

TYPE EXAMINATION CERTIFICATE



Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU


- [3] Type Examination Certificate Number: **DEMKO 17 ATEX 1952X Rev. 4**
- [4] Product: **TerraMAX Electric A.C. Motor**
- [5] Manufacturer: **CEMP S.r.l.**
- [6] Address: **via Piemonte 16, Senago, Milan 20030, Italy**
- [7] This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- [8] UL International Demko A/S certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014.
- The examination and test results are recorded in confidential report no. **US/UL/ExTR17.0117/04.**
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:


EN IEC 60079-0:2018
EN 60079-31:2014

EN IEC 60079-7:2015/A1:2018
EN IEC 60079-31:2024

Where additional criteria beyond those given here have been used, they are listed at item 18 in the Schedule.

- [10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed under item 17 of this certificate.
- [11] This Type examination certificate relates only to the design of the specified product, and not to specific items of product subsequently manufactured.
- [12] The marking of the product shall include the following (marking is provided in the Schedule as a part of item 15, if applicable):

 **II 3 D** **Ex tc IIIC T135 Dc**

 **II 3 G** **Ex ec IIC T3 Gc**

Certification Manager
Thomas Wilson

This is to certify that the sample(s) of the Product described herein ("Certified Product") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

Date of issue: 2017-11-28

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Certification Body

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Description of Product:

TerraMAX Electrical Motors are AC motors utilizing a brushless non-sparking 'ec' design. Motor frame, end shields, and terminal box are all constructed of cast iron. Terminal box makes use of two silicone gaskets, one between cover and body and 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' construction is the same as the 'ec' design but has an oil seal and o-rings at the end shields. The alternate 'tc' construction does not have the o-rings at the end shield and used the Gamma seal as the shaft seal.

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 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 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



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- 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.

Electrical ratings:

See "General Ratings" (Drawing Number: TCA-ER-001) for all basic ratings for all frame sizes.

IE3-400V-50Hz				IE3-400V-50Hz				IE3-400V-50Hz			
Frame	Pole	Rating [kW]	Current (A)	Frame	Pole	Rating [kW]	Current (A)	Frame	Pole	Rating [kW]	Current (A)
80M	2	0.75	1.6	180M	2	22	39.5	315S	2	110	188.8
80M	2	1.1	2.4	180M	4	18.5	35.8	315M	2	132	226.1
80M	4	0.75	1.7	180L	4	22	42.7	315L	2	160	272.8
90S	2	1.5	3.1	180L	6	15	31.0	315L	2	200	341.1
90L	2	2.2	4.3	180L	8	11	24.5	315S	4	110	194.7
90S	4	1.1	2.4	200L	2	30	55.0	315M	4	132	231.7
90L	4	1.5	3.2	200L	2	37	66.3	315L	4	160	276.3
90S	6	0.75	2.1	200L	4	30	54.5	315L	4	200	346.0
90L	6	1.1	3.0	200L	6	18.5	37.3	315S	6	75	142.1
100L	4	2.2	4.6	200L	6	22	43.9	315M	6	90	169.5
100L	4	3	6.0	200L	8	15	34.3	315L	6	110	205.6
100L	6	1.5	3.7	200L	8	15	34.3	315L	6	132	245.0
100L	8	0.75	2.2	225M	2	45	79.4	315S	8	55	119.3
100L	8	1.1	3.1	225S	4	37	68.1	315S	8	75	159.4
100L	2	3	5.6	225S	4	45	81.7	315S	8	90	189.8
112M	2	4	7.4	225M	4	30	56.6	355L	2	315	531.3
112M	4	4	7.9	225S	6	18.5	38.3	355L	2	355	601.0
112M	6	2.2	5.2	225S	8	22	44.7	355L	2	375	634.8
112M	8	1.5	4.0	225M	8	22	44.7	355M	4	250	427.6
132S	2	5.5	10.3	250M	2	55	94.8	355L	4	315	533.5
132S	2	7.5	13.6	250M	4	55	98.7	355L	4	355	601.9
132S	4	5.5	10.9	250M	6	37	69.5	355L	4	375	633.5
132M	4	7.5	14.6	250M	8	30	59.9	355M	6	160	292.0
132S	6	3	6.8	280S	2	75	128.6	355M	6	200	364.2
132M	6	4	8.9	280M	2	90	153.1	355L	6	250	453.5
132M	6	5.5	12.1	280S	4	75	131.6	355L	6	280	507.2
132S	8	2.2	5.6	280M	4	90	156.2	355L	6	315	551.9
132M	8	3	7.6	280M	6	45	85.8	355M	8	110	210.1
160M	2	11	19.9	280M	6	55	102.4	355M	8	132	246.3
160M	2	15	26.7	280S	8	37	74.8	355M	8	150	278.9
160L	2	18.5	32.3	280M	8	45	91.1	355M	8	160	298.8
160M	4	11	20.9					355L	8	200	367.9
160L	4	15	28.0					355L	8	225	413.3
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								



This certificate may only be reproduced in its entirety and without any change.

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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

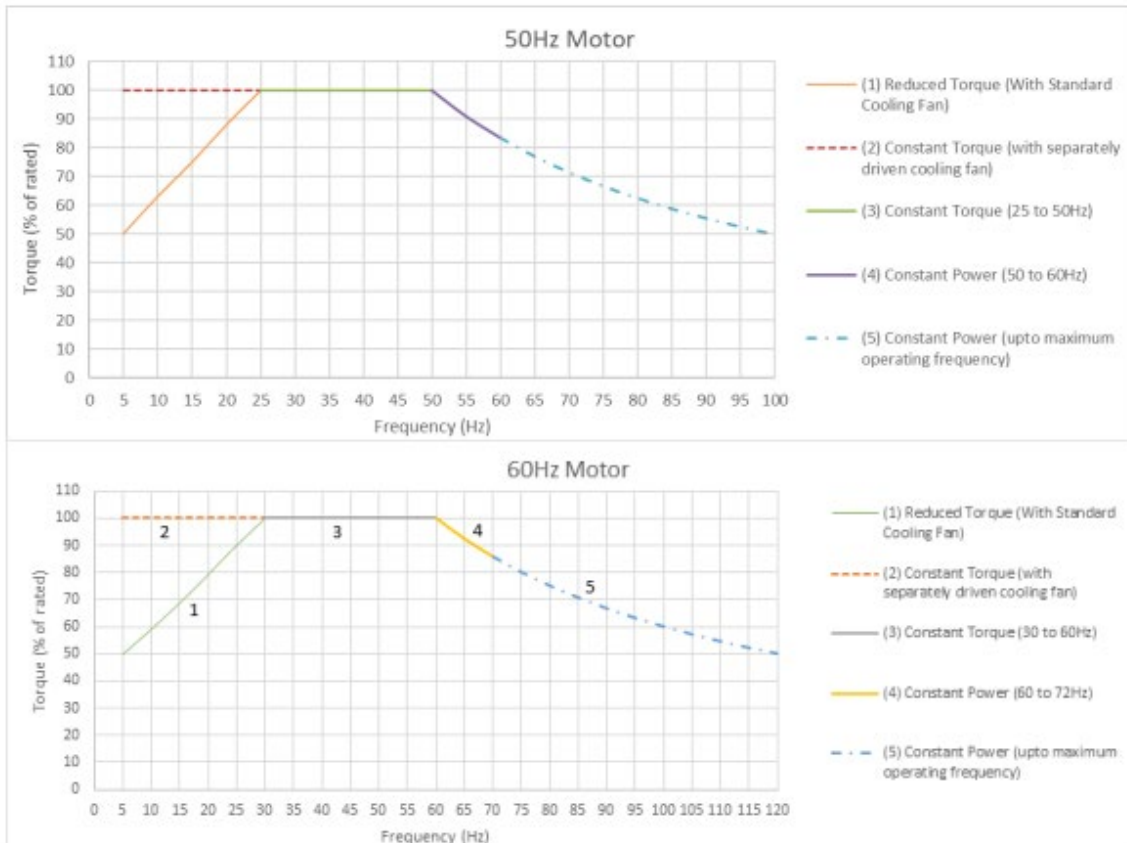
IE3-460V-60Hz			
Frame	Pole	Rating [kW]	Current (A)
180M	2	22	34.6
180M	4	18.5	30.3
180L	4	22	36.4
180L	6	15	26.7
180L	8	11	20.8
200L	2	30	47.9
200L	2	37	57.4
200L	4	30	46.5
200L	6	18.5	31.6
200L	6	22	37.1
200L	8	15	29.0
225M	2	45	68.6
225S	4	37	58.5
225M	4	45	69.9
225M	6	30	48.2
225S	8	18.5	33.0
225M	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	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	51.7
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	160	237.2
355M	8	160	253.0
355L	8	200	314.6
355L	8	225	353.9

Notes:

1. Current value is for 400/460V STD design.
2. Current value will change as the voltage changes.

PWM Variable Frequency Drive Ratings:



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Temperature range:

The ambient temperature range is -20°C (minimum) to +50°C (maximum).

Routine tests:

Routine Dielectric Testing is required as per Clause 7.1 of EN IEC 60079-7. 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.

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Descriptive Documents

The scheduled drawings are listed in the report no. provided under item no. [8] on page 1 of this Type Examination Certificate.

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Specific Conditions of Use:

- 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 a 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.
- When motors are provided with externally mounted bearing RTD's, connection to RTD wiring shall be provided by an intrinsically safe electrical system with level of protection "ib" or "ic", in alignment with the level of protection identified on the motor nameplate.

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Essential Health and Safety Requirements

The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

Additional information

The TerraMAX has in addition passed the tests for Ingress Protection to IP 55 and IP 66 in accordance with EN 60034-5:2000.

The trademark
company identifier on the marking label.



cemp



or **rotor ni** will be used as the