



Translation

**EC-Type Examination Certificate**

(1)

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(2)

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

(3)

**BVS 03 ATEX E 410 U**

(4)

**Equipment: Signal processing device type 700**

(5)

**Manufacturer: Micro Motion**

(6)

**Address: 3900 AJ Veenendaal, NL**

(7)

The design and construction of this component 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 component 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 03.2266 EG.

(9)

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

EN 50014:1997+A1-A2 General requirements  
EN 50020 :2002 Intrinsic safety 'i'

(10)

The sign "U" placed after the certificate number indicates that the certificate must not be mistaken for a certificate for equipment or a protective system. This certificate may only be used as the basis for the certification of equipment or a protective system.

(11)

This EC-Type Examination Certificate relates only to the design, examination and tests of the specified component in accordance to Directive 94/9/EC.

Further requirements of the Directive apply to the manufacturing process and supply of this component. 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**

Bochum, dated 11. December 2003

Signed: Jockers

Signed: Eickhoff

Certification body

Special services unit



(13) Appendix to

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

**BVS 03 ATEX E 410 U**

(15) 15.1 Subject and type  
Signal processing device type 700

15.2 Description

The signal processing device is used for the connection of sensors to transmitters.

The electrical components are completely encapsulated in a plastic housing. On the top of the housing terminals for the connection of the circuits from/to the transmitter are situated and the connection of the sensor is by means of a 9 pin connector at the bottom.

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 (pins 7 - 8)

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

15.3.2.2 pick-off circuits (pins 3up to 6)

voltage	U <sub>o</sub>	DC	17,3	V
current	I <sub>o</sub>		6,9	mA
power	P <sub>o</sub>		30	mW

for group IIC

max. external capacitance	C <sub>o</sub>		353	nF
max. external inductance	L <sub>o</sub>		742	mH
max. external inductance/resistance ratio	L <sub>o</sub> /R <sub>o</sub>		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 (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
15.3.3 ambient temperature range		Ta	-40 °C up to +60 °C	

(16) Test and assessment report  
BVS PP 03.2262 EG as of 11.12.2003

(17) Special conditions for safe use

17.1 The signal processing device has to be mounted inside an enclosure degrees of protection min. IP 20 in accordance with EN 60529.

17.2 The installation of the signal processing device inside an enclosure has to be done in a way that the distance in air between the connection facilities and earthed metal parts is min. 3 mm.

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, 11.12.2003  
BVS-Schu/Mi A 20030757

**Deutsche Montan Technologie GmbH**

  
\_\_\_\_\_  
Certification body

  
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Special services unit