



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.:

IECEx TSA 06.0034X

issue No.:5

Status:

Current

Date of Issue:

2010-05-24

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Certificate history:

Issue No. 5 (2010-5-24)
Issue No. 4 (2009-5-8)
Issue No. 3 (2009-4-22)
Issue No. 2 (2008-10-8)
Issue No. 1 (2007-11-30)
Issue No. 0 (2006-8-23)

Applicant:

CMG Pty Ltd
19 Corporate Avenue
Rowville Victoria 3178
Australia

Electrical Apparatus:

Range of SGA induction motors frames 71 to 315 and HGA induction motors frame 80 to 315

Optional accessory:

Type of Protection:

Ex e, nA, tD

Marking:

CMG Three Phase Motor
Duty: Type:
Ex e II T3 IP55, IP66 (Option)
Ex nA II T3 (Tamb 50 Deg C) IP55, IP66 (Option)
Ex tD A21 IP66 T135 Deg C (Tamb 50 Deg C)
IECEx TSA 06.0034X
S/No

Approved for issue on behalf of the IECEx
Certification Body:

Ujen Singh

Position:

Quality and Certification Manager

Signature:
(for printed version)

Date:

24 MAY 2010

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 the [Official IECEx Website](http://www.iecex.com).

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TestSafe Australia
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Londonderry NSW 2753
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Manufacturer: **CMG Pty Ltd**
19 Corporate Avenue
Rowville Victoria 3178
Australia

Manufacturing location(s):

**CMG Electric Motors
(Asia Pacific) Pte Ltd**
69 Tech Park Crescent
Singapore 638073

CMG Pty Ltd
1/6-8 Radium Street
Crestmead
Queensland 4132
Australia

**CMG Electric Motors NZ
Ltd**
303E / 315A Rosebank Road
Avondale, Auckland
New Zealand

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 electrical apparatus 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 : 2004 Edition: 4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-15 : 2005-03 Edition: 3	Electrical apparatus for explosive gas atmospheres Part 15: Construction, test and Marking of Type of Protection "n" electrical apparatus
IEC 60079-7 : 2006-07 Edition: 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
IEC 61241-0 : 2004 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
IEC 61241-1 : 2004 Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"

*This Certificate **does not** indicate compliance with electrical 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:

AU/TSA/ExTR06.0045/00
AU/TSA/ExTR06.0047/00
AU/TSA/ExTR06.0063/00
AU/TSA/ExTR08.0029/00
AU/TSA/ExTR08.0029/01
AU/TSA/ExTR08.0030/00
AU/TSA/ExTR08.0030/01
AU/TSA/ExTR08.0031/00
AU/TSA/ExTR08.0031/01
AU/TSA/ExTR10.0020/00

Quality Assessment Report:

AU/TSA/QAR06.0012/00
AU/TSA/QAR06.0012/01
AU/TSA/QAR06.0012/02
AU/TSA/QAR07.0008/01
AU/TSA/QAR07.0009/00



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The SGA range of squirrel cage induction motors is manufactured using a cast iron carcass and comprises a main body with a separate bolt-on terminal box. The motors are designed to operate on 3 phase, 100 V to 800 V, 40 Hz, 50 Hz or 60 Hz power systems. Motors may be single speed for Ex e applications and either single speed or two speed for Ex n and tD applications. Motors may be supplied with auxiliary terminal boxes as required for the connection of optional anti-condensation heaters, RTD'S and thermistors. Motors are available as foot mounted, flange mounted or foot and flange mounted. The bearings have V-ring seals with a nitrile rubber gasket seal on the lid of the main terminal box to give the motors an IP rating of IP55 for Ex e and Ex nA motors. A gamma seal is available to give the motors an IP66 rating for Ex tD and as an option for Ex e and Ex nA motors. Electrical connection is via a threaded entry in the main terminal box wall, designed to accommodate either a gland or conduit.

The drawings relating to this certification are listed in the Annexe. The range of Single Speed Induction Motors frame sizes SGA 71 to SGA 315 Ex e, Ex n and Ex tD are listed in Schedule 1 of the Annexe. The range of Two Speed Induction Motors frame sizes SGA 71 to SGA 315 for Ex n and Ex tD are listed in Schedule 2 of the Annexe. The equipment may include one or more of the options detailed in Schedule 3 of the Annexe.

CONDITIONS OF CERTIFICATION: YES as shown below:

- 1) It is a condition of safe use that Ex tD Motors operated from a VVVF drive shall have thermal protection devices connected into the motor control circuit in such a manner as to disconnect the source of supply in order to prevent the nominated temperature class from being exceeded.
- 2) It is a condition of safe use that supply cables shall be fitted via conduit or appropriately certified cable glands. The installation shall have an IP rating equivalent with the equipment rating. Unused gland entries must be fitted with appropriately certified plugs.
- 3) It is a condition of safe use that Ex tD motors fitted with brake units shall not have the brake device operated at frequency greater than 20 times per hour.
- 4) It is a condition of safe use that for Ex nA motors operated from a VVVF drive the following shall apply:
 - a) The applied load shall be inside the limits specified by the loadability curve shown in drawing SGA208. The motors are suitable for operation with VACON brand variable frequency drive types or equivalent types as determined by test and /or calculation.
 - b) The thermal protection devices shall be connected into the motor control circuit in such a manner as to disconnect the source of supply in order to prevent the nominated temperature class from being exceeded.
- 5) It is a condition of manufacture that each Ex nA motor shall have a dielectric strength test carried out by the manufacturer in accordance with Clause 34.2.1 of IEC60079.15.
- 6) It is a condition of manufacture that each Ex e motor shall have a dielectric strength test carried out by the manufacturer in accordance with Clause 7 of IEC60079.7.



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

Refer to Annexe for details of certificate changes for Issues 1 to 5.



IECEX Certificate of Conformity Annexe

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Schedule 1:
Range of single speed induction motors frame sizes SGA 71 to SGA 315
Ex e, Ex nA and Ex tD

2 POLE		4 POLE		6 POLE		8 POLE	
Frame size	Output Australian kW/Frame	Frame size	Output Australian kW/Frame	Frame size	Output Australian kW/Frame	Frame size	Output Australian kW/Frame
80A	0.75	71	0.37	80A	0.37	100L	1.1
80B	1.1	80A	0.55	80B	0.55	112M	1.5
90S	1.5	80B	0.75	90S	0.75	132S	2.2
90L	2.2	90S	1.1	90L	1.1	132M	3
100L	3	90L	1.5	100L	1.5	160M	4
112M	4	100L	2.2	112M	2.2	160M	5.5
112M	5.5	100L	3	132S	3	160L	7.5
132S	5.5	112M	4	132M	4	180L	11
132S	7.5	132S	5.5	132M	5.5	200L	15
132M	11	132M	7.5	160M	7.5	225S	18.5
160M	11	132M	11	160L	11	225M	22
160M	15	160M	11	180L	15	250M	30
160L	18.5	160L	15	200L	18.5	280S	37
180M	22	180M	18.5	200L	22	280M	45
200L	30	180L	22	225M	30	315S	55
200L	37	200L	30	250M	37	315M	75
225M	45	225S	37	280S	45	315L	90
250M	55	225M	45	280M	55	315L	110
280S	75	250M	55	315S	75	-	-
280M	90	280S	75	315M	90	-	-
315S	110	280M	90	315L	110	-	-
315M	132	315S	110	315L	132	-	-
315L	160	315M	132	-	-	-	-
315L	200	315L	160	-	-	-	-
-	-	315L	200	-	-	-	-

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Schedule 2:
Range of two speed induction motors frame sizes SGA 71 to SGA 315
Ex nA and Ex tD

Frame size	SINGLE WINDING (tapped)			SEPARATE WINDINGS	
	kW output (High/low speed)			kW Output (High/low speed)	
	2/4 Poles	4/8 Poles	6/12 Poles	4/6 Poles	6/8 Poles
80A	0.6/0.12	0.45/0.10	0.25/0.06	0.37/0.12	0.25/0.06
80B	0.8/0.16	0.6/0.12	0.37/0.08	0.55/0.18	0.37/0.08
90S	1.2/0.24	0.8/0.16	0.55/0.12	0.75/0.25	0.55/0.24
90L	1.7/0.34	1.2/0.24	0.75/0.18	1.1/0.36	0.75/0.32
100L	2.4/0.48	1.7/0.34	1.1/0.25	1.5/0.50	1.1/0.47
100L	-	2.4/0.5	-	2.2/0.75	-
112M	3.3/0.66	3.3/0.7	1.5/0.37	3.0/1.0	1.5/0.65
132S	4.4/0.88	4.4/0.9	2.2/0.45	4.0/1.3	2.2/0.95
132S	6.1/1.2	-	-	-	-
132M	-	6.1/1.2	3/0.6	5.5/1.8	3.0/1.3
132M	-	-	4/0.8	-	4.0/1.7
-	-	-	-	-	-
160M	8.3/1.7	8.3/1.7	5.5/1.1	7.5/2.5	5.5/2.4
160M	12/2.4	-	-	-	-
160L	17/3.4	12/2.4	7.5/1.5	11/3.5	7.5/3.2
180M	20/4.0	17/3.4	-	-	-
180L	-	20/4.0	11/2.2	15/5.0	11/4.7
-	-	-	-	-	-
200L	24/4.8	24/5.0	15/3	18.5/6.1	13/5.5
200L	33/6.6	-	-	22/7.3	-
225S	-	33/6.6	18.5/3.7	-	15/6.5
225M	41/8.2	41/8.2	22/4.4	33/11	21/9.0
250M	50/10	50/10	-	45/15	26/11
280S	61/12	61/12	-	-	30/13
280M	83/17	83/17	-	55/18	37/16
315S	99/20	99/20	-	75/25	53/23
315M	121/24	121/24	-	90/30	65/28
315L	145/29	145/29	-	110/36	80/34
315L	176/35	176/35	-	132/44	92/40

Schedule 3: Options for SGA71 to 315

1	Left hand terminal box when viewed from the drive-end or top terminal box
2	Anti-condensation heaters for frames 112 – 315 Anti-condensation heaters fitted in accordance with drawing SGA201.
3	Additional sets (3) of PTC thermistors. Fitting of thermistors in accordance with drawing SGA201.
4	Auxiliary terminal box for the termination of the thermistors, RTD's and heaters. Auxiliary box fitted in accordance with drawing SGA203.
5	Winding RTD's – PT100 RTD's Fitted into the motor windings. RTD's fitted in accordance with drawing SGA201.
6	Bearing thermistors fitted into the bearing housing with leads sleeved and routed into auxiliary terminal box. Leads shall be covered with Vidaflex fibreglass sleeve or equivalent.

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Schedule 3: Options for SGA71 to 315 cont'd

7	Vibration adaptors fitted in tapped blind hole in endshield or as shown in drawing SGA 207
8	Stainless steel fasteners
9	Stainless steel shaft. Magnetic grades of stainless steel only for 2 pole motors. Other poles can have magnetic or non-magnetic grades of stainless steel.
10	Alterations to shaft extension diameter and/or length. Shaft diameter shall comply with IEC 60072-1 Table 4 "Shaft extension keys and keyways dimensions. Greatest permissible torque on continuous duty for AC motors". Alternatively, shaft design shall meet requirements of AS 1403-2004: Design of Rotating Steel Shafts.
11	Alternative types of rolling bearings i.e. ball, roller, angular contact. (as per manufacturer's recommendations)
12	Flange size and type changes external to motor enclosure.
13	Operation on VVVF drives, for Ex nA and Ex tD motors. Motors shall be fitted with a thermistor to limit the surface temperature of the motor.
14	For Ex e Ex nA and Ex tD Operation of motors with electronic soft starters. Electronic soft starters shall be disconnected from the circuit once the motor is started and supply of the motor shall be direct from the mains only. For Ex e t _E times shall be stated as obtained for DOL mains supply, for safety considerations. Refer to drawing SGA 114, 139, 161 and 161A for t _E times
15	Forced ventilation by separately driven cooling fan - the main motor protected by thermistors. The motor driving the fan shall have the same protection as the main motor. The cooling unit shall be fitted as shown on drawing SGA205. Applicable to motor with frame size SGA 200 to SGA 315 only
16	Fan and Fan cover design changes for noise reduction maintaining required clearances and airflow. New fan cover shall be of steel / stainless steel with same thickness or thicker than original fan cover with same fixing.
17	Fan material may be cast iron.
18	Additional eyebolt for vertical lifting
19	Rain canopy for vertical mount (shaft down) motors without reducing airflow over motor. Rain canopy made out of steel / stainless steel - Frames 71 to 132 Minimum thickness 1.0 mm and Minimum thickness 1.5 mm for Frames 160 to 315.
20	Sun shields made from steel / stainless steel - Frames 71 to 132 Minimum thickness 1.0 mm and Minimum thickness 1.5 mm for Frames 160 to 315.
21	Extended leads and blanking plate shall be fitted in accordance with drawing SGA204.
22	Brass, aluminium or steel gland plate in place of cast iron. Alloys to contain < 7.5 % in total magnesium and titanium by mass.
23	Larger terminal box – Next size up
24	Larger terminal block with larger box (both next size up).
25	Supply terminals to suit star-delta starting with six supply leads.
26	Other supply voltages within 100V to 500V for SGA 71 to 132 and 100 V to 800 V for SGA 160 to 315 – 40 Hz, 50 Hz or 60 Hz.
27	Lower kW output rating other than standard. Other rating data for lower kW rating to be declared by test and / or calculation based on test for standard kW rating.
28	IP66 for Ex e and Ex nA
29	Location of drain plug at lowest point for different mounting arrangements.
30	Two speed motors for Ex nA and Ex tD applications.
31	Fitting of brakes to frames 71 and 80. Ref to drawings SGA 115 and SGA 118. for Ex tD applications.
32	Attachment of shaft encoder certified by IECEx and ATEX Approved for Zone 1, Group II, T3 for Exe or Zone 2 Group II, T3 for Ex nA or Ex tD A21, T135 °C for Ex tD
33	Refer to Procedure EP- GT012 to determine the ambient temperature (if other than standard) or alternative material for V- ring /Gamma seal /Oil seal based on Test results.

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Schedule 4 Range of single speed induction motors frame sizes HGA 80 to HGA 315 Ex e, Ex nA and Ex tD

Frame Size	Output (Australian) kW/Frame			
	2 POLE	4 POLE	6 POLE	8 POLE
80A	0.75	-	-	-
80B	1.1	0.75	-	-
90S	1.5	1.1	0.75	-
90L	2.2	1.5	1.1	-
100L	3	-	1.5	-
100LA	-	2.2	-	0.75
100LB	-	3	-	1.1
112M	4	4	2.2	1.5
132S	-	5.5	3	2.2
132SA	5.5	-	-	-
132SB	7.5	-	-	-
132M	-	7.5	-	3
132MA	-	-	4	-
132MB	-	-	5.5	-
160M	-	11	7.5	-
160MA	11	-	-	4
160MB	15	-	-	5.5
160L	18.5	15	11	7.5
180M	22	18.5	-	-
180L	-	22	15	11
200L	-	30	-	15
200LA	30	-	18.5	-
200LB	37	-	22	-
225S	-	37	-	18.5
225M	45	45	30	22
250M	55	55	37	30
280S	75	75	45	37
280M	90	90	55	45
315S	110	110	75	55
315M	132	132	90	75
315LA	160	160	110	90
315LB	-	-	132	110

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Schedule 5 Options for HGA 80 to 315

Options for HGA80 - 315 Motors		Protection
1	Left Hand Terminal Box when viewed from the Drive-end or Top Terminal Box	Ex e, Ex nA & Ex tD
2	Anti-Condensation Heaters for Frames 80 - 315. Anti-condensation heaters fitted in accordance to drawing HGA002	Ex e, Ex nA & Ex tD
3	Additional Sets (3) of PTC Thermistors. Fitting of thermistors in accordance to drawing HGA002	Ex e, Ex nA & Ex tD
4	Auxiliary Terminal Box for the Termination of the Thermistors, RTD's and Heaters. Auxiliary box fitted in accordance to drawings HGA012A, B, C.	Ex e, Ex nA & Ex tD
5	Winding RTD's - PT100 RTD's Fitted into the Motor Windings. RTD's fitted in accordance to drawing HGA002	Ex e, Ex nA & Ex tD
6	Bearing Thermistors fitted into the bearing housing with leads sleeved and routed into auxiliary terminal box. Leads shall be covered with Vidaflex fibreglass sleeve or equivalent.	Ex e, Ex nA & Ex tD
7	Vibration Adaptors fitted in tapped blind hole in endshield or as shown in drawing HGA006	Ex e, Ex nA & Ex tD
8	Stainless Steel Fasteners	Ex e, Ex nA & Ex tD
9	Stainless Steel Shaft. Magnetic grades of stainless steel only for 2 pole motors. Other poles can have magnetic or non-magnetic grades of stainless steel.	Ex e, Ex nA & Ex tD
10	Alterations to Shaft Extension Diameter and/or Length. Shaft diameter shall comply with IEC 60072-1 Table 4 "Shaft extension keys and keyways dimensions. Greatest permissible torque on continuous duty for AC motors". Alternatively, shaft design shall meet requirements of AS 1403-2004: Design of Rotating Steel Shafts.	Ex e, Ex nA & Ex tD
11	Alternative types of rolling bearings i.e. ball, roller, angular contact. (As per Manufactures Recommendations.)	Ex e, Ex nA & Ex tD
12	Flange size and type changes external to motor enclosure.	Ex e, Ex nA & Ex tD
13	Operation on VVVF Drives, for Ex nA & Ex tD motors Ex nA & Ex tD motors shall be fitted with a thermistor to limit the surface temperature of the motor.	Ex nA & Ex tD
14	Operation of motors with Electronic Soft Starters. Electronic Soft Starters shall be disconnected from the circuit once the motor is started and supply to motor shall be direct from mains only. 't _e ' times shall be stated as obtained for DOL mains supply, for safety considerations. Refer to drawing HGA010 for 't _e ' times.	Ex e, Ex nA & Ex tD
15	Fan and Fan Cover Design Changes for noise reduction maintaining required clearances and airflow. New Fan Cover Shall be of Steel / Stainless Steel with same Thickness or Thicker than Original Fan Cover with same Fixing.	Ex e, Ex nA & Ex tD
16	Fan material may be Cast Iron.	Ex e, Ex nA & Ex tD
17	Additional Eye Bolt for Vertical Lifting.	Ex e, Ex nA & Ex tD
18	Rain Canopy for vertical mount (shaft down) motors without reducing airflow over motor.	Ex e, Ex nA & Ex tD
19	Rain Canopy Made Out of Steel / Stainless Steel (Minimum Thickness 0.8mm).	Ex e, Ex nA & Ex tD
20	Sun Shields. Made From Steel / Stainless Steel (Minimum Thickness 1.5mm).	Ex e, Ex nA & Ex tD
21	Extended Leads and Blanking Plate fitted in accordance to drawing HGA003	Ex e, Ex nA & Ex tD
22	Brass, Aluminium or Steel gland plate in place of cast iron. Alloys to contain Magnesium Content <6% and Total Magnesium and Titanium Content <7.5% by Mass.	Ex e, Ex nA & Ex tD
23	Larger Terminal Box - Next Size up	Ex e, Ex nA & Ex tD
24	Larger Terminal Block with Larger Box (Both Next Size Up)	Ex e, Ex nA & Ex tD
25	Supply Terminals to Suit Star-Delta starting with 6 Supply Leads	Ex e, Ex nA & Ex tD
26	Other Supply Voltages within 100V to 800V - 40, 50 or 60 Hz.	Ex e, Ex nA & Ex tD
27	Lower kW Output Rating Other than Standard Provided I _a /I _n Ratio is Still Inside Permissible Limits for New Rating. Other Rating Data for Lower kW Output to be Declared by Test and/or Calculation based on Test for Standard kW Rating.	Ex e, Ex nA & Ex tD
28	IP66 on Ex e and Ex nA	Ex e & Ex nA
29	Location of Drain Plug at Lowest Point for Different Mounting Arrangements.	Ex e, Ex nA & Ex tD
30	Attachment of Shaft Encoder Certified by IEC Ex and ATEX Approved for Zone 1, Group II, T3 for Ex e or Zone 2, Group II, T3 for Ex nA or Ex tD A21 IP66 T135°C for Ex tD.	Ex e, Ex nA & Ex tD
31	Refer to procedure EP-GT012 to determine the ambient temperature (if other than standard) or alternative material for V-ring/Gamma seal/Oil seal based on Test results.	Ex e, Ex nA & Ex tD
	Forced Ventilation by Separately Driven Cooling Fan - The Main Motor Protected by Thermistors. The motor driving the fan shall have the same protection as the main motor. The cooling unit shall be fitted as shown on drawing HGA004A, HGA004B & HGA004C.	Ex e, Ex nA & Ex tD

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Drawings relating to Issue 0

Drawing No.	Drawing Description	Revision	Date
Ex e, nA and tD			
SGA100A	General Arrangement for SGA 71 frame motor	C	16/06/2006
SGA101A	General Arrangement for SGA 80-132 frame motor	C	16/06/2006
SGA102	Parts list for SGA 71 frame motor	C	17/05/2006
SGA103	Parts list for SGA 80 frame motor	C	17/05/2006
SGA104	Parts list for SGA 90 frame motor	C	17/05/2006
SGA105	Parts list for SGA 100 frame motor	C	17/05/2006
SGA106	Parts list for SGA 112 frame motor	C	17/05/2006
SGA107	Parts list for SGA 132 frame motor	C	17/05/2006
SGA108	ROTOR / STATOR AIR GAPS 71-132 frame motors	C	12/05/2006
SGA111	OPTIONS LIST 71-132 frame motors	L	30/06/2006
SGA112A	TERMINAL BOX ARRANGEMENT Ex e, Ex nA & Ex tD 71-132 500V (OPTION 1)	C	17/05/2006
SGA112B	TERMINAL BOX ARRANGEMENT Ex e, Ex nA & Ex tD 71-132 500V (OPTION 2)	D	17/05/2006
SGA113	FAN CLEARANCES 71-132 frame motor	C	17/05/2006
SGA120A	RATINGS SINGLE SPEED SGA Motor frame 71 – 280 Ex e Ex nA & Ex tD Protection	C	17/05/2006
SGA121	ALTERNATIVE NAMEPLATE FOR SGA MOTORS FRAME 71 Ex e, Ex nA & Ex tD	D	16/06/2006
SGA122	NAMEPLATE FOR SGA MOTORS FRAME 71 - 112 Ex e, Ex nA & Ex tD	D	16/06/2006
SGA130A	General Arrangement for SGA160-180 frames	C	16/06/2006
SGA131	Parts list for SGA 160 frame motor	C	17/05/2006
SGA132	Parts list for SGA 180 frame motor	C	17/05/2006
SGA133	ROTOR / STATOR AIR GAPS 160-180 FRAME MOTORS	B	17/05/2006
SGA135	OPTIONS LIST 160-180 FRAME MOTORS	H	30/06/2006
SGA136	TERMINAL BOX ARRANGEMENT Ex e 160-180 (800V)	E	3/07/2006
SGA138	FAN CLEARANCES 160-180	C	17/05/2006
SGA141	NAMEPLATE FOR SGA MOTORS FRAME 132 - 180 Ex e, ATEX / IEC Ex nA & Ex tD PROTECTION	D	16/06/2006
SGA150A	General Arrangement for SGA 200 – 280 frames	C	16/06/2006
SGA151	Parts List for SGA 200 frame motors	C	17/05/2006
SGA152	Parts List for SGA 225 frame motors	C	17/05/2006
SGA153	Parts List for SGA 250 frame motors	C	17/05/2006

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Drawings relating to Issue 0

Drawing No.	Drawing Description	Revision	Date
Ex e, nA and tD			
SGA154	Parts List for SGA 280 frame motors	C	17/05/2006
SGA155	ROTOR / STATOR AIR GAPS 200 - 280	B	17/05/2006
SGA157	OPTIONS LIST 200 - 280 frame motors	G	30/06/2006
SGA158	TERMINAL BOX ARRANGEMENT Ex e 200-280 (800V)	E	3/07/2006
SGA158A	TERMINAL BOX ARRANGEMENT Ex e 200-280 (800V)	D	3/07/2006
SGA160	FAN CLEARANCES 200 - 280	C	17/05/2006
SGA163	NAMEPLATE FOR SGA MOTORS FRAME 200 - 280 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	D	16/06/2006
SGA200	Stator internal connections, insulation, testing SGA motor frames 71 - 280 Ex e, Ex nA, & Ex tD protection	C	3/7/2006
SGA201 Sheet 1	PLACEMENT OF PROTECTION DEVICES 71 - 280 FRAMES	F	16/06/2006
SGA201 Sheet 2	PLACEMENT OF PROTECTION DEVICES 71 - 280 FRAMES	D	3/07/2006
SGA202	DRAIN PLUG FITMENT	A	6/01/2004
SGA203A	AUXILIARY TERMINAL BOX FITMENT	C	3/07/2006
SGA203B	AUXILIARY TERMINAL BOX FITMENT (Alternative)	C	3/07/2006
SGA203C	AUXILIARY TERMINALS (For RTD's, Thermistors & heaters)	B	19/05/2006
SGA204	BLANKING PLATE & EXTENDED LEADS	C	3/07/2006
SGA205	Forced ventilation by separately driven cooling fan Exe, Ex nA, & Ex tD protection (200 frame & above)	C	3/07/2006
SGA205A	Forced ventilation by separately driven cooling fan Option 1 Ex e, Ex nA, & Ex tD protection (200 frame & above)	C	3/07/2006
SGA205B	Forced ventilation by separately driven cooling fan Option 2 Ex e, Ex nA, & Ex tD protection (200 frame & above)	C	3/07/2006
SGA207	VIBRATION SENSOR ARRANGEMENT	C	19/05/2006
SGA210	WARNING LABELS 71 - 280 frames	D	17/05/2006
SGA211	FAN COWL AIR OUTLET SGA 71 - 280	A	19/05/2006
SGA212	PERIPHERAL FAN SPEEDS FOR SGA MOTORS 71 - 280	A	19/05/2006
CMG Motors /Manual IOM SGA 06-07 (3 rd Edition) 9 pages	Installation, Operation and Maintenance Instruction for CMG SGA Induction Motors	3 rd Edition	06-07
Ex tD			
SGA115	General Arrangement for 71 - 80 BRAKE MOTORS Ex tD	E	16/06/2006
SGA116	PART LIST 71 BRAKE MOTORS Ex tD	C	17/05/2006
SGA117	PART LIST 80 BRAKE MOTORS Ex tD	C	17/05/2006
SGA118A	TERMINAL BOX ARRANGEMENT FOR SGA BRAKE MOTORS (500V) 71-80 Ex tD (OPTION1)	D	3/07/2006
SGA118B	TERMINAL BOX ARRANGEMENT FOR SGA BRAKE MOTORS (500V) 71-80 Ex tD (OPTION 2)	E	3/07/2006

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Ex nA, Ex tD			
SGA119A	TERMINAL BOX 2 SPEED SGA Motor frame 71-132 (500 V) Ex nA & Ex tD (OPTION 1)	E	30/06/2006
SGA119B	TERMINAL BOX 2 SPEED SGA Motor frame 71-132 (500 V) Ex nA & Ex tD (OPTION 2)	E	30/06/2006
SGA120B	RATINGS 2 SPEED SGA Motor frame 80 – 280 Ex nA & Ex tD Protection	C	17/05/2006
SGA137	TERMINAL BOX ARRANGEMENT Ex nA & Ex tD 160-180 (800V)	F	3/07/2006
SGA140	2 SPEED - TERMINAL BOX ARRANGEMENT Ex nA & Ex tD 160-180 (800V)	F	3/07/2006
SGA159	TERMINAL BOX ARRANGEMENT Ex nA & Ex tD 200 – 280 (800V)	F	3/07/2006
SGA162	2 SPEED - TERMINAL BOX ARRANGEMENT Ex nA & Ex tD 200 – 280 (800V)	E	30/06/2006
Ex nA			
SGA208	FREQUENCY CONVERTER LOADABILITY (Ex nA)	B	17/05/2006
Ex e			
SGA114	t _E times 71-132 frame motors	C	17/05/2006
SGA139	t _E TIMES FOR SGA 160-180 Exe MOTORS	B	17/02/2005
SGA161	t _E TIMES FOR SGA 200-280 Exe MOTORS	A	3/06/2004
SGA206	Determination of t _E times for SGA Ex e motors	B	19/05/2006

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Variations permitted by Issue 1.

Addition of a new manufacturing location and the editing of the certificate details.

Conditions of Certification relating to variations permitted by Issue 1 of this Certificate:

All previous conditions still apply

Drawing relating to variations permitted by Issue 1 of this Certificate:

Document No.	Sheets	Document Title	Issue	Date (yyyy/mm/dd)
SGA121SG	1	ALTERNATIVE NAMEPLATE FOR SGA (SG) MOTORS FRAME 71 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	A	2007/08/09
SGA122SG	1	NAMEPLATE FOR SGA (SG) MOTORS FRAME 71-112 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	A	2007/08/09
SGA141SG	1	NAMEPLATE FOR SGA (SG) MOTORS FRAME 132-180 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	A	2007/08/09
SGA163SG	1	NAMEPLATE FOR SGA (SG) MOTORS FRAME 200-225 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	A	2007/08/09
SGA164SG	1	NAMEPLATE FOR SGA (SG) MOTORS FRAME 250-315 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	A	2007/08/09
SGA121NZ	1	ALTERNATIVE NAMEPLATE FOR SGA (NZ) MOTORS FRAME 71 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	A	2007/08/09
SGA122NZ	1	NAMEPLATE FOR SGA (NZ) MOTORS FRAME 71-112 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	A	2007/08/09
SGA141NZ	1	NAMEPLATE FOR SGA (NZ) MOTORS FRAME 132-180 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	A	2007/08/09
SGA163NZ	1	NAMEPLATE FOR SGA (NZ) MOTORS FRAME 200-225 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	A	2007/08/09
SGA164NZ	1	NAMEPLATE FOR SGA (NZ) MOTORS FRAME 250-315 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	A	2007/08/09
SGA122	1	NAMEPLATE FOR SGA MOTORS FRAME 71-112 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	D	2006/06/16
SGA141	1	NAMEPLATE FOR SGA MOTORS FRAME 132-180 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	D	2006/06/16
SGA163	1	NAMEPLATE FOR SGA MOTORS FRAME 200-315 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	E	2007/07/24

Variations permitted by Issue 2.

The SGA range of squirrel cage induction motors was extended to include frame size 315. Previously certified drawings were modified to cover the 315 frame size.

The drawings relating to this certification are listed below. The range of Single Speed Induction Motors frame sizes SGA 71 to SGA 315 for Ex e, Ex n and Ex tD are listed in Schedule 1. The range of Two Speed Induction Motors frame sizes SGA 71 to SGA 315 for Ex n and Ex tD are listed in Schedule 2. Options for SGA 71 to 315 Induction Motors are listed in Schedule 3.

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Conditions of Certification relating to variations permitted by Issue 2 of this Certificate:
All previous conditions still apply.

Drawing relating to variations permitted by Issue 2 of this Certificate:

Manufacturer's Documents				
Drawing/ Document No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
Ex e, nA and tD				
SGA100A	1	General Arrangement for SGA 71 frame motor Ex e, Ex nA & Ex tD protection	D	2008/07/22
SGA101A	1	General Arrangement for SGA motors frames 80-132 Ex e, Ex nA & Ex tD protection	D	2008/07/22
SGA101A-AU	1	General Arrangement for SGA motors frames 71-132 Ex e, Ex nA & Ex tD protection	A	2007/08/17
SGA111	1	Options for SGA 71 – 132 Ex e, Ex nA & tD motors	M	2008/07/25
SGA112A-AU	1	Terminal Box /Gasket Details 71-132 SGA motors frames 71-132 Ex e, Ex nA & Ex tD protection	B	2008/07/22
SGA120A	1	Ratings Single speed SGA Motor frames 71 – 315 Ex e Ex nA & Ex tD Protection	D	2007/06/12
SGA130A	1	General Arrangement for SGA motors frames 160-180 Ex e Ex nA & Ex tD Protection	E	2008/07/22
SGA130A-AU	1	General Arrangement for SGA motors frames 160-180 Ex e, Ex nA & Ex tD protection	A	2007/08/13
SGA135	1	Options for SGA 160 - 180 Ex e, Ex nA & Ex tD motors	J	2008/07/25
SGA136-AU	1	Terminal Box /Gasket Details SGA motor frames 160 - 180 Ex e, Ex nA & Ex tD protection	B	2008/07/22
SGA150A	1	General Arrangement for SGA motor frames 200 – 315 Ex e, Ex nA & Ex tD protection	E	2008/07/22
SGA150A-AU	1	General Arrangement for SGA motor frames 200 – 315 Ex e, Ex nA & Ex tD protection	A	2007/08/13
SGA155A	1	Rotor/ Stator Air Gaps – SGA (F8) motor frames 200 – 280 Ex e, Ex nA & Ex tD protection	A	2007/06/13
SGA155B	1	Rotor/ Stator Air Gaps – SGA (F8) motor frames 315 Ex e, Ex nA & Ex tD protection	A	2007/06/13
SGA157	1	Options for SGA 200 – 315 Ex e, Ex nA & Ex tD motors	J	2008/07/25
SGA158-AU	1	Terminal Box Details /Gasket Details motor frames 200 – 280 Ex e, Ex nA & Ex tD protection	B	2008/07/22
SGA160	1	Fan Clearances SGA motor frames 200 - 315 Ex e, Ex nA & Ex tD Protection	D	2007/07/23
SGA163	1	Nameplate for SGA motors frames 200 – 315 ATEX / IEC Ex e, Ex nA & Ex tD Protection	F	2008/10/01
SGA165	1	Parts list for SGA motor frame 315 Ex nA & Ex tD Protection	A	2007/07/24

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Drawing relating to variations permitted by Issue 2 of this Certificate cont'd

Manufacturer's Documents				
Drawing/ Document No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
Ex e, nA and tD				
SGA200	1	Stator internal connections, insulation, testing SGA motor frames 71 – 315 Ex e, Ex nA, & Ex tD protection	D	2007/07/24
SGA201 Sheet 1 of 2	1	Placement of protection devices (71 – 315 frames)	G	2007/07/24
SGA201 Sheet 2 of 2	1	Placement of protection devices (71 – 315 frames)	E	2007/07/24
SGA202	1	Drain plug fitment	C	2008/07/22
SGA203A	1	Auxiliary terminal box fitting arrangements (for RTD's/ Thermistors/Heaters)	E	2008/07/22
SGA203B	1	Auxiliary terminal box fitting arrangements Supplementary details	E	2008/07/22
SGA203C	1	Auxiliary terminal (for RTD's/ Thermistors/Heaters)	C	2008/07/22
SGA204	1	Blanking plate and Extended leads Ex e, Ex nA & Ex tD protection	D	2007/08/09
SGA210	1	Warning label details for SGA 71 – 315 Ex e, Ex nA, & Ex tD protection	E	2007/08/09
SGA211	1	Fan cover Air Outlet for SGA 71 – 315 Ex e, Ex nA, & Ex tD protection	B	2007/08/9
CMG Motors /Manual IOM SGA 06-08 (4th Edition) Pages 1 - 9	9	Installation, Operation and Maintenance Instruction for CMG SGA Induction Motors	4 th Edition	08-06
Ex nA and tD				
SGA120B	1	Ratings 2 speed SGA Motor frames 80 – 315 Ex nA & Ex tD Protection	D	2007/06/12
SGA166	1	Terminal Box SGA motor frame 315 (800V) Ex nA & Ex tD	B	2008/07/22
SGA166-AU	1	Terminal Box Details /Gasket Details SGA motor frame 315 Ex nA & Ex tD	B	2008/07/22
SGA167	1	2 Speed Terminal Box SGA motor frame 315 (800) Ex nA & Ex tD 315	B	2008/07/22
Ex e				
SGA161A	1	t _E times for SGA200 – 315 Ex e motors (F8)	A	2007/07/24

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Variations permitted by Issue 3.

Change to the address of the CMG Electric Motors Asia Pacific Pte Ltd from 21 Tuas South Street 1 Singapore 638032 to CMG Electric Motors Asia Pacific Pte Ltd 69 Tech Park Crescent Singapore 638073.

Conditions of Certification relating to variations permitted by Issue 3 of this Certificate:

All previous conditions still apply.

Drawing relating to variations permitted by Issue 3 of this Certificate:

No changes have been made to the previously certified drawings.

Variations permitted by Issue 4.

Addition to the range of certified motors to include the HGA range of high efficiency motors.

The HGA range is identical to the previously certified SGA range except for the changes to the electrical characteristics to improve efficiency.

Equipment Description for the HGA Range of motors.

The HGA range of squirrel cage induction motors are manufactured from cast iron and comprise a main body with a separate bolt-on terminal box. The motors are designed to operate on 3 phase, 100 V to 800 V, 40 Hz, 50 Hz or 60 Hz power systems. Motors may be supplied with auxiliary terminal boxes as required for the connection of optional anti-condensation heaters, RTD'S and thermistors. Motors are available as foot mounted, flange mounted or foot and flange mounted. The bearings have nitrile rubber v ring seals with a nitrile rubber gasket seal on the lid of the main terminal box to give the motors an IP rating of IP 55 with an option for IP 66 with sealing by a gamma ring.

Electrical connection is via a threaded entry in the main terminal box wall, designed to accommodate either a gland or conduit.

The Ex protection techniques for Ex e Ex n and Ex tD used in the SGA range is maintained in this new HGA range with the HGA range identical to the previously certified SGA range except for the changes to improve efficiency with changes to the core length, winding design current density (more copper in windings) and provision of a low loss fan.

Brake motors are included in the HGA Ex tD range of motors for frame size 80 to 132.

The full range of motors is listed in Schedule 4. The equipment may include one or more of the options detailed in Schedule 5.

Conditions of Certification relating to variations permitted Issue 4 of this Certificate:

All previous conditions still apply.

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Drawing relating to variations permitted by Issue 4 of this Certificate:

Manufacturer's Documents				
Drawing/ Document No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
Ex e, nA & tD motors				
HGA001		Options for HGA 80 – 315 Ex e, Ex nA & tD motors	A	2008/12/01
HGA002-S1	Sheet 1 of 2	Placement of protection devices (80 – 315 frames)	A	2008/12/01
HGA002-S2	Sheet 2 of 2	Placement of protection devices (80 – 315 frames)	A	2008/12/01
HGA003		Blanking plate and extension leads Ex e, Ex nA & tD protection	A	2008/12/01
HGA004A		Forced ventilation by separately driven cooling fan Option 1 Ex e, Ex nA & tD motors (200 frame and above)	A	2008/12/01
HGA004B		Forced ventilation by separately driven cooling fan Option 2 Ex e, Ex nA & tD motors (200 frame and above)	A	2008/12/01
HGA004C		Forced ventilation by separately driven cooling fan Option 3 Ex e, Ex nA & tD motors (200 frame and above)	A	2008/12/01
HGA005		Drain plug fitment	A	2008/12/01
HGA006		Adaptor for vibration sensor	A	2008/12/01
HGA008		Stator internal connection, insulation, testing HGA 80 – 315 Ex e, Ex nA, & Ex tD protection	A	2008/12/01
HGA009		Warning label details for HGA 80 - 315 Ex e, Ex nA, & Ex tD protection	A	2008/12/01
HGA012A		Auxiliary Terminal Box Fitting arrangements (for RTD's /thermistors/ Heaters / Frames 80 – 315)	A	2008/12/01
HGA012B		Auxiliary Terminal Box Fitting arrangements (for RTD's /Thermistors/ Heaters / Frames 80 – 315)	A	2008/12/01
HGA012C		Auxiliary Terminal (for RTD's /Thermistors/ Heaters)	A	2008/12/01
HGA0801		General arrangement for HGA 80 Motors Ex e, Ex nA & Ex tD protection	B	2009/03/11
HGA0802		Detail views for HGA80 Motors Ex e, Ex nA & Ex tD protection	A	2008/11/28
HGA0803		Parts list for HGA080 Motor Ex e, Ex nA & Ex tD protection	B	2009/03/11
HGA0811NP		Nameplate for HGA Motor Frame 80 – 112 Motors Ex e, Ex nA & Ex tD protection	C	2009/03/13
HGA0813TB1		Terminal Box HGA Motor Frame 80 - 132 Ex e, Ex nA & Ex tD protection 800V Max	B	2009/02/27
HGA0813TBG		Terminal Box Gaskets HGA Motor Frame 080 - 132 Ex e, Ex nA & Ex tD protection	A	2008/12/02
HGA0901		General arrangement for HGA 90 Motors Ex e, Ex nA & Ex tD protection	B	2009/03/11
HGA0902		Detail views for HGA 90 Motors Ex e, Ex nA & Ex tD protection	A	2009/11/28
HGA0903		Parts list for HGA 090 Motor Ex e, Ex nA & Ex tD protection	B	2009/03/11

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Manufacturer's Documents				
Drawing/ Document No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
Ex e, nA & tD motors				
HGA1001		General arrangement for HGA 100 Motors Ex e, Ex nA & Ex tD protection	B	2009/03/11
HGA1002		Detail views for HGA 100 Motors Ex e, Ex nA & Ex tD protection	A	2009/11/28
HGA1003		Parts list for HGA 100 Motor Ex e, Ex nA & Ex tD protection	B	2009/03/11
HGA1121		General arrangement for HGA 112 Motors Ex e, Ex nA & Ex tD protection	B	2009/03/11
HGA1122		Detail views for HGA 112 Motors Ex e, Ex nA & Ex tD protection	A	2008/11/28
HGA1123		Parts list for HGA 112 Motor Ex e, Ex nA & Ex tD protection	B	2009/03/11
HGA1318NP		Nameplate for HGA Motor Frame 132 – 180 IEC Ex e, Ex nA & Ex tD protection	C	2009/03/13
HGA1321		General arrangement for HGA 132 Motors Ex e, Ex nA & Ex tD protection	B	2009/03/11
HGA1322		Detail views for HGA 132 Motors Ex e, Ex nA & Ex tD protection	A	2008/11/28
HGA1323		Parts list for HGA 132 Motor Ex e, Ex nA & Ex tD protection	B	2009/03/11
HGA1601		General arrangement for HGA 160 Motors Ex e, Ex nA & Ex tD protection	B	2009/03/11
HGA1602		Detail views for HGA 160 Motors Ex e, Ex nA & Ex tD protection	A	2008/11/28
HGA1603		Parts list for HGA 160 Motor Ex e, Ex nA & Ex tD protection	B	2009/03/11
HGA1618TBG		Terminal Box Gaskets HGA Motor Frame 160 – 180 Ex e, Ex nA & Ex tD protection	A	2008/12/02
HGA1801		General arrangement for HGA 180 Motors Ex e, Ex nA & Ex tD protection	B	2009/03/11
HGA1802		Detail views for HGA 180 Motors Ex e, Ex nA & Ex tD protection	A	2008/11/28
HGA1803		Parts list for HGA 180 Motor Ex e, Ex nA & Ex tD protection	B	2009/03/11
HGA2001		General arrangement for HGA 200 Motors Ex e, Ex nA & Ex tD protection	B	2009/03/10
HGA2002		Detail views for HGA 200 Motors Ex e, Ex nA & Ex tD protection	A	2008/11/28
HGA2003		Parts list for HGA 200 Motor Ex e, Ex nA & Ex tD protection	C	2009/03/10
HGA2022NP		Nameplate for HGA Motors Frames 200 – 225 Ex e, Ex nA & Ex tD protection	C	2009/03/13
HGA2022TBG		Terminal Box Gaskets HGA Motor Frame 200 – 225 Ex e, Ex nA & Ex tD protection	A	2008/12/02
HGA2251		General arrangement for HGA 225 Motors Ex e, Ex nA & Ex tD protection	B	2009/03/10
HGA2252		Detail views for HGA 225 Motors Ex e, Ex nA & Ex tD protection	A	2008/11/28
HGA2253		Parts list for HGA 225 Motor Ex e, Ex nA & Ex tD protection	B	2009/03/10

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Manufacturer's Documents				
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Ex e, nA & tD motors				
HGA2501		General arrangement for HGA 250 Motors Ex e, Ex nA & Ex tD protection	B	2009/03/10
HGA2502		Detail views for HGA 250 Motors Ex e, Ex nA & Ex tD protection	A	2008/11/28
HGA2503		Parts list for HGA 250 Motor Ex e, Ex nA & Ex tD protection	B	2009/03/10
HGA2531NP		Nameplate for HGA Motors Frames 250 – 315 IEC Ex e, Ex nA & Ex tD protection	C	2009/03/13
HGA2528TBG		Terminal Box Gasket HGA Motor Frame 250 – 280 Ex e, Ex nA & Ex tD protection	A	2008/12/02
HGA2801		General arrangement for HGA 280 Motors Ex e, Ex nA & Ex tD protection	B	2009/03/10
HGA2802		Detail views for HGA 280 Motors Ex e, Ex nA & Ex tD protection	B	2009/03/10
HGA2803		Parts list for HGA 280 Motor Ex e, Ex nA & Ex tD protection	B	2009/03/10
Exe				
HGA010		Determination of t_E times for HGA Ex e motors	A	2008/12/01
HGA010A		t_E times for HGA Ex e motors	A	2008/12/02
HGA1618TB1		Terminal Box HGA Motor Frame 160 – 180 Ex e, protection 800V Max	B	2009/02/27
HGA2022TB1		Terminal Box HGA Motor Frame 200 – 225 Ex e, protection 800V Max	B	2009/02/27
HGA2528TB1		Terminal Box HGA Motor Frame 250 – 280 Ex e protection 800V Max	B	2009/02/27
Ex nA & Ex tD				
HGA1618TB2		Terminal Box HGA Motor Frame 160 - 180, Ex nA & Ex tD protection 800V Max	B	2009/02/27
HGA2022TB2		Terminal Box HGA Motor Frame 200 - 225 Motor Ex nA & Ex tD protection 800V Max	B	2009/02/27
HGA2528TB2		Terminal Box HGA Motor Frame 250 - 280 Ex nA & Ex tD protection 800V Max	B	2009/02/27
HGA3151		General arrangement for HGA 315 Motors Ex nA & Ex tD protection	B	2009/03/10
HGA3152		Detail views for HGA 315 Motors Ex nA & Ex tD protection	A	2008/11/28
HGA3153		Parts list for HGA 315 Motor Ex nA & Ex tD protection	B	2009/03/10
HGA315TB		Terminal Box HGA Motor Frame 315 Ex nA & Ex tD protection	B	2009/02/27
HGA315TBG		Terminal Box Gaskets HGA Motor Frame 315 Ex nA & Ex tD protection	A	2008/12/02
Ex nA				
HGA007		HGA 'Ex nA' motor loadability with frequency convertor	A	2008/12/01
Ex tD protection				
HGA0804		General arrangement for HGA080 Brake Motor Ex tD protection	B	2009/03/13
HGA0805		Brake Parts list for HGAB080 Motor Ex tD protection	A	2008/12/02

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Manufacturer's Documents				
Drawing/ Document No.:	Page/s:	Title:	Revision Level:	Date: (yyyy-mm-dd)
Ex tD protection				
HGA0813TBB		Terminal Box HGA Brake Motor Frame 80 - 132 Ex tD protection (Rectifier in main box)	B	2009/02/27
HGA0813TBB1		Terminal Box HGA Brake Motor Frame 80 - 132 (Sealed rectifier – Motor supply) Ex tD protection	B	2009/02/27
HGA0813TBB2		Terminal Box HGA Brake Motor Frames 80 - 132 (Sealed rectifier – Independent supply) Ex tD protection	B	2009/02/27
HGA0813TBB3		Terminal Box HGA Brake Motor Frame 80 - 132 (Rectifier pack – Motor supply) Ex tD protection	B	2009/02/27
HGA0813TBB4		Terminal Box HGA Brake Motor Frame 80 - 132 (Rectifier pack – Independent supply) Ex tD protection	B	2009/02/27
HGA0904		General arrangement for HGA90 Brake Motors Ex tD protection	B	2009/03/13
HGA0905		Brake Parts list for HGAB90 Motor Ex tD protection	A	2008/12/02
HGA1004		General arrangement for HGA 100 Brake Motors Ex tD protection	B	2009/03/13
HGA1005		Brake Parts list for HGAB 100 Motor Ex tD protection	A	2008/12/02
HGA1124		General arrangement for HGA 112 Brake Motors Ex tD protection	B	2009/03/13
HGA1125		Brake Parts list for HGAB 112 Motor Motors Ex tD protection	A	2008/12/02
HGA1324		General arrangement for HGA 132 Brake Motors Ex tD protection	B	2009/03/13
HGA1325		Brake Parts list for HGAB 132 Motor Ex tD protection	A	2008/12/02

Variations permitted by Issue 5.

The drawings relating to variations permitted by Issue 3 of this Certificate were omitted from Issue 3 and are now included in Issue 5.

Conditions of Certification relating to variations permitted by Issue 5 of this Certificate:

All previous conditions still apply.

Drawing relating to variations permitted by Issue 5 of this Certificate:

Document No.	Sheets	Document Title	Issue	Date
SGA121SG	1	ALTERNATIVE NAMEPLATE FOR SGA (SG) MOTORS FRAME 71 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	B	2008/04/30
SGA122SG	1	NAMEPLATE FOR SGA (SG) MOTORS FRAME 71-112 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	B	2008/04/30
SGA141SG	1	NAMEPLATE FOR SGA (SG) MOTORS FRAME 132-180 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	B	2008/04/30
SGA163SG	1	NAMEPLATE FOR SGA (SG) MOTORS FRAME 200-225 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	B	2008/04/30
SGA164SG	1	NAMEPLATE FOR SGA (SG) MOTORS FRAME 250-315 ATEX / IEC Ex e, Ex nA & Ex tD PROTECTION	B	2008/04/30

Certificate issued by:



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