



SP04ATEX3121X
31 December 2004



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

[2] **Equipment or Protective Systems intended for use in
Potentially Explosive Atmospheres
Directive 94/9/EC**

[3] Certificate Number:
SP04ATEX3121X

[4] Equipment or Protective System: Fan type KD 225/4/50/25 Ex

[5] Applicant (manufacturer): Helios Ventilatoren GmbH + Co

[6] Address: Lupfenstrasse 8, DE-780 56 Villingen-Schwenningen, Germany

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

[8] SP, Notified Body No. 0402 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in a confidential report No. P401607:A

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

- EN 1127-1:1997 (SS-EN 1127-1 ed 1)
- EN 50014:1997 + A1...A2 (SS-EN 50014 ed 4 + A1...A2)
- EN 50019:2000 (SS-EN 50019 ed 6)
- EN 13463-1:2001 (SS-EN 13463-1 ed 1)

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

[11] This EC Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. This certificate does not cover these requirements.

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

 **II 2G EEx e II T3**

Borås 31th December 2004

**SP Swedish National Testing and Research Institute
Certification**


Lena Matt Månsson
Certification Manager


Åke Månsson
Certification Officer

SP internal number: 39 74 01

Certificate issued by Notified Body No. 0402

Page 1(3)

SP Swedish National Testing and Research Institute

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SP04ATEX3121X
31 December 2004



[13]

Schedule

[14]

EC-TYPE EXAMINATION CERTIFICATE No. SP04ATEX3121X

[15]

Description of equipment

The fan consists of a housing, a fan wheel and a certified induction motor with a permanently connected cable. The material in the construction is galvanic sheet-iron except the motor enclosure. The fan is designed for installation in a duct system which is intended to provide the required degree of ingress protection for the fan ventilation openings.

The fan can be speed controlled by applying reduced supply voltages by means of a transformer according to the table below. The fan motor is equipped with three PTC temperature sensors for connection to a separate supervision equipment.

Data

Type of duty: S1 (continuous duty)

Ambient temperature (T_{amb}): - 20 °C to + 40 °C

Table. Rated data.

Fan type KD 225/4/50/25 Ex	
Motor type	MK 106-4DK.07.Y
Voltage	400 V ac
Number of phases/frequency	3 ~ 50 Hz
Current	0,85 A
Input power	490 W
Speed	1290 rpm
t_A ¹⁾	81 s
I_A/I_N	3,4
Minimum back pressure (Pa)	(V ac)
30	400
10	230
0	180
0	140
0	90

¹⁾ Based on rated voltage and cold state (+20 °C)

[16]

Report No.

P401607:A

[17]

Special conditions for safe use

1. The PTC thermal protection circuits of the motor shall be connected to a triggering device certified according to Directive 94/9/EC, which shall disconnect the motor from main supply at excessive temperature. The device shall disconnect the motor within the time $t_A = 81$ s based on rated voltage and cold state (+20 °C).
2. The fan shall be installed in a duct system which shall provide the degree of protection IP 20 at the inlet side and IP 10 at the outlet side of the fan. Parts that contribute to this protection shall have a suitable design with respect to strength and material.



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31 December 2004



3. The fan may be run at reduced supply voltages by means of a transformer according to data above (Table). The current is thereby allowed to exceed the rated current of the electrical motor with up to 12 % provided that the rated input power above is not exceeded.
4. The cable shall be permanently installed, mechanically protected and protected from other environmental stress in order to ensure the explosion protection. The connection of the free end of the cable shall be explosion protected according to the valid installation regulations.
5. In order to limit the current of the motor, the fan shall be operated with a static back pressure of a minimum value according to data above (Table).

[18] **Essential health and safety requirements**

Additional requirements according to draft standard "Design of fans working in potentially explosive atmospheres" (CEN/TC305/WG2 N 390, Date: 2003-12-22) have been applied in part.

[19] **Drawings and documents**

According to the specification P401607:B dated 2004-12-31.



SP04ATEX3122X
31 December 2004



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

[2] **Equipment or Protective Systems intended for use in
Potentially Explosive Atmospheres
Directive 94/9/EC**

[3] Certificate Number:
SP04ATEX3122X

[4] Equipment or Protective System: Fan type KD 250/4/50/30 Ex

[5] Applicant (manufacturer): Helios Ventilatoren GmbH + Co

[6] Address: Lupfenstrasse 8, DE-780 56 Villingen-Schwenningen, Germany

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

[8] SP, Notified Body No. 0402 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in a confidential report No. P401607:A

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

- EN 1127-1:1997 (SS-EN 1127-1 ed 1)
- EN 50014:1997 + A1...A2 (SS-EN 50014 ed 4 + A1...A2)
- EN 50019:2000 (SS-EN 50019 ed 6)
- EN 13463-1:2001 (SS-EN 13463-1 ed 1)

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

[11] This EC Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. This certificate does not cover these requirements.

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

II 2G EEx e II T3

Borås 31th December 2004

**SP Swedish National Testing and Research Institute
Certification**

Lennart Månsson
Certification Manager

Åke Månsson
Certification Officer

SP internal number: 39 74 02

Certificate issued by Notified Body No. 0402

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SP04ATEX3122X
31 December 2004



Schedule

[13]

[14] **EC-TYPE EXAMINATION CERTIFICATE No. SP04ATEX3122X**

[15] **Description of equipment**

The fan consists of a housing, a fan wheel and a certified induction motor with a permanently connected cable. The material in the construction is galvanic sheet-iron except the motor enclosure. The fan is designed for installation in a duct system which is intended to provide the required degree of ingress protection for the fan ventilation openings.

The fan can be speed controlled by applying reduced supply voltages by means of a transformer according to the table below. The fan motor is equipped with three PTC temperature sensors for connection to a separate supervision equipment.

Data

Type of duty: S1 (continuous duty)
Ambient temperature (T_{amb}): - 20 °C to + 40 °C

Table. Rated data.

Fan type KD 250/4/50/30 Ex	
Motor type	MK 106-4DK.14.Y
Voltage	400 V ac
Number of phases/frequency	3 ~ 50 Hz
Current	1,8 A
Input power	900 W
Speed	1355 rpm
t_A ¹⁾	50 s
I_A/I_N	4,1
Minimum back pressure (Pa)	(V ac)
125	400
90	230
60	180
40	140
0	90

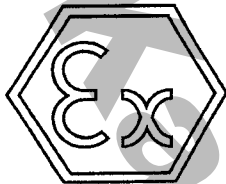
¹⁾ Based on rated voltage and cold state (+20 °C)

[16] **Report No.**

P401607:A

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

1. The PTC thermal protection circuits of the motor shall be connected to a triggering device certified according to Directive 94/9/EC, which shall disconnect the motor from main supply at excessive temperature. The device shall disconnect the motor within the time $t_A = 50$ s based on rated voltage and cold state (+20 °C).
2. The fan shall be installed in a duct system which shall provide the degree of protection IP 20 at the inlet side and IP 10 at the outlet side of the fan. Parts that contribute to this protection shall have a suitable design with respect to strength and material.



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31 December 2004



3. The fan may be run at reduced supply voltages by means of a transformer according to data above (Table). The current is thereby allowed to exceed the rated current of the electrical motor with up to 6 % provided that the rated input power above is not exceeded.
4. The cable shall be permanently installed, mechanically protected and protected from other environmental stress in order to ensure the explosion protection. The connection of the free end of the cable shall be explosion protected according to the valid installation regulations.
5. In order to limit the current of the motor, the fan shall be operated with a static back pressure of a minimum value according to data above (Table).

[18] **Essential health and safety requirements**

Additional requirements according to draft standard "Design of fans working in potentially explosive atmospheres" (CEN/TC305/WG2 N 369, Date: 2003-07-08) have been applied in part.

[19] **Drawings and documents**

According to the specification P401607:C dated 2004-12-31.



SP04ATEX3123X
31 December 2004



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

[2] **Equipment or Protective Systems intended for use in
Potentially Explosive Atmospheres
Directive 94/9/EC**

[3] Certificate Number:
SP04ATEX3123X

[4] Equipment or Protective System: Fan type KD 285/4/60/30 Ex

[5] Applicant (manufacturer): Helios Ventilatoren GmbH + Co

[6] Address: Lupfenstrasse 8, DE-780 56 Villingen-Schwenningen, Germany

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

[8] SP, Notified Body No. 0402 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in a confidential report No. P401607:A

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

- EN 1127-1:1997 (SS-EN 1127-1 ed 1)
- EN 50014:1997 + A1...A2 (SS-EN 50014 ed 4 + A1...A2)
- EN 50019:2000 (SS-EN 50019 ed 6)
- EN 13463-1:2001 (SS-EN 13463-1 ed 1)

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

[11] This EC Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. This certificate does not cover these requirements.

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

II 2G EEx e II T3

Borås 31th December 2004

**SP Swedish National Testing and Research Institute
Certification**

Lennart Månsson
Certification Manager

Åke Månsson
Certification Officer

SP internal number: 39 74 03

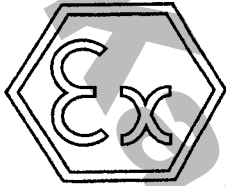
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SP04ATEX3123X
31 December 2004



Schedule

[13]

[14] **EC-TYPE EXAMINATION CERTIFICATE No. SP04ATEX3123X**

[15] **Description of equipment**

The fan consists of a housing, a fan wheel and a certified induction motor with a permanently connected cable. The material in the construction is galvanic sheet-iron except the motor enclosure. The fan is designed for installation in a duct system which is intended to provide the required degree of ingress protection for the fan ventilation openings.

The fan can be speed controlled by applying reduced supply voltages by means of a transformer according to the table below. The fan motor is equipped with three PTC temperature sensors for connection to a separate supervision equipment.

Data

Type of duty: S1 (continuous duty)

Ambient temperature (T_{amb}): - 20 °C to + 40 °C

Table. Rated data.

Fan type KD 285/4/60/30 Ex		
Motor type	MK 137-4DK.10.Y	
Voltage	230/400 V ac (D/Y)	
Number of phases/frequency	3 ~ 50 Hz	
Current	3,8/2,2 A (D/Y)	
Input power	1,3 kW	
Speed	1330 rpm	
t_A ¹⁾	85 s	
I_A/I_N	4,1	
Minimum back pressure (Pa)	D (V ac)	Y (V ac)
225	230	400
165	160	230
115	130	180
75	105	140
0	80	90

¹⁾ Based on rated voltage and cold state (+20 °C)

[16] **Report No.**

P401607:A

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

1. The PTC thermal protection circuits of the motor shall be connected to a triggering device certified according to Directive 94/9/EC, which shall disconnect the motor from main supply at excessive temperature. The device shall disconnect the motor within the time $t_A = 85$ s based on rated voltage and cold state (+20 °C).
2. The fan shall be installed in a duct system which shall provide the degree of protection IP 20 at the inlet side and IP 10 at the outlet side of the fan. Parts that contribute to this protection shall have a suitable design with respect to strength and material.



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31 December 2004



3. The fan may be run at reduced supply voltages by means of a transformer according to data above (Table). The current is thereby allowed to exceed the rated current of the electrical motor with up to 9 % provided that the rated input power above is not exceeded.
4. The cable shall be permanently installed, mechanically protected and protected from other environmental stress in order to ensure the explosion protection. The connection of the free end of the cable shall be explosion protected according to the valid installation regulations.
5. In order to limit the current of the motor, the fan shall be operated with a static back pressure of a minimum value according to data above (Table).

[18] **Essential health and safety requirements**

Additional requirements according to draft standard "Design of fans working in potentially explosive atmospheres" (CEN/TC305/WG2 N 390, Date: 2003-12-22) have been applied in part.

[19] **Drawings and documents**

According to the specification P401607:D dated 2004-12-31.



SP04ATEX3125X
31 December 2004



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

[2] **Equipment or Protective Systems intended for use in
Potentially Explosive Atmospheres
Directive 94/9/EC**

[3] Certificate Number:
SP04ATEX3125X

[4] Equipment or Protective System: Fan type KD 315/4/60/35 Ex

[5] Applicant (manufacturer): Helios Ventilatoren GmbH + Co

[6] Address: Lupfenstrasse 8, DE-780 56 Villingen-Schwenningen, Germany

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

[8] SP, Notified Body No. 0402 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in a confidential report No. P401607:A

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

- EN 1127-1:1997 (SS-EN 1127-1 ed 1)
- EN 50014:1997 + A1...A2 (SS-EN 50014 ed 4 + A1...A2)
- EN 50019:2000 (SS-EN 50019 ed 6)
- EN 13463-1:2001 (SS-EN 13463-1 ed 1)

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

[11] This EC Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. This certificate does not cover these requirements.

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

II 2G EEx e II T3

Borås 31th December 2004

**SP Swedish National Testing and Research Institute
Certification**

Lennart Månsson
Certification Manager

Åke Månsson
Certification Officer

SP internal number: 39 74 04

Certificate issued by Notified Body No. 0402

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SP04ATEX3125X
31 December 2004



[13] **Schedule**

[14] **EC-TYPE EXAMINATION CERTIFICATE No. SP04ATEX3125X**

[15] **Description of equipment**

The fan consists of a housing, a fan wheel and a certified induction motor with a permanently connected cable. The material in the construction is galvanic sheet-iron except the motor enclosure. The fan is designed for installation in a duct system which is intended to provide the required degree of ingress protection for the fan ventilation openings.

The fan can be speed controlled by applying reduced supply voltages by means of a transformer according to the table below. The fan motor is equipped with three PTC temperature sensors for connection to a separate supervision equipment.

Data

Type of duty: S1 (continuous duty)
Ambient temperature (T_{amb}): - 20 °C to + 40 °C

Table. Rated data.

Fan type KD 315/4/60/35 Ex		
Motor type	MK 137-4DK.20.Y	
Voltage	230/400 V ac (D/Y)	
Number of phases/frequency	3 ~ 50 Hz	
Current	6,8/3,9 A (D/Y)	
Input power	2,1 kW	
Speed	1380 rpm	
t_A ¹⁾	60 s	
I_A/I_N	5,7	
Minimum back pressure (Pa)	D (V ac)	Y (V ac)
100	230	400
0	160	230
0	130	180
0	105	140
0	80	90

¹⁾ Based on rated voltage and cold state (+20 °C)

[16] **Report No.**

P401607:A

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

1. The PTC thermal protection circuits of the motor shall be connected to a triggering device certified according to Directive 94/9/EC, which shall disconnect the motor from main supply at excessive temperature. The device shall disconnect the motor within the time $t_A = 60$ s based on rated voltage and cold state (+20 °C).
2. The fan shall be installed in a duct system which shall provide the degree of protection IP 20 at the inlet side and IP 10 at the outlet side of the fan. Parts that contribute to this protection shall have a suitable design with respect to strength and material.



SP04ATEX3125X
31 December 2004



3. The fan may be run at reduced supply voltages by means of a transformer according to data above (Table). The current is thereby allowed to exceed the rated current of the electrical motor with up to 17 % provided that the rated input power above is not exceeded.
4. The cable shall be permanently installed, mechanically protected and protected from other environmental stress in order to ensure the explosion protection. The connection of the free end of the cable shall be explosion protected according to the valid installation regulations.
5. In order to limit the current of the motor, the fan shall be operated with a static back pressure of a minimum value according to data above (Table).

[18] **Essential health and safety requirements**

Additional requirements according to draft standard "Design of fans working in potentially explosive atmospheres" (CEN/TC305/WG2 N 390, Date: 2003-12-22) have been applied in part.

[19] **Drawings and documents**

According to the specification P401607:E dated 2004-12-31.



SP04ATEX3126X
31 December 2004



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

[2] **Equipment or Protective Systems intended for use in
Potentially Explosive Atmospheres
Directive 94/9/EC**

[3] Certificate Number:
SP04ATEX3126X

[4] Equipment or Protective System: Fan type KD 355/6/70/40 Ex

[5] Applicant (manufacturer): Helios Ventilatoren GmbH + Co

[6] Address: Lupfenstrasse 8, DE-780 56 Villingen-Schwenningen, Germany

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

[8] SP, Notified Body No. 0402 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in a confidential report No. P401607:A

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

- EN 1127-1:1997 (SS-EN 1127-1 ed 1)
- EN 50014:1997 + A1...A2 (SS-EN 50014 ed 4 + A1...A2)
- EN 50019:2000 (SS-EN 50019 ed 6)
- EN 13463-1:2001 (SS-EN 13463-1 ed 1)

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

[11] This EC Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. This certificate does not cover these requirements.

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

II 2G EEx e II T3

Borås 31th December 2004

**SP Swedish National Testing and Research Institute
Certification**

Lennart Månsson
Certification Manager

Åke Månsson
Certification Officer

SP internal number: 39 74 05

Certificate issued by Notified Body No. 0402

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SP Swedish National Testing and Research Institute

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SP04ATEX3126X
31 December 2004



[13]

Schedule

[14]

EC-TYPE EXAMINATION CERTIFICATE No. SP04ATEX3126X

[15]

Description of equipment

The fan consists of a housing, a fan wheel and a certified induction motor with a permanently connected cable. The material in the construction is galvanic sheet-iron except the motor enclosure. The fan is designed for installation in a duct system which is intended to provide the required degree of ingress protection for the fan ventilation openings.

The fan can be speed controlled by applying reduced supply voltages by means of a transformer. The fan motor is equipped with three PTC temperature sensors for connection to a separate supervision equipment.

Data

Type of duty: S1 (continuous duty)
Ambient temperature (T_{amb}): -20 °C to +40 °C

Table. Rated data.

Fan type KD 355/6/70/40 Ex	
Motor type	MK 137-6DK.20.Y
Voltage	230/400 V ac (D/Y)
Number of phases/frequency	3 ~ 50 Hz
Current	6,4/3,7 A (D/Y)
Input power	1,8 kW
Speed	840 rpm
t_A ¹⁾	160 s
I_A/I_N	3,2

¹⁾ Based on rated voltage and cold state (+20 °C)

[16]

Report No.

P401607:A

[17]

Special conditions for safe use

1. The PTC thermal protection circuits of the motor shall be connected to a triggering device certified according to Directive 94/9/EC, which shall disconnect the motor from main supply at excessive temperature. The device shall disconnect the motor within the time $t_A = 160$ s based on rated voltage and cold state (+20 °C).
2. The fan shall be installed in a duct system which shall provide the degree of protection IP 20 at the inlet side and IP 10 at the outlet side of the fan. Parts that contribute to this protection shall have a suitable design with respect to strength and material.
3. The fan may be run by means of a transformer at a voltage from 15 % to 100 % of its rated voltage. The current is thereby not allowed to exceed the rated current of the electrical motor.
4. The cable shall be permanently installed, mechanically protected and protected from other environmental stress in order to ensure the explosion protection. The connection of the free end of the cable shall be explosion protected according to the valid installation regulations.



SP04ATEX3126X
31 December 2004



[18] **Essential health and safety requirements**

Additional requirements according to draft standard "Design of fans working in potentially explosive atmospheres" (CEN/TC305/WG2 N 390, Date: 2003-12-22) have been applied in part.

[19] **Drawings and documents**

According to the specification P401607:F dated 2004-12-31.