



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

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

Certificate No.:	IECEX UL 17.0104X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 4	Issue 3 (2022-08-22)
Date of Issue:	2024-11-05		Issue 2 (2019-09-26)
Applicant:	CEMP S.r.l. via Piemonte 16 I-20030 Senago (MI) Italy		Issue 1 (2018-09-28)
Equipment:	Electric A.C. Motor - TerraMAX Motor		Issue 0 (2017-11-28)
Optional accessory:			
Type of Protection:	Increased Safety "eb" and "ec", Dust Ignition Protection by Enclosure "tb" and "tc"		
Marking:	Ex tb IIIC T135 Db		
	Ex tc IIIC T135 Dc		
	Ex eb IIC T3 Gb		
	Ex ec IIC T3 Gc		
	-20°C (minimum) to +50°C (maximum)		

Approved for issue on behalf of the IECEx
Certification Body:

Katy A. Holdredge

Position:

Senior Staff Engineer

Signature:
(for printed version)

Date:
(for printed version)

2024-11-05

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 www.iecex.com or use of this QR Code.



Certificate issued by:

UL Solutions (US)
333 Pfingsten Road
Northbrook IL 60062-2096
United States of America





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Manufacturer: **CEMP S.r.l.**
via Piemonte 16
I-20030 Senago (MI)
Italy

Manufacturing locations: **CEMP S.r.l.**
via Piemonte 16
I-20030 Senago (MI)
Italy

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 equipment 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 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-31:2022](#) Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

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

[US/UL/ExTR17.0117/00](#)
[US/UL/ExTR17.0117/03](#)

[US/UL/ExTR17.0117/01](#)
[US/UL/ExTR17.0117/04](#)

[US/UL/ExTR17.0117/02](#)

Quality Assessment Report:

[IT/CES/QAR07.0002/18](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

TerraMAX Electrical Motors are AC motors utilizing a brushless Non-Sparking 'eb' and 'ec' design. Motor stator, end shields, and terminal box are all constructed of casted iron. Terminal box makes use of two silicone gaskets, one between cover and body. The other between body and motor stator. For frames 200 and above, there is an additional gasket between terminal box and gland plate. The 'tc' and 'tb' construction is the same as the 'eb' and 'ec' design but has an oil seal and o-rings at the end shields. The alternate 'tb' and 'tc' construction does not have the O-Rings at the end shield and used the Gamma seal as the shaft seal.

Please see Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- Motor has a non-metallic fan attached to rotor that is protected by metallic guard. Do not remove cover without taking anti-static precautions as described in device Installation Instructions.
- Threaded entries shall be fitted with a suitable fitting that has a seal or gasket.
- Ensure supply terminals are secured to the correct tightening torque values, as indicated in instructions.
- Compatible with a PWM variable frequency drive converter only.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1: Added alternate construction to achieve IP66 rating and added level of protection 'tb' and 'tc'.

Issue 2: Addition of increased safety 'eb' and 'ec' protection.

Issue 3: Updated to the latest edition of IEC 60079-0 and minor corrections.

Issue 4: Remove IEC 60079-15 from the certificate. Various drawing updates.

Annex:

[Annex to IECEx UL 17.0104X Rev. 4.pdf](#)



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TYPE DESIGNATION

Nomenclature:

Example:

T	C	T	8	5	P	4	A	G	5	1	3	G	Z	X	9	8	3
I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII

I. Efficiency Code

T – LV IE3

II. Frame Type

C – Cast Iron

III. Environment

N – Ex ec Certification

T – Ex tb/tc Certification

E – Ex eb/ec Certification

G – Ex eb/tb Certification

H – Ex ec/tc Certification

IV. Power Ratings (up to 375kW) – Alpha Numeric / Numeric

P – for ratings less than 1

0 – for whole number ratings below 100

1 through 9 – for decimal ratings below 100 or whole number ratings at or above 100

V. Power Ratings from 1.1 to 375 kW– Alpha Numeric / Numeric

P – for decimal ratings below 10

0 – for whole number ratings below 10

1 through 9 – for decimal or whole number ratings above 10 but below 100

VI. Power Ratings from 1.1 to 375 kW– Alpha Numeric / Numeric

P – for decimal ratings below 100

1 through 9 – for all other ratings

VII. Pole

1 – 2 Pole

2 – 4 Pole

3 – 6 Pole

4 – 8 Pole

VIII. Frame Standard

A – Standard IEC

B – non-standard IEC, with non-standard measurements which do not affect protection method i.e., mounting, shaft diameter/length may differ

C – Standard NEMA

D – nonstandard NEMA, with non-standard measurements which do not affect protection method i.e., mounting, shaft diameter/length may differ

IX. Voltage

Any single alphanumeric – Denotes motor voltage for maximum of 1000 V



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X. Frequency

- 1 – 50Hz
- 2 – 60Hz
- 3 – 50Hz/60Hz
- 4 – Other Fixed Frequency
- 5 – Inverter Duty

XI. Frame/Flange Mounting

Any single numeric character from 1-9

XII. Terminal Box Location

- 1 - Top
- 2 – Left
- 3 – Right

XIII. Accessories Any single numeric

- G – General Purpose
- V – VSD Compatible
- D – Force cooling and Encoder
- E – Encoder
- F – Force cooling

XIV. Mechanical Modification

Any single letter, A-Z

XV. Electrical Modification (De-rating to below values specified by this certificate)

Any single letter

XVI. Serial Number Digit 1

Any single alphanumeric
M – Mining construction with larger terminal box

XVII. Serial Number Digit 2

Any single alphanumeric

XVIII. Serial Number Digit 3

Any single alphanumeric

NOTE: Model number may have a two-digit alpha/numeric prefix denoting year and month of manufacture.



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PARAMETERS RELATING TO THE SAFETY

FRAME AND MAX OUTPUT POWER RATINGS

IE3-400V-50Hz			
Frame	Pole	Rating [kW]	Current (A)
80M	2	0.75	1.6
80M	2	1.1	2.4
80M	4	0.75	1.7
90S	2	1.5	3.1
90L	2	2.2	4.3
90S	4	1.1	2.4
90L	4	1.5	3.2
90S	6	0.75	2.1
90L	6	1.1	3.0
100L	4	2.2	4.6
100L	4	3	6.0
100L	6	1.5	3.7
100L	8	0.75	2.2
100L	8	1.1	3.1
100L	2	3	5.6
112M	2	4	7.4
112M	4	4	7.9
112M	6	2.2	5.2
112M	8	1.5	4.0
132S	2	5.5	10.3
132S	2	7.5	13.6
132S	4	5.5	10.9
132M	4	7.5	14.6
132S	6	3	6.8
132M	6	4	8.9
132M	6	5.5	12.1
132S	8	2.2	5.6
132M	8	3	7.6
160M	2	11	19.9
160M	2	15	28.7
160L	2	18.5	32.3
160M	4	11	20.9
160L	4	15	28.0
160M	6	7.5	15.1
160L	6	11	22.2
160M	8	4	9.8
160M	8	5.5	12.9
160L	8	7.5	17.3

IE3-400V-50Hz			
Frame	Pole	Rating [kW]	Current (A)
180M	2	22	39.5
180M	4	18.5	35.8
180L	4	22	42.7
180L	6	15	31.0
180L	8	11	24.5
200L	2	30	55.0
200L	2	37	66.3
200L	4	30	54.5
200L	6	18.5	37.3
200L	6	22	43.9
200L	8	15	34.3
225M	2	45	79.4
225S	4	37	68.1
225M	4	45	81.7
225M	6	30	56.6
225S	8	18.5	38.3
225M	8	22	44.7
250M	2	55	94.8
250M	4	55	98.7
250M	6	37	69.5
250M	8	30	59.9
280S	2	75	128.6
280M	2	90	153.1
280S	4	75	131.6
280M	4	90	156.2
280S	6	45	85.8
280M	6	55	102.4
280S	8	37	74.8
280M	8	45	91.1

IE3-400V-50Hz			
Frame	Pole	Rating [kW]	Current (A)
315S	2	110	188.8
315M	2	132	226.1
315L	2	160	272.8
315L	2	200	341.1
315S	4	110	194.7
315M	4	132	231.7
315L	4	160	276.3
315L	4	200	346.0
315S	6	75	142.1
315M	6	90	169.5
315L	6	110	205.6
315L	6	132	245.0
315S	8	55	119.3
315S	8	75	159.4
315S	8	90	189.8
355M	2	250	425.3
355L	2	315	531.3
355L	2	355	601.0
355L	2	375	634.8
355M	4	250	427.6
355L	4	315	533.5
355L	4	355	601.9
355L	4	375	633.5
355M	6	160	292.0
355M	6	200	364.2
355L	6	250	453.5
355L	6	280	507.2
355L	6	315	551.9
355M	8	110	210.1
355M	8	132	246.3
355M	8	150	278.9
355M	8	160	298.8
355L	8	200	367.9
355L	8	225	413.3

FRAME AND MAX OUTPUT POWER RATINGS

IE3-460V-60Hz			
Frame	Pole	Rating [kW]	Current (A)
80M	2	0.75	1.5
80M	2	1.1	2.0
80M	4	0.75	1.5
90S	2	1.5	2.6
90L	2	2.2	3.7
90S	4	1.1	2.0
90L	4	1.5	2.8
90S	6	0.75	1.7
90L	6	1.1	2.2
100L	4	2.2	3.9
100L	4	3	5.1
100L	6	1.5	3.0
100L	8	0.75	1.9
100L	8	1.1	2.7
100L	2	3	4.8
112M	2	4	6.4
112M	4	4	6.9
112M	6	2.2	4.2
112M	8	1.5	3.3
132S	2	5.5	9.0
132S	2	7.5	11.9
132S	4	5.5	9.2
132M	4	7.5	12.4
132S	6	3	5.6
132M	6	4	7.5
132M	6	5.5	10.1
132S	8	2.2	4.7
132M	8	3	6.4
160M	2	11	17.2
160M	2	15	23.2
160L	2	18.5	28.1
160M	4	11	17.8
160L	4	15	24.1
160M	6	7.5	12.8
160L	6	11	18.8
160M	8	4	8.2
160M	8	5.5	10.9
160L	8	7.5	14.4

IE3-460V-60Hz			
Frame	Pole	Rating [kW]	Current (A)
180M	2	22	34.6
180M	4	18.5	30.3
180L	4	22	36.4
180L	6	15	26.7
180L	8	11	20.8
200L	2	30	47.9
200L	2	37	57.4
200L	4	30	46.5
200L	6	18.5	31.6
200L	6	22	37.1
200L	8	15	29.0
225M	2	45	68.6
225S	4	37	58.5
225M	4	45	69.9
225M	6	30	48.2
225S	8	18.5	33.0
225M	8	22	38.1
250M	2	55	82.9
250M	4	55	84.1
250M	6	37	59.5
250M	8	30	51.3
280S	2	75	112.4
280M	2	90	132.1
280S	4	75	113.4
280M	4	90	134.6
280S	6	45	72.9
280M	6	55	87.0
280S	8	37	63.6
280M	8	45	77.4

IE3-460V-60Hz			
Frame	Pole	Rating [kW]	Current (A)
315S	2	110	163.3
315M	2	132	195.1
315L	2	160	236.5
315L	2	200	294.4
315S	4	110	167.6
315M	4	132	199.0
315L	4	160	237.2
315L	4	200	296.5
315S	6	75	120.5
315M	6	90	144.1
315L	6	110	173.8
315L	6	132	208.4
315S	8	55	98.3
315S	8	75	132.3
315S	8	90	155.9
355M	2	250	368.0
355L	2	315	458.5
355L	2	375	545.9
355M	4	250	366.5
355L	4	315	456.6
355L	4	355	514.6
355L	4	375	543.6
355M	6	160	249.5
355M	6	200	311.9
355L	6	250	389.9
355L	6	280	436.7
355L	6	315	485.5
355M	8	110	176.8
355M	8	132	208.7
355M	8	150	237.2
355M	8	160	253.0
355L	8	200	314.6
355L	8	225	353.9

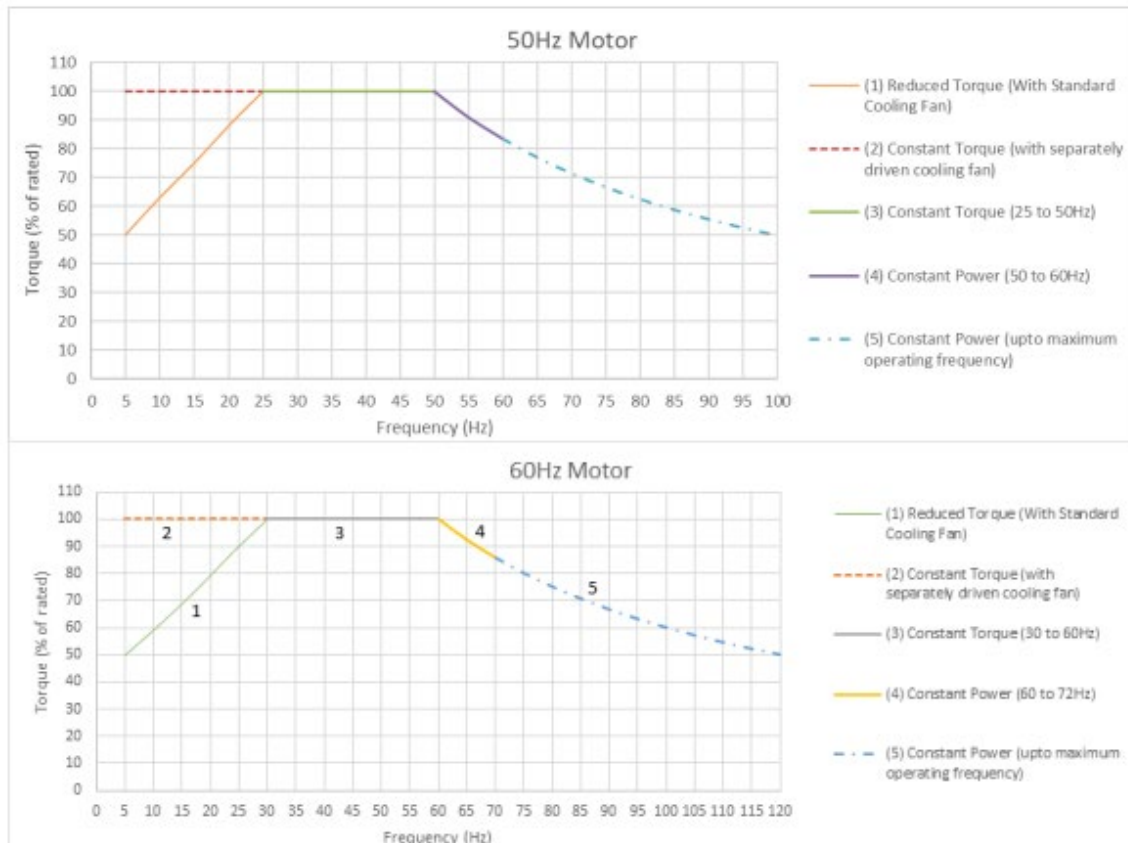
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PWM Variable Frequency Drive Ratings:



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MARKING

Marking has to be readable and indelible; it has to include the following indications:

Nameplate:

55 FOR Ex eb/ec
 66 FOR Ex tb/tc
 66 FOR Ex eb/ec (OPTION)

(110)

TerraMAX™ IEC 60034
 3 PHASE IEC/EN 60079

Model No. Part No.
 S. No. Volts Conn Hz kW IP Ins.cl A r/min cosφ η% SF IE-CL Fr Duty IM

Ex
 Brgs. Relub.

CE
 0539

CC003A

Refer to the Address Table

YOM kg

PROTECTION TYPE & CERTIFICATION NUMBER

NOTIFIED BODY # FOR Zone 1 / 21 MOTORS ONLY
 ONLY WHEN MOTOR MEETS NEMA PREMIUM EFFICIENCY (IE3) AT 60Hz

YEAR OF MANUFACTURE

ONLY FOR Ex eb MOTORS

A	
B	
C	
D	

ADDRESS DETAILS	
CEMP S.r.l. - Via Piemonte 16-20030 SENAGO (Milan) - ITALY	

PROTECTION NOTES
 THE NAMEPLATE WILL BE ETCHED, STAMPED OR ENGRAVED FOR DIFFERENT PROTECTIONS AS FOLLOWS:

PROTECTION TYPE	T (amb)	CERTIFICATION #
1	-20°C (MIN) to +50°C (MAX)	IECEx UL 17.0104X DEMKO 18 ATEX 2068X
2		IECEx UL 17.0104X DEMKO 17 ATEX 1952X
3		IECEx UL 17.0104X DEMKO 18 ATEX 2068X
4		IECEx UL 17.0104X DEMKO 17 ATEX 1952X
5		IECEx UL 17.0104X DEMKO 18 ATEX 2068X
6		IECEx UL 17.0104X DEMKO 17 ATEX 1952X

NOTES
 1 MATERIAL SHALL BE STAINLESS STEEL OR ALUMINIUM / FSS

Electrostatic Supplementary Warning Plate:

⚠ WARNING

1. POTENTIAL DANGER OF ELECTROSTATIC CHARGE-SEE MANUAL
 2. TO BE ENERGIZED WITH CABLE SUITABLE FOR TEMPERATURE 90° C

1. POTENZIALE PERICOLO DI CARICHE ELETTROSTATICHE-VEDERE MANUALE
 2. ALIMENTARE CON CAVO IDONEO A TEMPERATURE DI 90° C



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Inverter Duty Supplementary Nameplate:

95					
①		3~Motor		PWM Converter Supply Alimentazione tramite variatore di frequenza PWM	
Part No.			S.No.		
Volts	Hz	kW	A	r/min	Nm
PTC : °C		Min. Switching Freq		: kHz S9 DUTY	
		Min. Freq commutazione			

ROUTINE EXAMINATIONS AND TESTS

Each piece of equipment defined above has to have successfully passed before delivery:

Routine Dielectric Testing as per Clause 7.1 of IEC 60079-7. The test voltage is to be $(2 \cdot U + 1000)$ V or 1500V, whichever is greater, where U is the rated voltage of a particular motor frame size. The voltage is to be applied for a minimum 60 seconds between each phase and the motor frame. Alternatively, a test shall be carried out at 1,2 times the test voltage but shall be maintained for at least 100 ms.