

1 EC-TYPE EXAMINATION CERTIFICATE



2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 94/9/EC**

3 EC-Type Examination Certificate No: **FM07ATEX0002X**

4 Equipment or protective system: **T-590-AabK I/P Converter**
(Type Reference and Name)

5 Name of Applicant: **ControlAir Inc.**

6 Address of Applicant: **8 Columbia Drive
Amherst, NH 03031 USA**

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

8 FM Approvals Ltd, notified body number 1725 in accordance with Article 9 of 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 intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in confidential report number 3030620EC dated 15th June 2007

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents: EN 60079-0:2006 and EN 60079-11:2007

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 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. These are not covered by this certificate.

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



II 1 G Ex ia IIC T* Ta = -55°C to Ta max

*Temperature class and maximum ambient temperature as indicated on Page 2

Andrew Was
General Manager, FM Approvals Ltd.

Issue date: **19th June 2007**



THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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to EC-Type Examination Certificate No. FM07ATEX0002X

13 Description of Equipment or Protective System:

The T590 is an electro-mechanical current to pressure converter. The unit's electronics operates on a 4 to 20 mA current loop. The ambient operating temperature range of the T590 is -55°C to 85°C, however the temperature class and the maximum permitted operating temperature are dependent on the Energy Limitation Parameters specified below. The circuitry for the T590 is contained on a single printed circuit board that is mounted to the transducer's drive coil on the aluminium manifold and covered with a plastic cover. The I/P Converter is intended to be installed within an additional enclosure.

T590-AabK. I/P Converter.

II 1 G Ex ia IIC T* Ta = -55°C to Ta max

a = Output Pressure: C, D, E

b = Connection: M, P

Energy Limitation Parameters

*Temperature class	Ta max	Ii	Ui	Pi
T4	85°C	60 mA	38.8V	2.328W
T4	85°C	100 mA	30V	3.0W
T4	80°C	120 mA	28V	3.36W
T4	70°C	150 mA	25.5V	3.825W
T5	70°C	60 mA	38.8V	2.328W
T5	55°C	100 mA	30V	3W
T5	45°C	120 mA	28V	3.36W
T5	85°C	23 mA	6.75V	0.155W
T6	60°C	50 mA	42.5V	2.125W
T6	55°C	60 mA	38.8V	2.328W

14 Special Conditions for Safe Use:

1. *The non-metallic cover of the I/P converter is considered to constitute an electrostatic discharge hazard. Clean only with a damp cloth.*
2. *The I/P converter enclosure's metal base must be mounted as part of a bonded structure.*
3. *The I/P converter enclosure contains aluminium and is considered to constitute a potential risk of ignition by impact or friction and must be taken into account during installation.*
4. *The User shall permanently mark the protection type chosen. Once the type of protection has been marked it shall not be changed.*

15 Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

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16 Test and Assessment Procedure and Conditions:

This EC-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's ATEX Certification Scheme.

17 Approved Drawings

Drawing No:	Rev	Date	Title / Description
438-520-002	-	09/08/05	Manifold Assy
429-850-153	-	18/08/05	590-ACM 4-20mA 3-15PSI T590 Transducer
448-505-206	1	02/01/07	Body Assembly T590 Transducer
438-538-009	-	09/04/07	Coil/Lamination Sub-assembly T590 Transducer
448-550-001	-	21/03/06	Flapper Sub-Assembly T590 Transducer
446-917-001	1	28/04/04	Lamination, Stamped T590 Transducer
446-772-002	-	25/08/04	Bobbin, Molded T590 Transducer
448-538-007	2	20/07/05	Coil Assembly T590 Transducer
446-732-963	2	05/04/07	Label, Control T590 Transducer
431-990-047	2	05/04/07	Interconnection Diagram T590 Transducer
438-850-155	-	16/08/05	Pneumatic Sub-Assy T590 Transducer
436-799-061	-	09/04/07	Circuit Board T590 Transducer
CTA-P00820*	C	14/01/07	Assembly T590 Transducer
432-714-040	2	22/06/06	Cover, Hot Stamped T590 Transducer
436-714-036	4	17/08/04	Cover
429-850-166	-	09/05/06	590-ACP 4-20mA 3-15PSI T590 Transducer
446-732-984	2	05/04/07	Label, ATEX T590 Transducer
442-732-985	2	05/04/07	Label, ATEX, Typed T590 Transducer
441-622-089	4/07	10/04/07	Instruction Manual
446-732-993	1	05/04/07	Label, ATEX T590 Transducer

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Drawing No:	Rev	Date	Title / Description
442-732-994	1	05/04/07	Label, ATEX, Typed T590 Transducer

* These drawings were prepared by Circuit Tech Assembly LLC on behalf of ControlAir Inc. and have been annotated by FM Approvals Ltd to permit their identification in this report.

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