



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 EUT 20.0003X** Page 1 of 4 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2020-05-22

Applicant: **ORANGE1 ELECTRIC MOTORS S.p.A.**
Via Mantova, 93
43122 Parma - Italy
Italy

Equipment: **Electric motor, Series J3-K3**

Optional accessory: Capacitor box

Type of Protection: **Increased safety "Ex ec", Dust tight "Ex tc", Flameproof "Ex db" (capacitor box)**

Marking: Ex tc IIIB T125°C Dc Single-phase version
Ex ec IIC T4...T3 Gc
or
Ex tc IIIB T125°C Dc Three-phase version
Ex db ec IIC T4...T3 Gc

Approved for issue on behalf of the IECEx
Certification Body:

Bucchieri Dionisio

Position:

Head of IECEx CB

Signature:
(for printed version)

Date:

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:

Eurofins Product Testing Italy S.r.l.
Via Cuorgnè
n.21 - 10156 Torino
Italy



Product Testing



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Manufacturer: **ORANGE1 ELECTRIC MOTORS S.p.A.**
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43122 Parma - Italy
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Additional
manufacturing
locations:

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 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

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

IEC 60079-7:2015 Explosive atmospheres – Part 7: Equipment protection by increased safety "e"
Edition:5.0

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 Report:

[IT/EUT/ExTR20.0002/00](#)

Quality Assessment Report:

[IT/EUT/QAR14.0001/07](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The equipment are made of aluminum with separate parts: motor enclosure, terminal box for supply and a capacitor enclosure (for single phase motors).

The motors are suitable for Group IIC and Group IIIB.

The motor enclosure and the terminal box have types of protection "Ex ec" and "Ex tc";

The capacitor enclosure has types of protection "Ex db" and "Ex tb";

The motors can be equipped with auxiliary devices (capacitor, breathing and draining devices).

The equipment are provided with PTC thermal protectors in the stator windings (one on each phase).

Electrical characteristics:

Maximum supply voltage: 600 V_{ac} 3-phase

Rated frequency: 50 Hz or 60 Hz

Rated power: 0.06 kW to 18.5 kW

Poles: 2, 4, 6, 8

Insulation class: F (155°C)

Duty: S1

Degree of protection: IP 65 (according to EN 60079-0 and IEC 60529)

Ambient temperature: from -20 °C to +40 °C

Painting: Maximum thickness of 0.2 mm for type of protection "Ex ec"

Not performed for type of protection "Ex tc"

Temperature classes and Maximum surface temperatures:

- T4 without thermal protection; or

when the equipment is provided with PT100 (intervention temperatures of 120°C or 130°C);

- T3 when the equipment is provided with PT100 (intervention temperature of 150°C);

- T125°C with and without thermal protection;

Cable entries

Cable glands are already properly IECEx certified.

The accessories used for cable entries are not object of this certification and must be subjected of a separate IECEx certification according to IEC 60079-31 and IEC 60079-0. They must have an operating temperature range from -40°C and +80°C and ensure a degree of protection IP 65.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The operating temperature of supply cable must be suitable for a temperature of 80°C.

- The uses has to periodically clean the enclosure in order to avoid the creation of a dust layer.

In addition. for single-phase motors:

- Flameproof joints are not intended to be repaired



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Equipment (continued):

Ventilation

Fans for "Ex ec" motors, which have a peripheral speed below 50 m/s, are made of plastic material.

Fans for "Ex tc" or "Ex ec" motors (which have a peripheral speed above 50 m/s) are made of plastic dissipative material or aluminum.

The degree of protection (IP) of ventilation openings are:

- IP 20 on the air inlet side
- IP 10 on the air outlet side

Warning label

Do not open when energized

Single phase cap. conduit thread size: M20x1.5 (or M16x1.5 or 1/2"NPT or 3/4" NPT).

Routine tests:

In compliance with clause 7.1 of IEC 60079-7, the manufacturer has to perform the dielectric strength test between galvanically isolated parts with a minimum voltage of $(2 \cdot U + 1000)$ V r.m.s. for 60 s, where "U" is the working voltage. As an alternative, the test can also be conducted at $(2 \cdot U + 1000) \times 1.2$ V r.m.s. for $t > 0.1$ s. It is also acceptable a routine dielectric test according to the relevant industrial standard.

Annex:

[Annex to CoC.pdf](#)

Annex to certificate:

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Identification

The three-phase and single-phase asynchronous squirrel cage motors, Series J3 – K3, are a range of motors size 56 up to 160 (motor shaft height). They are identified by a code as follows:

		J3	063	A	4	H	230	5	F	Z	3
Motor type											
K3	Single phase Ex										
J3	Three phase Ex										
Motor shaft height:											
56, 63, 71, 80, 90, 100, 112, 132, 160											
Stator dimensions:											
A, B	56, 63, 71, 80										
S, L	90										
K, M	100										
M	112										
S, K, M, L	132										
S M, L	160										
Poles:											
2, 4	Single-phase motors										
2, 4, 6, 8	Three-phase motors 1 speed										
Mounting arrangements											
H	B3	W	B3/B14								
B	B3 right box	X	B3/B5								
S	B3 left box	J	B3/B14 left box								
F	B5	M	B3/B14 right box								
G	V1 (B5 + rain cover)	R	B3/B5 left box								
Q	B14	T	B3/B5 right box								
Supply voltage											
Three-phase 1 speed											
230	for 230/400V										
400	for 400/690V										
Three-phase 2 speeds											
230 o 400	-										
Single-phase											
230	-										
Frequency											
5	50Hz										
6	60Hz										
Protection (IP and Ex)											
N	Increased safety 'Ex ec' IP65 - Protection 'Ex tc' (Non-conductive dust)										
Painting											
Z	Not painted	M	BRIGHT BLACK RAL9005								
B	BLUE RAL5010	N	BLACK MATT								
E	BLUE RAL5014	V	GREEN 5018								
K	BLUE RAL5015	W	WHITE RAL9001								
G	GRAY RAL7031										
Thermal protectors											
-	Without thermal protectors										
P	Thermal protection PTC (class T3)										
U	Thermal protection PTC (class T4)										

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The list of motors is reported below:

Three phase motors - 400V 50Hz - 2 poles

Type	Poles	Power[kW]	IN [A]	IA [A]
J3 56A2	2	0.09	0.32	1.2
J3 56B2	2	0.12	0.54	2
J3 63A2	2	0.18	0.62	3.1
J3 63B2	2	0.25	0.82	3.1
J3 71A2	2	0.37	1	3.78
J3 71B2	2	0.55	1.45	7.1
J3 80A2	2	0.75	1.9	11
J3 80B2	2	1.1	2.5	10.2
J3 90S2	2	1.5	3.83	15
J3 90L2	2	2.2	6.6	27.5
J3 100L2	2	3	6.6	23.4
J3 112M2	2	4	9.1	55.2
J3 132K2	2	5.5	11.5	51.8
J3 132S2	2	7.5	15.2	104
J3 160K2	2	11	21.4	134
J3 160M2	2	15	27.3	153
J3 160L2	2	18.5	34	161

Three phase motors - 400V 50Hz - 4 poles

Type	Poles	Power[kW]	IN [A]	IA [A]
J3 56A4	4	0.06	0.49	1.6
J3 56B4	4	0.09	0.51	1.6
J3 63A4	4	0.12	0.44	1.1
J3 63B4	4	0.18	0.71	2.2
J3 71A4	4	0.25	0.95	3.16
J3 71B4	4	0.37	1.2	4.8
J3 80A4	4	0.55	1.75	7.5
J3 80B4	4	0.75	2.1	6.9
J3 90S4	4	1.1	3.3	11.3
J3 90L4	4	1.5	3.8	15.75
J3 100K4	4	2.2	5.8	31.3
J3 100L4	4	3	6.8	27.6
J3 112M4	4	4	8.95	56
J3 132S4	4	5.5	11.5	56
J3 132M4	4	7.5	15.5	88
J3 160M4	4	11	24.1	129.6
J3 160L4	4	15	31.1	161

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Three phase motors - 400V 50Hz - 6 poles

Type	Poles	Power[kW]	IN [A]	IA [A]
J3 71A6	6	0.180	0.6	1.82
J3 71B6	6	0.250	0.8	2.45
J3 80A6	6	0.370	1.4	5.16
J3 80B6	6	0.550	1.7	6.30
J3 90S6	6	0.750	2.3	8.00
J3 90L6	6	1.100	3.0	10.10
J3 100L6	6	1.500	4.3	17.800
J3 112M6	6	2.200	5.6	20.200
J3 132S6	6	3.000	7.8	41.00
J3 132K6	6	4.000	9.2	52.00
J3 132M6	6	5.500	12.5	62.50
J3 160M6	6	7.500	17.0	88.80
J3 160L6	6	11.000	23.0	124.50

Three phase motors - 400V 50Hz - 8 poles

Type	Poles	Power[kW]	IN [A]	IA [A]
J3 80A8	8	0.18	0.95	2.41
J3 80B8	8	0.25	1.28	3.72
J3 90S8	8	0.37	1.30	3.62
J3 90L8	8	0.55	1.90	5.70
J3 100K8	8	0.75	2.90	10.70
J3 100L8	8	1.10	3.60	13.32
J3 112M8	8	1.50	4.20	13.72
J3 132S8	8	2.20	6.80	21.76
J3 132L8	8	3.00	7.00	28.00
J3 160S8	8	4.00	9.00	36.90
J3 160M8	8	5.50	12.70	50.80
J3 160L8	8	7.50	15.90	66.78

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Single phase motors - 230V 50Hz - 2 poles

Type	Poles	Power[kW]	IN [A]	IA [A]
K3 56A2	2	0.09	1.11	2.44
K3 56B2	2	0.12	1.17	2.72
K3 63A2	2	0.18	1.5	4.74
K3 63B2	2	0.25	1.81	4.74
K3 71A2	2	0.37	2.56	9.30
K3 71B2	2	0.55	3.83	10.65
K3 80A2	2	0.75	4.47	17.20
K3 80B2	2	1.1	6.7	28.50
K3 90S2	2	1.5	9.2	23.40
K3 100L2	2	2.2	14.4	35.34
K3 100L2	2	3	17.8	44.80

Single phase motors - 230V 50Hz - 4 poles

Type	Poles	Power[kW]	IN [A]	IA [A]
K3 56A4	4	0.06	0.99	1.78
K3 56B4	4	0.09	1.07	1.78
K3 63A4	4	0.12	1.1	2.40
K3 63B4	4	0.18	1.4	2.85
K3 71A4	4	0.25	2.2	6.00
K3 71B4	4	0.37	2.57	7.40
K3 80A4	4	0.55	3.68	12.75
K3 80B4	4	0.75	4.75	12.75
K3 90S4	4	1.1	7.7	23.50
K3 90L4	4	1.5	9.3	33.30
K3 90L4	4	1.5	10.4	33.60
K3 100K4	4	2.2	13.3	30.40
K3 112M4	4	3	17.2	65.70