



하이켄모터
내압 방폭형 전동기
Explosion-Proof Motors(Flameproof d Type)



POWER MOTOR



HIGEN MOTORS
www.higenmotor.com

내압 방폭 관련 기호의 의미

Meaning of Explosion-Proof Motor Symbol

Identification Code

0575 is the identification number of DNV responsible for the approval

DNV의 식별번호

MOTOR GROUPING

Motors and other electrical apparatus are divided into two groups - Group I for mines and Group II for surface industry explosive atmospheres. Group II has three sub-divisions, A, B and C, according to the level of risk, Group IIC is the most stringent rating

Group I : 광산용
Group II : 1)일반 산업용 2)Risk Level(IIA<IIB<IIC)

CE marking
(CE 마크)



The European Commission mark for Ex products

방폭 제품에 대한 유럽 위원회 마크

G indicates that the marking relates to gas.

D would indicate that the marking related to dust.

G : gas와 관련됨, D : 분진과 관련됨

Explosion Protection : Flameproof Ex d

No internal explosion can be spread to the surrounding explosive atmosphere. (내부 폭발이 외부로 전파되어서는 안됨.)

Equipment Category

I for Zone 0 or 20;
II for Zone 1 or 21;
III for Zone 2 or 22.

Permanent presence of explosive atmosphere.
Only specially designed electric motors can be used here.

Zone 1 and Zone 21;
Incidental presence of explosive atmosphere during normal duty.

Zone 2 and Zone 22;
Presence of explosive atmosphere only by accident, but not during normal duty.

TEMPERATURE CONTROLS

There are six temperature classes according to the maximum surface temperature of the motor

TEMPERATURE CLASS

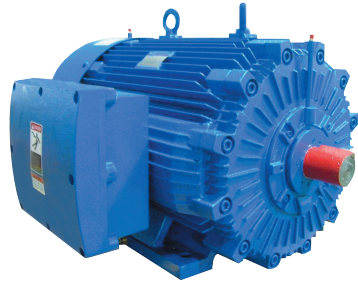
(모터의 최대 표면 온도 분류)
T1 T2 T3 T4 T5 T6
450 300 200 135 100 85

TEMPERATURE LIMIT()

I : 폭발 gas가 상존 II : 정상 작동시 폭발 gas가 부수적으로 발생할 수 있음.
III : 정상 작동이 아닌, 사고등으로 폭발 gas가 우연히 발생할 수 있음.



71M ~ 250M



280M ~ 315M



355L

사 양 (Specification)	항 목 (Items)
구조의 설명 (Structure Explanation)	전동기 내부로 스며든 폭발성 가스에 의해 비정상적으로 내부폭발이 일어날 경우 전동기가 폭발압력에 견디고, 또한 외부의 폭발성 Gas로 불꽃의 전파를 방지하도록 한 방폭구조. * 내부에서 폭발할 경우 그 압력에 견뎌야 함. * 폭발 화염이 외부로 전파되지 않아야 함. * 폭발시 전동기의 표면온도가 주변의 가연성 가스에 점화되지 않아야 함. The motor shall be built in an explosion-proof structure to withstand the explosion pressure and to prevent the flame to spread out to flammable gas outside the frame when any abnormal internal explosion incurred by any explosive gas permeated inside the frame. * Should withstand any pressure developed by internal explosion * Explosion flames should not spread outside of the frame. * The surface temperature of motor should be lower to prevent any ignition of the ambient flammable gas.
그룹기호 (Group Symbol)	Ex d
방폭기호 (Explosion-Proof Symbol)	II B, IIC
최고표면온도 (Max. Surface Temp.)	T4/T5/T6
외피 및 취부구조 (Housing Structure)	전폐형(TEFC, TEAO, TENV), 수평(B3), 수직(B5,V1), B3B5 등
주변조건 (Surrounding Condition)	주위온도 (Ambient temp.) : -20~50°C / 습도 (Humidity) 80% (↓) 이하
사용위험장소 (Application Danger Place)	1종 장소 (Zone 1), 2종 장소 (Zone 2)
보호등급 (Protection Degree)	IP55, 56, 65 & 66

Certificate

Certificate

1 ATTESTATION D'EXAMEN CE DE TYPE

2 Appareil ou système de protection destiné à être utilisé en atmosphères explosibles (Directive 94/9/CE)

3 Numéro de l'attestation d'examen CE de type LCIE 09 ATEX 3009

4 Appareil ou système de protection :
Type : Moteur à induction triphasé EX150 HQ1KC, EX150 HQ1KC

5 Demandeur : HIGEN Motor Co., Ltd
Adresse : #74-5, Seongsan-dong, Changwon-si, Gyeongangnam-do Korea, Republic of

6 Fabricant : HIGEN Motor Co., Ltd
Adresse : #74-5, Seongsan-dong, Changwon-si, Gyeongangnam-do Korea, Republic of

7 Cet appareil ou système de protection et ses variantes éventuelles acceptées sont décrits dans l'annexe de la présente attestation et dans les documents descriptifs cités en référence.

8 Le LCIE, organisme notifié sous la référence 0081 conformément à l'article 9 de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994, certifie que cet appareil ou système de protection est conforme aux exigences essentielles de sécurité et de santé pour la conception et la construction d'appareils et de systèmes de protection destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive. Les résultats des vérifications et essais figurent dans le rapport confidentiel N° 86445-577405.

9 Le respect des exigences essentielles de sécurité et de santé est assuré par la conformité à :
- EN 60079-0 (2006)
- EN 60079-1 (2004)

10 Le signe X lorsqu'il est placé à la suite du numéro de l'attestation, indique que cet appareil ou système de protection est soumis aux conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.

11 Cette attestation d'examen CE de type concerne uniquement la conception et la construction de l'appareil ou du système de protection spécifié, conformément à l'annexe III de la directive 94/9/CE. Des exigences supplémentaires de la directive sont applicables pour la fabrication et la fourniture de l'appareil ou du système de protection. Ces dernières ne sont pas couvertes par la présente attestation.

12 Le marquage de l'appareil ou du système de protection doit comporter les informations détaillées au point 15.

Fontenay-aux-Roses, le 27 Janvier 2009

responsable de certification ATEX
 certification manager
 Marc GILLAI

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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 II ATEX 99645X**

[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:

Ex II G Ex d IIC/TIB T5/T6 Gb -20°C ≤ T_a ≤ +50°C

Høvik, 2011-10-14
for Det Norske Veritas AS

Marianne Spællin
 Certification Manager

Notice: This Certificate is subject to terms and conditions overlaid. 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/digitalsignature
 If any cover, labels, tags or markings which is placed to have been issued by any signatory or its personnel of Det Norske Veritas, then Det Norske Veritas and its personnel shall not be held liable for the printed details here of changes. However, the responsibility for the correct and accurate nature of the content of the certificate for the services provided, whether that be equipment, installation, design, testing, etc., shall remain with the client.

Det Norske Veritas AS
 VERITASVEIEN 1, 1363 HØVIK, NORWAY
 TEL: (+47) 67 57 99 00 FAX: (+47) 67 57 99 01

Outline Dimension

Outline Dimension

IMB3

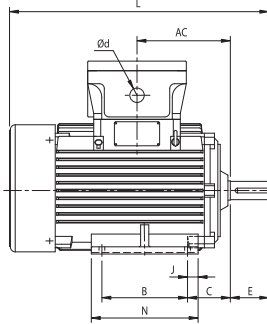


FIG. 1

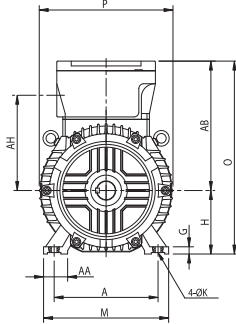
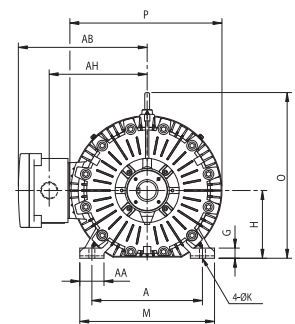
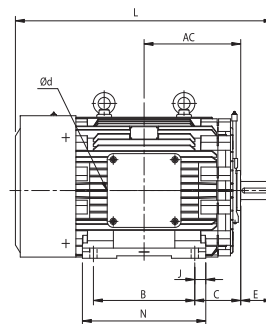
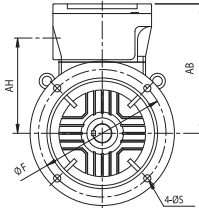
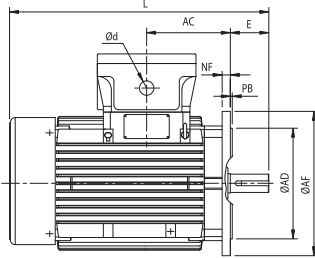


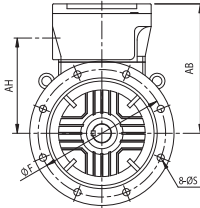
FIG. 2



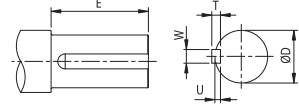
IMB5



71M...180L
(FF130...FF300)



200L...250M
(FF400...FF500)



[SHAFT EXTENSION]

Specification

Specification

FRAME NO.	FLANGE NO.	OUTPUT(KW)				DIMENSIONS(mm)																				중량 (Kg)	Fig.								
		2P	4P	6P	8P	A	B	C	ØD	E	W	U	T	G	H	J	ØK	M	N	AA	AB	AC	AH	O	P			ØAD	ØF	ØAF	NF	PB	ØS	L	d
71M	FF130	0.4	0.2/0.4	-	-	112	90	45	Ø14j6	30	5	3	5	7	71	9	7	135	140	30	163		110	234	156	110j6	130	160	10	3.5	10	293	1'M25	22	1
80M	FF165	0.75	0.75	0.4	-	125	100	50	Ø19j6	40	6	3.5	6	9	80	10.5	10	150	150	35	260	125	123	253	176	130j6	165	200	10	3.5	12	332	1'M25	25	
90L	FF165	1.5 / 2.2	1.5	0.75	0.4	140	125	56	Ø24j6	50	8	4	7	9	90	10	10	170	180	35	265	129.	133	273	196	130j6	165	200	10	3.5	12	392	1'M25	35	
100L	FF215	-	2.2	1.5	0.75	160	140	63	Ø28j6	60	8	4	7	11	100	11	12	200	185	45	280	5	152	302	223	180j6	215	250	10	4	15	429	1'M25	45	
112M	FF215	3.7	2.2/3.7	2.2	1.5	190	140	70	Ø28j6	60	8	4	7	13	112	11	12	226	192	40	288	150	169	331	242	180j6	215	250	10	4	15	444	1'M25	65	
132S	FF265	5.5 / 7.5	5.5	3.7	2.2	216	140	89	Ø38k6	80	10	5	8	15	132	22	12	260	184	50	338	148	198	401	178	230j6	265	300	17	4	15	499	2'M32	85	
132M	FF265	-	7.5	5.5	3.7	216	178	89	Ø38k6	80	10	5	8	15	132	22	12	260	222	50	338	143	198	401	278	230j6	265	300	17	4	15	539	2'M32	95	
160M	FF300	11 / 15	11	7.5	5.5	254	210	108	Ø42k6	110	12	5	8	20	160	20	15	300	250	55	370	174	220	451	320	250j6	300	350	18	5	19	635	2'M32	140	
160L	FF300	18.5	15	11	7.5	254	254	108	Ø42k6	110	12	5	8	20	160	20	15	300	294	55	370	174	220	451	320	250j6	300	350	18	5	19	675	2'M32	160	
180M	FF300	22	18.5 / 22	15	11	279	241	121	Ø48k6	110	14	5.5	9	23	180	19.5	15	320	280	60	385	194	245	503	366	250j6	300	350	16	5	19	723	2'M40	200	
180L	FF300	30.0	30.0	18.5 / 22	15	279	279	121	Ø55m6	110	16	6	10	23	180	19.5	15	320	318	60	385	194	245	503	366	250j6	300	350	16	5	19	758	2'M40	220	
200L	FF400	37 / 45	-	-	-	318	305	133	Ø55m6	110	16	6	10	25	200	-	Ø19	400	365	83	365	229	287	565	419	342	400	450	19	4	18	880	2'M40	310	
		-	37 / 45	30 / 37	18.5 / 22	318	305	133	Ø60m6	140	18	7	11	25	200	-	Ø19	400	365	83	365	229	287	565	419	342	400	450	19	4	18	910	2'M40	310	
225S	FF400	55	-	-	-	356	286	149	Ø55m6	110	14	5.5	9	30	225	-	Ø19	432	362	79	375	219	297	600	454	350	400	450	20	5	18	850	2'M40	390	
		-	55	45	30	356	286	149	Ø60m6	140	18	7	11	30	225	-	Ø19	432	362	79	375	219	297	600	454	350	400	450	20	5	18	880	2'M40	390	
250S	FF500	75	-	-	-	406	311	168	Ø55m6	110	16	6	10	30	250	-	Ø24	485	415	87.5	408	239	297	660	454	450	500	550	20	5	18	935	2'M40	450	
		-	75	55	37	406	311	168	Ø75m6	140	18	7	11	30	250	-	Ø24	485	415	87.5	408	239	297	660	454	450	500	550	20	5	18	965	2'M40	450	
250M	FF500	90	-	-	-	406	349	168	Ø55m6	110	16	6	10	30	250	-	Ø24	485	460	87.5	408	239	297	660	454	450	500	550	20	5	18	995	2'M40	495	
		-	90	75	45	406	349	168	Ø75m6	140	18	7	11	30	250	-	Ø24	485	460	87.5	408	239	297	660	454	450	500	550	20	5	18	1025	2'M40	495	
280S	-	110	-	-	-	457	368	190	Ø55m6	110	16	6	10	42	280	-	Ø24	557	510	100	535	239	405	680	-	-	-	-	-	-	-	1040	2'M63	1000	
		-	110	90	55	457	368	190	Ø85m6	170	22	9	14	42	280	-	Ø24	557	510	100	535	239	405	680	-	-	-	-	-	-	-	1100	2'M63	1050	
280M	-	132	-	-	-	457	419	190	Ø55m6	110	16	6	10	42	280	-	Ø24	557	510	100	535	400	405	680	-	-	-	-	-	-	-	1040	2'M63	1100	
		-	132	110	75	457	419	190	Ø85m6	170	22	9	14	42	280	-	Ø24	557	510	100	535	400	405	680	-	-	-	-	-	-	-	1110	2'M63	1150	
315S	-	160	-	-	-	508	406	216	Ø75m6	110	20	7.5	12	45	315	-	Ø28	628	558	120	575	400	435	750	-	-	-	-	-	-	-	1145	2'M63	1350	
		-	160	132	90	508	406	216	Ø95m6	170	25	9	14	45	315	-	Ø28	628	558	120	575	400	435	750	-	-	-	-	-	-	-	1205	2'M63	1450	
315M	-	200	-	-	-	508	457	216	Ø75m6	140	20	7.5	12	45	315	-	Ø28	628	558	120	575	445	435	750	-	-	-	-	-	-	-	1150	2'M63	1500	
		-	200	160	110	508	457	216	Ø95m6	170	25	9	14	45	315	-	Ø28	628	558	120	575	445	435	750	-	-	-	-	-	-	-	1205	2'M63	1600	
355L	-	-	260	200	160	610	630	254	Ø100m6	210	28	10	16	45	355	-	Ø28	710	770	110	720	445	565	875	-	-	-	-	-	-	-	1520	2'M63	2100	

* 단시간 정격의 모터를 주문 하실 경우는 치수가 변경될 수 있으나 영업팀에 문의하여 주십시오.

2011. 10 내압 방폭형 모터 / 두산 Ver. 1110.1

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