types and motors rating

Type Identification	Ex code	IP	Operation mode and T classification	Electrical Data	Rpm
DB3D 71M	Ex d IIB	56	(S1 - S9)T5 or (S1 - S2)T6	200-690V 50/60Hz 0,2-0,6kW	750 - 3600
DC3D 71M	Ex d IIC	66	(S1 - S9)T5 or (S1 - S2)T6	200-690V 50/60Hz 0,2-0,6kW	750 - 3600

### Nomenclature

D	C	3	D	71	M	04	B30	FC	380	/	60
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩		⑪

1<sup>st</sup>; D: Flameproof

2<sup>nd</sup>; B:IIB, C:IIC

3<sup>rd</sup>; three phase 1 speed

4<sup>th</sup>; terminal box protection type, D:Ex d

5<sup>th</sup>; frame number

6<sup>th</sup>; core length

7<sup>th</sup>; number of poles, 02: 2poles, 04: 4poles, 06: 6poles, 08:8poles

8<sup>th</sup>; mounting, B3, B5, B35, V1, V3, V5, V6

9<sup>th</sup>; ventilation, FC:TEFC, NV:TENV, AO:TEAO

10<sup>th</sup>; voltage & frequency

[16] Project No.: PRJC-224371-2010-PRC-KOR

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**EC-TYPE EXAMINATION CERTIFICATE No.: DNV 12 ATEX 11790X**

**Descriptive Documents**

Number	Title	Rev.	Date
4682EHCB01	Motor Assembly 71M IIB	0	2011.08.31
4682EHCB02	Motor Assembly 71M IIC	0	2011.08.31
2242EB0001	Parts list 71M IIB	0	2011.08.31
2242EB0002	Parts list 71M IIC	0	2011.08.31
3844EZ0013	Labeling 71M IIB	0	2011.08.31
3844EZ0014	Labeling 71M IIC	0	2011.08.31
3210E2B001	Frame 71M Horizontal	0	2010.12.13
3210E2B002	Frame 71M Vertical	0	2010.12.13
4810E2B001	Bracket 71M Front	0	2010.12.13
4810E2B002	Bracket 71M Rear	0	2010.12.13
4810E2B003	Bracket 71M Flange	0	2010.12.13
4370E3B001	Shaft	0	2011.02.15
4830E3N001	Bushing	0	2010.12.01
3040E3J001	Terminal Base	0	2010.07.14
3550E3J001	Terminal Cover	0	2010.07.14
3M10539	Fan 2Pole	0	1999.03.02
3M91010	Fan 4Pole	0	2003.06.04
3550E3B001	Fan Cover Horizontal, Vertical	0	2011.02.17
3550KK3876	Fan Cover Vertical	0	2009.03.31

**Routine test**

Each enclosure must be routine pressure tested with for 60 seconds according to clause 16 of EN/IEC 60079-1.

ITEM	Overpressure kPa
DB3D frame	903
DB3D terminal box	1 028
DC3D frame	1 268
DC3D terminal box	1 214

**[17] Special Conditions for Safe Use**

Repairs of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 1 and 2 of EN/IEC 60079-1.

The tensile strength of the fastener elements of each part of the flame proof casing must be at least equal to 1220N/mm<sup>2</sup>.

**[18] Essential Health and Safety Requirements**

See part 9 of this certificate

END OF CERTIFICATE

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 300.000. In this provision 'Det Norske Veritas' shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

