

TYPE EXAMINATION CERTIFICATE



[2] **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. 1**

[4] Product: **TerraMAX Electric A.C. Motor**

[5] Manufacturer: **CEMP S.r.l.**

[6] Address: **via Piemonte 16, I-20030 Senago (MI) 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. **4877272.1124619**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012+A11:2013

EN 60079-15:2010

EN 60079-31:2014

except in respect of those requirements listed at item 18 of 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 specified in the schedule to 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:

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

 **II 3 D Ex tc IIIB T200 Dc**

Certification Manager
Jan-Erik Storgaard

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

Re-issued: 2018-09-28

Certification Body

UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark
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Schedule

TYPE EXAMINATION CERTIFICATE No.

DEMKO 17 ATEX 1952X Rev. 1

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Description of Product:

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

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 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
- 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

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Schedule TYPE EXAMINATION CERTIFICATE No. DEMKO 17 ATEX 1952X Rev. 1

- 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.

Electrical ratings:

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

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 | 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 |
| 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 | 8 | 22 | 37.1 |
| 200L | 6 | 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 | 150 | 237.2 |
| 355M | 8 | 160 | 253.0 |
| 355L | 8 | 200 | 314.6 |
| 355L | 8 | 225 | 353.9 |

Temperature range:

The ambient temperature range is -20 °C to +50 °C.

Schedule

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Routine tests:

Routine Dielectric Testing is required as per Clause 23 of EN 60079-15. 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.

[16]

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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Special 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.

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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 66 in accordance with EN 60034-5:2000.

The trademark
identifier on the marking label.

 **marathon**
Motors

 **cemp**

 **LEESON**

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