Translation

(1) # EC-Type Examination Certificate

(2) **- Directive 94/9/EC -**
Equipment and protective systems intended for use in potentially explosive atmospheres

(3) # DMT 01 ATEX E 082 X

(4) **Equipment:** **Transmitter type *700**********

(5) **Manufacturer:** **Micro Motion, Inc.**

(6) **Address:** **Boulder, Co. 80301, USA**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.

(8) The certification body of Deutsche Montan Technologie 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 01.2061 EG.

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

EN 50014:1997+A1-A2	General requirements
EN 50018:1994	Flameproof enclosure 'd'
EN 50019:1994	Increased safety 'e'
EN 20020:1994	Intrinsic safety 'i'
EN 50284:1999	Equipment Group II, Category 1 G

(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 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

see table on page 2

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

Deutsche Montan Technologie GmbH
Essen, dated 27. June 2001

Signed: Jockers
DMT-Certification body

Signed: Dill
Head of special services unit

Am Technologiepark 1, 45307 Essen, Telefon (0201)172-1416, Telefax (0201)172-1716

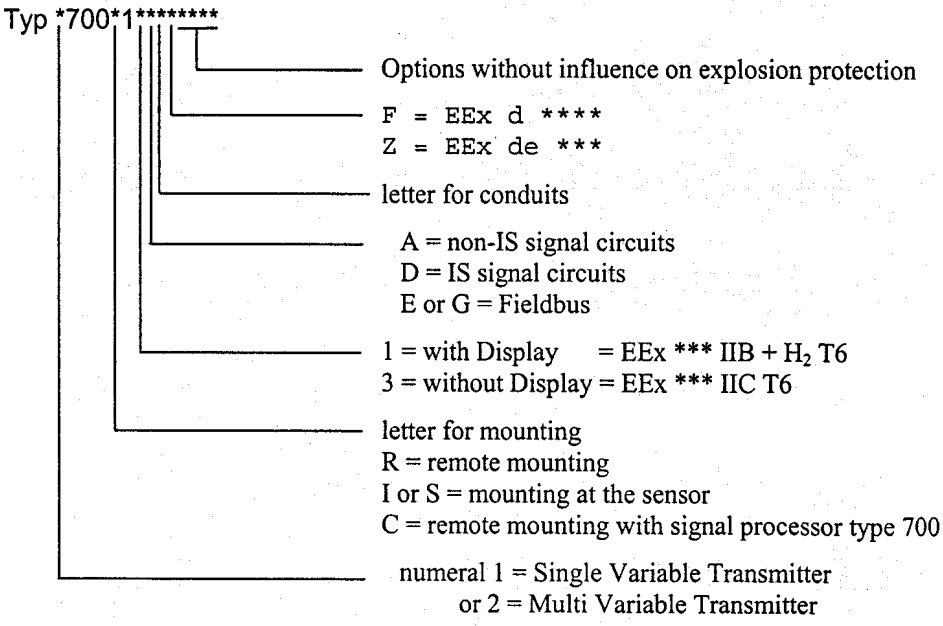
(13) Appendix to

(14) # EC-Type Examination Certificate

DMT 01 ATEX E 082 X

(15) 15.1 Subject and type
Transmitter type *700**********

Instead of the *** in the complete denomination letters and numerals will be inserted which characterize the following variations:



Due to the construction the transmitter gets the following additional marking:

type	marking
*700*11A*F****	II 2 G EEx d[ib] IIB+H_2 T6
*700*11A*Z****	II 2 G EEx de[ib] IIB+H_2 T6
2700*11E*F****	II (1)2 G EEx d[ia/ib] IIB+H_2 T6
2700*11G*F****	II (1)2 G EEx d[ia/ib] IIB+H_2 T6
2700*11E*Z****	II (1)2 G EEx de[ia/ib] IIB+H_2 T6
2700*11G*Z****	II (1)2 G EEx de[ia/ib] IIB+H_2 T6
*700*13A*F****	II 2 G EEx d[ib] IIC T6
*700*13A*Z****	II 2 G EEx de[ib] IIC T6
2700*13E*F****	II (1)2 G EEx d[ia/ib] IIC T6
2700*13G*F****	II (1)2 G EEx d[ia/ib] IIC T6
2700*13E*Z****	II (1)2 G EEx de[ia/ib] IIC T6
2700*13G*Z****	II (1)2 G EEx de[ia/ib] IIC T6
*700C11A*F****	II 2 G EEx d[ib] IIB+H_2 T5
*700C11A*Z****	II 2 G EEx de[ib] IIB+H_2 T5
2700C11E*F****	II (1)2 G EEx d[ia/ib] IIB+H_2 T5
2700C11G*F****	II (1)2 G EEx d[ia/ib] IIB+H_2 T5
2700C11E*Z****	II (1)2 G EEx de[ia/ib] IIB+H_2 T5

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type	marking
2700C11G*Z****	II (1)2 G EEx de[ia/ib] IIB+H_2 T5
*700C13A*F****	II 2 G EEx d[ib] IIC T5
*700C13A*Z****	II 2 G EEx de[ib] IIC T5
2700C13E*F****	II (1)2 G EEx d[ia/ib] IIC T5
2700C13G*F****	II (1)2 G EEx d[ia/ib] IIC T5
2700C13E*Z****	II (1)2 G EEx de[ia/ib] IIC T5
2700C13G*Z****	II (1)2 G EEx de[ia/ib] IIC T5
*700R11D*F****	II (1)2 G EEx d[ia/ib] IIB+H_2 T6
*700R11D*Z****	II (1)2 G EEx de[ia/ib] IIB+H_2 T6
*700C11D*F****	II (1)2 G EEx d[ia/ib] IIB+H_2 T5
*700C11D*Z****	II (1)2 G EEx de[ia/ib] IIB+H_2 T5
*700R13D*F****	II (1)2 G EEx d[ia/ib] IIC T6
*700R13D*Z****	II (1)2 G EEx de[ia/ib] IIC T6
*700C13D*F****	II (1)2 G EEx d[ia/ib] IIC T5
*700C13D*Z****	II (1)2 G EEx de[ia/ib] IIC T5
*700I11D*F****	II (1)2 G EEx d[ia/ib] IIB+H_2 T6
*700I11D*Z****	II (1)2 G EEx de[ia/ib] IIB+H_2 T6
*700I13D*F****	II (1)2 G EEx d[ia/ib] IIC T6
*700I13D*Z****	II (1)2 G EEx de[ia/ib] IIC T6

15.2 Description

The transmitter is, in combination with a sensor, used for measurement of mass flow and data transmittion.

The electrical circuitry of the transmitters is mounted inside a metal enclosure type 1700/2700..*..*.. (BVS PP 01.2042 EG) which is devided into three compartments.

In the compartment type of protection „Flameproof Enclosure" the Terminal Board, Power Supply Board, I.S. output Board (for type *700*1*D******) or non-I.S. output board (for type *700*1*A****) or Fieldbus Board (only for type 2700*1********) and display board (for type *700*11******) are mounted.

The compartment „Increased Safety" (type *700*1***Z*****) or „Flameproof Enclosure" (type *700*1***F*****) is equipped with terminals for the connection of intrinsically safe circuits as well as non intrinsically safe circuits.

The enclosure is constructed with a terminal compartment for the connection of remotely operating intrinsically safe sensors (type *700R1*********). Alternatively, the enclosure can be mounted directly to the sensor via a transition compartment for the incorporation of the signal processing device type 700 in accordance with DMT 01 ATEX E 081 U (Typ *700I1*********).
This type of mounting has to be certified separately.

The transmitter type *700C1******** is constructed with a terminal compartment for the incorporation of the signal processing device type 700 (DMT 01 ATEX E 081 U) and a connection board.

15.3 Parameters

15.3.1 mains circuit (terminals 9 - 10)

voltage		AC/DC	18 - 240 V + 10 %	
max. voltage	Um	AC/DC	265	V

15.3.2 non intrinsically safe signal circuits (terminals 1 - 6), only for type *700*1*A******

voltage	Um	AC/DC	60	V

15.3.3 intrinsically safe Fieldbus circuit (terminals Fieldbus 1 and 2) type of protection EEx ia IIC only for type 2700*1*E****** and type 2700*1*G******

voltage	Ui	DC	30	V
current	Ii		300	mA
power	Pi		1,3	W
effective internal inductance	Li		negligible	
effective internal capacitance	Ci		negligible	

15.3.4 intrinsically safe signal circuits type of protection EEx ia IIC for type *700*1*D******

15.3.4.1 terminals 1 - 2: mA-output1 and terminals 5 - 6: mA-output2
values for each circuit

voltage	Ui	DC	30	V
current	Ii		300	mA
power	Pi		1	W
effective internal inductance	Li		negligible	
effective internal capacitance	Ci		negligible	

15.3.4.2 terminals 3 - 4: frequency output

voltage	Ui	DC	30	V
current	Ii		100	mA
power	Pi		0,75	W
effective internal inductance	Li		negligible	
effective internal capacitance	Ci		negligible	

15.3.5 ambient temperature range Ta -40 °C bis +60 °C

15.3.6 intrinsically safe power and signal circuits for type *700R1********

voltage	Uo	DC	17,22	V
current	Io		0,484	A
limeted by a fuse with a nominal value of			0,16	A
power	Po		2,05	W
type of protection EEx ib IIC				
max. external inductance	Lo		151	µH
max. externalcapacitance	Co		333	nF
max. inductance/resistance ratio	Lo/Ro		17,06	µH/Ω
type of protection EEx ib IIB				
max. external inductance	Lo		607	µH
max. externalcapacitance	Co		2,04	µF
max. inductance/resistance ratio	Lo/Ro		68,2	µH/Ω

15.3.7 intrinsically safe power and signal circuits for type *700C1********

15.3.7.1 drive circuit (terminals 3 and 4)

voltage	Uo	DC	10,5	V
current	Io		2,45	A
power	Po		2,54	W
internal resistance	Ri		4,32	Ω

Am Technologiepark 1, 45307 Essen, Telefon (0201)172-1416, Telefax (0201)172-1716

for group IIC				
max. external capacitance	Co		2,41	µF
max. external inductance	Lo		5,9	µH
max. external inductance/resistance ratio	Lo/Ro		5,5	µH/Ω
for group IIB				
max. external capacitance	Co		16,8	µF
max. external inductance	Lo		24	µH
max. external inductance/resistance ratio	Lo/Ro		22	µH/Ω

The maximum external inductance L (sensor coil) can be calculated with the following term:

$$L = 2 \times E \times \left(\frac{Ri + Ro}{1.5 \times Uo} \right)^2$$

whereby E = 40 µJ for group IIC and E = 160 µJ for group IIB will be inserted.

15.3.7.2 pick-off circuits (terminals 5- 6 and 7 - 8)

voltage	Uo	DC	17,3	V
current	Io		6,9	mA
power	Po		30	mW
for group IIC				
max. external capacitance	Co		353	nF
max. external inductance	Lo		742	mH
max. external inductance/resistance ratio	Lo/Ro		1,19	mH/Ω
for group IIB				
max. external capacitance	Co		2,06	µF
max. external inductance	Lo		2,97	H
max. external inductance/resistance ratio	Lo/Ro		4,75	mH/Ω

15.3.7.3 temperature circuit (terminals 1, 2 and 9)

voltage	Uo	DC	17,3	V
current	Io		26	mA
power	Po		112	mW
for group IIC				
max. external capacitance	Co		353	nF
max. external inductance	Lo		52,6	mH
max. external inductance/resistance ratio	Lo/Ro		0,32	mH/Ω
for group IIB				
max. external capacitance	Co		2,06	µF
max. external inductance	Lo		210	mH
max. external inductance/resistance ratio	Lo/Ro		1,26	mH/Ω

15.3.7.4 ambient temperature range Ta -40 °C bis +55 °C

(16) Test and assessment report
BVS PP 01.2061 EG as of 27.06.2001

(17) Special conditions for safe use

17.1 For the application of the transmitter in an ambient temperature of less than - 20 °C suitable cable and cable entries or conduit entries certified for this condition shall be used.

17.2 If certified conduit entries are used for the connection of the transmitter enclosure, the associated stopping boxes shall be installed immediately at the enclosure

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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.

45307 Essen, 27.06.2001
BVS-Schu/Mi A 20000634

Deutsche Montan Technologie GmbH

DMT-Certification body

Head of special services unit

Am Technologiepark 1, 45307 Essen, Telefon (0201)172-1416, Telefax (0201)172-1716

Translation

1st Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 082 X

Equipment: **Transmitter type .*700**********

Manufacturer: **Micro Motion, Inc.**

Address: **Boulder, Co. 80301, USA**

Description
The transmitter type *700*1*D****** can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report.

Test and assessment report
BVS PP 01.2061 EG as of 01.08.2001

Deutsche Montan Technologie GmbH
Essen, dated 01. August 2001

Signed: Dill
DMT-Certification body

Signed: Eickhoff
Head of special services unit

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.

45307 Essen, 01. 08. 2001
BVS-Schu/Mi A 20010498

Deutsche Montan Technologie GmbH

DMT-Certification body

Head of special services unit

Am Technologiepark 1, 45307 Essen, Telefon (0201)172-1416, Telefax (0201)172-1716

Translation

2nd Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 082 X

Equipment: **Transmitter type .*700**********

Manufacturer: **Micro Motion, Inc.**

Address: **Boulder, Co. 80301, USA**

Description

The transmitter can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report and new variations are availible:

type *700*1B******* and type *700*1C*******
type *700B1********

The transmitter type 2700*1E******* and type 2700*1G******* may also be connected to a circuit FIELDBUS in accordance with the FISCO model (PTB Report PTB-W-53).

Parameters

1	non intrinsically safe signal circuits (terminals 1 - 6), only for types *700*1*A******, *700*1*B****** and *700*1*C******				
	voltage	Um	AC/DC	60	V
2	intrinsically safe power and signal circuits for types *700R1******** and *700B1********				
	voltage	Uo	DC	17,22	V
	current	Io		0,484	A
	limited by a fuse with a nominal value of			0,16	A
	power	Po		2,05	W
	type of protection EEx ib IIC				
	max. external inductance	Lo		151	µH
	max. external capacitance	Co		333	nF
	max. inductance/resistance ratio	Lo/Ro		17,06	µH/Ω
	type of protection EEx ib IIB				
	max. external inductance	Lo		607	µH
	max. external capacitance	Co		2,04	µF
	max. inductance/resistance ratio	Lo/Ro		68,2	µH/Ω

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3 intrinsically safe circuit FIELDBUS (terminals Fieldbus 1 and 2) type of protection EEx ia IIC
only for type 2700*1*E****** and type 2700*1*G******

voltage	Ui	DC	30	V
current	Ii		380	mA
power	Pi		5,32	W
effective internal capacitance	Ci		negligible	
effective internal inductance	Li		negligible	

for the connection of a FIELDBUS circuit in accordance with FISCO model

Test and assessment report
BVS PP 01.2061 EG as of 15.11.2001

Deutsche Montan Technologie GmbH
Essen, dated 15. November 2001

Signed: Jockers
DMT-Certification body

Signed: Dill
Head of special services unit

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.

45307 Essen, 15.11.2001
BVS-Schu/Mi A 20010559

Deutsche Montan Technologie GmbH

DMT-Certification body

Head of special services unit

Am Technologiepark 1, 45307 Essen, Telefon (0201)172-1416, Telefax (0201)172-1716

Translation

3rd Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 082 X

Equipment: **Transmitter type *700**********

Manufacturer: **Micro Motion, Inc.**

Address: **Boulder, Co. 80301, USA**

Description
The transmitter can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report, new denomination

type *700*14*****

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997+A1-A2	General requirements
EN 50018:2000	Flameproof enclosure 'd'
EN 50019:2000	Increased safety 'e'
EN 50020:1994	Intrinsic safety 'i'
EN 50284:1999	Equipment Group II Category 1G

Test and assessment report
BVS PP 01.2061 EG as of 30.01.2003

Deutsche Montan Technologie GmbH
Essen, dated 30.Januar 2003

signed: Eickhoff
DMT-Certification body

signed: Arnold
Head of special services unit

Am Technologiepark 1, 45307 Essen, Telefon (0201)172-1416, Telefax (0201)172-1716

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.

45307 Essen, 30.01.2002
BVS-Schu/Mi A 20020733

Deutsche Montan Technologie GmbH

DMT-Certification body

Head of special services unit

Am Technologiepark 1, 45307 Essen, Telefon (0201)172-1416, Telefax (0201)172-1716

EXAM
BBG Prüf- und Zertifizier GmbH

Zertifizierungsstelle

Carl-Beyling-Haus
Dinnendahlstraße 9
44809 Bochum

Telefon 0201 17 2 - 38 55
Telefax 0201 17 2 - 39 24
e-mail: Jockers@bg-exam.de

EXAM - Postfach 10 27 48 - D-44727 Bochum

Micro Motion, Inc.
7070 Winchester Circle

Boulder, Co.

USA

Ihr Zeichen	Henk van Holland
Ihre Nachricht	27.03.2003/06.05.2003
Unser Zeichen	A 20030440 BVS-Schu/Mi
Durchwahl	Tel.: (0201) 172 3958
e-mail	Schumann@bg-exam.de
Datum	24.06.2003

Ladies and Gentlemen,

we added the Revision Report as of 24.06.2003 to the Test and Assessment Report BVS PP 01.2061 EG.

We confirm, that the Certificate

DMT 01 ATEX E 082 X as of 27.06.2001/30.01.2003

is still valid.

Kind regards
BBG Prüf- und Zertifizier GmbH

i.V. (Jockers) i.V. (Wittler)

Enclosures: Revision Report
Descriptive Documents

Exam
BBG Prüf- und Zertifizier GmbH

Geschäftsführung:
Dr.-Ing. Günter Levin (Vors.)
Dr.-Ing. Uli Barth

Sitz: Bochum
Amtsgericht Bochum
HRB 5357

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e-mail: Jockers@bg-exam.de

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Micro Motion, Inc.
7070 Winchester Circle

Boulder, Co.

USA

Ihr Zeichen	Henk van Holland
Ihre Nachricht	14.08.2003
Unser Zeichen	A 20030664 BVS-Schu/Mi
Durchwahl	Tel.: (0201) 172 3958
e-mail	Schumann@bg-exam.de
Datum	09.10.2003

Ladies and Gentlemen,

we added the Revision Report as of 09.10.2003 to the Test and Assessment Report BVS PP 01.2061 EG.

We confirm, that the Certificate

DMT 01 ATEX E 082 X as of 27.06.2001/24.06.2003

is still valid.

Kind regards
BBG Prüf- und Zertifizier GmbH

(Jockers) i.V. (Eickhoff)

Enclosures: Revision Report
Descriptive Documents

Exam
BBG Prüf- und Zertifizier GmbH

Geschäftsführung:
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Sitz: Bochum
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EXAM
BBG Prüf- und Zertifizier GmbH

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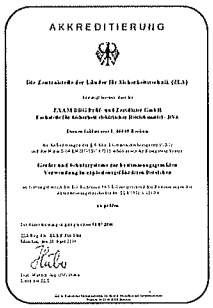

ZLS-Reg.-Nr.:
ZLS-P-516-3/04

EXAM · Postfach 10 27 48 · 44727 Bochum

Emerson Process Management
Fisher-Rosemount Flow

Wiltonstraat 30

3900 AJ Veenendaal

Niederlande

Ihr Zeichen	H. van Holland
Ihre Nachricht	10.08.2004
Unser Zeichen	BVS-Schu/Mi
Durchwahl	3958
e-mail	Schumann@bg-exam.de
Datum	11.08.2004

Transmitter *700********

EC Type Examination Certificate DMT 01 ATEX 082 X

3rd Supplement

Ladies and Gentlemen,
we have no objections, if you deliver for a transient periode
transmitters with a modified glass window with a marking
type *700*11******* and an additional unique CEQ number which
specifies the transmitter as IIC equipment
instead of transmitters with a marking type *700*14*******.

Mit freundlichen Grüßen
EXAM BBG Prüf- und Zertifizier GmbH

i. V. i. A.

EXAM
BBG Prüf- und Zertifizier
GmbH

Geschäftsführung:
Dr.-Ing. Reinhard Bassier
Dr.-Ing. Günter Levin

Sitz: Bochum
Amtsgericht Bochum
HRB 5357

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Konto 20 50 250

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EXAM
BBG Prüf- und Zertifizier GmbH

Translation

4th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 082 X

Equipment: **Transmitter type *700*1*******

Manufacturer: **Micro Motion, Inc.**

Address: **Boulder, Co. 80301, USA**

Description
The transmitter can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report and the following variations are also available:
Transmitter Typ *700*12*******
Transmitter Typ *700*15*******
The transmitter type 2700*1*E****** and type 2700*1*G****** may also be connected to a FIELDBUS circuit in accordance with the FISCO model (IEC TS 60079-27:2002).

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997+A1-A2	General requirements
EN 50018:2000 +A1	Flameproof enclosure 'd'
EN 50019:2000	Increased safety 'e'
EN 50020:2002	Intrinsic safety 'i'
EN 50284:1999	Equipment Group II Category 1G

Test and assessment report
BVS PP 01.2061 EG as of 04.06.2004

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 04. June 2004

Signed: Dr. Jockers
Certification body

Signed: Dr. Eickhoff
Special services unit

Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 201 172-3947 Fax +49 201 172-3948
(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen)

EXAM
BBG Prüf- und Zertifizier GmbH

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.

44809 Bochum, 04.06.2004
BVS-Schu/Mi A 20040136

EXAM BBG Prüf- und Zertifizier GmbH

Certification body

Special services unit

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen)

EXAM
BBG Prüf- und Zertifizier GmbH

Translation

5th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 082 X

Equipment: **Transmitter type *700*1********

Manufacturer: **Micro Motion, Inc.**

Address: **USA - Boulder, Co. 80301**

Description
The transmitter also meets category 2D.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997+A1-A2	General requirements
EN 50018:2000 +A1	Flameproof enclosure 'd'
EN 50019:2000	Increased safety 'e'
EN 50020:2002	Intrinsic safety 'i'
EN 50281-1-1:1998 + A1	Dust explosion protection
EN 50284:1999	Equipment Group II Category 1G

Parameters

Electrical data unchanged

Thermal data

Permitted ambient temperature

-40 °C ≤ Ta ≤ +60 °C for type *700(B or R)1(1, 2 or 3)*******
-40 °C ≤ Ta ≤ +55 °C for type *700(C or S)1(1, 2 or 3)*******
-20 °C ≤ Ta ≤ +60 °C for type *700(B or R)1(4 or 5)*******
-20 °C ≤ Ta ≤ +55 °C for type *700(C or I or S)1(4 or 5)*******

temperature class	T6/T5
maximum surface temperature T for dust	65 °C
Degrees of protection according to EN 60529	IP66/67

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

EXAM
BBG Prüf- und Zertifizier GmbH

Marking

the existing marking is extended as follows

⟨Ex⟩ II 2D IP66/67 T 65 °C

Test and assessment report
BVS PP 01.2061 EG as of 05.01.2005

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 05. January 2005

Signed: Dr. Jockers
Certification body

Signed: Dr. Eickhoff
Special services unit

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.

44809 Bochum, 05.01.2005
BVS-Hk/Mi A 20040478

EXAM BBG Prüf- und Zertifizier GmbH

Certification body

Special services unit

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EXAM
BBG Prüf- und Zertifizier GmbH

Translation

6th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 082 X

Equipment: **Transmitter type *700*1********

Manufacturer: **Micro Motion, Inc.**

Address: **Boulder, Co. 80301, USA**

Description

The cemented window cover of the transmitter enclosure is manufactured alternatively with FEP plate.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997+A1-A2	General requirements
EN 50018:2000 +A1	Flameproof enclosure 'd'
EN 50019:2000	Increased safety 'e'
EN 50020:2002	Intrinsic safety 'i'
EN 50281-1-1:1998 + A1	Dust explosion protection
EN 50284:1999	Equipment Group II Category 1G

Parameters

unchanged

Marking

unchanged

Special conditions for safe use

unchanged

Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 234/3696-105 Fax +49 234/3696-110 E-mail ZS@bg-exam.de
(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

EXAM
BBG Prüf- und Zertifizier GmbH

Test and assessment report
BVS PP 01.2061 EG as of 30.06.2006

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 30. June 2006

Signed: Dr. Jockers
Certification body

Signed: Dr. Eickhoff
Special services unit

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.

44809 Bochum, 30.06.2006
BVS-Hk/Mi A 20060812

EXAM BBG Prüf- und Zertifizier GmbH

Certification body

Special services unit

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

BBG Prüf- und Zertifizier GmbH

Translation

7th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 082 X

Equipment: **Transmitter type *700*1********

Manufacturer: **Micro Motion, Inc.**

Address: **Boulder, Co. 80301, USA**

Description
The Power Supply Board and the Fieldbus Board, mounted inside the compartment type of protection „Flameproof Enclosure", have been modified slightly. The rest of the apparatus remains unchanged.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 50014:1997+A1-A2	General requirements
EN 50018:2000 +A1	Flameproof enclosure 'd'
EN 50019:2000	Increased safety 'e'
EN 50020:2002	Intrinsic safety 'i'
EN 50281-1-1:1998 + A1	Dust explosion protection
EN 50284:1999	Equipment Group II Category 1G

For the enclosure of the transmitter also the standard EN 50019:2000 Increased safety 'e' has been used; for this apparatus the essential requirements of the Directive 94/9/EC are still fulfilled.

Parameters

unchanged

Marking

unchanged

Special conditions for safe use

unchanged

Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 234/3696-105 Fax +49 234/3696-110 E-mail ZS@bg-exam.de
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EXAM
BBG Prüf- und Zertifizier GmbH

Test and assessment report
BVS PP 01.2061 EG as of 08.01.2007

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 08. January 2007

Signed: Dr. Jockers
Certification body

Signed: Dr. Eickhoff
Special services unit

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.

44809 Bochum, 08.01.2007
BVS-Schu/Mi A 20060816

EXAM BBG Prüf- und Zertifizier GmbH

Certification body

Special services unit

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

Translation

8th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 082 X

Equipment: **Transmitter type *700*1********

Manufacturer: **Micro Motion, Inc.**

Address: **Boulder, Co. 80301, USA**

Description
The transmitter can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report:
A new variation, which may also be connected to a circuit FIELDBUS in accordance with the FNICO model (EN 60079-27:2006) is available:
Type *700*1*N****.**

Parameter Um of the non intrinsically safe signal circuits has been changed into 33V.

Parameter Ui of the intrinsically safe circuit FIELDBUS has been changed into 33V.

Marking for Gas and Dust changed due to the use of new standards.

Correction of the denomination error in 2. Supplement for the type 2700*1*(B, C, E or G)****** has been carried out.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 60079-0:2006	General requirements
EN 60079-1:2004	Flameproof enclosure 'd'
EN 60079-7:2003	Increased safety 'e'
EN 60079-11:2007	Intrinsic safety 'i'
EN 60079-26:2004	Equipment Group II Category 1G
EN 60079-27:2006	Fielbussystems FISCO/FNICO
EN 61241-0 2006	General requirements
EN 61241-1 2004	Protection by enclosures

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

The marking of the equipment shall include the following:

II 2G bzw. II (1)2 G (see table)
II 2D Ex tD A21 IP66/IP67 T65°C

-40 °C ≤ Ta ≤ +60 °C for type *700(B or R)1(1, 2 or 3)*******
-40 °C ≤ Ta ≤ +55 °C for type *700(C or I or S)1(1, 2 or 3)*******
-20 °C ≤ Ta ≤ +60 °C for type *700(B or R)1(4 or 5)*******
-20 °C ≤ Ta ≤ +55 °C for type *700(C - or I or S)1(4 or 5)*******

Type	Type of protection gas
*700[1)]1[2)3)]*F****	Ex d[ib] IIB+H_2 T6
*700[1)]1[2)3)]*Z****	Ex de[ib] IIB+H_2 T6
*700[1)]1[4)3)]*F****	Ex d[ib] IIC T6
*700[1)]1[4)3)]*Z****	Ex de[ib] IIC T6
*700[1)]1[2)5)]*F****	Ex d[ia/ib] IIB+H_2 T6
*700[1)]1[2)5)]*Z****	Ex de[ia/ib] IIB+H_2 T6
*700[1)]1[4)5)]*F****	Ex d[ia/ib] IIC T6
*700[1)]1[4)5)]*Z****	Ex de[ia/ib] IIC T6
*700[6)]1[2)3)]*F****	Ex d[ib] IIB+H_2 T5
*700[6)]1[2)3)]*Z****	Ex de[ib] IIB+H_2 T5
*700[6)]1[4)3)]*F****	Ex d[ib] IIC T5
*700[6)]1[4)3)]*Z****	Ex de[ib] IIC T5
*700[6)]1[2)5)]*F****	Ex d[ia/ib] IIB+H_2 T5
*700[6)]1[2)5)]*Z****	Ex de[ia/ib] IIB+H_2 T5
*700[6)]1[4)5)]*F****	Ex d[ia/ib] IIC T5
*700[6)]1[4)5)]*Z****	Ex de[ia/ib] IIC T5

1) At this place the letter B or R will be inserted.

2) At this place the numeral 1 or 2 will be inserted.

3) At this place the letter A, B, C or N will be inserted.

4) At this place the numeral 3, 4 or 5 will be inserted.

5) At this place the letter D, E or G will be inserted.

6) At this place the letter C, I or S will be inserted.

Modified parameters

1 non intrinsically safe signal circuits (terminals 1-6), only for types *700*1*A******, *700*1*B****** and *700*1*C******,

voltage	Um	AC/DC	33	V

2 non intrinsically safe circuit FIELDBUS (terminals FIELDBUS 1and 2), only for type *700*1*N******

voltage	Um	DC	33	V
current	Im		380	mA
power	Pm		5.32	W
effective internal inductance		L		negligible
effective internal capacitance		C		negligible

for the connection of a FIELDBUS circuit in accordance with FNICO model

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

3 intrinsically safe circuit FIELDBUS (terminals FIELDBUS 1 and 2), type of protection Ex ia IIC only for type 2700*1*E****** and 2700*1*G******

voltage	Ui	DC	33	V
current	Ii		380	mA
power	Pi		5.32	W
effective internal inductance		Li	negligible	
effective internal capacitance		Ci	negligible	

for the connection of a FIELDBUS circuit in accordance with FISCO model

Special conditions for safe use

Unchanged

Test and assessment report
BVS PP 01.2061 EG as of 10.07.2007

DEKRA EXAM GmbH
Bochum, dated 10. July 2007

Signed: Migenda
Certification body

Signed: Dr. Wittler
Special services unit

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.

44809 Bochum, 10.07.2007
BVS-Schu/Mi A 20070193

DEKRA EXAM GmbH

Migenda
Certification body

Wittler
Special services unit

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

DEKRA

Translation

9th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 082 X

Equipment: **Transmitter type *7*0*1*******

Manufacturer: **Micro Motion, Inc.**

Address: **Boulder, Co. 80301, USA**

Description
The transmitter can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report:
Analog Board, Fieldbus Board and Terminal-EMI Board have been revised.

A new variation is available: type *750(D or E)1*(J or K)******.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 60079-0:2006	General requirements
EN 60079-1:2004	Flameproof enclosure 'd'
EN 60079-7:2003	Increased safety 'e'
EN 60079-11:2007	Intrinsic safety 'i'
EN 60079-26:2004	Equipment Group II Category 1G
EN 60079-27:2006	Fieldbus systems FISCO/FNICO
EN 61241-0:2006	General requirements
EN 61241-1:2004	Protection by enclosures

The marking of the equipment shall include the following:

II 2G bzw. II (1)2 G (see table)
II 2D Ex tD A21 IP66/IP67 T65°C

Type *7*0*1(1, 2 or 3)*******	Ta	-40 °C to +55 °C
Type *7*0*1(4 or 5)*******	Ta	-20 °C to +55 °C

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Type	Type of protection gas
*7[7]0[1]1[2][3]*F****	Ex d [ib] IIB +H_2 T6
*7[7]0[1]1[2][3]*Z****	Ex de [ib] IIB +H_2 T6
*7[7]0[1]1[4][3]*F****	Ex d [ib] IIC T6
*7[7]0[1]1[4][3]*Z****	Ex de [ib] IIC T6
*7[7]0[1]1[2][5]*F****	Ex d [ia/ib] IIB +H_2 T6
*7[7]0[1]1[2][5]*Z****	Ex de [ia/ib] IIB +H_2 T6
*7[7]0[1]1[4][5]*F****	Ex d [ia/ib] IIC T6
*7[7]0[1]1[4][5]*Z****	Ex de [ia/ib] IIC T6
*7[7]0[6]1[2][3]*F****	Ex d [ib] IIB +H_2 T5
*7[7]0[6]1[2][3]*Z****	Ex d [ib] IIB + H_2 T5
*7[7]0[6]1[4][3]*F****	Ex d[ib] IIC T5
*7[7]0[6]1[4][3]*Z****	Ex de [ib] IIC T5
*7[7]0[6]1[2][5]*F****	Ex d [ia/ib] IIB +H_2 T5
*7[7]0[6]1[2][5]*Z****	Ex de [ia/ib] IIB +H_2 T5
*7[7]0[6]1[4][5]*F****	Ex d [ia/ib] IIC T5
*7[7]0[6]1[4][5]*Z****	Ex de [ia/ib] IIC T5

[1] At this place the letter B, R or E will be inserted.

[2] At this place the numeral 1 or 2 will be inserted.

[3] At this place the letter A, B, C, N, J or K will be inserted.

[4] At this place the numeral 3, 4 or 5 will be inserted.

[5] At this place the letter D, E or G will be inserted.

[6] At this place the letter C, I, S or D will be inserted.

[7] At this place the numeral 0 or 5 will be inserted.

Modified parameters

1 Non intrinsically safe signal circuits (terminals 1-6), only for types *700*1*A******, *700*1*B******,*700*1*C******, *750*1*J****** and *750*1*K******

Voltage	Um	AC/DC 33	V

2 Non intrinsically safe circuit FIELDBUS (terminals FIELDBUS 1and 2), only for type 27*0*1*N******

Voltage	Um	DC 33	V
Current	Im	380	mA
Power	Pm	5.32	W
Internal inductance	L	negligible	
Internal capacitance	C	negligible	

for the connection of a FIELDBUS circuit in accordance with FNICO model

3 Intrinsically safe circuit FIELDBUS (terminals FIELDBUS 1 and 2), type of protection Ex ia IIC only for type 27*0*1*E****** and 27*0*1*G******

Voltage	Ui	DC 33	V
Current	Ii	380	mA
Power	Pi	5.32	W
Effective internal inductance	Li	negligible	
Effective internal capacitance	Ci	negligible	

for the connection of a FIELDBUS circuit in accordance with FISCO model

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4 Intrinsically safe circuits (terminals 1 and 2 mA output 1 and terminals 5 and 6 mA output 2), type of protection Ex ia IIC only for type *7*0*1*D ******

Voltage	Ui	DC	30	V
Current	Ii		300	mA
Power	Pi		1	W
Effective internal inductance	Li		negligible	
Effective internal capacitance	Ci		negligible	

5 Intrinsically safe circuits (terminals 3 and 4 Frequency Output), type of protection Ex ia IIC only for type *7*0*1*D ******

Voltage	Ui	DC	30	V
Current	Ii		100	mA
Power	Pi		0.75	W
Effective internal inductance	Li		negligible	
Effective internal capacitance	Ci		negligible	

6 Intrinsically safe power and signal circuits for type *700R1******** or *700B1******** or *750E1********

Voltage	Uo	DC	17.22	V
Current	Io		0.484	A
limited by a fuse with a nominal value of			0.16	A
Power	Po		2.05	W
Type of protection Ex ib IIC				
Max. external inductance	Lo		151	µH
Max. external capacitance	Co		333	nF
Max. inductance/resistance ratio	Lo/Ro		17.06	µH/Ω
Type of protection Ex ib IIB				
Max. external inductance	Lo		607	µH
Max. external capacitance	Co		2.04	µF
Max. inductance/resistance ratio	Lo/Ro		68.2	µH/Ω

7 Intrinsically safe power and signal circuits for type *7*0C1********

7.1 Drive circuit (pins 3 and 4)

Voltage	Uo	DC	10.5	V
Current	Io		2.45	A
Power	Po		2.54	W
Internal resistance	Ri		4.32	Ω
For group IIC				
Max. external capacitance	Co		2.41	µF
Max. external inductance	Lo		5.9	µH
Max. external inductance/resistance ratio	Lo/Ro		5.5	µH/Ω
For group IIB				
Max. external capacitance	Co		16.8	µF
Max. external inductance	Lo		24	µH
Max. external inductance/resistance ratio	Lo/Ro		22	µH/Ω

The maximum external inductance L (sensor coil) can be calculated with the following term:

$$L = 2 \times E \times \left(\frac{Ri + Ro}{1.5 \times Uo} \right)^2$$

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whereby E = 40 µJ for group IIC and E = 160 µJ for group IIB will be inserted.

7.2	Pick-off circuits (pins 5- 6 and 7-8)				
	Voltage	Uo	DC	17.3	V
	Current	Io		6.9	mA
	Power	Po		30	mW
	For group IIC				
	Max. external capacitance	Co		353	nF
	Max. external inductance	Lo		742	mH
	Max. external inductance/resistance ratio	Lo/Ro		1.19	mH/Ω
	For group IIB				
	Max. external capacitance	Co		2.06	µF
	Max. external inductance	Lo		2.97	H
	Max. external inductance/resistance ratio	Lo/Ro		4.75	mH/Ω
7.3	Temperature circuit (pins 1, 2 and 9)				
	Voltage	Uo	DC	17.3	V
	Current	Io		26	mA
	Power	Po		112	mW
	For group IIC				
	Max. external capacitance	Co		353	nF
	Max. external inductance	Lo		52.6	mH
	Max. external inductance/resistance ratio	Lo/Ro		0.32	mH/Ω
	For group IIB				
	Max. external capacitance	Co		2.06	µF
	Max. external inductance	Lo		210	mH
	Max. external inductance/resistance ratio	Lo/Ro		1.26	mH/Ω

Special conditions for safe use

Unchanged

Test and assessment report
BVS PP 01.2061 EG as of 10.01.2008

DEKRA EXAM GmbH
Bochum, dated 10. January

Signed: Dr. Jockers
Certification body

Signed: Dr. Eickhoff
Special services unit

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

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.

44809 Bochum, 10.01.2008
BVS-Schu/Mi A 20070791

DEKRA EXAM GmbH

Certification body

Special services unit

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

DEKRA

Translation

10th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 082 X

Equipment: **Transmitter type *7*0*1*******

Manufacturer: **Micro Motion, Inc.**

Address: **Boulder, Co. 80301, USA**

Description

The transmitter can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report: The transmitter type *700(R or B)1***(F or Z)**** can be modified in that way that a special remote J-box can be used alternatively; That variation gets the denomination

Type *700(R or B)1*(F or Z)**** ETO 16097.**

This variation can be used in an ambient temperature range of -35 °C up to +60 °C.

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 60079-0:2006	General requirements
EN 60079-1:2004	Flameproof enclosure 'd'
EN 60079-7:2003	Increased safety 'e'
EN 60079-11:2007	Intrinsic safety 'i'
EN 60079-26:2004	Equipment Group II Category 1G
EN 60079-27:2006	Fieldbus systems FISCO/FNICO
EN 61241-0:2006	General requirements
EN 61241-1:2004	Protection by enclosures

The marking of the equipment shall include the following:

II 2G bzw. II (1)2 G (see table)
II 2D Ex tD A21 IP66/IP67 T65°C

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(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

Type	Type of protection gas
*700[1)]1[2)3)]*F**** ETO 16097	Ex d [ib] IIB +H_2 T6
*700[1)]1[2)3)]*Z**** ETO 16097	Ex de [ib] IIB +H_2 T6
*700[1)]1[4)3)]*F**** ETO 16097	Ex d [ib] IIC T6
*700[1)]1[4)3)]*Z**** ETO 16097	Ex de [ib] IIC T6
*700[1)]1[2)5)]*F**** ETO 16097	Ex d [ia/ib] IIB +H_2 T6
*700[1)]1[2)5)]*Z**** ETO 16097	Ex de [ia/ib] IIB +H_2 T6
*700[1)]1[4)5)]*F**** ETO 16097	Ex d [ia/ib] IIC T6
*7[0]0[1)]1[4)5)]*Z**** ETO 16097	Ex de [ia/ib] IIC T6

1) At this place the letter B or R will be inserted.
2) At this place the numeral 1 or 2 will be inserted.
3) At this place the letter A,B,C or N will be inserted
4) At this place the numeral 3, 4 or 5 will be inserted.
5) At this place the letter D, E or G will be inserted.

Parameters

Type *700(R or B)1***(F or Z)**** ETO 16097

1	Mains circuit (terminals 9 - 10)				
	Voltage		AC/DC	18 - 240 V + 10 %	
	Max. voltage	Um	AC/DC	265	V
2	Intrinsically safe power and signal circuits for type *700R1******** or *700B1********				
	Voltage	Uo	DC	17.22	V
	Current	Io		0.484	A
	Limited by a fuse with a nominal value of			0.16	A
	Power	Po		2.05	W
	Type of protection Ex ib IIC				
	External inductance	Lo		151	µH
	External capacitance	Co		333	nF
	Inductance/resistance ratio	Lo/Ro		17.06	µH/Ω
	Type of protection Ex ib IIB				
	External inductance	Lo		607	µH
	External capacitance	Co		2.04	µF
	Inductance/resistance ratio	Lo/Ro		68.2	µH/Ω
3	Ambient temperature range	Ta	-35 °C up to +60 °C		

Special conditions for safe use

Unchanged

Test and assessment report

BVS PP 01.2061 EG as of 07.05.2009

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 234/3696-105 Fax +49 234/3696-110 E-mail zs-exam@dekra.com
(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

DEKRA EXAM GmbH
Bochum, dated 07. May 2009

Signed: Simanski
Certification body

Signed: Dr. Eickhoff
Special services unit

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.

44809 Bochum, 07. May 2009
BVS-Schu / Her A 20090272

DEKRA EXAM GmbH

Certification body

Special services unit

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Germany Phone +49 234/3696-105 Fax +49 234/3696-110 E-mail zs-exam@dekra.com
(until 31.05.2003: Deutsche Montan Technologie GmbH Am Technologiepark 1 45307 Essen Germany)

DEKRA

Translation

11th Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

to the EC-Type Examination Certificate
DMT 01 ATEX E 082 X

Equipment: **Transmitter type *700*1******** and *750*1********

Manufacturer: **Micro Motion, Inc.**

Address: **Boulder, Co. 80301, USA**

Description

The following modifications are covered by this supplement:

Fieldbus Board Profibus PA has been revised.

New variations are available: type *7*0*1*(2, 3 or 4)*(Z or L)****. These transmitters are equipped with the SMART Wireless THUM Model 775 (EC-Type Examination Certificate Baseefa 09ATEX0125X, II 1G Ex ia IIC T4 or Type Examination Certificate Baseefa 09ATEX0131, II 3G Ex nA IIC T4).

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

EN 60079-0:2006	General requirements
EN 60079-1:2007	Flameproof enclosure 'd'
EN 60079-7:2003	Increased safety 'e'
EN 60079-11:2007	Intrinsic safety 'i'
EN 60079-15:2005	Non-incendive 'n'
EN 60079-26:2004	Equipment Group II Category 1G
EN 60079-27:2006	FISCO/FNICO
EN 61241-0:2006	General requirements
EN 61241-1:2004	Protection by `tD`

Modified parameters:

1	Mains circuit (terminals 9-10)				
	Voltage		AC/DC	18-240V +10%	
	Voltage	Um	AC/DC	265	V
2	Non intrinsically safe signal circuits (terminals 1-6), only for types *700*1*A******, *700*1*B******,*700*1*C******, *700*1*2******, *700*1*3******, *750*1*J****** and *750*1*K******				
	Voltage	Um	AC/DC	33	V

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3 Non intrinsically safe circuit FIELDBUS (terminals FIELDBUS 1and 2), only for type 27*0*1*N******

Voltage	Um	DC	33	V
Current	Im		380	mA
Power	Pm		5.32	W
Effective internal inductance	L	negligible		
Effective internal capacitance	C	negligible		

for the connection of a FIELDBUS circuit in accordance with FNICO model

4 Intrinsically safe circuit FIELDBUS (terminals FIELDBUS 1 and 2), type of protection Ex ia IIC only for type 27*0*1*E****** and 27*0*1*G******

Voltage	Ui	DC	33	V
Current	Ii		380	mA
Power	Pi		5.32	W
Effective internal inductance	Li	negligible		
Effective internal capacitance	Ci	negligible		

for the connection of a FIELDBUS circuit in accordance with FISCO model

5 Intrinsically safe circuits (terminals 1 and 2 mA output 1 and terminals 5 and 6 mA output 2), type of protection Ex ia IIC only for type *7*0*1*D ******

Voltage	Ui	DC	30	V
Current	Ii		300	mA
Power	Pi		1	W
Effective internal inductance	Li	negligible		
Effective internal capacitance	Ci	negligible		

5.1 Intrinsically safe circuits (terminals 1 and 2 mA output 1), type of protection Ex ia IIC only for type *7*0*1*4 ******

Voltage	Ui	DC	30	V
Current	Ii		200	mA
Power	Pi		1	W
Effective internal inductance	Li	negligible		
Effective internal capacitance	Ci	negligible		

5.2 Intrinsically safe circuits (terminals 5 and 6 mA output 2), type of protection Ex ia IIC only for type *7*0*1*4 ******

Voltage	Ui	DC	30	V
Current	Ii		300	mA
Power	Pi		1	W
Effective internal inductance	Li	negligible		
Effective internal capacitance	Ci	negligible		

6 Intrinsically safe circuits (terminals 3 and 4 Frequency Output), type of protection Ex ia IIC only for type *7*0*1*D ****** and *7*0*1*4 ******

Voltage	Ui	DC	30	V
Current	Ii		100	mA
Power	Pi		0.75	W
Effective internal inductance	Li	negligible		
Effective internal capacitance	Ci	negligible		

7 Intrinsically safe power and signal circuits for type *700R1******** or type *700B1******** or type *750E1********

Voltage	Uo	DC	17.22	V
Current	Io		0.484	A
Limited by a fuse with a nominal value of			0.16	A
Power	Po		2.05	W

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	Type of protection Ex ib IIC				
	Max. external inductance	Lo		151	µH
	Max. external capacitance	Co		333	nF
	Max. inductance/resistance ratio	Lo/Ro		17.06	µH/Ω
	Type of protection Ex ib IIB				
	Max. external inductance	Lo		607	µH
	Max. external capacitance	Co		2.04	µF
	Max. inductance/resistance ratio	Lo/Ro		68.2	µH/Ω

8 Intrinsically safe power and signal circuits for type *7*0C1********

8.1	Drive circuit (pins 3 and 4)				
	Voltage	Uo	DC	10.5	V
	Current	Io		2.45	A
	Power	Po		2.54	W
	Internal resistance	Ri		4.32	Ω
	For group IIC				
	Max. external capacitance	Co		2.41	µF
	Max. external inductance	Lo		5.9	µH
	Max. external inductance/resistance ratio	Lo/Ro		5.5	µH/Ω
	For group IIB				
	Max. external capacitance	Co		i6.8	µF
	Max. external inductance	Lo		24	µH
	Max. external inductance/resistance ratio	Lo/Ro		22	µH/Ω

The maximum external inductance L (sensor coil) can be calculated with the following term:

$$L = 2 \times E \times \left(\frac{Ri + Ro}{1.5 \times Uo} \right)^2$$

whereby E = 40 µJ for group IIC and E = 160 µJ for group IIB will be inserted.

8.2	Pick-off circuits (pins 5- 6 and 7-8)				
	Voltage	Uo	DC	17.3	V
	Current	Io		6.9	mA
	Power	Po		30	mW
	For group IIC				
	Max. external capacitance	Co		353	nF
	Max. external inductance	Lo		742	mH
	Max. external inductance/resistance ratio	Lo/Ro		1.19	mH/Ω
	For group IIB				
	Max. external capacitance	Co		2.06	µF
	Max. external inductance	Lo		2.97	H
	Max. external inductance/resistance ratio	Lo/Ro		4.75	mH/Ω

8.3	Temperature circuit (pins 1, 2 and 9)				
	Voltage	Uo	DC	17.3	V
	Current	Io		26	mA
	Power	Po		112	mW

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	For group IIC			
	Max. external capacitance	Co	353	nF
	Max. external inductance	Lo	52.6	mH
	Max. external inductance/resistance ratio	Lo/Ro	0.32	mH/Ω
	For group IIB			
	Max. external capacitance	Co	2.06	µF
	Max. external inductance	Lo	210	mH
	Max. external inductance/resistance ratio	Lo/Ro	1.26	mH/Ω

9 Ambient temperature range Ta

Type *7*0(B,R,E)1(1,2,3)(A,B,C,D,E,G,N,J,K)******	Ta	-40°C up to +60°C
Type *7*0(B,R,E)1(1,2,3)(2,3,4)******	Ta	-40°C up to +60°C
Type *7*0(B,R,E)1(1,2,3)(A,B,C,D,E,G,N,J,K)****** ETO16097	Ta	-35°C up to +60°C
Type *7*0(B,R,E)1(1,2,3)(2, 3,4)****** ETO16097	Ta	-35°C up to +60°C
Type *7*0(B,R,E)1(4,5)(A,B,C,D,E,G,N,J,K)******	Ta	-20°C up to +60°C
Type *7*0(B,R,E)1(4,5)(2,3,4)******	Ta	-20°C up to +60°C
Type *7*0(C,I,S,D)1(1,2,3)(A,B,C,D,E,G,N,J,K)******	Ta	-40°C up to +55°C
Type *7*0(C,I,S,D)1(1,2,3)(2,3,4)******	Ta	-40°C up to +55°C
Type *7*0(C,I,S,D)1(4,5)(A,B,C,D,E,G,N,J,K)******	Ta	-20°C up to +55°C
Type *7*0(C,I,S,D)1(4,5)(2,3,4)******	Ta	-20°C up to +55°C

The marking of the equipment shall include the following:

II 2G resp. **II (1)2 G** resp. **II (2)3 G** **(see table)**
II 2D Ex tD A21 IP66/IP67 T65°C

Type	Type of protection gas	Type of protection dust
*7[7]0[1]1[2][3]*F****	II 2G Ex d [ib] IIB +H_2 T6	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[1]1[2][3]*Z****	II 2G Ex de [ib] IIB +H_2 T6	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[1]1[4][3]*F****	II 2G Ex d [ib] IIC T6	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[1]1[4][3]*Z****	II 2G Ex de [ib] IIC T6	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[1]1[2][5]*F****	II (1) 2G Ex d [ia/ib] IIB +H_2 T6	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[1]1[2][5]*Z****	II (1) 2G Ex de [ia/ib] IIB +H_2 T6	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[1]1[4][5]*F****	II (1) 2G Ex d [ia/ib] IIC T6	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[1]1[4][5]*Z****	II (1) 2G Ex de [ia/ib] IIC T6	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[6]1[2][3]*F****	II 2G Ex d [ib] IIB +H_2 T5	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[6]1[2][3]*Z****	II 2G Ex d [ib] IIB + H_2 T5	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[6]1[4][3]*F****	II 2G Ex d[ib] IIC T5	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[6]1[4][3]*Z****	II 2G Ex de [ib] IIC T5	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[6]1[2][5]*F****	II (1) 2G Ex d [ia/ib] IIB +H_2 T5	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[6]1[2][5]*Z****	II (1) 2G Ex de [ia/ib] IIB +H_2 T5	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[6]1[4][5]*F****	II (1) 2G Ex d [ia/ib] IIC T5	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[6]1[4][5]*Z****	II (1) 2G Ex de [ia/ib] IIC T5	II 2D Ex tD A21 IP66/IP67 T65°C
*7[7]0[1]1[2]4*Z****	II (1) 2G Ex de [ia/ib] IIB + H_2 T4	
*7[7]0[1]1[4]4*Z****	II (1) 2G Ex de [ia/ib] IIC T4	
*7[7]0[6]1[2]4*Z****	II (1) 2G Ex de [ia/ib] IIB + H_2 T4	
*7[7]0[6]1[4]4*Z****	II (1) 2G Ex de [ia/ib] IIC T4	
*7[7]0[1]1[2][8]*L****	II (2) 3G Ex nA de [ib] IIB + H_2 T4	
*7[7]0[1]1[4][8]*L****	II (2) 3G Ex nA de [ib] IIC T4	

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Type	Type of protection gas	Type of protection dust
*7[7]0[6]1[2][8]*L****	II (2) 3G Ex nA de [ib] IIB + H_2 T4	
*7[7]0[6]1[4][8]*L****	II (2) 3G Ex nA de [ib] IIC T4	

1) At this place the letter B, E or R will be inserted.
2) At this place the numeral 1 or 2 will be inserted.
3) At this place the letter A, B, C, N, J or K will be inserted.
4) At this place the numeral 3, 4 or 5 will be inserted.
5) At this place the letter D, E or G will be inserted.
6) At this place the letter C, I, S or D will be inserted.
7) At this place the numeral 0 or 5 will be inserted.
8) At this place the numeral 2 or 3 will be inserted.

Special conditions for safe use

For the application of the transmitter in an ambient temperature of less than – 20 °C suitable cable and cable entries or conduit entries certified for this condition shall be used.

If certified conduit entries are used for the connection of the transmitter enclosure, the associated stopping boxes shall be installed immediately at the enclosure.

Addition for version *7*0*1(4 or 5) ** (Z or F) **** CEQ/ETO 12638 only:
Using a dry cloth to clean the display cover can cause static discharge, which could result in an explosion in an explosive atmosphere.
To prevent an explosion, use a clean damp cloth to clean the display cover in an explosive atmosphere.

The window cover forms a unit and cannot be taken apart without destroying the cover parts. If a cover is damaged it must be replaced by a new cover.

For version *7*0*1*(2 or 3)**L**** only: These devices can only be installed in areas requiring 3G apparatus (Zone 2).

For wiring instructions of the SMART Wireless THUM Model 775, see Installation drawings ATEX-D-IS EB-20015694 and EB-20015470.

Test and assessment report

BVS PP 01.2061 EG as of 17.09.2009

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 17. 09. 2009

Signed: Simanski
Certification body

Signed: Dr. Eickhoff
Special services unit

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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.

44809 Bochum, 17. 09. 2009
BVS-Schu/Her A 20090691

DEKRA EXAM GmbH

Certification body

Special services unit

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DEKRA

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Boulder, Co.
USA

DEKRA EXAM GmbH
Certification Body
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Contact	Dipl.-Ing. Günther Schumann
Phone	+49.234.3696-358
Fax	+49.234.3696-300
E-Mail	guenther.schumann@dekra.com
Date	30.08.2010
Our reference:	BVS-Schu/Ar A 20100603
Your sign:	H. van Holland
Your reference:	01.06.2010

Dear Sir or Madame,

We added the Revision Report as of 2010.08.30 to the Test and Assessment Report BVS PP 01.2061 EG.

We confirm, that the Certificate

DMT 01 ATEX E 082 X as of 27.06.2001, last modification as of 17.09.2009

is still valid.

Yours sincerely
DEKRA EXAM GmbH

i.V. H. C. Simanski i.V. Franz Eickhoff

Hans-Christian Simanski Dr. Franz Eickhoff

Enclosures

Translation

(1) 12. 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: **DMT 01 ATEX E 082 X**

(4) Equipment: **Transmitter type *700*1******** und *750*1*********

(5) Manufacturer: **Micro Motion, Inc.**

(6) Address: **7070 Winchester Circle, Boulder, Co. 80301, USA**

(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 01.2061 EG.

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

IEC 60079-0:2011	**General requirements**
EN 60079-1:2007	**Flameproof enclosure ´d´**
EN 60079-7:2007	**Increased safety ´e´**
EN 60079-11:2012	**Intrinsic safety ´i´**
EN 60079-15:2010	**Type of protection ´n´**
EN 60079-26:2007	**Equipment with equipment protection level (EPL) Ga**
EN 60079-31:2009	**Equipment dust ignition protection by enclosures „t“**

(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** see cl. 15.2

DEKRA EXAM GmbH
Bochum, dated 20.08.2012

Signed: Simanski
Certification body

Signed: Dr. Eickhoff
Special services unit

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(13) Appendix to

(14) **12. Supplement to the EC-Type Examination Certificate**
DMT 01 ATEX E 082 X

(15) 15.1 Subject and type

Transmitter type *700*1******** and *750*1********
Instead of the *** in the complete denomination letters and numerals will be inserted which characterize the following variations:

Type * 7 0 0 * 1 * * * * * * * *
Type * 7 5 0 * 1 * * * * * * * *

Options without influence on explosion protection

Approval
F = Ex d **** Zone 1 and 2
Z = Ex de **** Zone 1 and 2
L = Ex nA de **** Zone 2 only

Letter for conduits

Output Options
A = One mA, one frequency
B = Config I/O default
C = Config I/O Custom
D = Intrinsically Safe Outputs
E = Intrinsically Safe Foundation Fieldbus H1
G = Profibus PA
N = Non-I.S. Foundation Fieldbus H1
J = Config I/O default (Used with Model *750 Only)
K = Config I/O Custom (Used with Model *750 Only)
2 = One mA, one frequency, Wireless HART Ex nA (for Zone 2 only)
3 = Config I/O Custom, Wireless HART Ex nA (for Zone 2 only)
4 = Intrinsically Safe Outputs, Wireless HART Ex ia (for Zone 1 and Zone 2)

Display Options
1 = Standard Display = Ex ***IIB + H_2
2 = Backlight Display = Ex ***IIB + H_2
3 = No Display = Ex ***IIC
4 = IIC Display = Ex ***IIC
4 with CEQ/ETO 12638 = IIC Display = Ex ***IIC with FEP Face Plate
5 = IIC Display with Backlight = Ex ***IIC
5 with CEQ/ETO 12638 = IIC Display with Backlight = Ex ***IIC with FEP Face Plate
8 = Display optimized for Chinese-language support Ex***IIB +H_2

Letter for mounting
R = Remote Mount Transmitter with Aluminium Housing
I or S = Integral Mount Transmitter
C = Remote Mount with Core Processor (Model 700) with Aluminium Housing
B = Remote Mount Alu Transmitter with remote Core Processor (Model 700)
D = Integral Mount Transmitter (Used with Model *750 Only)
E = Remote Mount Alu Transmitter with remote Core Processor (Model 800)
F = Remote Mount St. St Transmitter with remote Core Processor (Model 800)
M = Remote Mount Transmitter with Stainless Steel Housing
P = Remote Mount with Core Processor (Model 700) with Stainless Steel Housing

Numeral 1 = Single Variable Transmitter
or 2 = Multi Variable Transmitter

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15.2 Description

The transmitter can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report and The following modifications of the transmitter are possible:

New variations are available:
Type *7*0F1*******, type *7*0M1******* and type *7*0P1******* (stainless steel enclosure according to Test Report BVS PP 12.2072 EG, type of protection Ex d IIC).

Alternative versions are possible:
type *7*0(B,E,R,C,I,S,D) 1(4,5)******* CIC A1 with a modified window cover,
type *7*0*18(A,2)****** with a display optimized for Chinese language and with alternative Analog board

The apparatus have been assessed to the actual standards; a modified marking is the result.

Marking:
The marking contains the following:

Type *7*0(B,R,E,F,M)1(1,2,3,8)(A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40 °C to +60 °C
Type *7*0(B,R,E)1(4,5)(A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-20 °C to +60 °C
Type *7*0(B,R,E)1(4,5)(A,B,C,D,E,G,N,J,K,2,3,4)****** CIC A1	Ta	-40 °C to +60 °C
Type *7*0(F,M)1(4,5)(A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40 °C to +60 °C
Type *7*0(B,R)1(1,2,3,8)(A,B,C,D,E,G,N,J,K,2,3,4)****** ETO16097	Ta	-35 °C to +60 °C
Type *7*0 (C,I,S,D,P) 1(1,2,3,8) (A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40 °C to +55 °C
Type *7*0 (C,I,S,D) 1(4,5) (A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-20 °C to +55 °C
Type *7*0 (C,I,S,D) 1(4,5) (A,B,C,D,E,G,N,J,K,2,3,4)****** CIC A1	Ta	-40 °C to +55 °C
Type *7*0P1(4,5) (A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40 °C to +55 °C

II 2G or II (1) 2G or II (2) 3G; see table
II 2D see table

Type	type of protection gas	type of protection dust
*7[7])0[1])1[2)3)]*F****	II 2G Ex d [ib] IIB +H_2 T6 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7])0[1])1[2)3)]*Z****	II 2G Ex de [ib] IIB +H_2 T6 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7])0[1])1[4)3)]*F**** *7[7])0[1])144*F**** CIC A1 *7[7])0[1])145*F**** CIC A1 *7[7])0[1])154*F**** CIC A1 *7[7])0[1])155*F**** CIC A1	II 2G Ex d [ib] IIC T6 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7])0[9])1[4)3)]*F**** *7[7])0[9])144*F**** CIC A1 *7[7])0[9])145*F**** CIC A1 *7[7])0[9])154*F**** CIC A1 *7[7])0[9])155*F**** CIC A1	II 2G Ex d [ib] IIC T6 Gb	
*7[7])0[1])1[4)3)]*Z**** *7[7])0[1])144*Z**** CIC A1 *7[7])0[1])145*Z**** CIC A1 *7[7])0[1])154*Z**** CIC A1 *7[7])0[1])155*Z**** CIC A1	II 2G Ex de [ib] IIC T6 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7])0[9]) 1[4)3)]*Z**** *7[7])0[9])144*Z**** CIC A1 *7[7])0[9])145*Z**** CIC A1 *7[7])0[9])154*Z**** CIC A1 *7[7])0[9])155*Z**** CIC A1	II 2G Ex de [ib] IIC T6 Gb	
*7[7])0[1])1[2)5)]*F****	II (1) 2G Ex d [ia Ga] [ib] IIB +H_2 T6 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7])0[1])1[2)5)]*Z****	II (1) 2G Ex de [ia Ga] [ib] IIB +H_2 T6 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7])0[9])1[2)5)]*F****	II (1) 2G Ex d [ia Ga] [ib] IIC T6 Gb	
*7[7])0[1])1[4)5)]*F****	II (1) 2G Ex d [ia Ga] [ib] IIC T6 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7])0[1])1[4)5)]*Z****	II (1) 2G Ex de [ia Ga] [ib] IIC T6 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7])0[6])1[2)3)]*F****	II 2G Ex d [ib] IIB +H_2 T5 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7])0[6])1[2)3)]*Z****	II 2G Ex de [ib] IIB + H_2 T5 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7])0[6])1[4)3)]*F****	II 2G Ex d [ib] IIC T5 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7])0[6])1[4)3)]*Z****	II 2G Ex de [ib] IIC T5 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7])0P1[4)3)]*F****	II 2G Ex d [ib] IIC T5 Gb	
*7[7])0[6])1[2)5)]*F****	II (1) 2G Ex d [ia Ga] [ib] IIB +H_2 T5 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7])0[6])1[2)5)]*Z****	II (1) 2G Ex de [ia Ga] [ib] IIB +H_2 T5 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7])0[6])1[4)5)]*F****	II (1) 2G Ex d [ia Ga] [ib] IIC T5 Gb	II 2D Ex tb IIIC T65°C IP66/IP67

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Type	type of protection gas	type of protection dust
*7[7]0[6]1[4)5)]*Z****	II (1) 2G Ex de [ia Ga] [ib] IIC T5 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7]0P1[4)5)]*F****	II (1) 2G Ex d [ia Ga] [ib] IIC T5 Gb	
*7[7]0[1)]1[2)]4*Z****	II (1) 2G Ex de [ia Ga] [ib] IIB + H_2 T4 Gb	
*7[7]0[1)]1[4)]4*Z****	II (1) 2G Ex de [ia Ga] [ib] IIC T4 Gb	
*7[7]0[6)]1[2)]4*Z****	II (1) 2G Ex de [ia Ga] [ib] IIB + H_2 T4 Gb	
*7[7]0[6)]1[4)]4*Z****	II (1) 2G Ex de [ia Ga] [ib] IIC T4 Gb	
*7[7]0[1)]1[2)8)]*L****	II (2) 3G Ex nA de [ib Gb] IIB + H_2 T4 Gc	
*7[7]0[1)]1[4)8)]*L**** *7[7]0[1)]144*L**** CIC A1 *7[7]0[1)]145*L**** CIC A1 *7[7]0[1)]154*L**** CIC A1 *7[7]0[1)]155*L**** CIC A1	II (2) 3G Ex nA de [ib Gb] IIC T4 Gc	
*7[7]0[6)]1[2)8)]*L****	II (2) 3G Ex nA de [ib Gb] IIB + H_2 T4 Gc	
*7[7]0[6)]1[4)8)]*L**** *7[7]0[6)]144*L**** CIC A1 *7[7]0[6)]145*L**** CIC A1 *7[7]0[6)]154*L**** CIC A1 *7[7]0[6)]155*L**** CIC A1	II (2) 3G Ex nA de [ib Gb] IIC T4 Gc	
*7[7]0[1)]18A*F****	II 2G Ex d [ib] IIB +H_2 T6 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7]0[1)]18A*Z****	II 2G Ex de [ib] IIB +H_2 T6 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7]0[1)]182*L****	II (2) 3G Ex nA de [ib Gb] IIB + H_2 T4 Gc	
*7[7]0[6)]18A*F****	II 2G Ex d [ib] IIB +H_2 T6 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7]0[6)]18A*Z****	II 2G Ex de [ib] IIB +H_2 T6 Gb	II 2D Ex tb IIIC T65°C IP66/IP67
*7[7]0[6)]182*L****	II (2) 3G Ex nA de [ib Gb] IIB + H_2 T4 Gc	
*7[7]0[9)]18A*F****	II 2G Ex d [ib] IIB +H_2 T6 Gb	
*7[7]0P18A*F****	II 2G Ex d [ib] IIB +H_2 T5 Gb	

1) At this place the letter B, E or R will be inserted.
2) At this place the numeral 1 or 2 will be inserted.
3) At this place the letter A, B, C, N, J or K will be inserted.
4) At this place the numeral 3, 4 or 5 will be inserted.
5) At this place the letter D, E or G will be inserted.
6) At this place the letter C, I, S or D will be inserted.
7) At this place the numeral 0 or 5 will be inserted.
8) At this place the numeral 2 or 3 will be inserted.
9) At this place the letter F or M will be inserted.

15.3 Parameters

15.3.1 Mains circuit (terminals 9-10)

Voltage		AC/DC	18 - 240 V	+10 %
Voltage	Um	AC/DC	265	V

15.3.2 Non intrinsically safe signal circuits (terminals 1-6), only for types *700*1*(A, B, C, J, K, 2, 3)

Voltage	Um	AC/DC	33	V

15.3.3 Non intrinsically safe circuit FIELDBUS (terminals FIELDBUS 1and 2), only for type *7*0*1*N******

Voltage	Um	DC	33	V
Current	Im		380	mA
Power	Pm		5.32	W
Effective internal inductance	Li		negligible	
Effective internal capacitance	Ci		negligible	

15.3.4 Intrinsically safe circuit FIELDBUS (terminals FIELDBUS 1 and 2), type of protection Ex ia IIC only for type 27*0*1*(E,G)******

Voltage	Ui	DC	33	V
Current	Ii		380	mA
Power	Pi		5.32	W
Effective internal inductance	Li		negligible	
Effective internal capacitance	Ci		negligible	

for the connection of a FIELDBUS circuit in accordance with FISCO model

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15.3.5 Intrinsically safe circuits (terminals 1 and 2 mA output 1 and terminals 5 and 6 mA output 2), type of protection Ex ia IIC only for type *7*0*1*D ******

Voltage	Ui	DC	30	V
Current	Ii		300	mA
Power	Pi		1	W
Effective internal inductance	Li		negligible	
Effective internal capacitance	Ci		negligible	

15.3.5.1 Intrinsically safe circuits (terminals 1 and 2 mA output 1), type of protection Ex ia IIC only for type *7*0*1*4 ******

Voltage	Ui	DC	30	V
Current	Ii		200	mA
Power	Pi		1	W
Effective internal inductance	Li		negligible	
Effective internal capacitance	Ci		negligible	

15.3.5.2 Intrinsically safe circuits (terminals 5 and 6 mA output 2), type of protection Ex ia IIC only for type *7*0*1*4 ******

Voltage	Ui	DC	30	V
Current	Ii		300	mA
Power	Pi		1	W
Effective internal inductance	Li		negligible	
Effective internal capacitance	Ci		negligible	

15.3.6 Intrinsically safe circuits (terminals 3 and 4 Frequency Output), type of protection Ex ia IIC only for type *7*0*1*(D,4)******

Voltage	Ui	DC	30	V
Current	Ii		100	mA
Power	Pi		0.75	W
Effective internal inductance	Li		negligible	
Effective internal capacitance	Ci		negligible	

15.3.7 Intrinsically safe power and signal circuits for type *700(R, B, E, F, M)1********

Voltage	Uo	DC	17.22	V
Current	Io		0.484	A
Limited by a fuse with a nominal value of			0.16	A
Power	Po		2.05	W
Type of protection Ex ib IIC				
Max. external inductance	Lo		151	µH
Max. external capacitance	Co		333	nF
Max. inductance/resistance ratio	Lo/Ro		17.06	µH/Ω
Type of protection Ex ib IIB				
Max. external inductance	Lo		607	µH
Max. external capacitance	Co		2.04	µF
Max. inductance/resistance ratio	Lo/Ro		68.2	µH/Ω

15.3.8 Intrinsically safe power and signal circuits for type *7*0(C, I, S, D, P)1********

15.3.8.1 Drive circuit (pins 3 and 4)

Voltage	Uo	DC	10.5	V
Current	Io		2.45	A
Power	Po		2.54	W
Internal resistance	Ri		4.32	Ω
For group IIC				
Max. external capacitance	Co		2.41	µF
Max. external inductance	Lo		5.9	µH
Max. external inductance/resistance ratio	Lo/Ro		5.5	µH/Ω

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For group IIB				
Max. external capacitance	Co		16.8	µF
Max. external inductance	Lo		24	µH
Max. external inductance/resistance ratio	Lo/Ro		22	µH/Ω

The maximum external inductance L (sensor coil) can be calculated with the following term:

$$L = 2 \times E \times \left(\frac{Ri + Ro}{1.5 \times Uo} \right)^2$$

whereby E = 40 µJ for group IIC and E = 160 µJ for group IIB will be inserted.

15.3.8.2 Pick-off circuits (pins 5- 6 and 7-8)

Voltage	Uo	DC	17.3	V
Current	Io		6.9	mA
Power	Po		30	mW
For group IIC				
Max. external capacitance	Co		353	nF
Max. external inductance	Lo		742	mH
Max. external inductance/resistance ratio	Lo/Ro		1.19	mH/Ω
For group IIB				
Max. external capacitance	Co		2.06	µF
Max. external inductance	Lo		2.97	H
Max. external inductance/resistance ratio	Lo/Ro		4.75	mH/Ω

15.3.8.3 Temperature circuit (pins 1, 2 and 9)

Voltage	Uo	DC	17.3	V
Current	Io		26	mA
Power	Po		112	mW
For group IIC				
Max. external capacitance	Co		353	nF
Max. external inductance	Lo		52.6	mH
Max. external inductance/resistance ratio	Lo/Ro		0.32	mH/Ω
For group IIB				
Max. external capacitance	Co		2.06	µF
Max. external inductance	Lo		210	mH
Max. external inductance/resistance ratio	Lo/Ro		1.26	mH/Ω

15.3.9 Ambient temperature range

Type *7*0(B,R,E,F,M)1(1,2,3,8)(A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40°C to +60°C
Type *7*0(B,R,E)1(4,5)(A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-20°C to +60°C
Type *7*0(B,R,E)1(4,5)(A,B,C,D,E,G,N,J,K,2,3,4)****** CIC A1	Ta	-40°C to +60°C
Type *7*0(F,M)1(4,5)(A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40°C to +60°C
Type *7*0(B,R)1(1,2,3,8)(A,B,C,D,E,G,N,J,K,2,3,4)****** ETO16097	Ta	-35°C to +60°C
Type *7*0 (C,I,S,D,P) 1(1,2,3,8) (A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40°C to +55°C
Type *7*0 (C,I,S,D) 1(4,5) (A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-20°C to +55°C
Type *7*0 (C,I,S,D) 1(4,5) (A,B,C,D,E,G,N,J,K,2,3,4)****** CIC A1	Ta	-40°C to +55°C
Type *7*0P1(4,5) (A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40°C to +55°C

(16) Test and Assessment Report

BVS PP 01.2061 EG as of 20.08.2012

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Phone +49.234.3696-105 Fax +49.234.3696-110 zs-exam@dekra.com

(17) Special conditions for safe use

17.1 For the application of the transmitter suitable cable entries or conduit entries certified for this condition shall be used.

For the application of the transmitter in an ambient temperature of less than –20 °C suitable cables and cable entries or conduit entries certified for this condition shall be used.

If certified conduit entries are used for the connection of the transmitter enclosure, the associated stopping boxes shall be installed immediately at the enclosure.

17.2 Addition for version 7*0(F,M,P)1********:

The enclosure entries can be used for double compression Ex-d IIC glands such as but not limited to Hawke 501/453 intended for use with effectively filled and circular armoured or braided cable; volume of the Ex-d enclosure is less than 2 litres.

17.3 Addition for version *7*0*1(4,5)**(Z,F)**** CEQ/ETO 12638 only:

Using a dry cloth to clean the display cover can cause static discharge, which could result in an explosion in an explosive atmosphere.

To prevent an explosion, use a clean damp cloth to clean the display cover in an explosive atmosphere.

17.4 The window cover forms a unit and cannot be taken apart without destroying the cover parts. If a cover is damaged it must be replaced by a new cover.

17.5 For version *7*0*1*(2,3)**L**** only:
These devices can only be installed in areas requiring 3G apparatus (Zone 2).

17.6 For wiring instructions of the SMART Wireless THUM Model 775, see Installation drawings ATEX-D-IS EB-20015694 and EB-20015470.

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, 20.08.2012
BVS-Schu/Sch A 20120500

Certification body

Special services unit

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DEKRA

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Micro Motion, Inc.
7070 Winchester Circle
Boulder, Co.
USA

DEKRA EXAM GmbH
Certification Body
Dinnendahlstraße 9
44809 Bochum, Germany
Telefon +49.234.3696-105
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Contact	Dipl.-Ing. Günther Schumann
Phone	+49.234.3696-358
Fax	+49.234.3696-301
E-Mail	guenther.schumann@dekra.com
Date	23.11.2012
Our reference:	BVS-Schu/Mu A 20121077
Your sign:	H. van Holland
Your reference:	18.09.2012

Dear Sir or Madame,

we added the Revision Report as of 23.11.12 to the Test and Assessment Report BVS PP 01.2061 EG.

We confirm, that the Certificate

DMT 01 ATEX E 082 X as of 27.06.2001, last modification as of 20.08.2012

is still valid.

Yours sincerely
DEKRA EXAM GmbH

i.V. Franz Eickhoff i.V. Michael Wittler

Dr. Franz Eickhoff Dr. Michael Wittler

Enclosure

Translation

(1) # 13. 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: **DMT 01 ATEX E 082 X**

(4) Equipment: **Transmitter type 700*1******** und *750*1*********

(5) Manufacturer: **Micro Motion, Inc.**

(6) Address: **7070 Winchester Circle, Boulder, Co. 80301, USA**

(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 01.2061 EG.

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

EN 60079-0:2012	**General requirements**
EN 60079-1:2007	**Flameproof enclosure ´d´**
EN 60079-7:2007	**Increased safety ´e´**
EN 60079-11:2012	**Intrinsic safety ´i´**
EN 60079-15:2010	**Type of protection ´n´**
EN 60079-26:2007	**Equipment with equipment protection level (EPL) Ga**
EN 60079-31:2009	**Equipment dust ignition protection by enclosures „t“**

(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** see cl. 15.2

DEKRA EXAM GmbH
Bochum, dated 17th April 2013

Signed: Dr. Franz Eickhoff
Certification body

Signed: Dr. Michael Wittler
Special services unit

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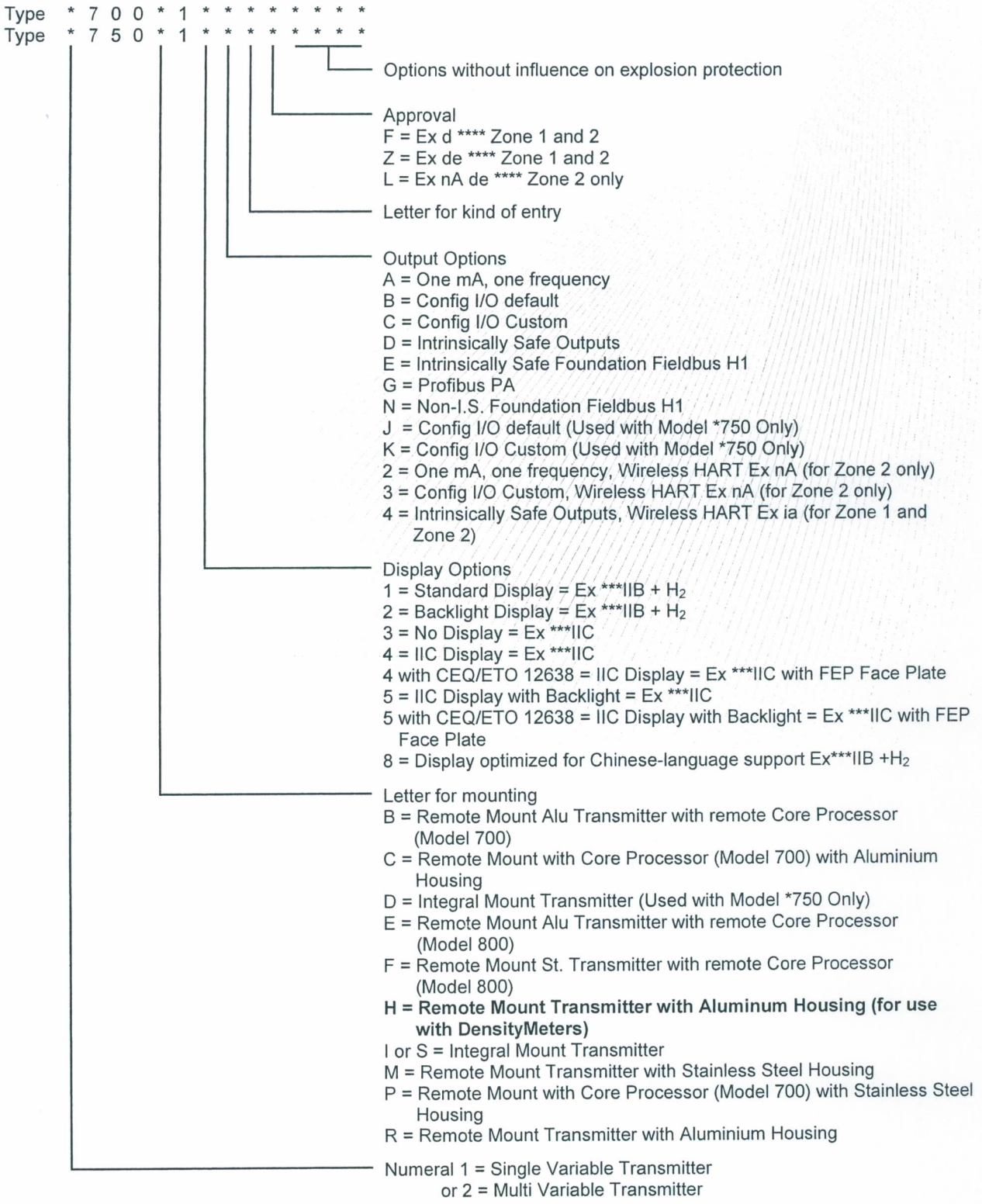
(13) Appendix to

(14) **13. Supplement to the EC-Type Examination Certificate**
DMT 01 ATEX E 082 X

(15) 15.1 Subject and type

Transmitter type *700*1******** and *750*1********
Instead of the *** in the complete denomination letters and numerals will be inserted which characterize the following variations:



Changes are in bold

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15.2 Description

The transmitter can be modified according to the descriptive documents as mentioned in the pertinent Test and Assessment Report.
The following modification of the transmitter is possible: type *7*0H1******** for use with Density Meter.
Additionally the apparatus has been assessed to the standard EN 60079-0:2012.

Marking:
The marking contains the following:

Type *7*0(B,R,E,F,M,H)1(1,2,3,8)(A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40 °C to +60 °C
Type *7*0(B,R,E,H)1(4,5)(A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-20 °C to +60 °C
Type *7*0(B,R,E,H)1(4,5)(A,B,C,D,E,G,N,J,K,2,3,4)****** CIC A1	Ta	-40 °C to +60 °C
Type *7*0(F,M)1(4,5)(A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40 °C to +60 °C
Type *7*0(B,R,H)1(1,2,3,8)(A,B,C,D,E,G,N,J,K,2,3,4)****** ETO16097	Ta	-35 °C to +60 °C
Type *7*0 (C,I,S,D,P) 1(1,2,3,8) (A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40 °C to +55 °C
Type *7*0 (C,I,S,D) 1(4,5) (A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-20 °C to +55 °C
Type *7*0 (C,I,S,D) 1(4,5) (A,B,C,D,E,G,N,J,K,2,3,4)****** CIC A1	Ta	-40 °C to +55 °C
Type *7*0P1(4,5) (A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40 °C to +55 °C

II 2G or II (1) 2G or II (2) 3G; see table
II 2D see table

Type	Marking directive Ex	Marking standard	IP protection
*7*0(B, R, E, H)1(1, 2, 8)(A,B,C,N,J, K)*F****	II 2G II 2D	Ex d [ib] IIB + H_2 T6 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(B, R, E, H)1(1, 2, 8)(A,B,C,N,J, K)*Z****	II 2G II 2D	Ex de [ib] IIB + H_2 T6 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(B, R, E, H)1(3, 4, 5)(A,B,C,N,J, K)*F**** With or w/o CIC A1	II 2G II 2D	Ex d [ib] IIC T6 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(B, R, E, H)1(3, 4, 5)(A,B,C,N,J, K)*Z**** With or w/o CIC A1	II 2G II 2D	Ex de [ib] IIC T6 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(B, R, E, H)1(1, 2)(D, E, G)*F****	II (1) 2 G II 2D	Ex d [ia Ga] [ib] IIB + H_2 T6 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(B, R, E, H)1(1, 2)(D, E, G)*Z****	II (1) 2 G II 2D	Ex de [ia Ga] [ib] IIB + H_2 T6 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(B, R, E, H)1(3, 4, 5)(D, E, G)*F**** With or w/o CIC A1	II (1) 2 G II 2D	Ex d [ia Ga] [ib] IIC T6 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(B, R, E, H)1(3, 4, 5)(D, E, G)*Z**** With or w/o CIC A1	II (1) 2 G II 2D	Ex de [ia Ga] [ib] IIC T6 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(B, R, E, H)1(1, 2, 8)(2 or 3)*L****	II (2) 3 G	Ex nA d e [ib Gb] IIB + H_2 T4 Gc	IP66
*7*0(B, R, E, H)1(3, 4, 5)(2 or 3)*L**** With or w/o CIC A1	II (2) 3 G	Ex nA d e [ib Gb] IIC T4 Gc	IP66
*7*0(B, R, E, H)1(1, 2) 4*Z****	II (1) 2 G	Ex d e [ia Ga] [ib] IIB + H_2 T4 Gb	IP66
*7*0(B, R, E, H)1(3, 4, 5) 4*Z**** With or w/o CIC A1	II (1) 2 G	Ex d e [ia Ga] [ib] IIC T4 Gb	IP66
*7*0(C, I, S, D)1(1, 2, 8)(A,B,C,N,J, K)*F****	II 2G II 2D	Ex d [ib] IIB + H_2 T5 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(C, I, S, D)1(1, 2, 8)(A,B,C,N,J, K)*Z****	II 2G II 2D	Ex de [ib] IIB + H_2 T5 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(C, I, S, D)1(3, 4, 5)(A,B,C,N,J,K)*F**** With or w/o CIC A1	II 2G II 2D	Ex d [ib] IIC T5 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(C, I, S, D)1(3, 4, 5)(A,B,C,N,J, K)*Z**** With or w/o CIC A1	II 2G II 2D	Ex de [ib] IIC T5 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(C, I, S, D)1(1, 2)(D, E, G)*F****	II (1) 2 G II 2D	Ex d [ia Ga] [ib] IIB + H_2 T5 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(C, I, S, D)1(1, 2)(D, E, G)*Z****	II (1) 2 G II 2D	Ex de [ia Ga] [ib] IIB + H_2 T5 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(C, I, S, D)1(3, 4, 5)(D, E, G)*F**** With or w/o CIC A1	II (1) 2 G II 2D	Ex d [ia Ga] [ib] IIC T5 Gb Ex tb IIIC T65 °C Db	IP66/IP67
*7*0(C, I, S, D)1(3, 4, 5)(D, E, G)*Z**** With or w/o CIC A1	II (1) 2 G II 2D	Ex de [ia Ga] [ib] IIC T5 Gb Ex tb IIIC T65 °C Db	IP66/IP67

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Type	Marking directive ⟨Ex⟩	Marking standard	IP protection
*7*0(C, I, S, D)1(1, 2, 8)(2 or 3)*L****	II (2) 3 G	Ex nA d e [ib Gb] IIB + H_2 T4 Gc	IP66
*7*0(C, I, S, D)1(3, 4, 5)(2 or 3)*L**** With or w/o CIC A1	II (2) 3 G	Ex nA d e [ib Gb] IIC T4 Gc	IP66
*7*0(C, I, S, D)1(1, 2) 4*Z****	II (1) 2 G	Ex d e [ia Ga] [ib] IIB + H_2 T4 Gb	IP66
*7*0(C, I, S, D)1(3, 4, 5) 4*Z**** With or w/o CIC A1	II (1) 2 G	Ex d e [ia Ga] [ib] IIC T4 Gb	IP66
*7*0(F,M)1(1, 2, 8)(A,B,C,N,J, K)*F****	II 2G	Ex d [ib] IIB + H_2 T6 Gb	IP66/IP67
*7*0(F,M)1(3, 4, 5)(A,B,C,N,J, K)*F****	II 2G	Ex d [ib] IIC T6 Gb	IP66/IP67
*7*0(F,M)1(1, 2)(D, E, G)*F****	II (1) 2 G	Ex d [ia Ga] [ib] IIB + H_2 T6 Gb	IP66/IP67
*7*0(F,M)1(3, 4, 5)(D, E, G)*F****	II (1) 2 G	Ex d [ia Ga] [ib] IIC T6 Gb	IP66/IP67
*7*0P1(1, 2, 8)(A,B,C,N,J, K)*F****	II 2G	Ex d [ib] IIB + H_2 T5 Gb	IP66/IP67
*7*0P1(3, 4, 5)(A,B,C,N,J, K)*F****	II 2G	Ex d [ib] IIC T5 Gb	IP66/IP67
*7*0P1(1, 2)(D, E, G)*F****	II (1) 2 G	Ex d [ia Ga] [ib] IIB + H_2 T5 Gb	IP66/IP67
*7*0P1(3, 4, 5)(D, E, G)*F****	II (1) 2 G	Ex d [ia Ga] [ib] IIC T5 Gb	IP66/IP67

15.3 Parameters

15.3.1 Mains circuit (terminals 9-10)

Voltage		AC/DC	18-240 V +10 %	
Voltage	U_m	AC/DC	265	V

15.3.2 Non intrinsically safe signal circuits (terminals 1-6), only for types *700*1*(A, B, C, J, K, 2, 3)

Voltage	U_m	AC/DC	33	V

15.3.3 Non intrinsically safe circuit FIELDBUS (terminals FIELDBUS 1 and 2), only for type *7*0*1*N******

Voltage	U_m	DC	33	V
Current	I_m		380	mA
Power	P_m		5.32	W
Effective internal inductance	L_i		negligible	
Effective internal capacitance	C_i		negligible	

15.3.4 Intrinsically safe circuit FIELDBUS (terminals FIELDBUS 1 and 2), type of protection Ex ia IIC only for type 27*0*1*(E,G)******

Voltage	U_i	DC	33	V
Current	I_i		380	mA
Power	P_i		5.32	W
Effective internal inductance	L_i		negligible	
Effective internal capacitance	C_i		negligible	

for the connection of a FIELDBUS circuit in accordance with FISCO model

15.3.5 Intrinsically safe circuits (terminals 1 and 2 mA output 1 and terminals 5 and 6 mA output 2), type of protection Ex ia IIC only for type *7*0*1*D ******

Voltage	U_i	DC	30	V
Current	I_i		300	mA
Power	P_i		1	W
Effective internal inductance	L_i		negligible	
Effective internal capacitance	C_i		negligible	

15.3.5.1 Intrinsically safe circuits (terminals 1 and 2 mA output 1), type of protection Ex ia IIC only for type *7*0*1*4 ******

Voltage	U_i	DC	30	V
Current	I_i		200	mA
Power	P_i		1	W
Effective internal inductance	L_i		negligible	
Effective internal capacitance	C_i		negligible	

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15.3.5.2 Intrinsically safe circuits (terminals 5 and 6 mA output 2), type of protection Ex ia IIC only for type *7*0*1*4 ******

Voltage	U_i	DC	30	V
Current	I_i		300	mA
Power	P_i		1	W
Effective internal inductance	L_i		negligible	
Effective internal capacitance	C_i		negligible	

15.3.6 Intrinsically safe circuits (terminals 3 and 4 Frequency Output), type of protection Ex ia IIC only for type *7*0*1*(D,4)******

Voltage	U_i	DC	30	V
Current	I_i		100	mA
Power	P_i		0.75	W
Effective internal inductance	L_i		negligible	
Effective internal capacitance	C_i		negligible	

15.3.7 Intrinsically safe power and signal circuits for type *700(R, B, E, F, M, H)1********

Voltage	U_o	DC	17.22	V
Current	I_o		0.484	A
Limited by a fuse with a nominal value of			0.16	A
Power	P_o		2.05	W
Type of protection Ex ib IIC				
Max. external inductance	L_o		151	µH
Max. external capacitance	C_o		333	nF
Max. inductance/resistance ratio	L_o/R_o		17.06	µH/Ω
Type of protection Ex ib IIB				
Max. external inductance	L_o		607	µH
Max. external capacitance	C_o		2.04	µF
Max. inductance/resistance ratio	L_o/R_o		68.2	µH/Ω

15.3.8 Intrinsically safe power and signal circuits for type *7*0(C, I, S, D, P)1********

15.3.8.1 Drive circuit (pins 3 and 4)

Voltage	U_o	DC	10.5	V
Current	I_o		2.45	A
Power	P_o		2.54	W
Internal resistance	R_i		4.32	Ω
For group IIC				
Max. external capacitance	C_o		2.41	µF
Max. external inductance	L_o		5.9	µH
Max. external inductance/resistance ratio	L_o/R_o		5.5	µH/Ω
For group IIB				
Max. external capacitance	C_o		16.8	µF
Max. external inductance	L_o		24	µH
Max. external inductance/resistance ratio	L_o/R_o		22	µH/Ω

The maximum external inductance L (sensor coil) can be calculated with the following term:

$$L = 2 \times E \times \left(\frac{Ri + Ro}{1.5 \times Uo} \right)^2$$

whereby E = 40 µJ for group IIC and E = 160 µJ for group IIB will be inserted.

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15.3.8.2 Pick-off circuits (pins 5- 6 and 7-8)

Voltage	U_o	DC	17.3	V
Current	I_o		6.9	mA
Power	P_o		30	mW
For group IIC				
Max. external capacitance	C_o		353	nF
Max. external inductance	L_o		742	mH
Max. external inductance/resistance ratio	L_o/R_o		1.19	mH/Ω
For group IIB				
Max. external capacitance	C_o		2.06	µF
Max. external inductance	L_o		2.97	H
Max. external inductance/resistance ratio	L_o/R_o		4.75	mH/Ω

15.3.8.3 Temperature circuit (pins 1, 2 and 9)

Voltage	U_o	DC	17.3	V
Current	I_o		26	mA
Power	P_o		112	mW
For group IIC				
Max. external capacitance	C_o		353	nF
Max. external inductance	L_o		52.6	mH
Max. external inductance/resistance ratio	L_o/R_o		0.32	mH/Ω
For group IIB				
Max. external capacitance	C_o		2.06	µF
Max. external inductance	L_o		210	mH
Max. external inductance/resistance ratio	L_o/R_o		1.26	mH/Ω

15.3.9 Ambient temperature range

Type *7*0(B,R,E,F,M,H)1(1,2,3,8)(A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40 °C to +60 °C
Type *7*0(B,R,E,H)1(4,5)(A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-20 °C to +60 °C
Type *7*0(B,R,E,H)1(4,5)(A,B,C,D,E,G,N,J,K,2,3,4)****** CIC A1	Ta	-40 °C to +60 °C
Type *7*0(F,M)1(4,5)(A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40 °C to +60 °C
Type *7*0(B,R,H)1(1,2,3,8)(A,B,C,D,E,G,N,J,K,2,3,4)****** ETO16097	Ta	-35 °C to +60 °C
Type *7*0 (C,I,S,D,P) 1(1,2,3,8) (A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40 °C to +55 °C
Type *7*0 (C,I,S,D) 1(4,5) (A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-20 °C to +55 °C
Type *7*0 (C,I,S,D) 1(4,5) (A,B,C,D,E,G,N,J,K,2,3,4)****** CIC A1	Ta	-40 °C to +55 °C
Type *7*0P1(4,5) (A,B,C,D,E,G,N,J,K,2,3,4)******	Ta	-40 °C to +55 °C

(16) Test and Assessment Report

BVS PP 01.2106 EG as of 17.04.2013

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Phone +49.234.3696-105 Fax +49.234.3696-110 zs-exam@dekra.com

(17) Special conditions for safe use

17.1 For the application of the transmitter suitable cable entries or conduit entries certified for this condition shall be used.

For the application of the transmitter in an ambient temperature of less than –20 °C suitable cables and cable entries or conduit entries certified for this condition shall be used.

If certified conduit entries are used for the connection of the transmitter enclosure, the associated stopping boxes shall be installed immediately at the enclosure.

17.2 Addition for version 7*0(F,M,P)1********:

The enclosure entries can be used for double compression Ex-d IIC glands such as but not limited to Hawke 501/453 intended for use with effectively filled and circular armoured or braided cable; volume of the Ex-d enclosure is less than 2 litres.

17.3 Addition for version *7*0*1(4,5)**(Z,F)**** CEQ/ETO 12638 only:

Using a dry cloth to clean the display cover can cause static discharge, which could result in an explosion in an explosive atmosphere.

To prevent an explosion, use a clean damp cloth to clean the display cover in an explosive atmosphere.

17.4 The window cover forms a unit and cannot be taken apart without destroying the cover parts. If a cover is damaged it must be replaced by a new cover.

17.5 For version *7*0*1*(2,3)**L**** only:
These devices can only be installed in areas requiring 3G apparatus (Zone 2).

17.6 For wiring instructions of the SMART Wireless THUM Model 775, see Installation drawings ATEX-D-IS EB-20015694 and EB-20015470.

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, 17th April 2013
BVS-Schu/Mu A 20130326

Certification body

Special services unit

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Date 2014-02-07

Our reference BVS-Schu/Sch A 20131208
Your sign H. van Holland
Your reference 2013-12-09

Transmitter type 700*1****** und *750*1*********

Dear Sir or Madame,

We added the Revision Report as of 2014-02-07 to the Test and Assessment Report BVS PP 01.2061 EG.

We confirm, that the Certificate

DMT 01 ATEX E 082 X as of 2001-06-27, last modification as of 2013-04-17

is still valid.

Yours sincerely
DEKRA EXAM GmbH

i.V. Franz Eickhoff i.V. Dr. Wittler

Dr. Franz Eickhoff Dr. Michael Wittler

Enclosure