


- [1] **EC-TYPE EXAMINATION CERTIFICATE**
- [2] **Equipment or Protective System intended for use in Potentially Explosive Atmospheres
Directive 94/9/EC**
- [3] EC-Type Examination Certificate Number: **SP 03ATEX3101X**
- [4] Equipment or Protective System:
Fan type Ex 140-2, Ex 140-2C, Ex 140-4, Ex 140-4C, Ex 180-4 and Ex 180-4C
- [5] Applicant (manufacturer): Systemair AB
- [6] Address: Industrivägen 3, SE-739 30 Skinnskatteberg, Sweden
- [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. P204644.
- [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 50017:1998 (SS-EN 50017 ed 3)
 - 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 2 G EEx e II T3** (Type Ex 140-2, Ex 140-4 and Ex 180-4)

 **II 2 G EEx eq II T3** (Type Ex 140-2C, Ex 140-4C and Ex 180-4C)

Borås 21 November 2003

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


Lennart Månsson
Certification manager


Åke Månsson
Certification officer

CERTIFICATE
SP 03ATEX3101X, dated 21.11.2003

Signed on behalf of SP, 21.11.2003: 

[13]

Schedule[14] **EC-TYPE EXAMINATION CERTIFICATE No. SP 03ATEX3101X**[15] **Description of equipment**

The fans consist of motors as specified below and fan houses with fan wheels with diameter 146 mm or 180 mm. The fans have bars that provide degree of protection IP 20 at the inlet side and IP 10 at the outlet side. When the fans are installed in a duct system the degree of protection is intended to be provided elsewhere.

The motor enclosure fulfils degree of protection IP 54 and the fans are provided with certified cable entries (Ex II 2GD EEx e II IP 68). Fans, designed for single-phase connections (C letter at the end of type designation), are equipped with certified capacitors (Ex II 2G EEx q II T6) and when cable entries not used they shall be closed with certified blanking elements.

Data

Fan type	Ex 140-2	Ex 140-2C
Motor type	ONKF-771	ONKF-771
Voltage (V)	230/400 (D/Y)	230
Number of phases/frequency	3 ~ 50 Hz	1 ~ 50 Hz
Current (A)	2,25/1,28 (D/Y)	3,0
Input power (W)	696	674
Speed (rpm)	2885	2885
Insulation class	F	F
t_E (s)	15	23
I_A/I_N	6,9	5,4

Fan type	Ex 140-4		Ex 140-4C	
Motor type	ONKF-742	ONKF-742	ONKF-742	ONKF-742
Voltage (V)	230/400 (D/Y)	440	230	240
Number of phases/frequency	3 ~ 50 Hz	3 ~ 60 Hz	1 ~ 50 Hz	1 ~ 60Hz
Current (A)	0,66/0,38 (D/Y)	0,36	0,57	0,61
Input power (W)	100	142	99	141
Speed (rpm)	1470	1745	1465	1730
Insulation class	F	F	F	F
t_E (s)	154	130	310	420
I_A/I_N	5,1	5,3	4,4	3,8

Fan type	Ex 180-4		Ex 180-4C
Motor type	ONKF-742	ONKF-742	ONKF-742
Voltage (V)	230/400 (D/Y)	440	230
Number of phases/frequency	3 ~ 50 Hz	3 ~ 60 Hz	1 ~ 50 Hz
Current (A)	0,75/0,43 (D/Y)	0,50	0,89
Input power (W)	177	283	177
Speed (rpm)	1425	1670	1415
Insulation class	F	F	F
t_E (s)	131	67	240
I_A/I_N	4,4	3,7	2,9

CERTIFICATE
SP 03ATEX3101X, dated 21.11.2003

Signed on behalf of SP, 21.11.2003:



Manufacturer of the motors: OY KOLMEKS AB
Type of duty: S1 (continues duty)
Ambient temperature (T_{amb}): - 20 °C to + 40 °C.

[16] **Report No.**

P204644

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

- 1 The fan shall be installed with an overload protective device, which protect the motor not only with respect to overload but also with respect to stalled rotor condition. At stalled rotor the device shall disconnect the motor within the time t_E .

To determine the delay time for the device a current-time characteristic curve shall be held which states the delay time as a function of the ratio of the starting-/rated current (I_A/I_N) for $2,9 < I_A/I_N < 6,9$, see data above for the fan type. The tripping time of the protective device shall be equal to these values by ± 20 %.

- 2 When the fans are installed in a duct system the degree of protection IP 20 at the inlet side and IP 10 at the outlet side shall be fulfilled for the duct system. Parts that contribute to this protection shall have a suitable design with respect to strength and material.
- 3 Flying rust or flakes are not permitted in the airflow.
- 4 The adhesive tape that covers the ventilation openings of the motor capacitor for the single-phase fans shall be examined on regularly bases. If the tape is damaged or lost the whole capacitor shall be exchange.
- 5 The cable, to be connected to the fan, shall be permanently installed with adequate clamping.

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

Additional requirements according to prEN 13463-5 (May 2003) and draft standard "Design of fans working in potentially explosive atmospheres" (CEN/TC305/WG2 N 369, Date: 2003-07-08) have been applied.

[19] **Drawings and documents**

According to specification No. P204644:C.