



Translation

**EC-Type Examination Certificate**

(1)

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

(2)

(3)

**DMT 02 ATEX E 002**

(4)

**Equipment: Processor type Model 700C**

(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 02.2001 EG.

(9)

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

EN 50014:1997+A1-A2 General requirements  
EN 50020:1994 Intrinsic safety

(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

(12)

The marking of the equipment shall include the following:

**II 2G EEx ib IIB/IIC T5**

**Deutsche Montan Technologie GmbH**

Essen, dated 16.January 2002

Signed: Jockers

Signed: Dill

DMT-Certification body

Head of special services unit



(13) Appendix to

(14) **EC-Type Examination Certificate**

**DMT 02 ATEX E 002**

(15) 15.1 Subject and type  
Processor type Model 700C

15.2 Description

The processor is used for the connection of sensors to transmitters.

The electrical components (signal processing unit type 700 in accordance with DMT 01 ATEX E 081 U and terminals) are fastened in a metal housing.

15.3 Parameters

15.3.1 Input circuit (terminals 1 - 4)

voltage	U <sub>i</sub>	DC	17,3	V
current	I <sub>i</sub>		484	mA
power	P <sub>i</sub>		2,1	W
effective internal capacitance	C <sub>i</sub>		2200	pF
effective internal inductance	L <sub>i</sub>		30	μH

15.3.2 Output (sensor) circuits

15.3.2.1 Drive circuit (terminals 3 - 4)

voltage	U <sub>o</sub>	DC	10,5	V
current	I <sub>o</sub>		2,45	A
power	P <sub>o</sub>		2,54	W
internal resistance	R <sub>i</sub>		4,32	Ω

for group IIC

max. external capacitance	C <sub>o</sub>		2,41	μF
max. external inductance	L <sub>o</sub>		5,9	μH
max. external inductance/resistance ratio	L <sub>o</sub> /R <sub>o</sub>		5,5	μH/Ω

for group IIB

max. external capacitance	C <sub>o</sub>		16,8	μF
max. external inductance	L <sub>o</sub>		24	μH
max. external inductance/resistance ratio	L <sub>o</sub> /R <sub>o</sub>		22	μH/Ω

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

$$L = 2 \times E \times \left( \frac{R_i + R_o}{1.5 \times U_o} \right)^2$$

whereby E = 40 μJ for group IIC and E = 160 μJ for group IIB will be inserted and R<sub>o</sub> is the total resistance (coil resistance + series resistance).

15.3.2.2 pick-off circuits (terminals 5 up to 8)

voltage	U <sub>o</sub>	DC	17,3	V
current	I <sub>o</sub>		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
15.3.2.3 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
15.3.3 ambient temperature range	Ta	-40 °C up to +60 °C	

(16) Test and assessment report  
BVS PP 02.2001 EG as of 16.01.2002


(17) Special conditions for safe use  
None

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, 16.01 2002  
BVS-Schu/Mi A 20010750

Deutsche Montan Technologie GmbH

  
DMT-Certification body

  
Head of special services unit

EXAM · Postfach 10 27 48 · D-44727 Bochum

Micro Motion, Inc.  
7070 Winchester Circle

Boulder, Co.

USA

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

Ihr Zeichen Henk van Holland  
Ihre Nachricht 06.05.2003  
Unser Zeichen A 20030453 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 02.2001 EG.

We confirm, that the Certificate

DMT 02 ATEX E 002 as of 16.01.2002

is still valid.

Kind regards  
BBG Prüf- und Zertifizier GmbH

  
(Jockers)

Enclosures: Revision Report  
Descriptive Documents

  
(Wittler)

Exam  
BBG Prüf- und Zertifizier  
GmbH

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

Sitz: Bochum  
Amtsgericht Bochum  
HRB 5357

Bankverbindung:  
Commerzbank Bochum  
BLZ 430 400 36  
Konto 20 50 250

e-mail: info@bg-exam.de  
http://www.bg-exam.de