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TYPE EXAMINATION CERTIFICATE

[2] **Equipment intended for use in potentially explosive atmospheres Directive 2014/34/EU**

[3] Certificate Number: **EPTI 20 ATEX 0378 X** **issue 1**

[4] Equipment: **Asynchronous motor**

Model: **J3, JK, K3 & KK**

[5] Manufacturer: **ORANGE1 ELECTRIC MOTORS S.p.A.**

[6] Address: Via Mantova, N. 93 – 43122 Parma - Italy

[7] This equipment and its accepted variations are specified in the annex to this Certificate.

[8] Eurofins Product Testing Italy S.r.l. certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II of the Directive.
The examination and test results are recorded in the confidential Report N° EPT.23.REL.01/2113113.

[9] Compliance with the essential health and safety is assured through the verification of them and by compliance with the standard:

EN IEC 60079-0:2018, EN 60079-1:2014, EN 60079-7:2015+A1:2018, EN 60079-31:2014

[10] If the sign "X" is placed after the Certificate number the equipment is subjected to special conditions for safe use specified in the annex to this Certificate.

[11] This TYPE EXAMINATION CERTIFICATE relates only to the design, the exam and the tests of the equipment specified.
Further requirements of the Directive 2014/34/EU apply to the manufacture and supply of this equipment.
These requirements are not object of this Certificate.

[12] The equipment shall include the sign Ex and the following string:

II 3D Ex tc IIIB T125°C Dc	Applicable to all motors
II 3G Ex ec IIC T4…T3 Gc	For three-phase motors
II 3G Ex db ec IIC T4…T3 Gc	For single-phase motors

Place and date of issue:
(DD-MM-YYYY)

Torino, 30-03-2023

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[15] **Equipment description**

The three-phase and single-phase asynchronous squirrel cage motors, Series J3, JK, K3, KK 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 ec efficiency IE1
J3	Three phase Ex ec efficiency IE1
KK	Single phase Ex ec efficiency IE2
JK	Three phase Ex ec efficiency IE2 or IE3

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 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).

Equipment characteristics:

Maximum supply voltage:	600 $V_{ac\ 3\text{-}phase}$
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 PTC (intervention temperatures of 120°C or 130°C);
- T3 when the equipment is provided with PTC (intervention temperature of 150°C);
- T125 °C with and without thermal protection;

The list of motors is reported below:

Three phase motors - 400V 50Hz - 2 poles

Type		Poles	Power [kW]	I_N [A]	I_A [A]
J3	56A2	2	0.09	0.32	1.2
J3	56B2	2	0.12	0.54	2.0
J3	63A2	2	0.18	0.62	3.1
J3	63B2	2	0.25	0.82	3.1
J3	71A2	2	0.37	1.0	3.78
J3	71B2	2	0.55	1.45	7.1
J3	80A2	2	0.75	1.9	11.0
J3	80B2	2	1.1	2.5	10.2
J3	90S2	2	1.5	3.83	15.0
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	104.0
J3	160K2	2	11	21.4	134.0
J3	160M2	2	15	27.3	153.0
J3	160L2	2	18.5	34.0	161.0

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Three phase motors - 400V 50Hz - 2 poles

Type		Poles	Power [kW]	I_N [A]	I_A [A]
JK	56M B2	2	0.12	0.48	2.73
JK	63M A2	2	0.18	0.58	2.26
JK	63M B2	2	0.25	0.81	3.15
JK	71M A2	2	0.37	1.13	7.57
JK	71M B2	2	0.55	1.49	10.13
JK	80M\ A2	2	0.75	1.59	11.44
JK	80M B2	2	1.1	2.5	18.5
JK	90S A2	2	1.5	3.16	24.96
JK	90L D2	2	2.2	4.84	38.23
JK	100L A2	2	3	5.72	50.33
JK	112M A2	2	4	7.64	81.74
JK	132S A2	2	5.5	10.58	81.46
JK	132S B2	2	7.5	14.2	112.1
JK	160M A2	2	11	20.35	163.2
JK	160M B2	2	15	27.56	275.0
JK	160L D2	2	18.5	33.59	302.3

Three phase motors - 400V 50Hz - 4 poles

Type		Poles	Power[kW]	I_N [A]	I_A [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	56.0
J3	132S4	4	5.5	11.5	56.0
J3	132M4	4	7.5	15.5	88.0
J3	160M4	4	11	24.1	129.6
J3	160L4	4	15	31.1	161.0

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Three phase motors - 400V 50Hz - 4 poles

Type		Poles	Power[kW]	I_N [A]	I_A [A]
JK	63M A4	4	0.12	0.49	1.61
JK	63M B4	4	0.18	0.57	1.88
JK	71M A4	4	0.25	0.79	4.18
JK	71M B4	4	0.37	1.08	5.83
JK	80M Z4	4	0.55	1.32	7.78
JK	80M A4	4	0.75	1.85	12.5
JK	90S A4	4	1.1	2.61	17.26
JK	90L D4	4	1.5	3.4	21.1
JK	100L A4	4	2.2	4.9	34.3
JK	112M A4	4	3	6.05	46.58
JK	112M B4	4	4	8.3	60.22
JK	132S A4	4	5.5	11.7	87.09
JK	132M D4	4	7.5	15	108.3
JK	160M D4	4	11	21.5	124.7
JK	160L E4	4	15	29.5	236

Three phase motors - 400V 50Hz - 6 poles

Type		Poles	Power[kW]	I_N [A]	I_A [A]
J3	71A6	6	0.18	0.6	1.82
J3	71B6	6	0.25	0.8	2.45
J3	80A6	6	0.37	1.4	5.16
J3	80B6	6	0.55	1.7	6.30
J3	90S6	6	0.75	2.3	8.00
J3	90L6	6	1.1	3.0	10.10
J3	100L6	6	1.5	4.3	17.80
J3	112M6	6	2.2	5.6	20.20
J3	132S6	6	3	7.8	41.00
J3	132K6	6	4	9.2	52.00
J3	132M6	6	5.5	12.5	62.50
J3	160M6	6	7.5	17.0	88.80
J3	160L6	6	11.0	23.0	124.50

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Three phase motors - 400V 50Hz - 6 poles

Type		Poles	Power[kW]	I_N [A]	I_A [A]
JK	71M Z6	6	0.12	0.59	2.36
JK	71M A6	6	0.18	0.82	2.83
JK	80M Z6	6	0.25	0.88	3.93
JK	80M A6	6	0.37	1.05	3.1
JK	80M B6	6	0.55	1.6	4.51
JK	90L A6	6	0.75	1.96	8.4
JK	100L A6	6	1.1	2.7	11.17
JK	100L B6	6	1.5	3.42	15.9
JK	112M A6	6	2.2	5.2	20.2
JK	132S A6	6	3	6.32	27.0
JK	132M D6	6	4	8.18	41.7
JK	160M A6	6	5.5	11.4	56.4
JK	160L D6	6	7.5	15.11	86.6

Three phase motors - 400V 50Hz - 8 poles

Type		Poles	Power[kW]	I_N [A]	I_A [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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Three phase motors - 400V 50Hz - 8 poles

Type		Poles	Power[kW]	I_N [A]	I_A [A]
JK	71M B8	8	0.12	0.72	2.5
JK	80M A8	8	0.18	0.86	4.17
JK	80M B8	8	0.25	1.18	5.71
JK	90S A8	8	0.37	1.42	5.41
JK	90L D8	8	0.55	2.07	8.25
JK	100L A8	8	0.75	2.45	8.82
JK	100L B8	8	1.1	3.13	11.26
JK	112M A8	8	1.1	2.96	10.65
JK	112M B8	8	1.5	3.96	15.04
JK	132S A8	8	2.2	5.84	23.36
JK	132M D8	8	3	7.38	28.04
JK	160M A8	8	4	5.65	47.32
JK	160L D8	8	5.5	7.8	56.7

Single phase motors - 230V 50Hz - 2 poles

Type		Poles	Power[kW]	I_N [A]	I_A [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 - 2 poles

Type		Poles	Power[kW]	I_N [A]	I_A [A]
KK	56M B2	2	0.12	1.05	3.25
KK	63M A2	2	0.18	1.4	6.16
KK	63M B2	2	0.25	1.68	7.39
KK	71M A2	2	0.37	2.31	8.77
KK	71M B2	2	0.55	3.5	16.8
KK	80M A2	2	0.75	4.68	24.8
KK	80M B2	2	1.1	6.2	34.7
KK	90L A2	2	1.5	8.2	41

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Single phase motors - 230V 50Hz - 4 poles

Type		Poles	Power[kW]	I_N [A]	I_A [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

Single phase motors - 230V 50Hz - 4 poles

Type		Poles	Power[kW]	I_N [A]	I_A [A]
KK	63M B4	4	0.12	1.05	2.5
KK	71M A4	4	0.18	1.25	4.3
KK	71M B4	4	0.25	1.62	5.5
KK	80M Z4	4	0.37	2.31	7.4
KK	80M A4	4	0.55	3.15	11
KK	90S A4	4	0.75	4.15	13.3
KK	90L B4	4	1.1	5.93	17.8

Ventilation

Ventilation is made by fan. who is fitted directly on the shaft.

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

Cable entries

Cable glands are already properly ATEX certified.

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

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Routine tests

In compliance with clause 7.1 of EN 60079-7. the manufacturer has to perform the dielectric strength test between galvanically isolated parts with a minimum voltage of (2*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*U+1000) x1.2 V r.m.s. for t > 0.1s.

It is also acceptable a routine dielectric test according to the relevant industrial standard.

Warning label

Do not open when energized
Single phase cap. conduit thread size: M20x1.5 (or M16x1.5 or ½" NPT or ¾" NPT).

[16] **Assessment Report n° EPT.23.REL.01/2113113**

This Type Examination Certificate is released after the positive result of the conformity assessment of the Directive 2014/34/EU and to harmonized technical standard listed in this Certificate. performed by Eurofins Product Testing Italy S.r.l. and reported in the Assessment Report above cited.

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

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

In addition, for single-phase motors:
- Flameproof joints are not intended to be repaired

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

Assured by compliance with harmonized standard.

Descriptive documents

[19] The equipment objects of this Certificate is described by the following documents

	Type of document	Name	Rev	Date
*	Technical note	Asynchronous motors – Series J3-K3	02	28-10-2022
*	Technical note attachment	ATTACHMENT 1 Ex ec Efficiency Levels	00	28-10-2022
*	Safety instructions	Motors series J3-JK-K3-KK Safety. installing and maintenance instructions	01	28-10-2022

*These documents are new or updated

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[20] **Terms and conditions**

The product liability rests with the Manufacturer. his representative or. in the absence of a representative. with the importer. in accordance with the General Product Safety Directive 2001/95/CE.
The following conditions may render this Certificate invalid:

- changes in the design or construction of the product;
- changes or amendments to the Directive 2014/34/EU;
- changes or amendments in the standards which form the basis for documenting compliance with the essential requirements of the 2014/34/EU Directive.

[21] **Certificate History**

Issue	Description	Date
0	First Emission	15-05-2020
1	Two new series of motors JK and KK have been introduced with different electrical characteristics. The mechanical dimensions. gaskets. materials and shape are identical to the previous series present in the issue 0 of this certificate.	30-03-2023

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End of Certificate