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 12472X**

[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 $-20^{\circ}C \leq Ta \leq +50^{\circ}C$

Høvik, 2012-09-12
for Det Norske Veritas AS

Martin Vestøl
Certification Manager

NORSK AKKREDITERING PROD 019

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

[13] **Schedule**

[14] **EC-TYPE EXAMINATION CERTIFICATE No.:** DNV 12 ATEX 12472X

Certificate History

Revision	Description	Report no.	Issue date
-	Original certificate	2012-9429	2012-09-12

[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~S9) , 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 an 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 250S	Ex d IIB	56	(S1 – S9)T5 or (S1 - S2)T6	200-690V 50/60Hz 30 –90kW	750 - 3600
DB3D 250M	Ex d IIB	56	(S1 – S9)T5 or (S1 - S2)T6	200-690V 50/60Hz 36 –110kW	750 - 3600
DC3D 250S	Ex d IIC	66	(S1 – S9)T5 or (S1 - S2)T6	200-690V 50/60Hz 30 –90kW	750 - 3600
DC3D 250M	Ex d IIC	66	(S1 – S9)T5 or (S1 – S2)T6	200-690V 50/60Hz 36 –110kW	750 - 3600

Nomenclature

D	C	3	D	250	S	04	B30	FC	380	/	60
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩		⑩

1st; D: Flameproof
2nd; B:IIB, C:IIC
3rd; three phase 1 speed
4th; terminal box protection type, D:Ex d
5th; frame number
6th; core length, S or M
7th; number of poles, 02: 2poles, 04: 4poles, 06: 6poles, 08:8poles
8th; mounting, B3, B5, B35, V1, V3, V5, V6
9th; ventilation, FC:TEFC, NV:TENV, AO:TEAO
10th; voltage & frequency

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

EC-TYPE EXAMINATION CERTIFICATE No.: DNV 12 ATEX 12472X

Descriptive Documents

Number	Title	Rev.	Date
4682EHCS01	Motor Assembly 250S/M IIB	2	2011.12.05
4682EHCS02	Motor Assembly 250S/M IIC	2	2011.12.05
2242ES0001	Parts list 250S/M IIB	0	2011.12.05
2242ES0002	Parts list 250S/M IIC	0	2011.12.05
3844EZ0023	Labeling 250S/M IIB	0	2011.11.30
3844EZ0024	Labeling 250S/M IIC	0	2011.11.30
3210E2S001	Frame 250S Horizontal	0	2011.01.14
3210E2S003	Frame 250M Horizontal	0	2011.01.21
3210E2S002	Frame 250S Vertical	0	2011.01.21
3210E2S004	Frame 250M Vertical	0	2011.01.21
4810E2S004	Bracket 250Fr. Front	0	2011.01.14
4810E2S002	Bracket 250Fr.Rear	0	2011.01.14
4810E2S005	Bracket 250Fr. Flange	0	2010.11.13
3550E2S003	Bearing Cover-IN	0	2011.01.14
3550E2S004	Bearing Cover-OUT	0	2011.01.13
4830E3N001	Bushing Cable	0	2010.12.01
4830E3Q001	Bushing Cable	1	2010.09.07
4370E3S001	Shaft 4…8Pole	0	2011.10.15
4370E3S002	Shaft 2Pole	0	2011.10.15
3040E3P001	Terminal Base	2	2010.08.26
3550E3P005	Terminal Cover	0	2010.09.29
3M95960	Fan 2Pole(50Hz),4Pole(60Hz)	0	1991.01.18
3M95653	Fan 2Pole(60Hz)	0	1991.12.10
5900KK2005	Fan 4…8Pole(50,60Hz)	0	1999.03.02
2M95274	Fan Cover 2…8Pole	0	2010.12.01

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	1 114
DB3D terminal box	1 089
DC3D frame	1 751
DC3D terminal box	1 268

[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^2.

[18] Essential Health and Safety Requirements

See part 9 of this certificate

END OF CERTIFICATE