

# CERTIFICATE

[1] **EC-TYPE EXAMINATION CERTIFICATE**

[2] **Equipment or Protective System intended for use  
in potentially explosive atmospheres  
Directive 94/9/EC**

[3] EC-Type Examination Certificate number:

**TÜV IT 15 ATEX 023 X**

[4] Equipment or Protective System: Three phase asynchronous electric motors  
ATEX Regal series, type AC..355

[5] Manufacturer: Cemp S.r.l.

[6] Address: Via Piemonte, 16  
I-20030 Senago (MI) - ITALY

[7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] TÜV Italia, notified body no. 0948 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. R 15 EX 014

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

**EN 60079-0 : 2012; EN 60079-1 : 2007; EN 60079-7 : 2007; EN 60079-31 : 2009**

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

[12] The marking of the equipment or protective system shall include the following:



**II 2G Ex d IIC T4...T3 Gb**

**Tamb: -50°C ÷ +60°C**

**II 2G Ex d e IIC T4...T3 Gb**

**Tamb: -50°C ÷ +60°C**

**II 2D Ex tb IIIC T135°C...T150°C Db**

**Tamb: -50°C ÷ +60°C**

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**Emission date:** 07<sup>th</sup> July 2015



  
**Approved**  
 Genaro Oliva  
 Industrie Service Director

TÜV Italia has been authorized by Italian government to operate as notified body for the certification of equipment or protective system intended for use in potentially explosive atmospheres. This document is not valid without official signature and logo. The internal reference code is 254915.

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[15] **Description of equipment**

The electric motors covered by this certificate are asynchronous three-phase motors AC series, with type of protection “Ex d” or “Ex d e” and protected from dust penetration, with type of protection “Ex t”.

The motors are made of cast iron with separate compartments: motor enclosure and terminal box for supply and auxiliary circuits connection. Motor enclosure is designed in Ex d type of protection, while terminal box can be Ex d or Ex e type of protection.

The motor enclosure satisfy also Ex tb type of protection, mechanical protection IP6X.

The motors can be used for continuous or intermittent duty, as defined by EN 60034.1 for : S1, S2, S3, S4, S6 and S9.

The motors can be equipped with auxiliary devices: heaters, temperature detectors PT100 and thermal protection.

The anti condensate heaters installed inside the motor enclosure have maximum power of 400 W and are allowed to be in operation only when motor is not powered.

The motor supplied by inverter is equipped inside of stator winding with PTC or PT100 thermal detectors for temperature control.

Rating data are specified on supplementary plate.

The presence of the thermal detectors inside the motor is shown by appropriate warning label.

The PTC thermal detectors are calibrated for an operation of:

- Max 120°C for temperature class T4 (T135°C)
- Max 130°C for temperature class T3 (T150°C)

According to IEC 60034-6 standard, the cooling is achieved by one of the following methods:

- Self-cooled motor by metal fan fitted on shaft IC 411
- Totally enclosed not ventilated IC 410
- Forced ventilation by means of auxiliary motor IC 416

The motors in type of protection Ex d can be equipped with separately certified draining devices II2GD Ex d IIC Gb and Ex tb IIIC Db IP66.

The motors can be made for different ambient temperatures as described below

- Standard construction: ambient temperature from -20°C to +40°C
- Special construction: ambient temperature from -20°C to +60°C
- Low temperature version: ambient temperature from -50°C to +60°C

In order to identify the relation between power of motor, ambient temperature and temperature class see instructions.

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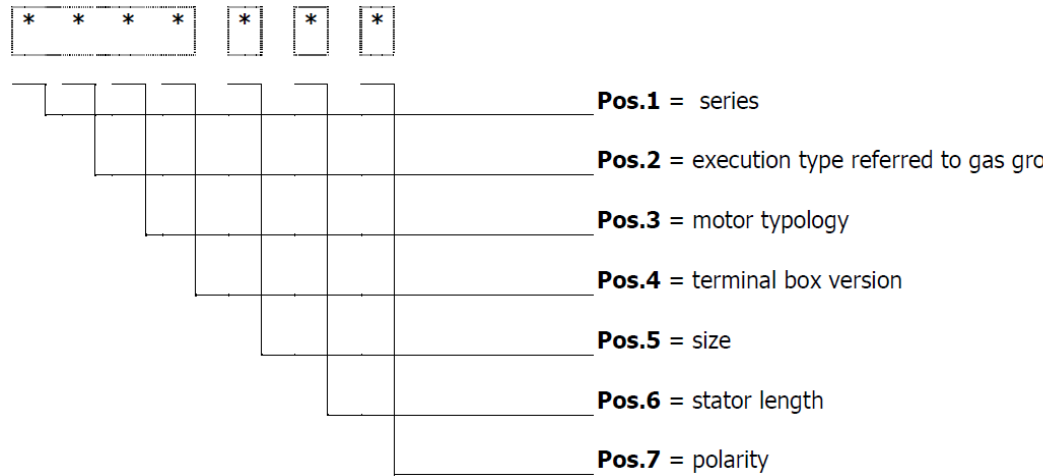
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The products with the identification codes are listed in the following table:



*Pos.1 : Motor series*

|          |                             |
|----------|-----------------------------|
| <b>A</b> | Flame proof electric motors |
|----------|-----------------------------|

*Pos.2 : Enclosure execution type*

|          |                         |
|----------|-------------------------|
| <b>C</b> | Motor for gas group IIC |
|----------|-------------------------|

*Pos.3 : Motor type ( electrical features )*

|          |  |          |  |
|----------|--|----------|--|
| <b>2</b> | Three phase motor double polarity constant torque  | <b>5</b> | Three phase motor for hoist                        |
| <b>3</b> | Three phase motor one polarity                     | <b>7</b> | Three phase motor suitable for frequency converter |
| <b>4</b> | Three phase motor double polarity quadratic torque |          |  |

*Pos.4 : Terminal box*

|          |                                   |          |                                   |
|----------|-----------------------------------|----------|-----------------------------------|
| <b>0</b> | With terminal box in Ex d version | <b>5</b> | With terminal box in Ex e version |
|----------|-----------------------------------|----------|-----------------------------------|

*Pos.5 : Size*

|            |                                   |
|------------|-----------------------------------|
| <b>355</b> | Motor size 355 according IEC60072 |
|------------|-----------------------------------|

*Pos.6 : Stator core length*

|           |       |           |       |
|-----------|-------|-----------|-------|
| <b>M</b>  | Short | <b>ML</b> | Short |
| <b>MA</b> | Short | <b>LA</b> | Long  |
| <b>MB</b> | Short | <b>LB</b> | Long  |
| <b>MC</b> | Short | <b>LC</b> | Long  |
| <b>MD</b> | Short | <b>LD</b> | Long  |

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*Pos.7 : Polarity number*

|           |         |           |                             |
|-----------|---------|-----------|-----------------------------|
| <b>2</b>  | 2 pole  | <b>24</b> | Double polarity : 2/4 pole  |
| <b>4</b>  | 4 pole  | <b>48</b> | Double polarity : 4/8 pole  |
| <b>6</b>  | 6 pole  | <b>46</b> | Double polarity : 4/6 pole  |
| <b>8</b>  | 8 pole  | <b>68</b> | Double polarity : 6/8 pole  |
| <b>10</b> | 10 pole | <b>41</b> | Double polarity : 2/12 pole |
| <b>12</b> | 12 pole | <b>43</b> | Double polarity : 2/16 pole |
| <b>16</b> | 16 pole |           |                             |

#### Rated characteristics

|                     |       |
|---------------------|-------|
| Maximum current [A] | 630   |
| Maximum voltage [V] | 1000  |
| Maximum power [kW]  | 450   |
| Frequency [Hz]      | 50/60 |
| Speed [r.p.m.]      | 3600  |
| Insulation class    | F / H |

#### Warning label

“To be energized with cable suitable for temperature 90°C”

“Restore greasing at every opening”

“Use screws quality 8.8 ISO 898-1”

“Fasteners quality A4-80 ISO 3506-1” (only for low temperature version)

In case of use of anti condensate heaters:

- “Warning – energized heaters”

For motors supplied by auxiliaries:

- “Winding fitted with PTC thermistors” or
- “Winding fitted with bimetallic thermistors” or
- “Winding protected with PT100: set operating temperature at xxx°C” (depends on temperature class)

For special painted motors:

- “Warning – Potential electrostatic charging hazard – see instructions”

[16] **Report no.** R 15 EX 014

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#### Routine tests

For motor enclosures and terminal boxes, manufacturer shall carry out the following routine tests:

#### Motor enclosures:

Overpressure test according to EN60079-1 with pressure not less than 35.5 bar static for at least 10 seconds

#### Ex d terminal boxes:

Overpressure test according to EN60079-1 with pressure not less than 19.8 bar static for at least 10 seconds

#### Motor with Exe terminal box:

Dielectric strength test according to EN60079-7 with voltage (2Un+1000)V in period of at least 60 s or 1.2x(2Un+1000)V for at least 100 ms.

#### Listed documents (prot. 254915)

| Title:       | Description:  | Pages: | Rev: | Date:      |
|--------------|---|--------|------|------------|
| NT-DP-0355_C | Technical note  | 33     | 0    | 17/03/2015 |
| ..           | Safety instructions   | 15     | n.a. | 12/2014    |
| IC706.00     | Auxiliary terminal  | 1      | 0    | 15/01/2015 |
| IC353500     | Auxiliary nameplates  | 1      | 0    | 15/01/2015 |
| IC353501     | Cable entry plate   | 1      | 0    | 15/01/2015 |
| IC353502     | Shield/frame joint (L3)   | 1      | 0    | 15/01/2015 |
| IC353503     | Shaft/bearing cup joint (L1)  | 1      | 0    | 15/01/2015 |
| IC353504     | Inner cup/shield joint 2 poles (L2)                                       | 1      | 0    | 15/01/2015 |
| IC353505     | Inner cup/shield joint 4,6,8 poles (L2)                                   | 1      | 0    | 15/01/2015 |
| IC353506     | Terminal box/frame joint (L4)   | 1      | 0    | 15/01/2015 |
| IC353507     | Terminal box/cover joint (L5)   | 1      | 0    | 15/01/2015 |
| IC353508     | Threaded joint for main terminal (L6)                                     | 1      | 0    | 15/01/2015 |
| IC353525     | Sealed bushing joint Bartec (L7)  | 1      | 0    | 15/01/2015 |
| IC353510     | Terminal box connection   | 1      | 0    | 15/01/2015 |
| IC353511     | Drain valve joint   | 1      | 0    | 11/06/2015 |
| IC353512     | Terminal box Ex de  | 1      | 0    | 15/01/2015 |
| IC353513     | Earth screw   | 1      | 0    | 15/01/2015 |
| IC353514     | Overall dimensional drawing for motor 355 (joints and IP mains)           | 1      | 1    | 11/06/2015 |
| IC353515     | Main terminal box drilled area  | 1      | 0    | 15/01/2015 |
| IC353517     | Terminal box Ex d   | 1      | 0    | 15/01/2015 |
| IC353518     | Overall dimensional drawing for motor 355 4 poles long frame              | 1      | 0    | 15/01/2015 |
| IC353519     | Overall dimensional drawing for motor 355 2 poles long frame              | 1      | 0    | 15/01/2015 |
| IC353520     | Overall dimensional drawing for motor 355 4 poles short frame             | 1      | 0    | 15/01/2015 |
| IC353521     | Overall dimensional drawing for motor 355 2 poles short frame             | 1      | 0    | 15/01/2015 |
| IC353522     | Overall dimensional drawing for motor with forced ventilation long frame  | 1      | 0    | 15/01/2015 |
| IC353523     | Overall dimensional drawing for motor with forced ventilation short frame | 1      | 0    | 15/01/2015 |

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| Title:        | Description:                                  | Pages: | Rev: | Date:      |
|---------------|---|--------|------|------------|
| IC353524      | L7 alternative Cemp rubber bushing joint (L9) | 1      | 0    | 15/01/2015 |
| IC28353001    | Endshield 355 rear                            | 1      | 0    | 15/01/2015 |
| IC28353002    | Endshield 355 front                           | 1      | 0    | 15/01/2015 |
| IC28358001    | Inner bearing cap                             | 1      | 0    | 15/01/2015 |
| IC28359001    | End cap bearing                               | 1      | 0    | 15/01/2015 |
| IC38353001    | Frame 355 short                               | 1      | 0    | 15/01/2015 |
| IC38353501    | Frame 355 long                                | 1      | 0    | 15/01/2015 |
| IC48350001    | Shaft   | 1      | 0    | 15/01/2015 |
| IC50353092    | Clamp for passing                             | 1      | 0    | 15/01/2015 |
| IC50353096    | Main terminal Ex d e                          | 1      | 0    | 15/01/2015 |
| IC58312101    | Terminal box lid                              | 1      | 0    | 15/01/2015 |
| IC58313001    | Terminal box                                  | 1      | 2    | 15/01/2015 |
| IC71350001    | Aluminum fan 2 poles                          | 1      | 0    | 15/01/2015 |
| IC71350021    | Aluminum fan 4-6-8 poles                      | 1      | 0    | 15/01/2015 |
| IC72351001    | Fan cover                                     | 1      | 0    | 15/01/2015 |
| IA-0355-C     | Nameplate motor Gas                           | 1      | 0    | 17/03/2015 |
| IAG-0355-IIIC | Nameplate motor Dust                          | 1      | 0    | 17/03/2015 |
| IA-0355-C-GD  | Nameplate motor Gas and Dust                  | 1      | 0    | 17/03/2015 |
| IA-0355-I     | Inverter nameplate                            | 1      | 0    | 17/03/2015 |

One copy of all documents is kept in TÜV Italia files.

[17] **Special conditions for safe use**

- The motor intended for use with max ambient temperature 50°C / 60°C / 80°C shall be feed with cable of thermal stability not less of 90°C / 100°C / 120°C respectively
- Due to the possible presence of electrostatic charges in IIC enclosures with special paint (thickness exceeding 0,2 mm) clean the motor only with a wet rag or by non-frictional means
- The motor when provided with cables permanently connected shall have these cables protected against the risk of damage due to mechanical stresses. The end connection shall be made according to one of the types of protection indicated in the EN60079-0 standard and in accordance with the installation rules in force in the site of installation
- The motor supplied by inverter is equipped in the drive end stator winding overhang with PTC or PT100 thermal detectors per phase for temperature control. These are to be connected to a protection circuit so as to limit the stator temperature to:
  - Max 120°C for temperature class T4 / T135°C
  - Max 130°C for temperature class T3 / T150°C

[18] **Essential Health and Safety Requirements**

Assured by compliance with the standards set out in the [9].

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