[1] # CERTYFIKAT BADANIA TYPU

[2] Urządzenia, systemy ochronne, części i podzespoły przeznaczone do użytku w przestrzeniach zagrożonych wybuchem. Dyrektywa 94/9/WE
(Rozporządzenie MG z dnia 22.12.2005r. Dz.U. Nr 263, Poz. 2203).

[3] Certyfikat badania typu WE:

KDB 06ATEX353

[4] Urządzenie:

Silniki indukcyjne trójfazowe
typu 3S(K,L)g 160...-(2,3)D, typu 3S(K,L)g 180...-(2,3)D,
typu 2S(K,L)g 200...-(2,3)D, typu 2S(K,L)g 225...-(2,3)D,
typu 2S(K,L)g 250...-(2,3)D, typu 2S(K,L)g 280...-(2,3)D,
typu 2S(K,L)g 315...-(2,3)D

[5] Producent:

Maszyny Elektryczne „CELMA" SA

[6] Adres:

ul. 3 Maja 19, 43-400 Cieszyn

[7] Przedmiotowe urządzenie lub system ochronny wraz z zatwierdzonymi jego odmianami, zostało opisane w załączniku do niniejszego certyfikatu oraz w wymienionej w nim dokumentacji.

[8] Główny Instytut Górnictwa, Jednostka Notyfikowana nr 1453 zgodnie z artykułem 9 Dyrektywy 94/9/WE z dnia 23 marca 1994, potwierdza, że urządzenie lub system ochronny będący przedmiotem niniejszego certyfikatu spełnia zasadnicze wymagania bezpieczeństwa i ochrony zdrowia dotyczące projektowania i budowy urządzeń i systemów ochronnych przeznaczonych do użytku w przestrzeniach zagrożonych wybuchem wymienione w Załączniku nr 2 Dyrektywy 94/9/WE (Rozdział 2 Rozporządzenia MG z dnia 22.12.2005r. Dz.U. Nr 263, Poz. 2203).
Wyniki oceny i badań zostały wyszczególnione w sprawozdaniu KDB Nr 06.261 [T-5907]

[9] Zasadnicze wymagania bezpieczeństwa i ochrony zdrowia zrealizowano poprzez spełnienie wymagań norm:

PN-EN 60079-0:2006; PN-EN 60079-15:2006(U)

[10] Znak „X" umieszczony za numerem certyfikatu oznacza szczególne warunki stosowania w przestrzeniach zagrożonych wybuchem wyszczególnione w załączniku do niniejszego certyfikatu.

[11] Niniejszy certyfikat badania typu dotyczy jedynie konstrukcji, oceny i badań przedmiotowego urządzenia lub systemu ochronnego zgodnie z Dyrektywą 94/9/WE.
Certyfikat nie obejmuje pozostałych wymagań Dyrektywy dotyczących procesu produkcji i wprowadzania na rynek urządzenia lub systemu ochronnego.

[12] Urządzenie lub system ochronny należy oznaczyć:

II 3G Ex nA II T5

lub

II 3G Ex nA II T4

lub

II 3G Ex nA II T3

Data wydania: 5.12.2006 r.

KIEROWNIK
Zespołu Certyfikacji Wyrobów
KD "BARBARA" Mikołów
doc. dr hab. inż. Krzysztof Cybulski

Główny Instytut Górnictwa w Katowicach ☆ Jednostka Certyfikująca ☆

GŁÓWNY INSTYTUT GÓRNICTWA
KIEROWNIK
Jednostki Certyfikującej
dr inż. Dariusz Stefaniak

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www.gig.katowice.pl

AC 038

[13] # ZAŁĄCZNIK

[14] **Certyfikat badania typu KDB 06ATEX353**

[15] **Opis:**

Silniki typu 3S(K,L)g 160...-180...-(2,3)D oraz 2S(K,L)g 200...-315...-(2,3)D wykonane są jako nieiskrzące (Ex nA) i przeznaczone do napędu urządzeń w przemyśle. Wyposażone są w jedną skrzynkę przyłączową. Silniki posiadają obudowę o stopniu ochrony IP56 (wersja ...-3D) lub IP 66 (wersja ...-2D).
Silniki chłodzone są powietrzem - stalowy przewietrznik umieszczony na wale silnika po stronie ND.

Silniki mogą być wyposażone w układ kontroli termicznej.
W czołach uzwojeń mogą być montowane:

- termistorowe czujniki temperatury o temperaturze zadziałania 140 °C (dla w. m. „160” - „280”) lub 160 °C (dla w. m. „315”) lub
- bimetalowe rozwierne czujniki temperatury o temperaturze zadziałania 135 °C (dla w. m. „160” - „280”) lub 160 °C (dla w. m. „315”) lub
- termorezystory Pt100.

W tarczach łożyskowych od strony D (dla w. m. „160” oraz „180”) oraz od strony D oraz ND (dla w. m. „200”, „225”, „250”, „280” oraz „315”):

- bimetalowe lub termistorowe czujniki temperatury o temperaturze zadziałania 90 °C (dla w. m. „160”, „180”, „200”, „225”, „250” i „280”) lub o temperaturze zadziałania 110 °C (dla w. m. „315”).
- termorezystory Pt100.

Silniki mogą być ponadto wyposażone w antykondensacyjne podgrzewacze uzwojeń (podłączane podczas postoju silnika) o mocy 55W(230V) - dla w. m. „160”, „180”, „200”, „225” i „250”, lub o mocy 80W (230V) - dla silników w. m. „280” oraz „315”.

Parametry techniczne:

minimalna temperatura pracy:	-40°C
maksymalna temperatura pracy:	+60
napięcie znamionowe:	380V, 400V, 500V, 660V, 690V, 1000 (50Hz) lub 440V, 460V (60Hz)
stopień ochrony:	IP56 lub IP66
rodzaj pracy:	S1

Silniki przystosowane są do zasilania z przetwornicy częstotliwości

[13] # ZAŁĄCZNIK

[14] **Certyfikat badania typu KDB 06ATEX353**

Parametry silników w. m. „160”:

Wykonanie	Moc Pn[kW]		Prąd znamionowy In [A]							
			50 Hz						60 Hz	
	50 Hz	60 Hz	380V	400V	500V	660V	690V	1000V	440V	460V
160M2A	11	13	21.2	20.2	16.1	12.2	11.7	8.1	21.9	20.9
160M2B	15	17	28.0	26.6	21.3	16.1	15.4	10.6	27.6	26.4
160L2	18.5	21	34.0	32.5	26.0	19.7	18.8	13.0	34.0	32.5
160M4	11	13	22.2	21.1	16.9	12.8	12.2	8.4	22.9	21.9
160L4	15	17	29.5	28.0	22.4	17.0	16.3	11.2	29.2	27.9
160M6	7.5	9	16.1	15.3	12.2	9.3	8.9	6.1	16.7	16.1
160L6	11	13	23.1	22.0	17.6	13.3	12.7	8.8	23.8	22.8
160M8A	4	5	10.0	9.5	7.6	5.8	5.5	3.8	10.9	10.4
160M8B	5.5	6	13.5	12.8	10.3	7.8	7.4	5.1	12.9	12.3
160L8	7.5	9	17.5	16.6	13.3	10.1	9.6	6.6	18.3	17.5

Oznaczenie:
II 3G Ex nA II T5 - dla maksymalnej temperatury pracy do +40°C
II 3G Ex nA II T4 - dla maksymalnej temperatury pracy do +60°C

Parametry silników w. m. „180”:

Wykonanie	Moc Pn[kW]		Prąd znamionowy In [A]							
			50 Hz						60 Hz	
	50 Hz	60 Hz	380V	400V	500V	660V	690V	1000V	440V	460V
180M2	22	25	41.0	39.0	31.0	23.6	22.6	15.5	40.5	39.0
180M4	18.5	21	34.5	32.7	26.1	19.8	19.0	13.1	34.0	32.5
180L4	22	25	40.5	38.6	31.0	23.4	22.4	15.4	40.0	38.5
180L6	15	17	30.0	28.6	22.9	17.3	16.6	11.4	29.8	28.5
180L8	11	13	24.8	23.6	18.9	14.3	13.7	9.4	25.6	24.5

Oznaczenie:
II 3G Ex nA II T5 - dla maksymalnej temperatury pracy do +40°C
II 3G Ex nA II T4 - dla maksymalnej temperatury pracy do +60°C

Parametry silników w. m. „200”:

Wykonanie	Moc Pn[kW]		Prąd znamionowy In [A]							
			50 Hz						60 Hz	
	50 Hz	60 Hz	380V	400V	500V	660V	690V	1000V	440V	460V
200L2A	30	35	55.0	52.0	42.0	31.5	30.5	20.9	56.0	54.0
200L2B	37	43	67.0	64.0	51.0	39.0	37.0	25.6	68.0	65.0
200L4	30	35	56	53	42.5	32	31	21.3	57	54
200L6A	18.5	21	36	34.5	27.4	20.8	19.9	13.7	35.5	34.5
200L6B	22	25	42	40	32	24.2	32.1	15.9	41.5	40
200L8	15	17	30.5	29.1	23.3	17.7	16.9	11.7	30.5	29.0
160L8	7.5	9	17.5	16.6	13.3	10.1	9.6	6.6	18.3	17.5

Oznaczenie:
II 3G Ex nA II T5 - dla maksymalnej temperatury pracy do +40°C
II 3G Ex nA II T4 - dla maksymalnej temperatury pracy do +60°C

Główny Instytut Górnictwa w Katowicach Jednostka Certyfikująca

[13] # ZAŁĄCZNIK

[14] **Certyfikat badania typu KDB 06ATEX353**

Parametry silników w. m. „225”:

Wykonanie	Moc Pn[kW]		Prąd znamionowy In [A]							
			50 Hz						60 Hz	
	50 Hz	60 Hz	380V	400V	500V	660V	690V	1000V	440V	460V
225M2	45	52	81	77	62	47	45	31	82	78
225S4	37	43	69	66	52	39.5	38	26.2	70	67
225M4	45	52	83	79	63	47.5	45.5	31.5	83	80
225M6	30	35	56	54	43	32.5	31	21.4	57	55
225S8	18.5	21	39	37	29.5	22.3	21.4	14.7	38.5	36.5
225M8	22	25	46	44	35	26.6	25.5	17.6	46	44

Oznaczenie:
II 3G Ex nA II T5 - dla maksymalnej temperatury pracy do +40°C
II 3G Ex nA II T4 - dla maksymalnej temperatury pracy do +60°C

Parametry silników w. m. „250”:

Wykonanie	Moc Pn[kW]		Prąd znamionowy In [A]							
			50 Hz						60 Hz	
	50 Hz	60 Hz	380V	400V	500V	660V	690V	1000V	440V	460V
250M2	55	63	99	94	75	57	55	37.5	99	95
250M4	55	63	98	93	75	57	54	37.5	98	94
250M6	37	43	68	65	52	39.5	37.5	25.9	69	66
250M8	30	35	59	56	45	34	32.5	22.5	60	58

O Oznaczenie:
II 3G Ex nA II T5 - dla maksymalnej temperatury pracy do +40°C
II 3G Ex nA II T4 - dla maksymalnej temperatury pracy do +60°C

Parametry silników w. m. „280”:

Wykonanie	Moc Pn[kW]		Prąd znamionowy In [A]							
			50 Hz						60 Hz	
	50 Hz	60 Hz	380V	400V	500V	660V	690V	1000V	440V	460V
280S2	75	86	135	128	102	78	74	51	135	129
280M2	90	104	159	151	121	91	87	60	160	153
280S4	75	86	134	128	102	77	74	51	134	128
280M4	90	104	159	151	120	91	87	60	160	153
280S6	45	52	85	80	64	48.5	46.5	32	85	81
280M6	55	63	100	95	76	58	55	38	100	96
280S8	37	43	73	69	55	42	40	27.7	74	71
280M8	45	52	88	84	67	51	48.5	33.5	89	85

Oznaczenie:
II 3G Ex nA II T5 - dla maksymalnej temperatury pracy do +40°C
II 3G Ex nA II T4 - dla maksymalnej temperatury pracy do +60°C

Główny Instytut Górnictwa w Katowicach ☆ Jednostka Certyfikująca ☆

[13] # ZAŁĄCZNIK

[14] **Certyfikat badania typu KDB 06ATEX353**

Parametry silników w. m. „315”:

Wykonanie	Moc Pn[kW]		Prąd znamionowy In [A]							
			50 Hz						60 Hz	
	50 Hz	60 Hz	380V	400V	500V	660V	690V	1000V	440V	460V
315S2	110	127	190	181	145	110	105	72	192	183
315M2A	132	152	232	220	176	134	128	88	233	223
315M2B	160	184	286	272	218	158	158	109	287	275
315S4	110	127	193	183	147	111	106	73	194	186
315M4A	132	152	235	223	178	135	129	89	236	225
315M4B	160	184	293	279	223	169	161	111	294	281
315S6	75	86	137	130	104	79	75	52	137	131
315M6A	90	104	166	158	126	95	91	63	167	160
315M6B	110	127	199	189	152	115	110	76	201	192
315S8	55	63	111	106	85	64	61	42.5	111	106
315M8A	75	86	149	142	113	86	82	57	149	143
315M8B	90	104	179	170	136	103	99	68	180	173

Oznaczenie:
II 3G Ex nA II T4 - dla maksymalnej temperatury pracy do +40°C
II 3G Ex nA II T3 - dla maksymalnej temperatury pracy do +60°C

[16] **Sprawozdania z badań:**

Sprawozdanie KDB Nr 06.261.

[17] **Szczególne warunki stosowania:**

nie ma

[18] **Zasadnicze wymagania bezpieczeństwa i ochrony zdrowia:**

Zrealizowano poprzez spełnienie wymagań norm wymienionych w pkt.9 niniejszego certyfikatu.

Główny Instytut Górnictwa w Katowicach ☆ Jednostka Certyfikująca ☆

[13] # ZAŁĄCZNIK

[14] **Certyfikat badania typu KDB 06ATEX353**

[19] **Wykaz uzgodnionej dokumentacji:**

- Karta katalogowa nr D4-032.344 z 7.11.2006 r.
- Parametry eksploatacyjne nr D4-031.467 z 30.11.2006 r.
- Szkic wymiarowy D4-030.365 z 11.08.2006 r.
- Wymiary nr D4-030.366 z 11.08.2006 r.
- „Rozruch silników przeciwwybuchowych przez softstart.” nr D4-020.545 wydanie 2 z 10.01.2005 r.
- „Dopuszczalne obciążenie czopa końca wału.” nr D4-039.154 z 6.09.2006 r.
- „Dopuszczalne obciążenie czopa końca wału.” nr D4-039.155 z 6.09.2006 r.
- Instrukcja obsługi nr D4-034.338 z 27.11.2006 r.
- Instrukcja obsługi nr D4-034.339 z 7.11.2006 r.
- rysunki:
  - nr D1-020.270 z 29.11.2006 r.
  - nr D1-020.271 z 29.11.2006 r.
  - nr D2-020.272 z 28.11.2006 r.
  - nr D2-020.273 z 29.11.2006 r.
  - nr D2-020.582 z 29.11.2006 r.
  - nr R4-437.357.000 z 14.11.2006 r.
  - nr R4-437.358.000 z 14.11.2006 r.
  - nr R4-437.113 z 3.06.2004 r.
  - nr R4-437.114 z 11.12.2002 r.
  - nr R4-437.356.000 z 14.11.2006 r.
  - nr R4-582.054 z 28.01.2005 r.
  - nr R4-582.055 z 28.01.2006 r.
  - nr D3-020.583 z 29.11.2006 r.
  - nr R4-274.074-088 z 9.03.2004 r.
  - nr D2-020.584 z 29.11.2006 r.

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 06ATEX0113** Issue Number: **2**

(4) Equipment: **Three-Phase Induction Squirrel-cage motors series Sh 90..., KSSKh 90..., Sg 100..., KSSKg 100..., Sg 112..., KSSKg 112..., Sg 132..., KSSKg 132..., Sg 160..., KSSKg 160..., Sg 180... and KSSKg 180... including terminal box.**

(5) Manufacturer: **Fabryka Maszyn Elektrycznych Indukta SA.**

(6) Address: **ul. M. Grazynskiego 22, 43-300 Bielsko-Biala, Poland**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 test report no. 210919000-13

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 61241-0 : 2006 **EN 61241-1 : 2004**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 D Ex tD A21 IP6X T125 °C

This certificate is issued on 5 June 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

C.G. van Es
Certification Manager

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(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 06ATEX0113 Issue No. 2**

(15) **Description**

Three-Phase Induction Squirrel-cage motors Series Squirrel-cage motors series Sh 90..., KSSKh 90..., Sg 100..., KSSKg 100..., Sg 112..., KSSKg 112..., Sg 132..., KSSKg 132..., Sg 160..., KSSKg 160..., Sg 180... and KSSKg 180... including terminal box.

Ambient temperature range -20 °C ... +40 °C.

Electrical data

Rated output	: 0,75 kW up to 30 kW
Rated voltage	: 120 Vac up to 690 Vac
Rated frequency	: 50 Hz
Rated speed ($n_{s)}$	: 750 rpm, 1000 rpm, 1500 rpm or 3000 rpm
Duty type	: S1
Insulation class	: F

The electrical data for each motor must be taken from the nameplate and installation instruction of the used motor.

Installation instructions

The degree of protection of at least IP6X to EN 60034-5 is only achieved if certified cable entries and blanking elements for unused openings are used that are suitable for the application and correctly installed.

The built-in winding PTC thermistors (DIN 44 081 or 44 082 120 °C) or KTY 84-1... sensors in combination with a protective device shall be installed in the motor circuits in such a way that operation of the PTC thermistors or KTY84-1... sensors leads to switching-off of the motor.

The instructions of the manufacturer must be followed in detail to assure proper and safe operation of the equipment.

(16) **Test Report**

KEMA No. 210919000-13

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Assured by compliance with the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210919000-13

KEMA

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX2147** Issue Number: **2**

(4) Equipment: **Three-phases asynchronous cage motors series Sg 180... and KSSKg 180.-.-T4.**

(5) Manufacturer: **Fabryka Maszyn Elektrycznych Indukta SA**

(6) Address: **ul. M. Grazynskiego 22, 43-300 Bielsko-Biala, Poland**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, *certifies that this equipment 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 test report number 210919000-12.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006 **EN 60079-7 : 2007** **EN 61241-0 : 2006**
EN 61241-1 : 2004

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex e II T4
II 2 D Ex tD A21 IP6X T125 °C

This certificate is issued on 5 June 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

C.G. van Es
Certification Manager

PRODUCTS RvA C 001

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(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2147** Issue No. **3**

(15) **Description**

Three-phases asynchronous cage motors series Sg 180... and KSSKg 180.-.-T4.
Construction according to EC-Type Examination Certificate KEMA 02ATEX2135 U.

Ambient temperature range -40 °C ... +40 °C.
The maximum surface temperature of the connection housing is referred to the maximum ambient temperature of 40 °C.

With an alternative terminal block the minimum ambient temperature for motor series Sg 180 is -20 °C.

Electrical data

Motor type	...g 180M-2-T4	...g 180L-4-T4
Rated output (kW)	10	11
Rated voltage (V ± 5 %)	400	400
Rated current (A)	17,4	19,3
Rated frequency (Hz)	50	50
Power factor	0,92	0,92
Rated speed (rpm)	2950	1465
Insulation class	F	F
I_A/I_N	8,5	5,8
t_E for T4 (s)	14,0	7,0

Any voltage from 190 V up to and including 690 V is allowed if the electrical and thermal load are equal to those of the tested motor (a lower or the same current- and flux density).

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2147** Issue No. **3**

Installation instructions

The degree of protection of at least IP54 to EN 60034-5 is only achieved if certified cable entries and blanking elements for unused openings are used that are suitable for the application and correctly installed.

The motor shall be provided with a three-phases inverse-delay overload protective device that not only monitors the motor current but also disconnects the stalled motor within the above mentioned times tE.

The motor shall only be used for continuous service, involving easy and infrequent starts which do not produce appreciable additional heating.

The built-in winding PTC thermistors (DIN 44 081 or 44 082 140 °C) or KTY 84-1... sensors in combination with a protective device shall be installed in the motor circuits in such a way that operation of the PTC thermistors or KTY84-1... sensors leads to switching-off of the motor.

For use in the presence of combustible dust:
The degree of protection of at least IP6X to EN 60529 is only achieved if the certified cable entries and blanking elements provide a degree of protection of at least IP6X to EN 60529.

Routine tests

Each motor shall be subjected to the dielectric strength test of EN 60034-1 clause 8 using a voltage of 1000 V + twice the rated voltage with a minimum of 1500 V during 60 seconds or as an alternative voltage of 120% of (1000 V + twice the rated voltage) during 1 second between the windings under test and the frame of the motor, with the core and the windings not under test connected to the frame.
Motors rated more then 5kW are tested in accordance with EN 60034-1, clause 9.2, using a voltage of 120% of (1000 V + twice the rated voltage) during 3-5 seconds.

(16) **Test Report**

KEMA No. 210919000-12.

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210919000-12.

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX2146** Issue Number: **2**

(4) Equipment: **Three-phases asynchronous cage motors series Sg 180... and KSSKg 180.-.-T3.**

(5) Manufacturer: **Fabryka Maszyn Elektrycznych Indukta SA**

(6) Address: **ul. M. Grazynskiego 22, 43-300 Bielsko-Biala, Poland**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 test report number 210919000-11.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006 **EN 60079-7 : 2007** **EN 61241-0 : 2006**
EN 61241-1 : 2004

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex e II T3
II 2 D Ex tD A21 IP6X T125 °C

This certificate is issued on 5 June 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

G.G. van Es
Certification Manager

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KEMA

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2146** Issue No. **2**

(15) **Description**

Three-phases asynchronous cage motors series Sg 180... and KSSKg 180.-.-T3.
Construction according to EC-Type Examination Certificate KEMA 02ATEX2135 U.

Ambient temperature range -40 °C ... +40 °C.
The maximum surface temperature of the connection housing is referred to the maximum ambient temperature of 40 °C.

With an alternative terminal block the minimum ambient temperature for motor series Sg 180 is -20 °C.

Electrical data

Motor type	...g 180M-2-T3	...g 180M-4-T3
Rated output (kW)	18,5	18,5
Rated voltage (V ± 5 %)	400	400
Rated current (A)	31,8	33
Rated frequency (Hz)	50	50
Power factor	0,92	0,89
Rated speed (rpm)	2945	1470
Insulation class	F	F
I_A/I_N	8,25	7,9
t_E for T3 (s)	13,0	5,0

Motor type	...g 180L-4-T3	...g 180L-6-T3
Rated output (kW)	22	13,5
Rated voltage (V ± 5 %)	400	400
Rated current (A)	38,3	26,6
Rated frequency (Hz)	50	50
Power factor	0,90	0,82
Rated speed (rpm)	1465	980
Insulation class	F	F
I_A/I_N	7,7	6,7
t_E for T3 (s)	5,0	8,0

Any voltage from 190 V up to and including 690 V is allowed if the electrical and thermal load are equal to those of the tested motor (a lower or the same current- and flux density).

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2146** Issue No. **2**

Installation instructions

The degree of protection of at least IP54 to EN 60034-5 is only achieved if certified cable entries and blanking elements for unused openings are used that are suitable for the application and correctly installed.

The motor shall be provided with a three-phases inverse-delay overload protective device that not only monitors the motor current but also disconnects the stalled motor within the above mentioned times t_E.

The motor shall only be used for continuous service, involving easy and infrequent starts which do not produce appreciable additional heating.

The built-in winding PTC thermistors (DIN 44 081 or 44 082 140 °C) or KTY 84-1... sensors in combination with a protective device shall be installed in the motor circuits in such a way that operation of the PTC thermistors or KTY84-1... sensors leads to switching-off of the motor.

For use in the presence of combustible dust:
The degree of protection of at least IP6X to EN 60529 is only achieved if the certified cable entries and blanking elements provide a degree of protection of at least IP6X to EN 60529.

Routine tests

Each motor shall be subjected to the dielectric strength test of EN 60034-1 clause 8 using a voltage of 1000 V + twice the rated voltage with a minimum of 1500 V during 60 seconds or as an alternative voltage of 120% of (1000 V + twice the rated voltage) during 1 second between the windings under test and the frame of the motor, with the core and the windings not under test connected to the frame.
Motors rated more then 5kW are tested in accordance with EN 60034-1, clause 9.2, using a voltage of 120% of (1000 V + twice the rated voltage) during 3-5 seconds.

(16) **Test Report**

KEMA No. 210919000-11.

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210919000-11.

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX2145** Issue Number: **2**

(4) Equipment: **Three-phases asynchronous cage motors series Sg 160... and KSSKg 160....**

(5) Manufacturer: **Fabryka Maszyn Elektrycznych Indukta SA**

(6) Address: **ul. M. Grazynskiego 22, 43-300 Bielsko-Biala, Poland**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 test report number 210919000-10.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006 **EN 60079-7 : 2007** **EN 61241-0 : 2006**
EN 61241-1 : 2004

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex e II T4
II 2 D Ex tD A21 IP6X T125 °C

This certificate is issued 5 June 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

C.G. van Es
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(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2145** Issue No. **2**

(15) **Description**

Three-phases asynchronous cage motors series Sg 160 and KSSKg 160....
Construction according to EC-Type Examination Certificate KEMA 02ATEX2135 U.

Ambient temperature range -40 °C ... +40 °C.
The maximum surface temperature of the connection housing is referred to the maximum ambient temperature of 40 °C.

With an alternative terminal block the minimum ambient temperature for motor series Sg 160 is -20 °C.

Electrical data

Motor type	...g 160M-2A-T4	...g 160M-2B-T4	...g 160L-2-T4
Rated output (kW)	5	6	7,5
Rated voltage (V ± 5 %)	400	400	400
Rated current (A)	9,2	10,7	13,1
Rated frequency (Hz)	50	50	50
Power factor	0,90	0,91	0,92
Rated speed (rpm)	2945	2950	2950
Insulation class	F	F	F
I_A/I_N	7,65	7,65	7,75
t_E for T4 (s)	8,0	7,0	8,0

Motor type	...g 160M-4-T4	...g 160L-4-T4
Rated output (kW)	6	7,5
Rated voltage (V ± 5 %)	400	400
Rated current (A)	11,3	13,8
Rated frequency (Hz)	50	50
Power factor	0,87	0,88
Rated speed (rpm)	1465	1465
Insulation class	F	F
I_A/I_N	7,25	7,6
t_E for T4 (s)	14,0	12,0

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 02ATEX2145** Issue No. **2**

Motor type	...g 160M-6-T4	...g 160L-6-T4
Rated output (kW)	5,5	7,0
Rated voltage (V ± 5 %)	400	400
Rated current (A)	11,2	13,6
Rated frequency (Hz)	50	50
Power factor	0,81	0,84
Rated speed (rpm)	965	970
Insulation class	F	F
I_A/I_N	6,65	7,50
t_E for T4 (s)	7,0	8,0

Any voltage from 190 V up to and including 690 V is allowed if the electrical and thermal load are equal to those of the tested motor (a lower or the same current- and flux density).

Installation instructions

The degree of protection of at least IP54 to EN 60034-5 is only achieved if certified cable entries and blanking elements for unused openings are used that are suitable for the application and correctly installed.

The motor shall be provided with a three-phases inverse-delay overload protective device that not only monitors the motor current but also disconnects the stalled motor within the above mentioned times tE.

The motor shall only be used for continuous service, involving easy and infrequent starts which do not produce appreciable additional heating.

The built-in winding PTC thermistors (DIN 44 081 or 44 082 140 °C) or KTY 84-1... sensors in combination with a protective device shall be installed in the motor circuits in such a way that operation of the PTC thermistors or KTY84-1... sensors leads to switching-off of the motor.

For use in the presence of combustible dust:
The degree of protection of at least IP6X to EN 60529 is only achieved if the certified cable entries and blanking elements provide a degree of protection of at least IP6X to EN 60529.

Routine tests

Each motor shall be subjected to the dielectric strength test of EN 60034-1 clause 8 using a voltage of 1000 V + twice the rated voltage with a minimum of 1500 V during 60 seconds or as an alternative voltage of 120% of (1000 V + twice the rated voltage) during 1 second between the windings under test and the frame of the motor, with the core and the windings not under test connected to the frame.
Motors rated more then 5kW are tested in accordance with EN 60034-1, clause 9.2, using a voltage of 120% of (1000 V + twice the rated voltage) during 3-5 seconds.

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2145** Issue No. **2**

(16) **Test Report**

KEMA No. 210919000-10.

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210919000-10.

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX2144** Issue Number: **2**

(4) Equipment: **Three-phases asynchronous cage motors series Sg 160... and KSSKg 160....**

(5) Manufacturer: **Fabryka Maszyn Elektrycznych Indukta SA**

(6) Address: **ul. M. Grazynskiego 22, 43-300 Bielsko-Biala, Poland**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 test report number 210919000-9.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006 **EN 60079-7 : 2007** **EN 61241-0 : 2006**
EN 61241-1 : 2004

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex e II T3
II 2 D Ex tD A21 IP6X T125 °C

This certificate is issued on 5 June 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

C.G. van Es
Certification Manager

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(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2144** Issue No. **2**

(15) **Description**

Three-phases asynchronous cage motors series Sg 160... and KSSKg 160....
Construction according to EC-Type Examination Certificate KEMA 02ATEX2135 U.

Ambient temperature range -40 °C ... +40 °C.
The maximum surface temperature of the connection housing is referred to the maximum ambient temperature of 40 °C.

With an alternative terminal block the minimum ambient temperature for motor series Sg 160 is -20 °C.

Electrical data

Motor type	...g 160M-2A-T3	...g 160L-2-T3	...g 160M-4-T3
Rated output (kW)	11	16	11
Rated voltage (V ± 5 %)	400	400	400
Rated current (A)	20,1	28,3	21,1
Rated frequency (Hz)	50	50	50
Power factor	0,89	0,90	0,85
Rated speed (rpm)	2920	2940	1460
Insulation class	F	F	F
I_A/I_N	6,5	7,7	7,2
t_E for T3 (s)	5,6	7,0	9,0

Motor type	...g 160L-4-T3	...g 160M-6-T3	...g 160L-6-T3
Rated output (kW)	15	7,5	11
Rated voltage (V ± 5 %)	400	400	400
Rated current (A)	28	15,7	22,0
Rated frequency (Hz)	50	50	50
Power factor	0,86	0,80	0,82
Rated speed (rpm)	1460	960	960
Insulation class	F	F	F
I_A/I_N	7,4	6,5	6,8
t_E for T3 (s)	8,0	10,0	8,0

Any voltage from 190 V up to and including 690 V is allowed if the electrical and thermal load are equal to those of the tested motor (a lower or the same current- and flux density).

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 02ATEX2144** Issue No. **2**

Installation instructions

The degree of protection of at least IP54 to EN 60034-5 is only achieved if certified cable entries and blanking elements for unused openings are used that are suitable for the application and correctly installed.

The motor shall be provided with a three-phases inverse-delay overload protective device that not only monitors the motor current but also disconnects the stalled motor within the above mentioned times tE.

The motor shall only be used for continuous service, involving easy and infrequent starts which do not produce appreciable additional heating.

The built-in winding PTC thermistors (DIN 44 081 or 44 082 140 °C) or KTY 84-1... sensors in combination with a protective device shall be installed in the motor circuits in such a way that operation of the PTC thermistors or KTY84-1... sensors leads to switching-off of the motor.

For use in the presence of combustible dust:
The degree of protection of at least IP6X to EN 60529 is only achieved if the certified cable entries and blanking elements provide a degree of protection of at least IP6X to EN 60529.

Routine tests

Each motor shall be subjected to the dielectric strength test of EN 60034-1 clause 8 using a voltage of 1000 V + twice the rated voltage with a minimum of 1500 V during 60 seconds or as an alternative voltage of 120% of (1000 V + twice the rated voltage) during 1 second between the windings under test and the frame of the motor, with the core and the windings not under test connected to the frame.
Motors rated more then 5kW are tested in accordance with EN 60034-1, clause 9.2, using a voltage of 120% of (1000 V + twice the rated voltage) during 3-5 seconds.

(16) ***Test Report***

KEMA No. 210919000-9.

(17) **Special conditions for safe use**

None.

(18) ***Essential Health and Safety Requirements***

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210919000-9.

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX2143** Issue Number: **2**

(4) Equipment: **Three-phases asynchronous cage motors series Sg 132... and KSSKg 132....**

(5) Manufacturer: **Fabryka Maszyn Elektrycznych Indukta SA**

(6) Address: **ul. M. Grazynskiego 22, 43-300 Bielsko-Biala, Poland**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 test report number 210919000-8.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006 **EN 60079-7 : 2007** **EN 61241-0 : 2006**
EN 61241-1 : 2004

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex e II T4
II 2 D Ex tD A21 IP6X T125 °C

This certificate is issued on 5 June 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

C.G. van Es
Certification Manager

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(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 02ATEX2143** Issue No. **2**

(15) **Description**

Three-phases asynchronous cage motors series Sg 12... and KSSKg 132....
Construction according to EC-Type Examination Certificate KEMA 02ATEX2135 U.

Ambient temperature range -40 °C ... +40 °C.
The maximum surface temperature of the connection housing is referred to the maximum ambient temperature of 40 °C.

With an alternative terminal block the minimum ambient temperature for motor series Sg 132 is -20 °C.

Electrical data

Motor type	...g 132S-2A-T4	...g 132S-2B-T4	...g 132S-4-T4
Rated output (kW)	2,5	3,5	3,0
Rated voltage (V ± 5 %)	400	400	400
Rated current (A)	4,6	6,4	6
Rated frequency (Hz)	50	50	50
Power factor	0,91	0,92	0,85
Rated speed (rpm)	2930	2935	1465
Insulation class	F	F	F
I_A/I_N	7,5	8,0	7,7
t_E for T4(s)	16	11	8

Motor type	...g 132M-4-T4	...g 132S-6-T4
Rated output (kW)	4	2,2
Rated voltage (V ± 5 %)	400	400
Rated current (A)	7,7	5,1
Rated frequency (Hz)	50	50
Power factor	0,87	0,78
Rated speed (rpm)	1460	960
Insulation class	F	F
I_A/I_N	7,4	5,9
t_E for T4 (s)	7	11

KEMA

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2143** Issue No. **2**

Motor type	...g 132M-6A-T4	...g 132M-6B-T4
Rated output (kW)	2,8	4
Rated voltage (V ± 5 %)	400	400
Rated current (A)	6,0	8,2
Rated frequency (Hz)	50	50
Power factor	*0,80*	*0,83*
Rated speed (rpm)	960	960
Insulation class	F	F
I_A/I_N	6,5	7,0
t_E for T4(s)	12	5,5

Any voltage from 190 V up to and including 690 V is allowed if the electrical and thermal load are equal to those of the tested motor (a lower or the same current- and flux density).

Installation instructions

The degree of protection of at least IP54 to EN 60034-5 is only achieved if certified cable entries and blanking elements for unused openings are used that are suitable for the application and correctly installed.

The motor shall be provided with a three-phases inverse-delay overload protective device that not only monitors the motor current but also disconnects the stalled motor within the above mentioned times t_E.

The motor shall only be used for continuous service, involving easy and infrequent starts which do not produce appreciable additional heating.

The built-in winding PTC thermistors (DIN 44 081 or 44 082 140 °C) or KTY 84-1... sensors in combination with a protective device shall be installed in the motor circuits in such a way that operation of the PTC thermistors or KTY84-1... sensors leads to switching-off of the motor.

For use in the presence of combustible dust:
The degree of protection of at least IP6X to EN 60529 is only achieved if the certified cable entries and blanking elements provide a degree of protection of at least IP6X to EN 60529.

Routine tests

Each motor shall be subjected to the dielectric strength test of EN 60034-1 clause 8 using a voltage of 1000 V + twice the rated voltage with a minimum of 1500 V during 60 seconds or as an alternative voltage of 120% of (1000 V + twice the rated voltage) during 1 second between the windings under test and the frame of the motor, with the core and the windings not under test connected to the frame.
Motors rated more then 5kW are tested in accordance with EN 60034-1, clause 9.2, using a voltage of 120% of (1000 V + twice the rated voltage) during 3-5 seconds.

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 02ATEX2143** Issue No. **2**

(16) **Test Report**

KEMA No. 210919000-8.

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210919000-8.

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX2142** Issue Number: **2**

(4) Equipment: **Three-phases asynchronous cage motors series Sg 132... and KSSKg 132....**

(5) Manufacturer: **Fabryka Maszyn Elektrycznych Indukta SA**

(6) Address: **ul. M. Grazynskiego 22, 43-300 Bielsko-Biala, Poland**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 test report number 210919000-7.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006 **EN 60079-7 : 2007** **EN 61241-0 : 2006**
EN 61241-1 : 2004

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex e II T3
II 2 D Ex tD A21 IP6X T125 °C

This certificate is issued on 5 June 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

C.G. van Es
Certification Manager

PRODUCTS RvA C 001

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(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2142** Issue No. **2**

(15) **Description**

Three-phases asynchronous cage motors series Sg 132... and KSSKg 132....
Construction according to EC-Type Examination Certificate KEMA 02ATEX2135 U.

Ambient temperature range -40 °C ... +40 °C.
The maximum surface temperature of the connection housing is referred to the maximum ambient temperature of 40 °C.

With an alternative terminal block the minimum ambient temperature for motor series Sg 132 is -20 °C.

Electrical data

Motor type	...g 132S-2A-T3	...g 132S-2B-T3	...g 132S-4-T3
Rated output (kW)	5,5	7	5,5
Rated voltage (V ± 5 %)	400	400	400
Rated current (A)	10,4	12,7	11,1
Rated frequency (Hz)	50	50	50
Power factor	0,90	0,91	0,84
Rated speed (rpm)	2915	2920	1455
Insulation class	F	F	F
I_A/I_N	7,1	7,7	6,8
t_E for T3 (s)	9	7	7

Motor type	...g 132M-4-T3	...g 132S-6-T3
Rated output (kW)	7,5	3
Rated voltage (V ± 5 %)	400	400
Rated current (A)	14,6	6,8
Rated frequency (Hz)	50	50
Power factor	0,86	0,80
Rated speed (rpm)	1450	945
Insulation class	F	F
I_A/I_N	7,0	5,3
t_E for T3 (s)	5	18

KEMA

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2142** Issue No. **2**

Motor type	...g 132M-6A-T3	...g 132M-6B-T3
Rated output (kW)	4	5,5
Rated voltage (V ± 5 %)	400	400
Rated current (A)	8,5	11,6
Rated frequency (Hz)	50	50
Power factor	0,82	0,82
Rated speed (rpm)	950	950
Insulation class	F	F
I_A/I_N	6,1	6,4
t_E for T3 (s)	14	8

Any voltage from 190 V up to and including 690 V is allowed if the electrical and thermal load are equal to those of the tested motor (a lower or the same current- and flux density).

Installation instructions

The degree of protection of at least IP54 to EN 60034-5 is only achieved if certified cable entries and blanking elements for unused openings are used that are suitable for the application and correctly installed.

The motor shall be provided with a three-phases inverse-delay overload protective device that not only monitors the motor current but also disconnects the stalled motor within the above mentioned times t_E.

The motor shall only be used for continuous service, involving easy and infrequent starts which do not produce appreciable additional heating.

The built-in winding PTC thermistors (DIN 44 081 or 44 082 140 °C) or KTY 84-1... sensors in combination with a protective device shall be installed in the motor circuits in such a way that operation of the PTC thermistors or KTY84-1... sensors leads to switching-off of the motor.

For use in the presence of combustible dust:
The degree of protection of at least IP6X to EN 60529 is only achieved if the certified cable entries and blanking elements provide a degree of protection of at least IP6X to EN 60529.

Routine tests

Each motor shall be subjected to the dielectric strength test of EN 60034-1 clause 8 using a voltage of 1000 V + twice the rated voltage with a minimum of 1500 V during 60 seconds or as an alternative voltage of 120% of (1000 V + twice the rated voltage) during 1 second between the windings under test and the frame of the motor, with the core and the windings not under test connected to the frame.
Motors rated more then 5kW are tested in accordance with EN 60034-1, clause 9.2, using a voltage of 120% of (1000 V + twice the rated voltage) during 3-5 seconds.

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2142** Issue No. **2**

(16) **Test Report**

KEMA No. 210919000-7.

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210919000-7.

KEMA

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX2141** Issue Number: **2**

(4) Equipment: **Three-phases asynchronous cage motors series Sg 112... and KSSKg 112....**

(5) Manufacturer: **Fabryka Maszyn Elektrycznych Indukta SA**

(6) Address: **ul. M. Grazynskiego 22, 43-300 Bielsko-Biala, Poland**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 test report number 210919000-6.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006 **EN 60079-7 : 2007** **EN 61241-0 : 2006**
EN 61241-1 : 2004

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex e II T4
II 2 D Ex tD A21 IP6X T125 °C

This certificate is issued on 5 June 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

C.G. van Es
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(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 02ATEX2141** Issue No. **2**

(15) **Description**

Three-phases asynchronous cage motors series Sg 112... and KSSKg 112....
Construction according to EC-Type Examination Certificate KEMA 02ATEX2135 U.

Ambient temperature range -40 °C ... +40 °C.
The maximum surface temperature of the connection housing is referred to the maximum ambient temperature of 40 °C.

Electrical data

Motor type	...g 112M-2-T4	...g 112M-4-T4	...g 112M-6-T4
Rated output (kW)	2	2,4	1,6
Rated voltage (V ± 5 %)	400	400	400
Rated current (A)	3,7	4,9	3,9
Rated frequency (Hz)	50	50	50
Power factor	0,91	0,84	0,73
Rated speed (rpm)	2915	1450	970
Insulation class	F	F	F
I_A/I_N	7,95	7,9	6,7
t_E for T4 (s)	15	8	12

Any voltage from 190 V up to and including 690 V is allowed if the electrical and thermal load are equal to those of the tested motor (a lower or the same current- and flux density).

Installation instructions

The degree of protection of at least IP54 to EN 60034-5 is only achieved if certified cable entries and blanking elements for unused openings are used that are suitable for the application and correctly installed.

The motor shall be provided with a three-phases inverse-delay overload protective device that not only monitors the motor current but also disconnects the stalled motor within the above mentioned times t_E.

The motor shall only be used for continuous service, involving easy and infrequent starts which do not produce appreciable additional heating.

The built-in winding PTC thermistors (DIN 44 081 or 44 082 140 °C) or KTY 84-1... sensors in combination with a protective device shall be installed in the motor circuits in such a way that operation of the PTC thermistors or KTY84-1... sensors leads to switching-off of the motor.

For use in the presence of combustible dust:
The degree of protection of at least IP6X to EN 60529 is only achieved if the certified cable entries and blanking elements provide a degree of protection of at least IP6X to EN 60529.

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2141** Issue No. **2**

Routine tests

Each motor shall be subjected to the dielectric strength test of EN 60034-1 clause 8 using a voltage of 1000 V + twice the rated voltage with a minimum of 1500 V during 60 seconds or as an alternative voltage of 120% of (1000 V + twice the rated voltage) during 1 second between the windings under test and the frame of the motor, with the core and the windings not under test connected to the frame.
Motors rated more then 5kW are tested in accordance with EN 60034-1, clause 9.2, using a voltage of 120% of (1000 V + twice the rated voltage) during 3-5 seconds.

(16) **Test Report**

KEMA No. 210919000-6.

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210919000-6.

KEMA

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX2140** Issue Number: **2**

(4) Equipment: **Three-phases asynchronous cage motors series Sg 112... and KSSKg 112....**

(5) Manufacturer: **Fabryka Maszyn Elektrycznych Indukta SA**

(6) Address: **ul. M. Grazynskiego 22, 43-300 Bielsko-Biala, Poland**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 test report number 210919000-5.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006 **EN 60079-7 : 2007** **EN 61241-0 : 2006**
EN 61241-1 : 2004

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex e II T3
II 2 D Ex tD A21 IP6X T125 °C

This certificate is issued on 5 June 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

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KEMA

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2140** Issue No. **2**

(15) **Description**

Three-phases asynchronous cage motors series Sg 112... and KSSKg 112....
Construction according to EC-Type Examination Certificate KEMA 02ATEX2135 U.

Ambient temperature range -40 °C ... +40 °C.
The maximum surface temperature of the connection housing is referred to the maximum ambient temperature of 40 °C.

Electrical data

Motor type	...g 112M-2-T3	...g 112M-4-T3	...g 112M-6-T3
Rated output (kW)	4	4	2,2
Rated voltage (V ± 5 %)	400	400	400
Rated current (A)	7,5	8,3	5,1
Rated frequency (Hz)	50	50	50
Power factor	0,91	0,85	0,77
Rated speed (rpm)	2875	1430	960
Insulation class	F	F	F
I_A/I_N	6,5	6,9	5,9
t_E for T3 (s)	8	7	19

Any voltage from 190 V up to and including 690 V is allowed if the electrical and thermal load are equal to those of the tested motor (a lower or the same current- and flux density).

Installation instructions

The degree of protection of at least IP54 to EN 60034-5 is only achieved if certified cable entries and blanking elements for unused openings are used that are suitable for the application and correctly installed.

The motor shall be provided with a three-phases inverse-delay overload protective device that not only monitors the motor current but also disconnects the stalled motor within the above mentioned times tE.

The motor shall only be used for continuous service, involving easy and infrequent starts which do not produce appreciable additional heating.

The built-in winding PTC thermistors (DIN 44 081 or 44 082 140 °C) or KTY 84-1... sensors in combination with a protective device shall be installed in the motor circuits in such a way that operation of the PTC thermistors or KTY84-1... sensors leads to switching-off of the motor.

For use in the presence of combustible dust:
The degree of protection of at least IP6X to EN 60529 is only achieved if the certified cable entries and blanking elements provide a degree of protection of at least IP6X to EN 60529.

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2140** Issue No. **2**

Routine tests

Each motor shall be subjected to the dielectric strength test of EN 60034-1 clause 8 using a voltage of 1000 V + twice the rated voltage with a minimum of 1500 V during 60 seconds or as an alternative voltage of 120% of (1000 V + twice the rated voltage) during 1 second between the windings under test and the frame of the motor, with the core and the windings not under test connected to the frame.
Motors rated more then 5kW are tested in accordance with EN 60034-1, clause 9.2, using a voltage of 120% of (1000 V + twice the rated voltage) during 3-5 seconds.

(16) **Test Report**

KEMA No. 210919000-5.

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210919000-5.

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX2139** Issue Number: **2**

(4) Equipment: **Three-phases asynchronous cage motors series Sg 100... and KSSKg 100....**

(5) Manufacturer: **Fabryka Maszyn Elektrycznych Indukta SA**

(6) Address: **ul. M. Grazynskiego 22, 43-300 Bielsko-Biala, Poland**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 test report number 210919000-4.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006 **EN 60079-7 : 2007** **EN 61241-0 : 2006**
EN 61241-1 : 2004

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex e II T4
II 2 D Ex tD T125 °C IP6X

This certificate is issued on 5 June 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

C.G.van Es
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(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2139** Issue No. **2**

(15) **Description**

Three-phases asynchronous cage motors series Sg 100... and KSSKg100....
Construction according to EC-Type Examination Certificate KEMA 02ATEX2135 U.

Ambient temperature range -40 °C ... +40 °C.
The maximum surface temperature of the connection housing is referred to the maximum ambient temperature of 40 °C.

Electrical data

Motor type	...g 100L-2-T4	...g 100L-4A-T4
Rated output (kW)	1,5	1,5
Rated voltage (V ± 5 %)	400	400
Rated current (A)	3,0	3,3
Rated frequency (Hz)	50	50
Power factor	0,91	0,83
Rated speed (rpm)	2900	1430
Insulation class	F	F
I_A/I_N	7,8	6,2
t_E for T4 (s)	5,5	10

Motor type	...g 100L-2-T4	...g 100L-4A-T4
Rated output (kW)	1,5	1,5
Rated voltage (V ± 5 %)	400	400
Rated current (A)	3,0	3,3
Rated frequency (Hz)	50	50
Power factor	0,91	0,83
Rated speed (rpm)	2900	1430
Insulation class	F	F
I_A/I_N	7,8	6,2
t_E for T4 (s)	5,5	10

Any voltage from 190 V up to and including 690 V is allowed if the electrical and thermal load are equal to those of the tested motor (a lower or the same current- and flux density).

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2139** Issue No. **2**

Installation instructions

The degree of protection of at least IP54 to EN 60034-5 is only achieved if certified cable entries and blanking elements for unused openings are used that are suitable for the application and correctly installed.

The motor shall be provided with a three-phases inverse-delay overload protective device that not only monitors the motor current but also disconnects the stalled motor within the above mentioned times t_E.

The motor shall only be used for continuous service, involving easy and infrequent starts which do not produce appreciable additional heating.

The built-in winding PTC thermistors (DIN 44 081 or 44 082 140 °C) or KTY 84-1... sensors in combination with a protective device shall be installed in the motor circuits in such a way that operation of the PTC thermistors or KTY84-1... sensors leads to switching-off of the motor.

For use in the presence of combustible dust:
The degree of protection of at least IP6X to EN 60529 is only achieved if the certified cable entries and blanking elements provide a degree of protection of at least IP6X to EN 60529.

Routine tests

Each motor shall be subjected to the dielectric strength test of EN 60034-1 clause 8 using a voltage of 1000 V + twice the rated voltage with a minimum of 1500 V during 60 seconds or as an alternative voltage of 120% of (1000 V + twice the rated voltage) during 1 second between the windings under test and the frame of the motor, with the core and the windings not under test connected to the frame.
Motors rated more then 5kW are tested in accordance with EN 60034-1, clause 9.2, using a voltage of 120% of (1000 V + twice the rated voltage) during 3-5 seconds.

(16) **Test Report**

KEMA No. 210919000-4.

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210919000-4.

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX2138** Issue Number: **2**

(4) Equipment: **Three-phases asynchronous cage motors series Sg 100... and KSSKg 100....**

(5) Manufacturer: **Fabryka Maszyn Elektrycznych Indukta SA**

(6) Address: **ul. M. Grazynskiego 22, 43-300 Bielsko-Biala, Poland**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 test report number 210919000-3.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006 **EN 60079-7 : 2007** **EN 61241-0 : 2006**
EN 61241-1 : 2004

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex e II T3
II 2 D Ex tD T125 °C IP6X

This certificate is issued on 5 June 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

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KEMA

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2138** Issue No. **2**

(15) **Description**

Three-phases asynchronous cage motors series Sg 100... and KSSKg 100....
Construction according to EC-Type Examination Certificate KEMA 02ATEX2135 U.

Ambient temperature range -40 °C ... +40 °C.
The maximum surface temperature of the connection housing is referred to the maximum ambient temperature of 40 °C.

Electrical data

Motor type	...g 100L-2-T3	...g 100L-4A-T3
Rated output (kW)	2,4	2,2
Rated voltage (V ± 5 %)	400	400
Rated current (A)	4,8	5,2
Rated frequency (Hz)	50	50
Power factor	0,88	0,80
Rated speed (rpm)	2905	1425
Insulation class	F	F
I_A/I_N	8,3	5,9
t_E for T3 (s)	6	9

Motor type	...g 100L-4B-T3	...g 100L-6-T3
Rated output (kW)	3	1,5
Rated voltage (V ± 5 %)	400	400
Rated current (A)	6,9	4,1
Rated frequency (Hz)	50	50
Power factor	0,81	0,73
Rated speed (rpm)	1415	945
Insulation class	F	F
I_A/I_N	5,75	4,5
t_E for T3 (s)	9	17

Any voltage from 190 V up to and including 690 V is allowed if the electrical and thermal load are equal to those of the tested motor (a lower or the same current- and flux density).

KEMA

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2138** Issue No. **2**

Installation instructions

The degree of protection of at least IP54 to EN 60034-5 is only achieved if certified cable entries and blanking elements for unused openings are used that are suitable for the application and correctly installed.

The motor shall be provided with a three-phases inverse-delay overload protective device that not only monitors the motor current but also disconnects the stalled motor within the above mentioned times t_E.

The motor shall only be used for continuous service, involving easy and infrequent starts which do not produce appreciable additional heating.

The built-in winding PTC thermistors (DIN 44 081 or 44 082 140 °C) or KTY 84-1... sensors in combination with a protective device shall be installed in the motor circuits in such a way that operation of the PTC thermistors or KTY84-1... sensors leads to switching-off of the motor.

For use in the presence of combustible dust:
The degree of protection of at least IP6X to EN 60529 is only achieved if the certified cable entries and blanking elements provide a degree of protection of at least IP6X to EN 60529.

Routine tests

Each motor shall be subjected to the dielectric strength test of EN 60034-1 clause 8 using a voltage of 1000 V + twice the rated voltage with a minimum of 1500 V during 60 seconds or as an alternative voltage of 120% of (1000 V + twice the rated voltage) during 1 second between the windings under test and the frame of the motor, with the core and the windings not under test connected to the frame.
Motors rated more then 5kW are tested in accordance with EN 60034-1, clause 9.2, using a voltage of 120% of (1000 V + twice the rated voltage) during 3-5 seconds.

(16) **Test Report**

KEMA No. 210919000-3.

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210919000-3.

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX2137** Issue Number: **2**

(4) Equipment: **Three-phases asynchronous cage motors series Sh 90.... and KSSKh 90....**

(5) Manufacturer: **Fabryka Maszyn Elektrycznych Indukta SA**

(6) Address: **ul. M. Grazynskiego 22, 43-300 Bielsko-Biala, Poland**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 test report number 210919000-2.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006 **EN 60079-7 : 2007** **EN 61241-0 : 2006**
EN 61241-1 : 2004

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex e II T4
II 2 D Ex tD A21 IP6X T125 °C

This certificate is issued on 5 june 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

C.G. van Es
Certification Manager

PRODUCTS RvA C 001

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(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 02ATEX2137** Issue No. **2**

(15) **Description**

Three-phases asynchronous cage motors series Sh 90... and KSSKh 90....
Construction according to EC-Type Examination Certificate KEMA 02ATEX2135 U.

Ambient temperature range -40 °C ... +40 °C.
The maximum surface temperature of the connection housing is referred to the maximum ambient temperature of 40 °C.

Electrical data

Motor type	...h 90S-2-T4	...h 90L-2-T4	...h 90S-4-T4
Rated output (kW)	1,0	1,2	0,80
Rated voltage (V ± 5 %)	400	400	400
Rated current (A)	2,3	2,4	2,0
Rated frequency (Hz)	50	50	50
Power factor	0,78	0,90	0,75
Rated speed (rpm)	2895	2855	1435
Insulation class	F	F	F
I_A/I_N	7,5	7,4	5,7
t_E for T4 (s)	6,0	6,0	10

Motor type	...h 90L-4-T4	...h 90S-6-T4	...h 90L-6-T4
Rated output (kW)	1,1	0,65	0,80
Rated voltage (V ± 5 %)	400	400	400
Rated current (A)	2,7	2,0	2,6
Rated frequency (Hz)	50	50	50
Power factor	0,78	0,68	0,61
Rated speed (rpm)	1430	935	950
Insulation class	F	F	F
I_A/I_N	6,2	4,1	4,75
t_E for T4 (s)	10	18	18

Any voltage from 190 V up to and including 690 V is allowed if the electrical and thermal load are equal to those of the tested motor (a lower or the same current- and flux density).

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 02ATEX2137** Issue No. **2**

Installation instructions

The degree of protection of at least IP54 to EN 60034-5 is only achieved if certified cable entries and blanking elements for unused openings are used that are suitable for the application and correctly installed.

The motor shall be provided with a three-phases inverse-delay overload protective device that not only monitors the motor current but also disconnects the stalled motor within the above mentioned times t_E.

The motor shall only be used for continuous service, involving easy and infrequent starts which do not produce appreciable additional heating.

The built-in winding PTC thermistors (DIN 44 081 or 44 082 140 °C) or KTY 84-1... sensors in combination with a protective device shall be installed in the motor circuits in such a way that operation of the PTC thermistors or KTY84-1... sensors leads to switching-off of the motor.

For use in the presence of combustible dust:
The degree of protection of at least IP6X to EN 60529 is only achieved if the certified cable entries and blanking elements provide a degree of protection of at least IP6X to EN 60529.

Routine tests

Each motor shall be subjected to the dielectric strength test of EN 60034-1 clause 8 using a voltage of 1000 V + twice the rated voltage with a minimum of 1500 V during 60 seconds or as an alternative voltage of 120% of (1000 V + twice the rated voltage) during 1 second between the windings under test and the frame of the motor, with the core and the windings not under test connected to the frame.
Motors rated more then 5kW are tested in accordance with EN 60034-1, clause 9.2, using a voltage of 120% of (1000 V + twice the rated voltage) during 3-5 seconds.

(16) **Test Report**

KEMA No. 210919000-2.

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210919000.

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX2136** Issue Number: **2**

(4) Equipment: **Three-phases asynchronous cage motors series Sh 90.... and KSSKh 90...**

(5) Manufacturer: **Fabryka Maszyn Elektrycznych Indukta SA**

(6) Address: **ul. M. Grazynskiego 22, 43-300 Bielsko-Biala, Poland**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 test report number 210919000-1.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006 **EN 60079-7 : 2007** **EN 61241-0 : 2006**
EN 61241-1 : 2004

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex e II T3
II 2 D Ex tD A21 IP6X T125 °C

This certificate is issued on 5 June 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

KEMA Quality B.V.

C.G. van Es
Certification Manager

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(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2136** Issue No. **2**

(15) **Description**

Three-phases asynchronous cage motors series Sh 90... and KSSKh 90...
Construction according to EC-Type Examination Certificate KEMA 02ATEX2135 U.
The maximum surface temperature of the connection housing is referred to the maximum ambient temperature of 40 °C.

Ambient temperature range -40 °C ... +40 °C.

Electrical data

Motor type	...h 90S-2-T3	...h 90L-2-T3	...h 90S-4-T3
Rated output (kW)	1,5	2,2	1,1
Rated voltage (V ± 5 %)	400	400	400
Rated current (A)	3,5	4,7	2,7
Rated frequency (Hz)	50	50	50
Power factor	0,81	0,82	0,80
Rated speed (rpm)	2850	2860	1405
Insulation class	F	F	F
I_A/I_N	6,0	7,1	4,65
t_E for T3 (s)	10	5,0	14

Motor type	...h 90L-4-T3	...h 90S-6-T3	...h 90L-6-T3
Rated output (kW)	1,5	0,75	1,1
Rated voltage (V ± 5 %)	400	400	400
Rated current (A)	3,7	2,1	3,0
Rated frequency (Hz)	50	50	50
Power factor	0,77	0,73	0,71
Rated speed (rpm)	1415	915	920
Insulation class	F	F	F
I_A/I_N	5,3	3,7	4,05
t_E for T3 (s)	13	32	33

Any voltage from 190 V up to and including 690 V is allowed if the electrical and thermal load are equal to those of the tested motor (a lower or the same current- and flux density).

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2136** Issue No. **2**

Installation instructions

The degree of protection of at least IP54 to EN 60034-5 is only achieved if certified cable entries and blanking elements for unused openings are used that are suitable for the application and correctly installed.

The motor shall be provided with a three-phases inverse-delay overload protective device that not only monitors the motor current but also disconnects the stalled motor within the above mentioned times t_E.

The motor shall only be used for continuous service, involving easy and infrequent starts which do not produce appreciable additional heating.

The built-in winding PTC thermistors (DIN 44 081 or 44 082 140 °C) or KTY 84-1... sensors in combination with a protective device shall be installed in the motor circuits in such a way that operation of the PTC thermistors or KTY84-1... sensors leads to switching-off of the motor.

For use in the presence of combustible dust:
The degree of protection of at least IP6X to EN 60529 is only achieved if the certified cable entries and blanking elements provide a degree of protection of at least IP6X to EN 60529.

Routine tests

Each motor shall be subjected to the dielectric strength test of EN 60034-1 clause 8 using a voltage of 1000 V + twice the rated voltage with a minimum of 1500 V during 60 seconds or as an alternative voltage of 120% of (1000 V + twice the rated voltage) during 1 second between the windings under test and the frame of the motor, with the core and the windings not under test connected to the frame.
Motors rated more then 5kW are tested in accordance with EN 60034-1, clause 9.2, using a voltage of 120% of (1000 V + twice the rated voltage) during 3-5 seconds.

(16) **Test Report**

KEMA No. 210919000-1.

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210919000-1.

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX2135 U** Issue Number: **3**

(4) Component: **Three-phases asynchronous cage motors series Sh 90..., KSSKh 90..., Sg 100..., KSSKg 100..., Sg 112..., KSSKg 112..., Sg 132..., KSSKg 132..., Sg 160..., KSSKg 160..., Sg 180...and KSSKg 180... including terminal box.**

(5) Manufacturer: **Fabryka Maszyn Elektrycznych Indukta SA**

(6) Address: **ul. M. Grazynskiego 22, 43-300 Bielsko-Biala, Poland**

(7) This component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) KEMA Quality B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this component 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. 210919000.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2006 **EN 60079-7 : 2007** **EN 61241-0 : 2006**
EN 61241-1 : 2004

(10) The sign "U" placed after the certificate number indicates that this certificate describes components and must not be mistaken for a certificate intended for an equipment or protective system. This EC-Type Examination Certificate may be used as a basis for certification of an equipment or protective system.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified component according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this component. These are not covered by this certificate.

(12) The marking of the component shall include the following:

II 2 G Ex e II
II 2 D Ex tD A21 IP6X

This certificate is issued on 5 June 2008 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

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(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX2135 U** Issue No. **3**

(15) **Description**

Motor frame constructions with designations according to EN 60034-7 for the three-phases asynchronous cage motors series Sh and KSSKh 90...; Sg and KSSKg 100...; Sg and KSSKg 112...; Sg, KSSKg 132...; Sg, KSSKg 160... and Sg, KSSKg 180... including terminal box.

Motors with horizontal and vertical shafts for foot and/or flange mounting and related mounting arrangements.

Ambient temperature range -40 °C ... +40 °C.

Also use of alternative increased safety terminal blocks for motor Sg 132..., Sg160... and Sg180.. for a minimum ambient temperature of -20 °C and the construction of the flange, shaft and bearing for direct mounting of a gearbox to the motors. The model codes for these versions will be KSSKg...

Electrical data

Voltage ..... max. 690 V, 50 Hz

Installation instructions

For use in the presence of combustible dust:
The degree of protection of at least IP6X to EN 60529 is only achieved if certified cable entries are used that are suitable for the application and correctly installed. Unused apertures shall be closed with suitable blanking elements.

The built-in winding PTC thermistors (DIN 44 081 or 44 082 140 °C) or KTY 84-1... sensors in combination with a protective device shall be installed in the motor circuits in such a way that operation of the PTC thermistors or KTY84-1... sensors leads to switching-off of the motor.

Routine tests

None.

(16) **Test Report**

KEMA No. 210919000.

(17) **Special conditions for safe use**

None.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 210919000.