Translation

(1) 1. Supplement to the EC-Type Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC
Supplement accordant with Annex III number 6

(3) No. of EC-Type Examination Certificate: **BVS 11 ATEX E 033 X**

(4) Equipment: **Coriolis Flow Meter Type C-Flow KCE80** / KCM****
and Type Tricor TCE80** / TCM***

(5) Manufacturer: **KEM Küppers Elektromechanik GmbH**

(6) Address: **Liebigstr. 5, 85757 Karlsfeld, Germany**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this supplement.

(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council 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 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 the test and assessment report BVS PP 11.2282 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

EN 60079-0:2009 General requirements
EN 60079-1:2007 Flameproof enclosure 'd'
EN 60079-11:2012 Intrinsic safety 'i'

(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 appendix to this certificate.

(11) This supplement to the EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2G Ex d [ia] IIC T4 Gb	(Transmitter housing
II 2G Ex d [ia] IIB T4 Gb	with reference to model)
II (2)G [Ex ia Gb] IIC	(alternate Transmitter housing
II (2)G [Ex ia Gb] IIB	with reference to model)
II 2G Ex ia IIC T4 Gb	(Transducer housing
II 2G Ex ia IIB T4 Gb	with reference to model)

DEKRA EXAM GmbH
Bochum, dated 12th December 2012

Signed: Simanski
Certification body

Signed: Dr. Eickhoff
Special services unit

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(13) Appendix to

(14) **1. Supplement to the EC-Type Examination Certificate**
BVS 11 ATEX E 033 X

(15) 15.1 Subject and type

The Coriolis Flow Meter can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report and receives then the marking:

Coriolis Flow Meter Type C-Flow KCE80** / KCM****
or Type Tricor TCE80** / TCM*** comprising:

- Transmitter Unit Type KCE80**-*-*-*-Ex
or Type TCE80**-*-****-Ex-**, respectively:

- and optionally one of the following Transducer Units:

Type KCM0300-*-**-*-*-*-*-Ex or KCM0325-*-**-*-*-*-*-Ex,
KCM0600-*-**-*-*-*-*-Ex or KCM0650-*-**-*-*-*-*-Ex,
KCM1500-*-**-*-*-*-*-Ex or KCM1550-*-**-*-*-*-*-Ex,
KCM3000-*-**-*-*-*-*-Ex or KCM3100-*-**-*-*-*-*-Ex,
KCM7900-*-**-*-*-*-*-Ex or KCM5500-*-**-*-*-*-*-Ex,
KCM28K-*-**-*-*-*-*-Ex,
KCM65K-*-**-*-*-*-*-Ex,

Type TCM0300-**-****-****-Ex-** or TCM0325-**-****-****-Ex-**,
TCM0600-**-****-****-Ex-** or TCM0650-**-****-****-Ex-**,
TCM1500-**-****-****-Ex-** or TCM1550-**-****-****-Ex-**,
TCM3000-**-****-****-Ex-** or TCM3100-**-****-****-Ex-**,
TCM7900-**-****-****-Ex-** or TCM5500-**-****-****-Ex-**,
TCM28K-**-****-****-Ex-**,
TCM65K-**-****-****-Ex-**.

Transducer Unit C-Flow type series KCM**-*-**-*-*-*-*-Ex**

Type	Flow rate
KCM0300-a-bc-d-e-f-g-Ex	≤ 300 kg / h
KCM0325-a-bc-d-e-f-g-Ex	≤ 300 kg / h
KCM0600-a-bc-d-e-f-g-Ex	≤ 600 kg / h
KCM0650-a-bc-d-e-f-g-Ex	≤ 600 kg / h
KCM1500-a-bc-d-e-f-g-Ex	≤ 1.500 kg / h
KCM1550-a-bc-d-e-f-g-Ex	≤ 1.500 kg / h
KCM3000-a-bc-d-e-f-g-Ex	≤ 3.000 kg / h
KCM3100-a-bc-d-e-f-g-Ex	≤ 3.000 kg / h
KCM5500-a-bc-d-e-f-g-Ex	≤ 5.500 kg / h
KCM7900-a-bc-d-e-f-g-Ex	≤ 7.900 kg / h
KCM28k-a-bc-d-e-f-g-Ex	≤28.000 kg / h
KCM65k-a-bc-d-e-f-g-Ex	≤65.000 kg / h

Specification of spacers a to g: no change.

Transducer Unit Tricor type series TCM**-**-****-****-Ex-****

Type	Flow rate
TCM0300-ab-cdef-ghik-Ex-xx	≤ 300 kg / h
TCM0325-ab-cdef-ghik-Ex-xx	≤ 300 kg / h
TCM0600- ab-cdef-ghik-Ex-xx	≤ 600 kg / h
TCM0650- ab-cdef-ghik-Ex-xx	≤ 600 kg / h
TCM1500- ab-cdef-ghik-Ex-xx	≤ 1.500 kg / h
TCM1550- ab-cdef-ghik-Ex-xx	≤ 1.500 kg / h
TCM3000- ab-cdef-ghik-Ex-xx	≤ 3.000 kg / h
TCM3100- ab-cdef-ghik-Ex-xx	≤ 3.000 kg / h
TCM5500- ab-cdef-ghik-Ex-xx	≤ 5.500 kg / h
TCM7900- ab-cdef-ghik-Ex-xx	≤ 7.900 kg / h
TCM28k- ab-cdef-ghik-Ex-xx	≤28.000 kg / h
TCM65k- ab-cdef-ghik-Ex-xx	≤65.000 kg / h

Specification of spacers a to k: no change.

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Transmitter Unit C-Flow type series KCE80-*-*-*-Ex**
No change.

Transmitter Unit Tricor type series TCE80-*-****-Ex-****
No change.

15.2 Description

The Coriolis Flow Meter Type C-Flow KCE80** / KCM**** / Type Tricor TCE80** / TCM*** has been enhanced optionally with sensors type *CM0325-**-****-****-Ex-** / *CM3100-**-****-****-Ex-** / *CM5500-**-****-****-Ex-** and non Ex-relevant area of the electronic circuitry has been subjected to minor change.

15.3 Parameters

15.3.1 Panel mountable housing

No change

15.3.2 Flameproof enclosure

No change

15.3.3 Intrinsically safe transducers (probes)

Parameter	Circuit			
	Driver		Sensor	Temperature sensor
Voltage U_i	DC 16.4 V	DC 9.4 V	DC 2 V	DC 10.5 V
Current I_i	382 mA	219 mA	17 mA	45 mA
Power P_i	1.56 W	515 mW		
Characteristics	linear	linear	trapezoidal	trapezoidal
Connection facility	screwed terminals (KCM****-0-**-*-*-*-2-Ex, external) screwed terminals (KCM****-1-**-*-*-*-2-Ex, external) screwed terminals (TCM****-**-****-AZZ*-Ex, external) LEMO HEG.2B.308 (TCM****-**-****-E***-Ex, compact) direct wiring (KCM****-EF/EFH/EM/ECMH/E*(H)-**-*-*-*-*-Ex, compact)			
Probe type	*CM28K-x)[1] *CM65K-x)[1]	*CM0300-x)[1] *CM0600-x)[1] *CM1500-x)[1] *CM3000-x)[1] *CM7900-x)[1]	(all models)	
Type of protection	Ex ia IIB	Ex ia IIC	Ex ia IIC / IIB	
Probe type		*CM0325-x)[1] *CM0650-x)[1] *CM1550-x)[1] *CM3100-x)[1] *CM5500-x)[1]	(all models)	
Type of protection		Ex ia IIC	Ex ia IIC / IIB	
Remark:)[1] '*' replaced by 'K' or 'T'; "x" see full-scale type code				

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15.3.4 Ambient temperature range

15.3.4 For the Coriolis C-Flow Meter Type C-Flow KCE80** / KCM**** or Type Tricor TCE80** / TCM****, respectively, the following ambient temperature range applies:

Model	Type	Ambient temperature range	Medium- temperature range	Temperature class
Panel mountable housing	KCE80x-SE-x-Ex TCE80x-L-x-Ex-x	0 °C ≤ T_a ≤ 60°C	not applicable	not applicable
Flameproof enclosure	KCE80x-WE-x-Ex TCE80x-E-x-Ex-x	- 40 °C ≤ T_a ≤ 70°C	not applicable	T4
Transducer compact version	KCMx-a-x-x-Ex TCMx-x-x-Ex-Ex-x	- 40 °C ≤ T_a ≤ 70°C	- 40 °C ≤ T ≤ 70°C	T4
external transducer	KCMx*-0-x-Ex KCMx-1-x-Ex TCMx-x-x-Ax-Ex-x	- 40 °C ≤ T_a ≤ 70°C	- 40 °C ≤ T ≤ 70°C	T4
			- 40 °C ≤ T ≤ 135°C	T3
			- 40 °C ≤ T ≤ 210°C	T2
Remark: "x" see full-scale type code "a" = EF / EFH / EM / EMH / E*(H)				

(16) Test and assessment report

BVS PP 11.2282 EG as of 12.12.2012

(17) Special conditions for safe use

No change

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
44809 Bochum, 12th December 2012
BVS-Scha/Mu A 20120864

Certification body

Special services unit

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