

(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: **KEMA 03ATEX1408 X**

(4) Equipment or protective system: **Coriolis Massflow Tube type CFS10-....MMM-, and type CFS20-....MMM-.**

(5) Manufacturer: **Invensys Systems Incorporated**

(6) Address: **33 Commercial Street, Foxboro, MA 02035, U.S.A.**

(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) 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 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 confidential report no. 2006279.

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

EN 50014 : 1997 EN 50020 : 2002

(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 according 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 the following:

 **II 2 G EEx ib IIB T2 ... T6**

Arnhem, 20 October 2003
KEMA Quality B.V.



C.G. van Es
Certification Manager

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SCHEDULE

(13)

(14)

to EC-Type Examination Certificate KEMA 03ATEX1408 X

(15) **Description**

The Coriolis Massflow Tubes of the CFS10-....MMM-. and CFS20-....MMM-. series convert a flow of a process medium into an electrical signal.

It serves as a remotely mounted sensor for the certified Coriolis Massflow Transmitter of the CFT50 series. The interconnecting cable is connected to the junction boxes fitted on the equipment.

Ambient temperature range -20 °C ... +60 °C.

Process temperature range and temperature class per table below.

Electrical data

Sensor circuits in type of explosion protection intrinsic safety EEx ib IIB, (terminals 1 .. 12 in the junction box) only for connection to the intrinsically safe circuits of the Coriolis Massflow Transmitter of the CFT50 series as approved per EC-Type Examination Certificate KEMA 03ATEX1405 X, taking the following combinations of cable parameters (line to line and line to screen), process temperature range and temperature class into account:

Model	Size	Cable data	Process temperature range	Temperature class
CFS10-02..MMM-.	1/8"	C ≤ 5 µF L ≤ 0,4 mH	-200 °C ... +200 °C	T2
CFS10-03..MMM-.	1/4"	C ≤ 5 µF L ≤ 0,1 mH	-200 °C ... +160 °C	T3
CFS10-05..MMM-.	1/2"	C ≤ 5 µF L ≤ 0,06 mH	-200 °C ... +95 °C	T4
CFS10-08..MMM-.	3/4"		-200 °C ... +60 °C	T5
CFS10-10..MMM-.	1"	C ≤ 5 µF L ≤ 0,2 mH	-200 °C ... +45 °C	T6
CFS10-15..MMM-.	1½"		- 55 °C ... +165 °C	T2
CFS10-20..MMM-.	2"		- 55 °C ... +165 °C	T3
CFS20-15..MMM-.	1½"		- 55 °C ... +95 °C	T4
CFS20-30..MMM-.	3"		- 55 °C ... +60 °C	T5
			- 55 °C ... +45 °C	T6

(16) **Report**

KEMA No. 2006279.

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

1. The enclosure shall be connected to the potential equalizing system within the hazardous area.
2. For ambient temperature range and electrical data, see (15).

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

Covered by the standards listed at (9).

SCHEDULE

(13)

(14)

to EC-Type Examination Certificate KEMA 03ATEX1408 X(19) **Test documentation**

1. Certificate of Conformity INIEX 90C.101.142 X

dated

2. Drawing No.	B0189XU, Rev. A	23.07.2003
	D0128YA, Rev. A	11.05.1993
	F0108JM, Rev. J	24.01.2003
	F0109WS, Rev. A	11.09.1996
	F0114AB (2 sheets), Rev. B	26.01.2000
	F0114AM (2 sheets), Rev. C	14.10.2003
	F0114BD (2 sheets), Rev. E	29.09.2003
	G0117BM, Rev. G	26.06.2003
	P0153KH (3 sheets), Rev. 01	10.06.2003

AMENDMENT 1

to EC-Type Examination Certificate KEMA 03ATEX1408 X

Manufacturer: **Invensys Systems Incorporated**

Address: **33 Commercial Street, Foxboro, MA 02035, U.S.A.**

Description

In future, the Coriolis Massflow Tubes of the CFS10-....MMM-. and CFS20-....MMM-. series may also be connected to the Coriolis Massflow Transmitter of the CFT20 series.

Electrical data

Sensor circuits in type of explosion protection intrinsic safety EEx ib IIB,
(terminals 1 .. 12 in the only for connection to the intrinsically safe circuits of the
junction box) Coriolis Massflow Transmitter of the CFT20 or CFT50 series
as approved per EC-Type Examination Certificate
KEMA 03ATEX1405 X.

All other data remain unchanged.

Test documentation

EC-Type Examination Certificate KEMA 03ATEX1405 X

Arnhem, 3 December 2003
KEMA Quality B.V.



C.G. van Es
Certification Manager