Ośrodek Badań, Atestacji i Certyfikacji Sp. z o.o.
44-121 Gliwice, ul. Łabędzka 21

AC 099

(1) QUALITY ASSURANCE NOTIFICATION

(Translation)

(2) Equipment, components or protective systems intended for use in potentially explosive atmospheres. Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014.

(3) Notification No: **OBAC 21 ATEXQ 006**

(4) Scope: **Equipment/ protective systems listed in the Annex/ Annexes is/ are an integral part of this notification**

(5) Manufacturer: **Fabryka Silników Elektrycznych „BESEL" S.A.**

(6) Address: ul. Elektryczna 8, 49-300 Brzeg

(7) Ośrodek Badań Atestacji i Certyfikacji OBAC Sp. z o.o. (The Institute for Research and Certification „OBAC" Sp. z o.o.) Notified Body No. 1461 in the scope of the Appendix VII, in compliance with article No. 17 of the European Parliament and of the Council Directive 2014/34/EU dated 26 February 2014 hereby certifies that the quality system of the producer fulfils the requirements specified in the appendix VII to the Directive 2014/34/EU.

(8) This notification is issued on the basis of an audit report No. OBAC/006/ATEXQ/RAPC/21 dated 18.06.2021. This certificate can be withdrawn in the event of a failure to fulfil the requirements of the appendix VII. The results of periodical evaluations of the quality system constitute a component of this notification.

(9) The Quality Assurance Notification is valid from **03.10.2021** to **02.10.2024** and can be withdrawn if the producer fails to fulfil the requirements of the periodical evaluations of the quality system.

(10) Under Article 16 of the Directive 2014/34/EU and chapter 3 of the aforementioned regulation, there must be an identification number of 1461 of the notified body participating in the production control phase, placed to the right from the CE mark.

(11) First issue of notification: 18.09.2015.

NOTIFIED BODY Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o. 1461

Certification Body Manager

Piotr Tarnawski M. Com.

Date of issue: 1st October 2021.

(12)

Appendix No. 1

to the Quality Assurance Notification No. OBAC 21 ATEXQ 006

(13) ***Equipment types/groups covered by the notification:***

- Three-phase low-power motors

(14) ***Types of explosion-proof design covered by the notification:***

- Ex e, Ex t

(15) ***Basis of issuing the appendix:***

- Audit report No. OBAC/006/ATEXQ/RAPC/21 of 18.06.2021.

NOTIFIED BODY Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o. 1461

OBAC

Ośrodek Badań, Atestacji i Certyfikacji Sp. z o.o.
44-121 Gliwice, ul. Łabędzka 21

(1) EU-TYPE EXAMINATION CERTIFICATE

(Translation)

(2) Equipment, components and protective systems intended for use in potentially explosive atmospheres. Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014.

(3) EU type examination certificate No: **OBAC 14 ATEX 0048X**

(4) Product: **Explosion-protected three-phase cage induction motor of ExS(K,L)h 56-** type**

(5) Manufacturer: **Fabryka Silników Elektrycznych „BESEL" S.A.**

(6) Address: ul. Elektryczna 8, 49-300 Brzeg

(7) This equipment, component or protective system and any of its approved version is specified in this certificate and in documents listed in p. 19.

(8) The Institute for Research and Certification „OBAC" Ltd., notified body No.1461 in accordance with Article 13 of the European Council Directive 2014/34/EU of February 26, 2014, certifies that this equipment, component or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment, component or protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential report No. OBAC/14/ATEX/0048.

(9) Compliance with the Safety Requirements has been assured by conformity with:

PN-EN 60079-0:2013 (EN 60079-0:2012) **PN-EN 60079-7:2016** (EN 60079-7:2015)
PN-EN 60079-31:2014 (EN 60079-31:2014)

(10) If the sign „X" is placed after the certificate number, it indicates that the product concerned is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EU-type examination certificate relates only to the design, evaluation and tests of the specified equipment, component or protective system according to the Directive 2014/34/EU. The certificate does not apply to further requirements of the Directive relating to the manufacture and placing on the market of this equipment, component or protective system.

(12) The marking of the equipment, component or protective system must include the following:

II 2G Ex eb II Tx Gb

II 2D Ex tb IIIC T125°C Db

Gliwice, 29th November 2016
Rev. 2

Certification Body Manager
Piotr Tarnawski M.Com.

(13)
(14)

SCHEDULE

to the EU-Type Examination Certificate No. OBAC 14 ATEX 0048X

(15) Ex Product description:

The increased-safety three-phase cage induction motors of ExS(K, L)h 56-** type are low-power motors of closed structure. The rotor cage and the frame elements such as the body, bearing hubs and the terminal box are made of aluminium. The fan cover is made of steel while the fan itself is made of plastic, aluminium or cast iron. The motor shaft is supported by rolling bearings. The juction box provided with screw-type terminals and a cover, and located on the body, is used for external electrical connections. Depending on its version the motor includes two or four pairs of poles and is suitable for lug-type, flange or lug-flange installation. The flange is available in three sizes. A part from the cable entry the equipment includes the following components holding their own EC-type examination certificates.

- Terminal board 2,5mm^2 – 6mm^2 — certificate no. KDB 06 ATEX 150U
- Miniature terminals of 07-9702-0… type (version with PTC) — certificate no. PTB 99 ATEX 3117U

Marking:

Explosion-protected three-phase cage induction motor of **Ex S (K,L) h 56 - * * (*)** type

Increased safety motor

Three-phase motor

Type of installation:
(without marking) – lug-type installation
K – flange installation
L – lug-flange installation

Series

Height of shaft axis: [mm]

Number of pair poles: **2, 4**

Length of stator:
A - 29 mm
B - 37 mm

Flange size:
(without marking) –IM B5 flange (large)
1 –IM B14/1 flange (middle)
2 –IM B14/2 flange (small)

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o. 1461

(13)
(14)

SCHEDULE

to the EU-Type Examination Certificate No. OBAC 14 ATEX 0048X

Rated data:

Version	ExS(K,L)h56-2A(*)		ExS(K,L)h56-2B(*)		ExS(K,L)h56-4A(*)		ExS(K,L)h56-4B(*)	
Rated power [kW]	0,09		0,12		0,06		0,09	
Rated voltage* [V], ±5%	230/400	266/460	230/400	266/460	230/400	266/460	230/400	266/460
Rated current* [A]	0,70/0,40	0,65/0,38	0,70/0,40	0,70/0,40	0,54/0,31	0,52/0,30	0,64/0,37	0,64/0,37
Frequency [Hz]	50	60	50	60	50	60	50	60
Power factor	0,60	0,55	0,70	0,64	0,57	0,50	0,59	0,53
Efficiency [%]	54,0	55,0	62,0	64,0	48,5	51,0	60,0	60,0
Rotational speed [rpm]	2760	3440	2750	3390	1380	1700	1370	1690
Type of operation	S1							
Class of insulation	F							
I_A/I_N	3,1	3,9	3,6	3,8	2,7	3,0	2,8	3,0
t_E [s] for **T3** temp. class	45,0		40,0		64,0		64,0	
t_E [s] for **T4** temp. class	18,0		17,0		24,0		27,0	
Thermistor rated temperature (version Ex t)	120°C							
Protection degree	IP66							
Ambient temperature	-20°C ≤ Ta ≤ +40°C							

* parameters for delta-star stator connections (see also special conditions of safe use)

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY
Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o.
1461

(13)

SCHEDULE

(14)

to the EU-Type Examination Certificate
No. OBAC 14 ATEX 0048X

(16) Report:

- Number LL/173-1/2013/A of 11.02.2014.
- Number LL/173-2/2013/A of 11.02.2014.
- Number LL/173-3/2013/A of 17.03.2014.
- Number LL/173-4/2013/A of 03.04.2014.

The Explosion-protected three-phase cage induction motor of ExS(K,L)h 56- type** meets the requirements for explosion-protected equipment and may be used as the device of equipment group II category 2G and/or 2D.

(17) Special conditions for safe operation:

- The application of voltage of 190V to 690V inclusive is permissible provided that the electric and thermal loads are equal to those the motor was subjected to during the EC-type examination (with the same or lower current and magnetic flux density).
- Adequately selected and installed certified cable entries shall be used in order to ensure protection degree of IP66.
- The motor shall be provided with adequate overload protection the current-time characteristic of which ensures that the motor will be switched off from the supply voltage earlier than the t_E time specified for the motor, at the current equal to the motor starting current.
- Temperature class of the equipment relates to the t_E value – see the rated data.
- The PTC thermistors built into the winding, if they are required, together with the overload protection, shall be connected with the motor circuit so that the action of the thermistors results in the motor switching off.

(18) The compliance with Safety Requirements has been assured by compliance with standards shown in p.9 of this certificate.

(19) List of agreed documentation:

- Documentation of increased-safety explosion-protected „ExS(K,L)h56-…" motors, December 2013.
- Instructions no. ITR/HR/4/07 – "Operating and Technical Instructions of explosion-protected three-phase cage induction motors of 56, 63, 71, 80 shaft axis height", March 2014.

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY
Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o.
1461

OBAC

Ośrodek Badań, Atestacji i Certyfikacji Sp. z o.o.
44-121 Gliwice, ul. Łabędzka 21

(1)

Schedule No. 1
to
the certificate No. OBAC 14 ATEX 0048X

(2) Equipment, components and protective systems intended for use in potentially explosive atmospheres. Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014.

(3) Product: **Explosion-protected three-phase cage induction motor of ExS(K,L)h 56-** type**

(4) Manufacturer: **Fabryka Silników Elektrycznych „BESEL" S.A.**

(5) Address: **ul. Elektryczna 8, 49-300 Brzeg**

(6) Compliance with the safety requirements has been assured by compliance with:

EN IEC 60079-0:2018+AC:2020-02 **EN 60079-7:2015+A1:2018** **EN 60079-31:2014**

(7) Description of changes:
- Marking correction (addition of the gas subgroup symbol "IIC")
- Standards update

Rated data:

Unchanged.

Marking:

Unchanged.

(8) Results of the examinations performed:

Explosion proof design is confirmed in the confidential product assessment report: OBAC/20/ATEX/0174.

The introduced changes meet the requirements for equipment of group II category 2GD.

Explosion-proof marking:

II 2G Ex eb IIC Tx Gb

II 2D Ex tb IIIC T125°C Db

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o. 1461

Certification Body Manager

Piotr Tarnawski M.Com.

Gliwice, 09th September 2020

Schedule No. 1
to
the certificate No. OBAC 14 ATEX 0048X

(9) Specific conditions of use:

Unchanged.

(10) Technical documentation:

- Documentation of increased-safety explosion-protected „ExS(K,L)h56-…" motors, December 2013.
- Instructions no. ITR/HR/4/07 – "Operating and Technical Instructions of explosion-protected three-phase cage induction motors of 56, 63, 71, 80 shaft axis height", March 2014.
- „Comparative analysis of standards PN-EN IEC 60079-0:2018-09 and PN-EN 60079-0:2013 in relation to motors ExS(K,L)h56 of the BESEL's S.A. production" 31.08.2020.

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY
Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o.
1461

OBAC

Ośrodek Badań, Atestacji i Certyfikacji Sp. z o.o.
44-121 Gliwice, ul. Łabędzka 21

(1) EU-TYPE EXAMINATION CERTIFICATE

(Translation)

(2) Equipment, components and protective systems intended for use in potentially explosive atmospheres. Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014.

(3) EU type examination certificate No: **OBAC 14 ATEX 0047X**

(4) Product: **Explosion-protected three-phase cage induction motor of ExS(K,L)h 63-** type**

(5) Manufacturer: **Fabryka Silników Elektrycznych „BESEL" S.A.**

(6) Address: ul. Elektryczna 8, 49-300 Brzeg

(7) This equipment, component or protective system and any of its approved version is specified in this certificate and in documents listed in p. 19.

(8) The Institute for Research and Certification „OBAC" Ltd., notified body No.1461 in accordance with Article 13 of the European Council Directive 2014/34/EU of February 26, 2014, certifies that this equipment, component or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment, component or protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential report No. OBAC/14/ATEX/0047.

(9) Compliance with the Safety Requirements has been assured by conformity with:

PN-EN 60079-0:2013 (EN 60079-0:2012) **PN-EN 60079-7:2016** (EN 60079-7:2015)
PN-EN 60079-31:2014 (EN 60079-31:2014)

(10) If the sign „X" is placed after the certificate number, it indicates that the product concerned is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EU-type examination certificate relates only to the design, evaluation and tests of the specified equipment, component or protective system according to the Directive 2014/34/EU. The certificate does not apply to further requirements of the Directive relating to the manufacture and placing on the market of this equipment, component or protective system.

(12) The marking of the equipment, component or protective system must include the following:

II 2G Ex eb II Tx Gb

II 2D Ex tb IIIC T125°C Db

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o. 1461

Gliwice, 29th November 2016
Rev. 2

Certification Body Manager
Piotr Tarnawski M.Com.

(13)

SCHEDULE

(14)

to the EU-Type Examination Certificate No. OBAC 14 ATEX 0047X

(15) Ex Product description:

The increased-safety three-phase cage induction motors of ExS(K, L)h 63-** type are low-power motors of closed structure. The rotor cage and the frame elements such as the body, bearing hubs and the terminal box are made of aluminium. The fan cover is made of steel while the fan itself is made of plastic, aluminium or cast iron. The motor shaft is supported by rolling bearings. The juction box provided with screw-type terminals and a cover, and located on the body, is used for external electrical connections. Depending on its version the motor includes two or four pairs of poles and is suitable for lug-type, flange or lug-flange installation. The flange is available in three sizes. A part from the cable entry the equipment includes the following components holding their own EC-type examination certificates.

- Terminal board 2,5mm^2 – 6mm^2 certificate no. KDB 06 ATEX 150U
- Miniature terminals of 07-9702-0… type (version with PTC) certificate no. PTB 99 ATEX 3117U

Marking:

Explosion-protected three-phase cage induction motor of **Ex S (K,L) h 63 - * * (*)** type

Increased safety motor

Three-phase motor

Type of installation
(without marking) – lug-type installation
K – flange installation
L – lug-flange installation

Series

Height of shaft axis: [mm]

Number of pair poles: **2, 4, 6**

Length of stator:
A - 45mm
B - 60mm

Flange size:
(without marking) – IM B5 flange (large)
1 –IM B14/1 flange (middle)
2 –IM B14/2 flange (small)

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o. 1461

(13)

(14)

SCHEDULE

to the EU-Type Examination Certificate No. OBAC 14 ATEX 0047X

Rated data:

Version	ExS(K,L)h63-2A(*)		ExS(K,L)h63-2B(*)		ExS(K,L)h63-4A(*)		ExS(K,L)h63-4B(*)		ExS(K,L)h63-6B(*)	
Rated power [kW]	0,18		0,25		0,12		0,18		0,06	
Rated voltage* [V], ±5%	230/400	266/460	230/400	266/460	230/400	266/460	230/400	266/460	230/400	266/460
Rated current* [A]	1,05/0,60	0,95/0,55	1,55/0,90	1,40/0,80	1,15/0,65	1,05/0,60	1,20/0,70	1,15/0,65	0,55	0,55
Frequency [Hz]	50	60	50	60	50	60	50	60	50	60
Power factor	0,70	0,67	0,60	0,60	0,47	0,44	0,57	0,53	0,39	0,34
Efficiency [%]	63,0	63,0	68,0	68,0	57,0	57,0	65,0	65,0	40,0	40,0
Rotational speed [rpm]	2820	3440	2870	3480	1415	1725	1390	1700	940	1140
Type of operation	S1									
Class of insulation	F									
I_A/I_N	4,8	5,6	5,9	7,0	3,5	4,1	3,75	4,25	2,4	2,5
t_E [s] for **T3** temp. class	26,0		17,0		55,0		45,0		110,0	
t_E [s] for **T4** temp. class	12,0		8,0		22,0		20,0		40,0	
Thermistor rated temperature (version Ex t)	120°C									
Protection degree	IP66									
Ambient temperature	-20°C ≤ Ta ≤ +40°C									

* parameters for delta-star stator connections (see also special conditions of safe use)

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o. 1461

(13)

SCHEDULE

(14)

to the EU-Type Examination Certificate No. OBAC 14 ATEX 0047X

(16) Report:

- Number LL/173-1/2013/A of 11.02.2014.
- Number LL/173-2/2013/A of 11.02.2014.
- Number LL/173-3/2013/A of 17.03.2014.
- Number LL/173-4/2013/A of 03.04.2014.

The Explosion-protected three-phase cage induction motor of ExS(K,L)h 63- type** meets the requirements for explosion-protected equipment and may be used as the device of equipment group II category 2G and/or 2D.

(17) Special conditions for safe operation:

- The application of voltage of 190V to 690V inclusive is permissible provided that the electric and thermal loads are equal to those the motor was subjected to during the EC-type examination (with the same or lower current and magnetic flux density).
- Adequately selected and installed certified cable entries shall be used in order to ensure protection degree of IP66.
- The motor shall be provided with adequate overload protection the current-time characteristic of which ensures that the motor will be switched off from the supply voltage earlier than the t_E time specified for the motor, at the current equal to the motor starting current.
- Temperature class of the equipment relates to the t_E value – see the rated data.
- The PTC thermistors built into the winding, if they are required, together with the overload protection, shall be connected with the motor circuit so that the action of the thermistors results in the motor switching off.

(18) The compliance with Safety Requirements has been assured by compliance with standards shown in p.9 of this certificate.

(19) List of agreed documentation:

- Documentation of increased-safety explosion-protected „ExS(K,L)h63-…" motors, April 2014.
- Instructions no. ITR/HR/4/07 – "Operating and Technical Instructions of explosion-protected three-phase cage induction motors of 56, 63, 71, 80 shaft axis height", March 2014.

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY
Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o.
1461

OBAC

Ośrodek Badań, Atestacji i Certyfikacji Sp. z o.o.
44-121 Gliwice, ul. Łabędzka 21

(1)

Schedule No. 1
to
the certificate No. OBAC 14 ATEX 0047X

(2) Equipment, components and protective systems intended for use in potentially explosive atmospheres. Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014.

(3) Product: **Explosion-protected three-phase cage induction motor of ExS(K,L)h 63-** type**

(4) Manufacturer: **Fabryka Silników Elektrycznych „BESEL" S.A.**

(5) Address: **ul. Elektryczna 8, 49-300 Brzeg**

(6) Compliance with the safety requirements has been assured by compliance with:

EN IEC 60079-0:2018+AC:2020-02 **EN 60079-7:2015+A1:2018** **EN 60079-31:2014**

(7) Description of changes:
- Marking correction (addition of the gas subgroup symbol "IIC")
- Standards update

Rated data:

Unchanged.

Marking:

Unchanged.

(8) Results of the examinations performed:

Explosion proof design is confirmed in the confidential product assessment report: OBAC/20/ATEX/0174.

The introduced changes meet the requirements for equipment of group II category 2GD.

Explosion-proof marking:

II 2G Ex eb IIC Tx Gb

II 2D Ex tb IIIC T125°C Db

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o. 1461

Certification Body Manager

Piotr Tarnawski M.Com.

Gliwice, 09th September 2020

Schedule No. 1
to
the certificate No. OBAC 14 ATEX 0047X

(9) Specific conditions of use:

Unchanged.

(10) Technical documentation:

- Documentation of increased-safety explosion-protected „ExS(K,L)h63-…" motors, April 2014.
- Instructions no. ITR/HR/4/07 – "Operating and Technical Instructions of explosion-protected three-phase cage induction motors of 56, 63, 71, 80 shaft axis height", March 2014.
- „Comparative analysis of standards PN-EN IEC 60079-0:2018-09 and PN-EN 60079-0:2013 in relation to motors ExS(K,L)h63 of the BESEL's S.A. production" 31.08.2020.

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY
Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o.
1461

OBAC

Ośrodek Badań, Atestacji i Certyfikacji Sp. z o.o.
44-121 Gliwice, ul. Łabędzka 21

(1) EU-TYPE EXAMINATION CERTIFICATE

(Translation)

(2) Equipment, components and protective systems intended for use in potentially explosive atmospheres. Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014.

(3) EU type examination certificate No: **OBAC 15 ATEX 0114X**

(4) Product: **Explosion protected three-phase cage induction motor of ExS(K,L)h 71-** type**

(5) Manufacturer: **Fabryka Silników Elektrycznych „BESEL" S.A.**

(6) Address: ul. Elektryczna 8, 49-300 Brzeg

(7) This equipment, component or protective system and any of its approved version is specified in this certificate and in documents listed in p. 19.

(8) The Institute for Research and Certification „OBAC" Ltd., notified body No.1461 in accordance with Article 13 of the European Council Directive 2014/34/EU of February 26, 2014, certifies that this equipment, component or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment, component or protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential report No. OBAC/15/ATEX/0114

(9) Compliance with the Safety Requirements has been assured by conformity with:

PN-EN 60079-0:2013	PN-EN 60079-7:2016	PN-EN 60079-31:2014
(EN 60079-0:2012)	(EN 60079-7:2015)	(EN 60079-31:2014)

(10) If the sign „X" is placed after the certificate number, it indicates that the product concerned is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EU-type examination certificate relates only to the design, evaluation and tests of the specified equipment, component or protective system according to the Directive 2014/34/EU. The certificate does not apply to further requirements of the Directive relating to the manufacture and placing on the market of this equipment, component or protective system.

(12) The marking of the equipment, component or protective system must include the following:

II 2G Ex eb II Tx Gb

II 2D Ex tb IIIC T125°C Db

Gliwice, 29th November 2016
Rev. 2

Certification Body Manager

Piotr Tarnawski M.Com.

(13)
(14)

SCHEDULE

to the EU-Type Examination Certificate No. OBAC 15 ATEX 0114X

(15) Ex Product description:

The increased-safety explosion protected three-phase cage induction motors of ExS(K, L)h 71-** type are the low-power enclosed motors. The rotor cage and enclosure elements like the frame, bearing housings and the terminal box are made of aluminium. The fan cover is made of steel, the fan itself being manufactured of plastic, aluminium or cast iron. The motor shaft is supported by anti-friction bearings. The external connections are performed using the frame-mounted junction box provided with screw terminals and a cover. Depending on version the motor includes two, four or six pole pairs, and is suited for base, flange or base-flange installation. The flange is in three sizes. The equipment, excluding the cable entry, includes the following components holding the EC-type examination certificates:

- Terminal plate 2,5mm^2 – 6mm^2 — certificate no.: KDB 06 ATEX 150U
- Miniature terminals of 07-9702-0… type (version with PTC) — certificate no.: PTB 99 ATEX 3117U

Designation:

Explosion protected three-phase cage induction motor of **Ex S (K,L) h 71 - * * (*)** type

Explosion protected motor

Three-phase

Type of installation:
(without symbol) – base support
K – flange installation
L –base + flange installation

Series

Height of shaft axis [mm]

Number of pole pairs (2p): **2, 4, 6**

Stator length:
A - 50mm (2p = 2, 4); 43mm (2p = 6)
B - 62mm (2p = 2, 4); 80mm (2p = 6)

Flange size:
(without symbol) –IM B5 flange (large)
1 –IM B14/1 flange (mid)
2 –IM B14/2 flange (small)

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o. 1461

(13)

SCHEDULE

(14)

to the EU-Type Examination Certificate No. OBAC 15 ATEX 0114X

Rated data:

Version	ExS(K,L)h71 -2A(*)		ExS(K,L)h71 -2B(*)		ExS(K,L)h71 -2B(*)		ExS(K,L)h71 -4A(*)		ExS(K,L)h71 -4B(*)	
Rated power [kW]	0,37		0,55		0,37		0,25		0,37	
Rated voltage* [V], ±5%	230/ 400	265/ 460	230/ 400	265/ 460	230/ 400	265/ 460	230/ 400	265 /460	230/ 400	265/ 460
Rated current* [A]	1,75/ 1,00	1,55/ 0,90	2,60/ 1,50	2,25/ 1,30	2,25/ 1,30	1,90/ 1,10	1,50/ 0,85	1,30/ 0,75	2,00/ 1,15	1,75/ 1,00
Frequency [Hz]	50	60	50	60	50	60	50	60	50	60
Power factor	0,83	0,80	0,75	0,73	0,62	0,61	0,65	0,55	0,70	0,65
Efficiency [%]	68,0	69,0	71,5	73,0	68,0	68,0	65,0	68,0	67,0	70,0
Rotational speed [obr/min]	2780	3410	2800	3430	2880	3490	1370	1690	1350	1680
Type of operation	S1									
Class of insulation	F									
I_A/I_N	4,75	5,6	5,3	6,4	6,1	7,6	3,9	4,7	3,6	4,5
t_E [s] for temp. class **T3**	24,0		14,0		-		43,0		25,0	
t_E [s] for temp. class **T4**	9,0		-		6,0		15,0		-	
Thermistor rated temperature (version Ex t)	120°C									
Degree of protection	IP66									
Ambient temperature	-20°C ≤ Ta ≤ +40°C									

* parameters applicable for delta (star connections of stator windings (see also: special conditions for safe use).

(13)

SCHEDULE

(14)

to the EU-Type Examination Certificate No. OBAC 15 ATEX 0114X

Version	ExS(K,L)h71-6A(*)		ExS(K,L)h71-6B(*)	
Rated power [kW]	0,18		0,25	
Rated voltage* [V], ±5%	230/400	265/460	230/400	265/460
Rated current * [A]	1,20/0,70	1,15/0,65	1,50/0,85	1,35/0,80
Frequency [Hz]	50	60	50	60
Power factor	0,70	0,60	0,67	0,62
Efficiency [%]	55,0	57,5	64,0	66,0
Rotational speed [obr/min]	880	1110	900	1120
Type of operation	S1			
Class of insulation	F			
I_A/I_N	2,9	3,35	3,0	4,0
t_E [s] for temp. class **T3**	40,0		60,0	
t_E [s] for temp. class. **T4**	-		23,0	
Thermistor rated temperature (version Ex t)	120°C			
Degree of protection	IP66			
Ambient temperature	-20°C ≤ Ta ≤ +40°C			

* parameters applicable for delta (star connections of stator windings (see also: special conditions for safe use).

(16) Report:

- Number LL/173-1/2013/A of 11.02.2014
- Number LL/173-2/2013/A of 11.02.2014
- Number LL/173-3/2013/A of 17.03.2014
- Number LL/173-4/2013/A of 03.04.2014
- Number LL/070/2015 of 29.04.2015

The explosion protected three-phase cage induction motor of ExS(K,L)h 71- type** meets the requirements for explosion protected equipment and may be used as the device of equipment group II, category 2G and/or 2D.

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o. 1461

(13)
(14)

SCHEDULE

to the EU-Type Examination Certificate No. OBAC 15 ATEX 0114X

(17) Special conditions for safe operation:

- It is permissible to apply voltages of 190V to 690V inclusive, provided that electric and terminal loads are equal to those the motor was subjected to during the type examination (the same or lower current and magnetic-flux density).
- To ensure IP66 protection degree, adequately selected and installed certified cable entries shall be used.
- The motor shall be provided with overload protection of adequate time-current characteristics ensuring that the motor will be disconnected from the supply voltage in time shorter from t_E specified for the motor at current value equal to its starting current.
- The equipment temperature class is related to the t_E value – see rated data.
- If required the winding in-built PTC thermistors shall be, in connection with the protection device, so connected in the motor circuit that the action of PTC thermistors results in the motor switching off.

(18) The compliance with Safety Requirements has been assured by compliance with standards shown in p.9 of this certificate.

(19) List of agreed documentation:

- Explosion protected increased-safety ExS(K,L)h71-… motors documentation, April 2015.
- Technical and Operational Instructions no. ITR/HR/4/07 – "Technical and Operational Instructions of explosion protected increased-safety three-phase cage induction motors of 56, 63, 71, 80 shaft-axis height", April 2015.

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY
Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o.
1461

OBAC

Ośrodek Badań, Atestacji i Certyfikacji Sp. z o.o.
44-121 Gliwice, ul. Łabędzka 21

(1)

Schedule No. 1
to
the certificate No. OBAC 15 ATEX 0114X

(2) Equipment, components and protective systems intended for use in potentially explosive atmospheres. Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014.

(3) Product: **Explosion-protected three-phase cage induction motor of ExS(K,L)h 71-** type**

(4) Manufacturer: **Fabryka Silników Elektrycznych „BESEL" S.A.**

(5) Address: **ul. Elektryczna 8, 49-300 Brzeg**

(6) Compliance with the safety requirements has been assured by compliance with:

EN IEC 60079-0:2018+AC:2020-02 **EN 60079-7:2015+A1:2018** **EN 60079-31:2014**

(7) Description of changes:
- Marking correction (addition of the gas subgroup symbol "IIC")
- Standards update

Rated data:

Unchanged.

Marking:

Unchanged.

(8) Results of the examinations performed:

Explosion proof design is confirmed in the confidential product assessment report: OBAC/20/ATEX/0174.

The introduced changes meet the requirements for equipment of group II category 2GD.

Explosion-proof marking:

II 2G Ex eb IIC Tx Gb

II 2D Ex tb IIIC T125°C Db

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o. 1461

Gliwice, 09th September 2020

Certification Body Manager

Piotr Tarnawski M.Com.

Schedule No. 1
to
the certificate No. OBAC 15 ATEX 0114X

(9) Specific conditions of use:

Unchanged.

(10) Technical documentation:

- Explosion protected increased-safety ExS(K,L)h71-... motors documentation, April 2015.
- Technical and Operational Instructions no. ITR/HR/4/07 – "Technical and Operational Instructions of explosion protected increased-safety three-phase cage induction motors of 56, 63, 71, 80 shaft-axis height", April 2015.
- „Comparative analysis of standards PN-EN IEC 60079-0:2018-09 and PN-EN 60079-0:2013 in relation to motors ExS(K,L)h71 of the BESEL's S.A. production" 31.08.2020.

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY
Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o.
1461

OBAC

Ośrodek Badań, Atestacji i Certyfikacji Sp. z o.o.
44-121 Gliwice, ul. Łabędzka 21

(1) EU-TYPE EXAMINATION CERTIFICATE

(Translation)

(2) Equipment, components and protective systems intended for use in potentially explosive atmospheres. Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014.

(3) EU type examination certificate No: **OBAC 16 ATEX 0118X**

(4) Product: **Three-phase, explosion-proof squirrel-cage induction motor, ExS(K,L)h 80-** type**

(5) Manufacturer: **Fabryka Silników Elektrycznych „BESEL" S.A.**

(6) Address: ul. Elektryczna 8, 49-300 Brzeg

(7) This equipment, component or protective system and any of its approved version is specified in this certificate and in documents listed in p. 19.

(8) The Institute for Research and Certification „OBAC" Ltd., notified body No.1461 in accordance with Article 13 of the European Council Directive 2014/34/EU of February 26, 2014, certifies that this equipment, component or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment, component or protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential report No. OBAC/16/ATEX/0118.

(9) Compliance with the Safety Requirements has been assured by conformity with:

PN-EN 60079-0:2013	PN-EN 60079-7:2016	PN-EN 60079-31:2014
(EN 60079-0:2012)	(EN 60079-7:2015)	(EN 60079-31:2014)

(10) If the sign „X" is placed after the certificate number, it indicates that the product concerned is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EU-type examination certificate relates only to the design, evaluation and tests of the specified equipment, component or protective system according to the Directive 2014/34/EU. The certificate does not apply to further requirements of the Directive relating to the manufacture and placing on the market of this equipment, component or protective system.

(12) The marking of the equipment, component or protective system must include the following:

II 2G Ex eb II Tx Gb

II 2D Ex tb IIIC T125°C Db

Gliwice, 29th November 2016
Rev. 2

Certification Body Manager
Piotr Tarnawski M.Com.

(13)
(14)

SCHEDULE

to the EU-Type Examination Certificate No. OBAC 16 ATEX 0118X

(15) Ex Product description:

Three-phase squirrel-cage induction motors with strengthened design ExS(K, L)h 80-** are low power motors with closed design. Rotor cage and housing components such as body, bearing plates and terminal box are made of aluminum alloy. Ventilator cover is made of steel and the ventilator is made of plastic, aluminum or cast iron. Motor shaft is mounted on roller bearings. External electric connections are made via connection box located on the housing and equipped with a cover and screw terminals. Motor depending on a design version, it is equipped with two, four or six pairs of poles and is prepared for lug, flange or lug and flange mounting. Flange is available in three sizes.

Apart from the cable entry, the device consists also of the following components which have their own CE-type examination certificates:

- Clamping plate 2,5mm2 – 6mm2 certificate no. KDB 06 ATEX 150U
- Miniature terminals type 07-9702-0... (version with PTC) certificate no. PTB 99 ATEX 3117U

Marking:

Three-phase, explosion-proof squirrel-cage induction motor **Ex S (K,L) h 80 - * * (*)** type

Motor with explosion proof design

Three-phase

Way of mounting:
(no marking) – lug
K – flange
L – lug + flange

Series

Shaft axis height in [mm]

Number of pole pairs (2p): **2, 4, 6**

Stator length:
A - 60mm (2p=2,4,6)
B - 80mm (2p=2,4,6)

Flange size:
(no marking) – IM B5 flange (large)
1 – IM B14/1 flange (medium)
2 – IM B14/2 flange (small)

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o. 1461

(13)
(14)

SCHEDULE

to the EU-Type Examination Certificate No. OBAC 16 ATEX 0118X

Rated data:

Version	ExS(K,L)h80-2A(*)				ExS(K,L)h80-2B(*)			
Rated power [kW]	0,75		0,55		1,10		0,75	
Rated voltage* [V], ±5%	230/400	265/460	230/400	265/460	230/400	265/460	230/400	265/460
Rated current* [A]	3,10/1,80	2,60/1,50	2,45/1,40	2,20/1,25	4,20/2,40	3,65/2,10	3,10/1,80	2,80/1,60
Frequency [Hz]	50	60	50	60	50	60	50	60
Power factor	0,86	0,85	0,79	0,78	0,88	0,85	0,80	0,78
Efficiency [%]	72,0	75,0	74,0	73,0	75,0	78,0	78,0	78,0
Speed [rpm]	2710	3370	2830	3450	2730	3380	2850	3470
Type of operation	S1							
Insulation class	F							
I_A/I_N	4,85	6,1	6,2	7,35	5,25	6,3	7,0	8,25
t_E [s] for temp. class **T3**	14,0		-		8,0		-	
t_E [s] for temp. class **T4**	-		10,0		-		8,0	
Thermistor rated temp. (version Ex t)	120°C							
Protection class	IP66							
Ambient temperature	-20°C ≤ Ta ≤ +40°C							

* parameters for triangle/star winding connections of the stator (see also special operating conditions)

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY
Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o.
1461

(13)
(14)

SCHEDULE

to the EU-Type Examination Certificate No. OBAC 16 ATEX 0118X

Version	ExS(K,L)h80-6A(*)		ExS(K,L)h80-6B(*)			
Rated power [kW]	0,37		0,55		0,37	
Rated voltage* [V], ±5%	230/400	265/460	230/400	265/460	230/400	265/460
Rated current* [A]	2,25/1,30	2,10/1,20	2,70/1,55	2,35/1,35	2,20/1,25	2,00/1,15
Frequency [Hz]	50	60	50	60	50	60
Power factor	0,66	0,60	0,75	0,69	0,60	0,55
Efficiency [%]	64,0	67,0	69,0	75,0	72,0	74,0
Speed [rpm]	920	1140	890	1120	940	1150
Type of operation	S1					
Insulation class	F					
I_A/I_N	3,35	3,9	3,5	4,1	4,35	4,85
t_E [s] for temp. class **T3**	30,0		36,0		-	
t_E [s] for temp. class **T4**	-		-		20,0	
Thermistor rated temp. (version Ex t)	120°C					
Protection class	IP66					
Ambient temperature	-20°C ≤ Ta ≤ +40°C					

* parameters for triangle/star winding connections of the stator (see also special operating conditions)

(16) Report:

- Number LL/173-1/2013/A of 11.02.2014
- Number LL/173-2/2013/A of 11.02.2014
- Number LL/173-3/2013/A of 17.03.2014
- Number LL/173-4/2013/A of 03.04.2014
- Number LL/070/2015 of 29.04.2015

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o. 1461

(13)
(14)

SCHEDULE

to the EU-Type Examination Certificate No. OBAC 16 ATEX 0118X

Three-phase, explosion-proof squirrel-cage induction motor, ExS(K,L)h 80- type** meets the requirements for devices with explosion proof design and may be used as a device in group II, category 2G and/or 2D.

(17) Special conditions for safe operation:

- Using the voltage in the range from 190V to 690V is allowed only provided that the electrical and temperature loads are equal to the loads to which the motor was subject during type examination (current and magnetic flux density the same or lower).
- In order to ensure IP66 protection, correctly selected and installed certified cable entries shall be used.
- The motor should be equipped with suitable overload protection with time and current characteristics ensuring that the motor will be disconnected from the supply voltage in a time shorter than the t_E time calculated for it with the current equal to the motor start up current.
- Device temperature class is connected with the value of time t_E – see rated data.
- If required, PTC thermistors built-in in the winding together with the protective device should be included in the motor circuit so that tripping of PTC thermistors leads to shutting off of the motor.

(18) The compliance with Safety Requirements has been assured by compliance with standards shown in p.9 of this certificate.

(19) List of agreed documentation:

- Documentation of explosion proof motors with strengthened design "ExS(K,L)h80-…", December 2015.
- Manual no. ITR/HR/4/07 - "Technical and operational manual for three-phase, explosion-proof squirrel-cage induction motors with strengthened design, shaft axis height 56, 63, 71, 80", January 2016

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY
Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o.
1461

OBAC

Ośrodek Badań, Atestacji i Certyfikacji Sp. z o.o.
44-121 Gliwice, ul. Łabędzka 21

(1)

Schedule No. 1
to
the certificate No. OBAC 16 ATEX 0118X

(2) Equipment, components and protective systems intended for use in potentially explosive atmospheres. Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014.

(3) Product: **Explosion-protected three-phase cage induction motor of ExS(K,L)h 80-** type**

(4) Manufacturer: **Fabryka Silników Elektrycznych „BESEL" S.A.**

(5) Address: **ul. Elektryczna 8, 49-300 Brzeg**

(6) Compliance with the safety requirements has been assured by compliance with:

EN IEC 60079-0:2018+AC:2020-02 **EN 60079-7:2015+A1:2018** **EN 60079-31:2014**

(7) Description of changes:
- Marking correction (addition of the gas subgroup symbol "IIC")
- Standards update

Rated data:

Unchanged.

Marking:

Unchanged.

(8) Results of the examinations performed:

Explosion proof design is confirmed in the confidential product assessment report: OBAC/20/ATEX/0174.

The introduced changes meet the requirements for equipment of group II category 2GD.

Explosion-proof marking:

II 2G Ex eb IIC Tx Gb

II 2D Ex tb IIIC T125°C Db

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o. 1461

Gliwice, 09th September 2020

Certification Body Manager

Piotr Tarnawski M.Com.

Schedule No. 1
to
the certificate No. OBAC 16 ATEX 0118X

(9) Specific conditions of use:

Unchanged.

(10) Technical documentation:

- Documentation of explosion proof motors with strengthened design "ExS(K,L)h80-…", December 2015
- Manual no. ITR/HR/4/07 - "Technical and operational manual for three-phase, explosion-proof squirrel-cage induction motors with strengthened design, shaft axis height 56, 63, 71, 80", January 2016
- „Comparative analysis of standards PN-EN IEC 60079-0:2018-09 and PN-EN 60079-0:2013 in relation to motors ExS(K,L)h80 of the BESEL's S.A. production" 31.08.2020.

NOTYFIKOWANY ORGAN CERTYFIKUJĄCY WYROBY
Ośrodek Badań, Atestacji i Certyfikacji OBAC Sp. z o.o.
1461