



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 143

(4)

Equipment: Sensor type ViscoScope VA-300*-**

(5)

Manufacturer: MARIMEX Industries GmbH

(6)

Address: D 46238 Bottrop

(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 03.2092 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'
EN 50284:1999 Equipment Group II Category 1G

(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 1/2G EEx ia IIC T3 – T6

Deutsche Montan Technologie GmbH

Essen, dated 16. June 2003

Signed: Jockers

Signed: Eickhoff

DMT-Certification body

Head of special services unit

(13) Appendix to

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

BVS 03 ATEX E 143

(15) 15.1 Subject and type
Sensor ViscoScope type VA-300*^{-**}

Instead of the ^{***} in the complete denomination letters and numerals will be inserted which characterise the area of use.

15.2 Description

The sensor connected to the appropriate transmitter is used to determine the viscosity of liquids.

15.3 Parameters

15.3.1 Drive coils (terminals 4 and 5)

Voltage	Ui	DC	7	V
Current	Ii		28	mA
Power	Pi		196	mW
effective internal capacitance	Ci			negligible
max. inductance of each coil			16	mH ± 10 %
Resistance of each coil			41	Ω ± 10 %
Inductance/resistance ratio				0,477 mH/Ω

15.3.2 Sensing coils (terminals 1 and 2)

Voltage	Ui	DC	1	V
Current	Ii		1	mA
Power	Pi		1	mW
effective internal capacitance	Ci			negligible
max. inductance of each coil			16	mH ± 10 %
Resistance of each coil			41	Ω ± 10 %
Inductance/resistance ratio				0,477 mH/Ω

15.3.3 Process PT 100 (terminals 6, 7 and 8)

Voltage	Ui	DC	1,5	V
Current	Ii		1	mA
Power	Pi		1,5	mW
effective internal capacitance	Ci			negligible
effective internal inductance	Li			negligible

15.3.4 Coil PT 100 (terminals 9, 10 and 11)

Voltage	Ui	DC	1,5	V
Current	Ii		1	mA
Power	Pi		1,5	mW
effective internal capacitance	Ci			negligible
effective internal inductance	Li			negligible



15.3.5 Classification into a temperature class depending on ambient temperature and process temperature in accordance with the following table:

Temperature class	max. process temperature	Ambient temperature range
T6	80 °C	-20 °C up to +80 °C
T5	90 °C	-20 °C up to +90 °C
T4	130 °C	-20 °C up to +130 °C
T3 *)	450 °C	-20 °C up to +190 °C

*) If the sensor is used at process temperatures > 190 °C, a air cooling has to be connected at the defined connection (air cooling port).

(16) Test and assessment report
BVS PP 03.2092 EG as of 16.06.2003


(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, 16.06.2003
BVS-Schu/Mi A 20020663

Deutsche Montan Technologie GmbH


DMT-Certification body


Head of special services unit



Translation

1st Supplement

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

to the EC-Type Examination Certificate BVS 03 ATEX E 143

Equipment: Sensor type ViscoScope VA-300*-.**
Manufacturer: MARIMEX Industries GmbH
Address: 46238 Bottrop

Description

The sensor can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report.

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

EN 50014:1997+A1-A2 General requirements
EN 50020:2002 Intrinsic safety 'i'
EN 50284:1999 Equipment Group II Category 1G

Modified parameters

1	Drive coils (terminals 4 and 5)			
	Voltage	U _i	DC	12 V
	Current	I _i		40 mA
	Power	P _i		480 mW
	effective internal capacitance	C _i		negligible
	max. inductance of each coil			16 mH ± 10 %
	Resistance of each coil			41 Ω ± 10 %
	Inductance/resistance ratio			0,477 mH/Ω
2	Sensing coils (terminals 1 and 2)			
	Voltage	U _i	DC	12 V
	Current	I _i		40 mA
	Power	P _i		480 mW
	effective internal capacitance	C _i		negligible
	max. inductance of each coil			16 mH ± 10 %
	Resistance of each coil			41 Ω ± 10 %
	Inductance/resistance ratio			0,477 mH/Ω

3	Process PT 100 (terminals 6, 7 and 8)				
	Voltage	Ui	DC	3	V
	Current	Ii		1	mA
	Power	Pi		3	mW
	effective internal capacitance	Ci			negligible
	effective internal inductance	Li			negligible
4	Coil PT 100 (terminals 9, 10 and 11)				
	Voltage	Ui	DC	3	V
	Current	Ii		1	mA
	Power	Pi		3	mW
	effective internal capacitance	Ci			negligible
	effective internal inductance	Li			negligible

Test and assessment report

BVS PP 03.2092 EG as of 08.03.2005

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 08. March 2005

Signed: Dr. Jockers

Signed: Dr. Eickhoff

Certification body_____
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, 08.03.2005

BVS-Schu/Mi A 20040684

EXAM BBG Prüf- und Zertifizier GmbH



Certification body

Special services unit



Translation

2nd Supplement

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

**to the EC-Type Examination Certificate
BVS 03 ATEX E 143**

Equipment: Sensor type ViscoScope VA-300*.-**
Manufacturer: MARIMEX Industries GmbH
Address: 46238 Bottrop, Germany

Description

The sensor can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report.

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

EN 50014:1997+A1-A2 General requirements
EN 50020:2002 Intrinsic safety 'i'
EN 50284:1999 Equipment Group II Category 1G

Modified parameters

1	Process PT 100 (terminals 6, 7 and 8)				
	Voltage	Ui	DC	3	V
	Current	Ii		200	mA
	Power	Pi		600	mW
	effective internal capacitance	Ci			negligible
	effective internal inductance	Li			negligible
2	Coil PT 100 (terminals 9, 10 and 11)				
	Voltage	Ui	DC	3	V
	Current	Ii		200	mA
	Power	Pi		600	mW
	effective internal capacitance	Ci			negligible
	effective internal inductance	Li			negligible

The marking of the equipment shall include the following:

 **II 1/2G EEx ia IIC T3-T6**

Test and assessment report
BVS PP 03.2092 EG as of 11.07.2005

EXAM BBG Prüf- und Zertifizier GmbH
Bochum, dated 11. July 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, 11.07 2005
BVS-Schu/Mi A 20050383

EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special services unit