

# *Certification of*

# EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

## AUSEx Scheme

# Certificate of Conformity

**Certificate No:** AUS Ex 3852X                      **Issue 0:** Original Issue 19/12/2002  
**Issue 3:** 22/12/2004

**Date of Expiry:** 19/12/2012

**Certificate Holder:** CMG Pty Ltd  
19 Corporate Avenue  
ROWVILLE VIC 3178

**Electrical Equipment:** Range of Ex e, Squirrel Cage Induction Motors  
Frame Sizes 80 to 400

**Type of Protection:** Ex e

**Marking Code:** Ex e II T3 (Tamb 50 °C) IP66  
AUS Ex 3852X

**Manufactured By:** Nanyang Explosion Protection Group Co Ltd  
22 North Zhongjing Road  
Nanyang City  
Henan Province  
CHINA

Issued by:



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*This certificate is granted subject to the conditions as set out in Standards Australia Miscellaneous Publication MP69 and the Procedure (Doc Q7134) of the scheme.*

*The electrical equipment and any acceptable variation to it specified in the schedule to this certificate and the identified documents, was found to comply with the following standards:*

- AS 2380.1-1989 Electrical equipment for explosive atmospheres - Explosion-protection techniques Part 1: General requirements (incorporating Amendment 1)
- AS 2380.6-1988 Electrical equipment for explosive atmospheres - Explosion-protection techniques Part 6: Increased safety
- AS 1939-1990 Degrees of protection provided by enclosures of electrical equipment (IP Code)

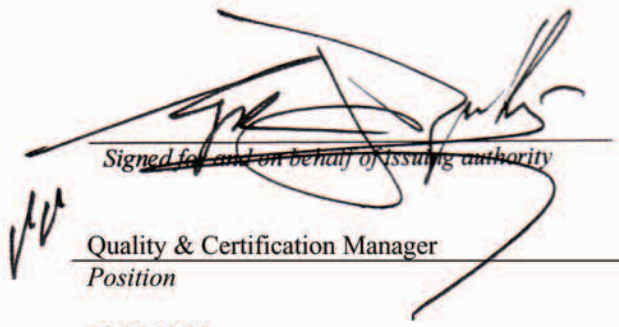
*This certificate does not ensure compliance with electrical safety requirements and performance other than those included in the Standards listed above.*

*It is the certificate holder's responsibility to ensure any relevant routine test in the above Standards is carried out.*

*The equipment listed successfully met the examination and test requirements as recorded in*

*Test Report No: TestSafe 23486, 24055, 25833*

*File Reference: TestSafe 2002/026441, 2003/004734, 2004/017404*

  
Signed for and on behalf of issuing authority

Quality & Certification Manager  
Position

22/12/2004  
Date of Issue

Ex 3852X-3

*This certificate and schedule may not be reproduced except in full.*

*This certificate is not transferable and remains the property of the issuing body to whom it must be returned in the event of it being revoked or not renewed.*

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### AUSEx Scheme

## Schedule

**Certificate No:** AUS Ex 3852X

**Issue:** 3

**Date of Issue:** 22/12/2004

**Certified Equipment:**

A range of squirrel cage induction motors with enclosures manufactured from cast iron and comprising a main body with bolt-on terminal box. The motors are designed for three phase operation and may be supplied with one or more of the options detailed in Schedule 3. Mounting may be by foot, flange, or foot and flange. An ingress protection rating of IP66 is achieved by provision of bearing V-ring seals and an 'O' ring seal on the lid of the main terminal box. Electrical connection is via a threaded entry in the main terminal box wall, designed to accommodate either a gland or conduit entry.

The range of motors covered by this Certificate is listed in Schedule 1. The starting current ratios and  $t_E$  times are listed in Schedule 2.

The range of motors is either type PPA for Australian output or type PPC for Cenelec output and are identical in construction for a given frame type.

**Conditions of Certification:**

1. It is a condition of safe use that on installation, if a gland is used, then this gland must be appropriately Standard Australia certified and have an IP rating of at least IP66.
2. It is a condition of manufacture that each motor shall have a routine high voltage test carried out in accordance with Clause 6.2 of AS 2380.1-1989.
3. It is a condition of safe use that any vibration sensors used at installation must be appropriately Standards Australia certified

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## AUSEx Scheme

Addendum to Certificate No. Ex 3852X-3

### Schedule 1

2 Pole Motors					
Frame Size	Output Australian Type PPA (kW)	Output Cenelec Type PPC (kW)	Frame Size	Output Australian Type PPA (kW)	Output Cenelec Type PPC (kW)
112M	4		315S	132	110
132SA	5.5		315M	150	
132SB	7.5		315M		132
160MA	11		315L	185	
160MB	15		315LXA	200	
160L	18.5		315LXB	220	
180M	22		355LA	250	200
200LA	30		355LB		220
200LB	37		355LC		225
225M	45		355LD		250
250S	55		355LE	280	280
250M	75		355LF	315	
250M		55	355LG	355	
280S	90	75	355LX	400	
280M	110		400LA	450	
280M		90	400LB	500	
			400LX	560	

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Addendum to Certificate No. Ex 3852X-3

### Schedule 1 (Continued)

4 Pole Motors					
Frame Size	Output Australian Type PPA (kW)	Output Cenelec Type PPC (kW)	Frame Size	Output Australian Type PPA (kW)	Output Cenelec Type PPC (kW)
112M	4		315S	132	110
132S	5.5		315M		132
132M	7.5		315M	150	150
160M	11		315LA	185	185
160L	15		315LB	200	
180M	18.5		315LC	220	
180L	22		315LX	250	
200L	30		355LA	280	200
225S	37		355LB		220
225M	45		355LC		225
250S	55		355LD		250
250M	75		355LE		280
250M		55	355LF	315	
280S	90	75	355LG	355	
280M	110		355LH	400	
280M		90	400LA	450	
			400LB	500	
			400LC	560	
			400LX	630	

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### Schedule 1 (Continued)

6 Pole Motors					
Frame Size	Output Australian Type PPA (kW)	Output Cenelec Type PPC (kW)	Frame Size	Output Australian Type PPA (kW)	Output Cenelec Type PPC (kW)
112M	2.2		315S	90	75
132S	3		315MA	110	
132MA	4		315MB		90
132MB	5.5		315MC	132	132
160M	7.5		315L	150	150
160L	11		315LX	185	
180L	15		355LA	200	185
200LA	18.5		355LB		200
200LB	22		355LC	220	220
225M	30		355LD		225
250S	37		355LE	250	250
250M	45		355LF	280	280
250M		37	355LX	315	
280S	55	45	400LA	355	
280M	75		400LB	400	
280M		55	400LC	450	
			400LX	500	

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### Schedule 1 (Continued)

8 Pole Motors					
Frame Size	Output Australian Type PPA (kW)	Output Cenelec Type PPC (kW)	Frame Size	Output Australian Type PPA (kW)	Output Cenelec Type PPC (kW)
132S	2.2		315S	75	55
132M	3		315M	90	
160MA	4		315M		75
160MB	5.5		315L	110	
160L	7.5		315LX	132	
180L	11		355LA	150	132
200L	15		355LB		150
225S	18.5		355LC	185	185
225M	22		355LD	200	200
250S	30		355LE	220	220
250M	37	30	355LF	250	250
280S	45	37	355LX	280	
280M	55		400LA	315	
280M		45	400LB	355	
			400LX	400	

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Addendum to Certificate No. Ex 3852X-3

Schedule 2: PPA (Australian) series, Starting Current Ratio ( $I_A/I_N$ ) and  $t_E$  Time

2 Poles				
Type	Output (kW)	Starting Current Ratio * $I_A/I_N$	Tested/ Calculated $t_E$ time (s)	* $t_E$ value (s)
112-2	4	6.9	10.3	10
132-2	5.5	7.5	15.7	15
132-2	7.5	7.5	12.3	12
160-2	11	6.3	11.8	11
160-2	15	6.8	9.3	9
160-2	18.5	6.6	7.9	7
180-2	22	6.6	8.1	8
200-2	30	6.2	8.2	8
200-2	37	6.5	6.6	6
225-2	45	6.6	8.3	8
250-2	55	6.6	7.0	7
250-2	75	6.7	5.9	5
280-2	90	6.3	6.0	6
280-2	110	6.1	6.2	6
315-2	132	5.6	9.7	9
315-2	150	5.6	8.9	8
315-2	185	6.5	6.7	6
315-2	200	5.6	7.5	7
315-2	220	6.0	6.9	6

\* For nameplate data

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Addendum to Certificate No. Ex 3852X-3

**Schedule 2 (Continued): PPA (Australian) series, Starting Current Ratio ( $I_A/I_N$ ) and  $t_E$  Time**

2 Pole motors				
Type	Output (kW)	Starting Current Ratio * $I_A/I_N$	Tested/ Calculated $t_E$ time (s)	* $t_E$ value (s)
355-2	250	5.6	7.9	7
355-2	280	5.9	7.4	7
355-2	315	5.3	7.4	7
355-2	355	6.0	6.3	6
355-2	400	5.1	7.3	7
400-2	450	5.4	6.8	6
400-2	500	6.6	6.0	6
400-2	560	5.8	7.1	7
4 Pole motors				
112-4	4	6.7	15.1	15
132-4	5.5	7.0	13.6	13
132-4	7.5	7.9	12.0	12
160-4	11	6.4	17.9	17
160-4	15	7.1	12.2	12
180-4	18.5	6.9	10.8	10
180-4	22	6.6	10.6	10
200-4	30	7.1	10.3	10
225-4	37	6.6	12.8	12
225-4	45	6.8	13.0	13
250-4	55	6.3	13.0	13
250-4	75	6.9	7.3	7
280-4	90	6.6	10.2	10

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Schedule 2 (Continued): PPA (Australian) series, Starting Current Ratio ( $I_A/I_N$ ) and  $t_E$  Time

4 Pole motors				
Type	Output (kW)	Starting Current Ratio * $I_A/I_N$	Tested/ Calculated $t_E$ time (s)	* $t_E$ value (s)
280-4	110	6.8	9.2	9
315-4	132	6.3	10.7	10
315-4	150	6.4	9.9	9
315-4	185	6.3	8.9	8
315-4	200	6.6	8.1	8
315-4	220	6.8	7.7	7
315-4	250	6.6	7.4	7
355-4	280	4.9	10.9	10
355-4	315	4.9	10.3	10
355-4	355	5.0	9.9	9
355-4	400	5.1	8.9	8
355-4	450	5.3	8.0	8
400-4	450	5.1	8.2	8
400-4	500	5.3	7.4	7
400-4	560	4.4	9.2	9
400-4	600	5.3	10.6	10
400-4	630	5.0	11.6	11

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**Schedule 2 (Continued): PPA (Australian) series, Starting Current Ratio ( $I_A/I_N$ ) and  $t_E$  Time**

6 Pole motors				
Type	Output (kW)	Starting Current Ratio * $I_A/I_N$	Tested/ Calculated $t_E$ time (s)	* $t_E$ value (s)
112-6	2.2	5.8	33.8	33
132-6	3	6.4	14.2	14
132-6	4	5.9	14.5	14
132-6	5.5	6.2	11.6	11
160-6	7.5	5.5	24.2	24
160-6	11	6.0	19.7	19
180-6	15	7.2	13.3	13
200-6	18.5	6.4	14.9	14
200-6	22	6.7	13.0	13
225-6	30	7.2	22.4	22
250-6	37	6.3	20.2	20
250-6	45	6.5	20.2	20
280-6	55	6.9	12.9	12
280-6	75	6.2	13.8	13
315-6	90	6.3	7.3	7
315-6	110	6.0	6.4	6
315-6	132	5.6	7.5	7
315-6	150	5.6	7.3	7
315-6	185	5.8	6.3	6
315-6	200	5.9	6.2	6
355-6	200	4.8	8.8	8
355-6	220	4.8	8.4	8
				Cont.

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6 Pole motors				
Type	Output (kW)	Starting Current Ratio * $I_A/I_N$	Tested/ Calculated $t_E$ time (s)	* $t_E$ value (s)
355-6	250	4.7	9.3	9
355-6	280	4.7	9.7	9
355-6	315	5.3	7.1	7
400-6	355	5.7	8.9	8
400-6	400	6.1	7.8	7
400-6	450	5.7	8.0	8
400-6	500	5.5	7.9	7
8 Pole motors				
132-8	2.2	4.8	20.2	20
132-8	3	4.7	18.2	18
160-8	4	5.0	12.9	12
160-8	5.5	5.2	10.6	10
160-8	7.5	5.7	8.4	8
180-8	11	5.6	15.4	15
200-8	15	5.2	11.4	11
225-8	18.5	5.4	12.5	12
225-8	22	5.5	11.4	11
250-8	30	5.8	10.3	10
250-8	37	5.3	11.3	11
280-8	45	5.4	10.8	10
280-8	55	6.0	8.7	8

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**Schedule 2 (Continued): PPA (Australian) series, Starting Current Ratio ( $I_A/I_N$ ) and  $t_E$  Time**

8 Pole motors				
Type	Output (kW)	Starting Current Ratio * $I_A/I_N$	Tested/ Calculated $t_E$ time (s)	* $t_E$ value (s)
315-8	75	4.7	10.8	10
315-8	90	4.4	11.0	11
315-8	110	4.6	9.4	9
315-8	132	4.8	8.9	8
315-8	150	4.9	8.4	8
355-8	150	4.0	13.9	13
355-8	185	4.1	12.7	12
355-8	200	4.4	11.9	11
355-8	220	4.3	11.7	11
355-8	250	4.5	10.8	10
355-8	280	4.5	10.1	10
400-8	280	5.7	13.7	13
400-8	315	5.8	12.4	12
400-8	355	5.7	11.8	11
400-8	400	5.7	11.2	11

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Schedule 2 (Continued): PPC (Cenelec) series, Starting Current Ratio ( $I_A/I_N$ ) and  $t_E$  Time

Type	kW	Starting Current Ratio * $I_A/I_N$	Tested/ Calculated $t_E$ time	* $t_E$ value for nameplate data
250M-2	55	6.5	7.0	7
280S-2	75	7.9	6.0	6
280M-2	90	7.8	6.3	6
315S-2	110	6.7	9.0	9
315M-2	132	6.5	9.7	9
355LA-2	200	6.6	7.5	7
355LB-2	220	7.5	6.9	6
355LC-2	225	6.8	6.6	6
355LD-2	250	6.8	7.9	7
355LE-2	280	7.0	7.4	7
250M-4	55	7.1	13.0	13
280S-4	75	6.9	13.0	13
280M-4	90	7.4	10.2	10
315S-4	110	6.3	12.8	12
315M-4	132	6.9	10.7	10
315M-4	150	7.1	9.9	9
315LA-4	185	7.1	8.9	8
355LA-4	200	7.5	8.1	8
355LB-4	220	7.3	7.7	7
355LC-4	225	7.1	7.3	7
355LD-4	250	7.6	7.4	7
355LE-4	280	5.3	10.9	10

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### Schedule 2 (Continued): PPC (Cenelec) series, Starting Current Ratio ( $I_A/I_N$ ) and $t_E$ Time

Type	kW	Starting Current Ratio * $I_A/I_N$	Tested/ Calculated $t_E$ time	* $t_E$ value for nameplate data
250M-6	37	6.5	20.2	20
280S-6	45	6.3	19.3	19
280M-6	55	7.4	12.9	12
315S-6	75	6.5	10.5	10
315MB-6	90	6.5	7.3	7
315MC-6	132	6.2	7.5	7
315L-6	150	6.1	7.3	7
355LA-6	185	5.9	6.3	6
355LB-6	200	5.2	6.2	6
355LC-6	220	5.2	8.4	8
355LD-6	225	5.0	11.5	11
355LE-6	250	5.6	9.3	9
355LF-6	280	5.2	9.7	9
250M-8	30	5.7	17.2	17
280S-8	37	5.6	10.1	10
280M-8	45	5.8	10.8	10
315S-8	55	4.9	10.8	10
315M-8	75	4.9	10.8	10
355LA-8	132	5.3	8.9	8
355LB-8	150	4.7	13.9	13
355LC-8	185	5.1	12.7	12
355LD-8	200	4.8	11.9	11
355LE-8	220	4.7	11.7	11
355LF-8	250	5.0	10.8	10

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### Schedule 3

Permitted options for all motors	
1	Alternative mounting of terminal box.
2	Anti-condensation heaters fitted in accordance with drawing PPA038.
3	Additional sets of PTC thermistors fitted in accordance with drawing PPA038.
4	Auxiliary terminal box for the termination of the thermistors, RTD's and heaters. Fitted in accordance with drawing PPA039.
5	Winding RTD's fitted into the motor windings in accordance with drawing PPA038.
6	Bearing thermistors fitted into the bearing housing with leads sleeved with vidaflex fibreglass sleeve and routed into auxiliary terminal box.
7	Vibration sensors fitted in tapped blind hole in endshields or as shown in drawing 7476B.
8	Stainless steel fasteners.
9	Magnetic grades of stainless steel for 2 pole motor shafts. Magnetic or non-magnetic grades of stainless steel for 4, 6 or 8 pole motor shafts.
10	Alterations to shaft extension diameter to IEC 60072-1 Table 4 and / or length. Alternatively, shaft design to requirements of AS 1403-1985.
11	Alternative types of rolling element bearings.
12	Flange size and type changes external to motor enclosure.
13	Fan and fan cover design changes for noise reduction while maintaining required clearances and airflow.
14	Additional eyebolt for vertical lifting.
15	Rain canopy for vertical mount (shaft down) without reducing airflow over motor.
16	Sun shields.
17	Blanking plate and extended leads fitted in accordance with drawing PPA041.
18	Brass, aluminium or steel gland plate in place of cast iron. Alloys to contain < 6% magnesium by mass.
19	Larger terminal box – Next size up.
20	Larger terminal block with larger box. Creepage and clearance distances maintained.
21	Supply voltages within the range 100 to 750 volts at 40, 50 or 60 Hz.
22	Location of drain plug at lowest point for different mounting arrangements.
23	Forced ventilation by separate cooling fan and motor in accordance with drawing PPA042.
24	Bearing RTD's fitted into the bearing housing with leads terminated in an auxiliary terminal box in accordance with drawing 7476A.

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# Certification of

# EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

## AUSEx Scheme

Addendum to Certificate No. Ex 3852X-3

### Drawing Schedule

Drawing No.	Drawing Title	Issue	Date
PPA001	General Arrangement of PPA Motors Frames 112 – 132 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA002	General Arrangement of PPA Motors Frames 160 – 200 Ex e, Ex n & DIP Protection	B	14/11/2002
PPA003	General Arrangement of PPA Motors Frames 225 – 315 Ex e, Ex n & DIP Protection	B	14/11/2002
PPA004	General Arrangement of PPA Motors Frames 355 – 450 Ex e, Ex n & DIP Protection	B	14/11/2002
PPA005	Rotor / Stator Air Gaps - 2 Pole PPA Motors Frames 112 – 450 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA006	Rotor / Stator Air Gaps - 4 Pole PPA Motors Frames 112 – 450 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA007	Rotor / Stator Air Gaps - 6 Pole PPA Motors Frames 112 – 450 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA008	Rotor / Stator Air Gaps - 8 Pole PPA Motors Frames 112 – 450 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA009	Stator Internal Connection, Insulation, Testing PPA Motor Frames 112 - 450 Ex e, Ex n & DIP Protection	A	17/07/2002
PPA010	Parts List for PPA Motor Frame 112 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA011	Parts List for PPA Motor Frame 132 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA012	Parts List for PPA Motor Frame 160 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA013	Parts List for PPA Motor Frame 180 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA014	Parts List for PPA Motor Frame 200 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA015	Parts List for PPA Motor Frame 225 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA016	Parts List for PPA Motor Frame 250 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA017	Parts List for PPA Motor Frame 280 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA018	Parts List for PPA Motor Frame 315 Ex e, Ex n & DIP Protection	A	26/07/2002

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## AUSEx Scheme

Addendum to Certificate No. Ex 3852X-3

### Drawing Schedule (Continued)

Drawing No.	Drawing Title	Issue	Date
PPA019	Parts List for PPA Motor Frame 355 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA020	Parts List for PPA Motor Frame 400 Ex e, Ex n & DIP Protection	A	26/07/2002
PPA022A	PPA /PPC Ex e Nameplate Details Frame 112 - 450	C	16/12/2002
PPA023	Nameplate Placement 315 - 400 Frame PPA / PPC	A	9/08/2002
PPA024	Options for PPA / PPC Ex e, Ex n & DIP Motors	E	19/12/2002
PPA025	Terminal Box Sizes for PPA Motor Frame 112 - 450 Ex e, Ex n & DIP Protection	B	14/11/2002
PPA026	Terminal Board PPA Motor Frame 112 - 132 Ex e Protection	A	22/07/2002
PPA027	Terminal Board PPA Motor Frame 160 - 180 Ex e Protection	A	22/07/2002
PPA028	Terminal Board PPA Motor Frame 200 - 250 Ex e Protection	A	22/07/2002
PPA029	Terminal Board PPA Motor Frame 250, 280 Ex e Protection	A	22/07/2002
PPA030	Terminal Board PPA Motor Frame 250, 280 & 315 Ex e Protection	A	22/07/2002
PPA031	Terminal Board PPA Motor Frame 315, 355 - 450 Ex e Protection	A	22/07/2002
PPA037	Fan clearances of PPA motors frames 112 –450 Ex e, Ex n & DIP protection	A	1/10/2002
PPA038	Placement of protection devices	A	13/11/2002
PPA039	Auxiliary box fitting arrangement	A	13/11/2002
PPA040	Drain plug fitment	A	14/11/2002
PPA041	Blanking plate and extension leads	A	15/11/2002
PPA042	Forced ventilation by separately driven cooling fan	C	16/12/2002
PPA043	Determination of $t_E$ time for PPA Ex motors	A	9/12/2002
PPA043A	$t_E$ time for PPA 2 pole Ex e motors	B	16/12/2002
PPA043B	$t_E$ time for PPA 4 pole Ex e motors	B	16/12/2002
PPA043C	$t_E$ time for PPA 6 pole Ex e motors	B	16/12/2002
PPA043D	$t_E$ time for PPA 8 pole Ex e motors	A	12/12/2002
7476A	RTD Arrangement, 315 –400 Frame PPA	A	14/11/2002
7476B	Vibration sensor Arrangement, 315 –400 Frame PPA	A	14/11/2002

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## AUSEx Scheme

Addendum to Certificate No. Ex 3852X-3

### Schedule of Variations

#### Variations Permitted by Issue 1:

The last paragraph of Certified Equipment on page 3 of the certificate has been corrected as follows:

“The range of motors is either type PPA for Australian output or type PPC for Cenelec output and are identical in construction for a given frame type”.

#### Variations Permitted by Issue 2:

The certificate detail has been revised to correct minor technical inconsistencies between the basic equipment as described and permitted options.

Addition to the range of motors to include motors PPA80 to PPA100 as listed in Schedule 4 with the corresponding starting current ratios and  $t_E$  times listed in Schedule 5. Permitted options remain unchanged except that auxiliary cooling fans are not fitted to the 80 – 100 range.

Addition of revised drawings PPA023 Issue B dated 22/7/2003 to remove the specific voltage of anti-condensation heaters that will change with the rated supply voltage and Drawing 7476A Issue B dated 22/7/2003 to address the issue of armoured cable for RTD leads.

#### Schedule 4

2 POLE		4 POLE		6 POLE	
Frame size	Output Australian Type PPA (kW)	Frame size	Output Australian Type PPA (kW)	Frame Size	Output Australian Type PPA (kW)
80	0.75	80	0.55		
80	1.1	80	0.75		
90S	1.5	90S	1.1		
90L	2.2	90L	1.5	90S	0.75
100L	3.0	100L	2.2	90L	1.1
		100L	3.0	100L	1.5

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## AUSEx Scheme

Addendum to Certificate No. Ex 3852X-3

### Schedule 5

Starting Current Ratio ( $I_A/I_N$ ) and $t_E$ Time				
Type	Output (kW)	Starting Current Ratio $*I_A/I_N$	Tested/ Calculated $t_E$ time (s)	$*t_E$ value (s)
801-2	0.75	6.0	18.5	18
802-2	1.1	6.3	12.7	12
90S-2	1.5	6.1	16.1	16
90L-2	2.2	6.0	12.2	12
100-2	3	6.6	12.8	12
802-4	0.55	6.0	22.9	22
802-4	0.75	6.5	16.8	16
90S-4	1.1	6.3	17.7	17
90L-4	1.5	6.8	12.7	12
100-4	2.2	6.8	19.9	19
100-4	3	7.0	15.0	14
90S-6	0.75	4.4	24.8	24
90L-6	1.1	4.7	18.5	18
100-6	1.5	5.5	19.2	19

\* For nameplate data

### Conditions of Certification Relating to Variations Permitted by Issue 2:

All previous conditions still apply.

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## AUSEx Scheme

Addendum to Certificate No. Ex 3852X-3

### Drawings Relating to Variations Permitted by Issue 2

Drawing No.	Drawing Title	Issue	Date
PPA009	Stator Internal Connection, Insulation, Testing PPA Motor Frames 80 – 450 Ex e, Ex n & DIP Protection	B	13/02/2003
PPA022A	PPA /PPC Ex e nameplate details frame 80 – 450	D	3/06/2003
PPA023	Nameplate Placement 315 - 400 Frame PPA / PPC	B	22/07/2003
PPA038	Placement of protection devices	B	24/07/2003
PPA040	Drain plug fitment	A	14/11/2002
PPA041	Blanking plate and extended leads Ex e, Ex n & DIP protection	B	13/2/2003
PPA043	Determination of $t_E$ time for PPA Ex e motors	A	9/12/2002
PPA043E	$t_E$ times for PPA 80 - 100 Frame Ex e motors	A	13/12/2002
PPA044	General arrangement of PPA motors frames 80 – 100 Ex e, Ex n & DIP protection	A	20/01/2003
PPA045	Rotor/stator air gaps 2-6 pole PPA motor frames 80 – 100 Ex e, Ex n & DIP protection	A	21/01/2003
PPA046	Parts list for PPA motor frame 80 Ex e, Ex n, & DIP protection	A	22/01/2003
PPA047	Parts list for PPA motor frame 90 Ex e, Ex n, & DIP protection	A	22/01/2003
PPA048	Parts list for PPA motor frame 100 Ex e, Ex n, & DIP protection	A	22/01/2003
PPA049	Terminal box PPA motor frame 80-100 Ex e, Ex n, DIP protection	C	25/06/2003
PPA052	Option for PPA / PPC Ex e, Ex n & DIP Motors- 80 – 100 Frame	A	2/06/2003
7476A	RTD Arrangement, 315 – 400 Frame PPA	B	22/7/2003

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## AUSEx Scheme

Addendum to Certificate No. Ex 3852X-3

### Variations Permitted by Issue 3:

1. Inclusion of data relating to the starting current ratio and  $t_E$  times for the PPC (Cenelec) range of motors into previous issues of this certificate, together with minor typographical corrections.
2. Inclusion of an option for 150 kW 6 pole motor type PPA315L to be supplied by Vacon VVVF drive, model number NXS02615A2H0 fitted with thermal shutdown option NXOPTA3. The VVVF drive shall be installed in a safe area.

### Conditions of Certification Relating to Variations Permitted by Issue 3:

1. All previous conditions still apply.
2. It is a condition of safe use that the 150kW motor, type PPA315L may be supplied by a Vacon VVVF Drive, model no. NXS02615A2H0 fitted with thermal shutdown option NXOPTA3. The drive shall be installed in a safe area, and be set to the following characteristics:-

Vacon VVVF drive parameters	
Maximum output frequency	50 Hz
Minimum output frequency	19 Hz
Maximum output voltage	415Volts, 3 phase
Current limit	261 A
Switching frequency	3.6 kHz

3. It is a condition of safe use that when the motor type PPA315L is supplied from the VVFD, the PTC thermistors sensing the temperature of each phase winding of the motor shall be connected to the VVVF drive, to shutdown supply to the motor in the event of any winding temperature exceeding 155 °C.

### Drawings relating to Variations Permitted by Issue 3

Drawing No.	Drawing title	Issue	Date
Cat NX	CMG drives - Vacon Frequency Converters NX series	1	07/03
PPA043F	$t_E$ times for PPC 250-355 frame Ex e motors	A	21/12/2004

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