



# 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](http://www.iecex.com)

Certificate No.: IECEx UL 17.0104X

Issue No: 1

Certificate history:

Issue No. 1 (2018-09-28)

Issue No. 0 (2017-11-28)

Status: **Current**

Page 1 of 4

Date of Issue: **2018-09-28**

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

Equipment: **Electric A.C. Motor - TerraMAX Motor**

*Optional accessory:*

Type of Protection: **Non-Sparking "nA", Dust Protection by Enclosure "tb" and "tc"**

Marking:

Ex nA IIC T3 Gc  
Ex tb IIIB T200 Db  
Ex tc IIIB T200 Dc

-20°C to +50°C

*Approved for issue on behalf of the IECEx  
Certification Body:*

Katy A. Holdredge

*Position:*

Senior Staff Engineer

*Signature:  
(for printed version)*

*Date:*

2018-09-28

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).

Certificate issued by:

**UL LLC**  
333 Pfingsten Road  
Northbrook IL 60062-2096  
United States of America





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Certificate No: IECEX UL 17.0104X

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Page 2 of 4

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

Additional Manufacturing location(s):

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 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 : 2011** Explosive atmospheres - Part 0: General requirements  
Edition:6.0

**IEC 60079-15 : 2010** Explosive atmospheres - Part 15: Equipment protection by type of protection "n"  
Edition:4

**IEC 60079-31 : 2013** Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

*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:

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

Quality Assessment Report:

[IT/CES/QAR07.0002/12](#)



# IECEX Certificate of Conformity

Certificate No: IECEX UL 17.0104X

Issue No: 1

Date of Issue: 2018-09-28

Page 3 of 4

## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

TerraMAX Electrical Motors are AC motors utilizing a brushless Non-Sparking 'nA' 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. The 'tc' and 'tb' construction is the same as the 'nA' design but has an oil seal and o-rings at the endshields.

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.
- Conduit openings and grease opening require the use of O-rings attached.



# IECEX Certificate of Conformity

Certificate No: IECEX UL 17.0104X

Issue No: 1

Date of Issue: 2018-09-28

Page 4 of 4

**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'.

**Annex:**

[Annex to IECEX UL 17.0104X Issue 1.pdf](#)



# IECEx Certificate of Conformity

Certificate No.: IECEx UL 17.0104X

Issue No.: 1

Page 1 of 5

## 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	XI V	XV	XV I	XV II	XV III

I. Efficiency Code

T – LV IE3

II. Frame Type

C – Cast Iron

III. Environment

N – Ex nA Certification

T – Ex tb/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



# IECEx Certificate of Conformity

Certificate No.: IECEx UL 17.0104X

Issue No.: 1

Page 2 of 5

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 690 V

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

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

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.



# IECEx Certificate of Conformity

Certificate No.: IECEx UL 17.0104X

Issue No.: 1

Page 3 of 5

## 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	26.7
160M	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	225.1
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
160M	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	198.0
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	355	517.7
355L	2	375	545.9
355M	4	250	366.5
355L	4	315	456.8
355L	4	355	514.8
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

Certificate No.: IECEx UL 17.0104X

Issue No.: 1

Page 4 of 5

## MARKING

Nameplate:

A	<b>marathon</b> Motors
B	<b>cemp</b>
C	<b>LEESON</b>
D	<b>rotor ni</b>

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

	PROTECTION TYPE	T (amb)	CERTIFICATION #
1	II 3G Ex nA IIC T3 Gc	-20°C to +50°C	IECEx UL 17.0104X DEMKO 17 ATEX 1952X
2	II 2D Ex tb IIIB T200 Db	-20°C to +50°C	IECEx UL 17.0104X DEMKO 18 ATEX 2068X
3	II 3D Ex tc IIIB T200 Dc	-20°C to +50°C	IECEx UL 17.0104X DEMKO 17 ATEX 1952X

Electrostatic Supplementary Warning Plate:

**WARNING - POTENTIAL DANGER OF ELECTROSTATIC CHARGE - SEE SAFETY INSTRUCTION**

**TO BE ENERGIZED WITH CABLE SUITABLE FOR TEMPERATURE 90° C**

**AVVERTIMENTO - POTENZIALE PERICOLO DI CARICHE ELETTROSTATICHE - VEDERE ISTRUZIONI**

**PER ESSERE ECCITATO CON CAVO ADATTO A TEMPERATURE DI 90° C**





# IECEx Certificate of Conformity

Certificate No.: IECEx UL 17.0104X

Issue No.: 1

Page 5 of 5

Inverter Duty Supplementary Nameplate:

3~Motor			PWM Converter Supply Alimentazione tramite variatore di frequenza PWM		
Part No. 11134A15TCN			S.No. WX22000327-15005J		
Volts	Hz	kW	A	r/min	Nm
80 D	10	1.95	20.6	282	63
200 D	25	7.5	27.7	724	97
400 D	50	15	27.1	1476	97
400 D	60	15	26.3	1771	80

PTC : 120°C      Min. Switching Freq : 5 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 23 of IEC 60079-15:2014. The test voltage is to be  $(2*U+1000)$  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.