



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 159 X**

(4) **Equipment: Sensor type R\*\*\* \*\*\*\*\*Z\*\*\*\*\* and CNG050 \*\*\*\*\*Z\*\*\*\*\***

(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 01.2114 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 'i'

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the 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 IIC T1 - T6**

**Deutsche Montan Technologie GmbH**

Essen, dated 03. December 2001

Signed: Dill

DMT-Certification body

Signed: Eickhoff

Head of special services unit



(13)

Appendix to

(14)

# EC-Type Examination Certificate

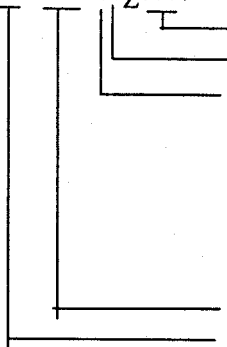
## DMT 01 ATEX E 159 X

(15) 15.1 Subject and type

Sensor type R\*\*\* \*\*\*\*\*Z\*\*\*\*\* and CNG050 \*\*\*\*\*Z\*\*\*\*\*

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

type CNG050 \*\*\*\*\*Z\*\*\*\*\*  
type R\*\*\* \*\*\*\*\*Z\*\*\*\*\*



marking without influence to the type of protection  
conduit connection  
electronic interface:  
A = local integral mounted signal processor type 700  
B = local integral mounted signal processor type 700 with extender  
C = with transmitter type \*700\*\*\*\*  
F = with transmitter type \*700\*\*\*\* with extender  
R = with junction box  
H = with junction box with extender  
marking without influence to the type of protection  
type of sensor

### 15.2 Description

The flow sensor in combination with a transmitter is used for flow measurement.

The flow sensor, which consists of magnetically excited oscillating tubes, contains as electrical components coils, resistors, temperature sensors and terminals and connectors.

The sensors type R\*\* \*\*\*\*\*A\*Z\*\*\*\*\*, type CNG050 \*\*\*\*\*A\*Z\*\*\*\*\*, type R\*\*\* \*\*\*\*\*B\*Z\*\*\*\*\* and type CNG050 \*\*\*\*\*B\*Z\*\*\*\*\* have an enclosure with an inside mounted processing device type 700 (DMT 01 ATEX E 081 U). This variation will have classification code EEx ib IIC T1-T5.

Alternatively a transmitter type \*700\*\*\*\*\* (DMT 01 ATEX E 082 X) can be mounted directly to the junction box; this variation gets the denomination

type R\*\*\* \*\*\*\*\*C\*Z\*\*\*\*\*, type CNG050 \*\*\*\*\*C\*Z\*\*\*\*\*, type R\*\*\* \*\*\*\*\*F\*Z\*\*\*\*\* and type CNG050 \*\*\*\*\*F\*Z\*\*\*\*\*

By mounting the sensor directly to the transmitter the use of the unit will be modified according to the following table:

	R025 *****C*Z*****, R025 *****F*Z***** R050 *****C*Z*****, R050 *****F*Z***** CNG050 *****C*Z*****, CNG050 *****F*Z***** R100 *****C*Z*****, R100 *****F*Z***** R200 *****C*Z*****, R200 *****F*Z*****
Transmitter type *700*11*****	EEx ib IIB+H <sub>2</sub> T1-5
Transmitter type *700*13*****	EEx ib IIC T1-5



**15.3 Parameters**

15.3.1 Type R\*\*\* \*\*\*\*\*R\*Z\*\*\*\*\*, type R\*\*\* \*\*\*\*\*H\*Z\*\*\*\*\*  
 type CNG050 \*\*\*\*\*R\*Z\*\*\*\*\* and type CNG050 \*\*\*\*\*H\*Z\*\*\*\*\*

15.3.1.1 Drive circuit (connections 1 - 2 or red and brown)

voltage	Ui	DC	11,4	V
current	Ii		2,45	A
power	Pi		2,54	W

effective internal capacitance negligible

Sensor type	Inductance [mH]	coil resistance at -40 °C [Ω]	serial resistor at -40 °C [Ω]
R025 *****R*Z***** R025 *****H*Z*****	5,83	24,1	988,8
R050 *****R*Z***** R050 *****H*Z***** CNG050 *****R*Z***** CNG050 *****R*Z*****	5,83	24,1	469,7
R100 *****R*Z***** R100 *****H*Z*****	29,9	262,1	207,7
R200 *****R*Z***** R200 *****H*Z*****	9,4	37,4	148,3

15.3.1.2 Pick-Off coil (Terminals 5/9 and 6/8 or wire color green/white and blue/grey)

voltage	Ui	DC	30	V
current	Ii		101	mA
power	Pi		750	mW

effective internal capacitance negligible

Sensor type	inductance [mH]	coil resistance at -40 °C [Ω]	serial resistor at -40 °C [Ω]
R025 *****R*Z***** R025 *****F*Z*****	6,9	105	0
R050 *****R*Z***** R050 *****F*Z***** CNG050 *****R*Z***** CNG050 *****R*Z*****	6,9	105	0
R100 *****R*Z***** R100 *****F*Z*****	6,9	105	0
R200 *****R*Z***** R200 *****F*Z*****	23,8	182,5	0

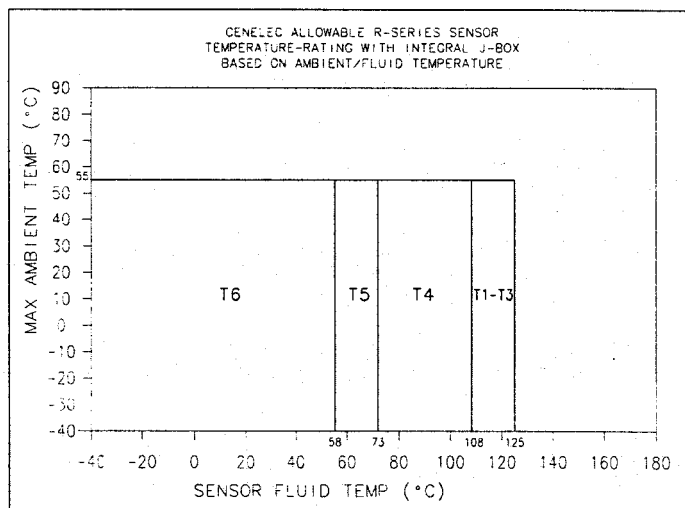
15.3.1.3 Temperature sensor circuit (terminals Klemmen 3, 4 and 7 or wires orange, yellow and violet)

voltage	Ui	DC	30	V
current	Ii		101	mA
power	Pi		750	mW
effective internal capacitance	Ci		negligible	
effective internal inductance	Li		negligible	

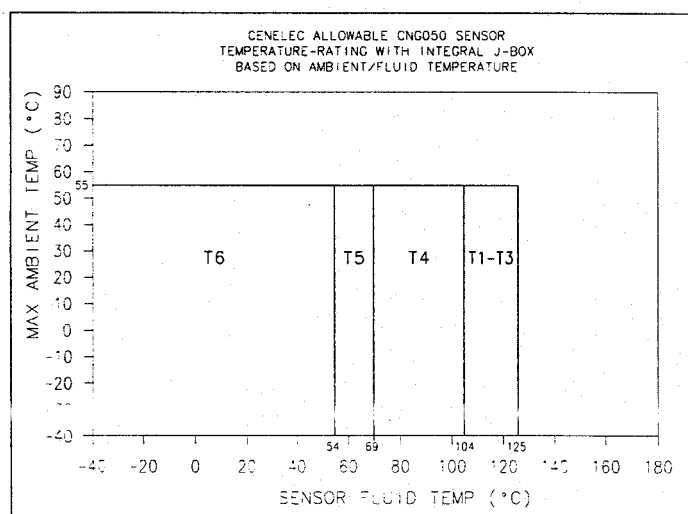
15.3.1.4 Regulation of temperature class

The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and is shown in the following graph:

15.3.1.4.1 Type R\*\*\* \*\*\*\*\*R\*Z\*\*\*\*\* , type R\*\*\* \*\*\*\*\*H\*Z\*\*\*\*\*



15.3.1.4.2 Type CNG050 \*\*\*\*\*R\*Z\*\*\*\*\* and type CNG050 \*\*\*\*\*H\*Z\*\*\*\*\*



minimum medium temperature is  $-40^{\circ}\text{C}$ .

15.3.1.5 ambient temperature range  $T_a$   $-40^{\circ}\text{C}$  up to  $+55^{\circ}\text{C}$

The use of the sensor at higher ambient temperatures is possible, provided that the ambient temperature does not exceed the maximum temperature of the medium taking into account the temperature classification and the maximum operating temperature of the sensor.



15.3.2 Type R\*\*\* \*\*\*\*\*A\*Z\*\*\*\*\*, type R\*\*\* \*\*\*\*\*B\*Z\*\*\*\*\*  
 type CNG050 \*\*\*\*\*A\*Z\*\*\*\*\* and type CNG050 \*\*\*\*\*B\*Z\*\*\*\*\*

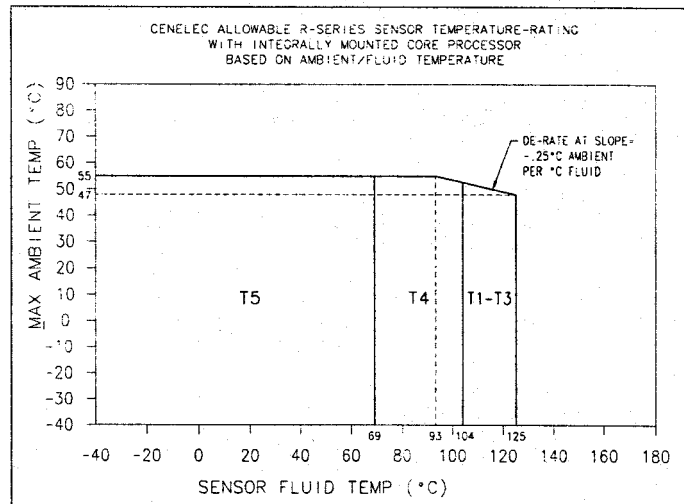
15.3.2.1 Input circuits (terminals 1 - 4)

voltage	Ui	DC	17,3	V
current	Ii		484	mA
power	Pi		2,1	W
effective internal capacitance	Ci		2200	pF
effective internal inductance	Li		30	μH

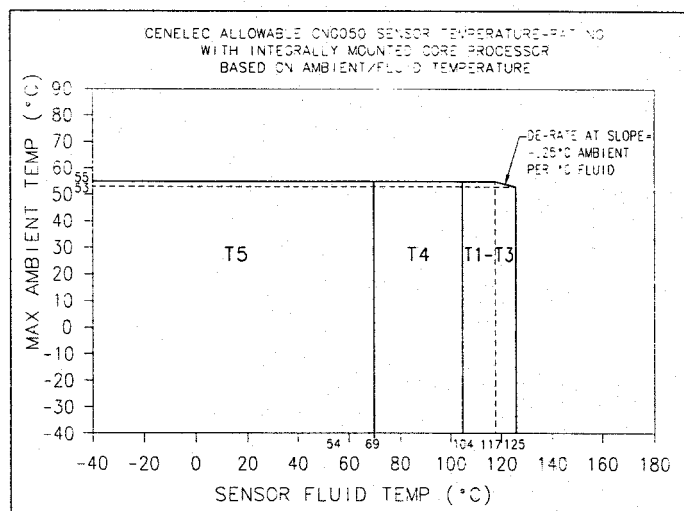
15.3.2.2 Regulation of temperature class

The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and is shown in the following graph:

15.3.2.2.1 Type R\*\*\* \*\*\*\*\*A\*Z\*\*\*\*\*, type R\*\*\* \*\*\*\*\*B\*Z\*\*\*\*\*



15.3.2.2.2 Type CNG050 \*\*\*\*\*A\*Z\*\*\*\*\* and type CNG050 \*\*\*\*\*B\*Z\*\*\*\*\*



minimum medium temperature is  $-40^{\circ}\text{C}$ .

15.3.2.3 Ambient temperature range

Ta  $-40^{\circ}\text{C}$  bis  $+55^{\circ}\text{C}$

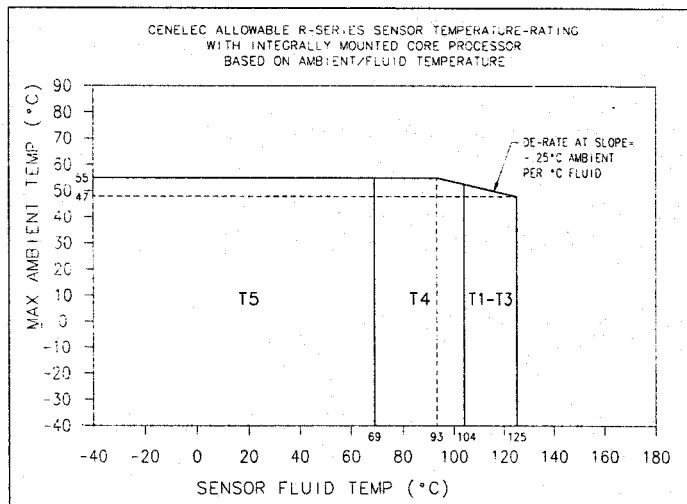


15.3.3 Type R\*\*\* \*\*\*\*\*C\*Z\*\*\*\*\*, type R\*\*\* \*\*\*\*\*F\*Z\*\*\*\*\*  
 Type CNG050 \*\*\*\*\*C\*Z\*\*\*\*\* and type CNG050 \*\*\*\*\*F\*Z\*\*\*\*\*

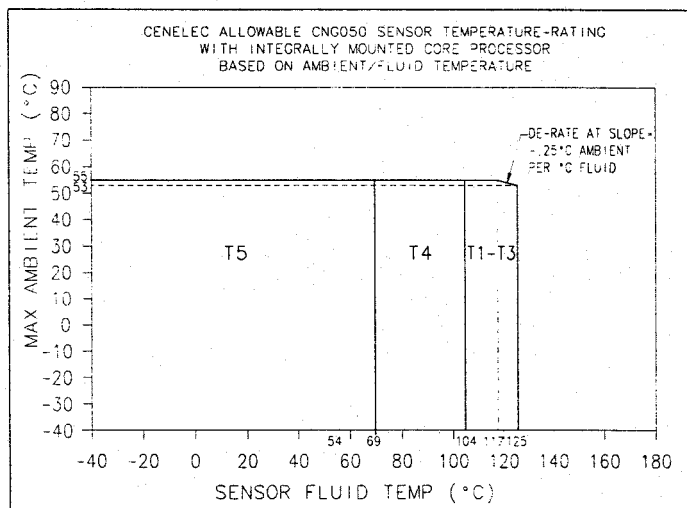
15.3.3.1 Electrical parameters see DMT 01 ATEX E 082 X for the transmitter type \*700\*\*\*\*\*

15.3.3.2 Regulation of temperature class  
 The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and is shown in the following graph:

15.3.3.2.1 Type R\*\*\* \*\*\*\*\*C\*Z\*\*\*\*\*, type R\*\*\* \*\*\*\*\*F\*Z\*\*\*\*\*



15.3.3.2.2 Type CNG050 \*\*\*\*\*C\*Z\*\*\*\*\* and type CNG050 \*\*\*\*\*F\*Z\*\*\*\*\*



minimum medium temperature is  $-40^{\circ}\text{C}$ .

15.3.3.3 Ambient temperature range  $T_a$   $-40^{\circ}\text{C}$  up to  $+55^{\circ}\text{C}$



(16) Test and assessment report  
BVS PP 01.2114 EG as of 03.12.2001

(17) Special conditions for safe use  
By mounting the sensor type R\*\*\* \*\*\*\*\*C\*Z\*\*\*\*\*, R\*\*\* \*\*\*\*\*F\*Z\*\*\*\*\*, CNG050 \*\*\*\*\*C\*Z\*\*\*\*\* oder CNG050 \*\*\*\*\*F\*Z\*\*\*\*\* directly to the transmitter \*700\*\*\*\*\* the use of the unit will be modified according to the following :

	R025 *****C*Z**** R050 *****C*Z**** CNG050 *****C*Z**** R100 *****C*Z**** R200 *****C*Z**** R025 *****F*Z**** CNG050 *****F*Z**** R050 *****F*Z**** R100 *****F*Z**** R200 *****F*Z****
Transmitter type *700*11*****	EEx ib IIB+H <sub>2</sub> T1-5
Transmitter type *700*13*****	EEx ib IIC T1-5

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, 03.12. 2001  
BVS-Schu/Mi A 20010619

**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 DMT 01 ATEX E 159 X

**Equipment:** Sensor type R\*\*\* \*\*\*\*\*Z\*\*\*\*\* und CNG050 \*\*\*\*\*Z\*\*\*\*\*

**Manufacturer:** Micro Motion, Inc.

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

Description

The sensor type R\*\*\* \*\*\*\*\*Z\*\*\*\*\* can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report and the following variation is also available:

type R\*\*\* \*\*\*\*\*I\*Z\*\*\*\*\*

Test and assessment report

BVS PP 01.2114 EG as of 20.02.2002

### Deutsche Montan Technologie GmbH

Essen, dated 20. Februar 2002

\_\_\_\_\_  
Jockers  
DMT-Certification body

\_\_\_\_\_  
Dill  
Head of 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.

45307 Essen, 20.02.2002  
BVS-Schu/Mi A 20020030

**Deutsche Montan Technologie GmbH**

\_\_\_\_\_  
*Jockers*  
DMT-Certification body

\_\_\_\_\_  
*Dill*  
Head of special services unit





# 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 159 X

**Equipment:** Sensor type R\*\*\* \*\*\*\*\*Z\*\*\*\*\* und CNG050 \*\*\*\*\*Z\*\*\*\*\*  
**Manufacturer:** Micro Motion, Inc.  
**Address:** Boulder, Co. 80301, USA

#### Description

The sensor can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report and the following variations are also available

Type R\*\*\* \*\*\*\*\*D\*Z\*\*\*\*\*, Type CNG050 \*\*\*\*\*D\*Z\*\*\*\*\*

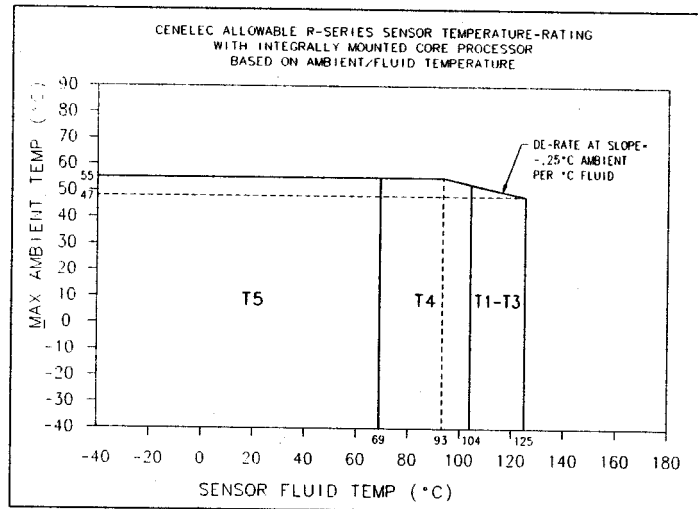
Type R\*\*\* \*\*\*\*\*E\*Z\*\*\*\*\*, Type CNG050 \*\*\*\*\*E\*Z\*\*\*\*\*

#### Parameters

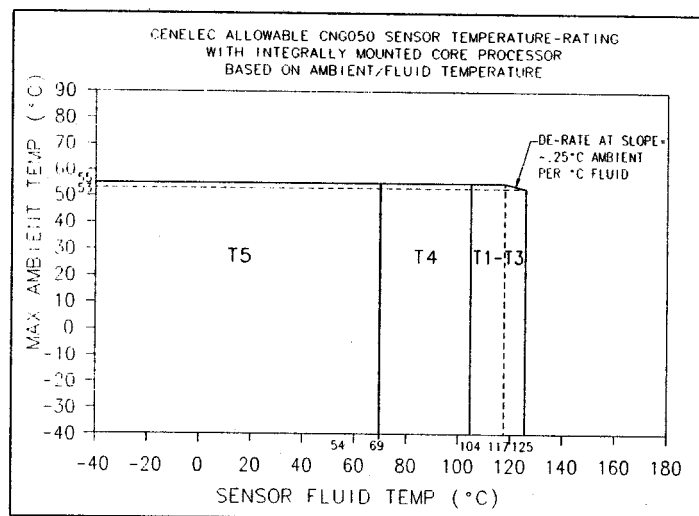
Type R\*\*\* \*\*\*\*\*D\*Z\*\*\*\*\*, type R\*\*\* \*\*\*\*\*E\*Z\*\*\*\*\*  
type CNG050 \*\*\*\*\*D\*Z\*\*\*\*\* and type CNG050 \*\*\*\*\*E\*Z\*\*\*\*\*

- 1 Input circuits (terminals 1 - 4)
- |                                |    |    |      |    |
|--------------------------------|----|----|------|----|
| voltage                        | Ui | DC | 17,3 | V  |
| current                        | Ii |    | 484  | mA |
| power                          | Pi |    | 2,1  | W  |
| effective internal capacitance | Ci |    | 2200 | pF |
| effective internal inductance  | Li |    | 30   | μH |
- 2 Regulation of temperature class  
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and is shown in the following graph:

2.1 Type R\*\*\* \*\*\*\*\*D\*Z\*\*\*\*\*, type R\*\*\* \*\*\*\*\*E\*Z\*\*\*\*\*



2.2 Type CNG050 \*\*\*\*\*D\*Z\*\*\*\*\* and type CNG050 \*\*\*\*\*E\*Z\*\*\*\*\*



minimum medium temperature is  $-40^{\circ}\text{C}$ .

3 Ambient temperature range Ta  $-40^{\circ}\text{C}$  bis  $+55^{\circ}\text{C}$

Test and assessment report  
BVS PP 01.2114 EG as of 29.04.2002



**Deutsche Montan Technologie GmbH**

Essen, dated 29. April 2002

Jockers  
DMT-Certification body

Eickhoff  
Head of 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.

45307 Essen, 29.04. 2002  
BVS-Schu/Mi A 20020140

**Deutsche Montan Technologie GmbH**

Jockers  
DMT-Certification body

Eickhoff  
Head of special services unit



DMT · Postfach 13 01 01 · D-45291 Essen

Micro Motion, Inc.  
7070 Winchester Circle

Boulder, Co.

USA

Zertifizierungsstelle

DIN EN ISO  
**9001**  
zertifiziert

Am Technologiepark 1  
D-45307 Essen  
Telefon (02 01) 1 72-14 16  
Telefax (02 01) 1 72-17 16  
e-mail: jockers@dmtd.de  
<http://www.dmt.de>

Ihr Zeichen Henk van Holland  
Ihre Nachricht 23.09.2002  
Unser Zeichen A 20020657 BVS-Schu/Mi  
Durchwahl Tel.: (0201) 172 3958  
e-mail Schumann@dmtd.de  
Datum 06.11.2002

Ladies and Gentlemen,

we added the Revision Report as of 06.11.2002 to the Test and Assessment Report  
BVS PP 01.2114 EG.

We confirm, that the Certificate


DMT 01 ATEX E 159 X as of 29.04.2002

is still valid.

Kind regards  
Deutsche Montan Technologie GmbH

Enclosures: Revision Report  
Descriptive Documents

  
(Jockes)

  
(Eickhoff)

**Deutsche  
Montan Technologie GmbH**

Aufsichtsratsvorsitzender:  
Ulrich Weber

Geschäftsführung:  
Dr.-Ing. Rolf Petry (Vors.)  
Dr.-Ing. Reinhard Bassier  
Heinz-Gerd Körner  
Dipl.-Kfm. Udo Scheer

Sitz: Essen  
Amtsgericht Essen HRB 810

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Konto 25 95 72

e-mail: [dmtd@dmtd.de](mailto:dmtd@dmtd.de)  
<http://www.dmt.de>

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 27.03.2003  
Unser Zeichen A 20030456 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 01.2114 EG.

We confirm, that the Certificate

DMT 01 ATEX E 159 X as of 03.12.2001/29.04.2002

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

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http://www.bg-exam.de



## 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 159 X

**Equipment:** Sensor type R\*\*\* \*\*\*\*\*Z\*\*\*\*\* and CNG050 \*\*\*\*\*Z\*\*\*\*\*  
**Manufacturer:** Micro Motion, Inc.  
**Address:** Boulder, Co. 80301, USA

### Description

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

The sensor type R200 \*\*\*\*\*Z\*\*\*\*\* may be produced with other coil parameters and gets the Construction Identification Code (C.I.C) A1.

The sensors may also be mounted to transmitters type Typ \*7001(2, 4 or 5)\*\*\*\*\*.

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'

### Modified parameters

1	Pick-Off coil (Terminals 5/9 and 6/8 or wire color green/white and blue/grey)				
	Voltage	U <sub>i</sub>	DC	30	V
	Current	I <sub>i</sub>		101	mA
	Power	P <sub>i</sub>		750	mW

effective internal capacitance

negligible

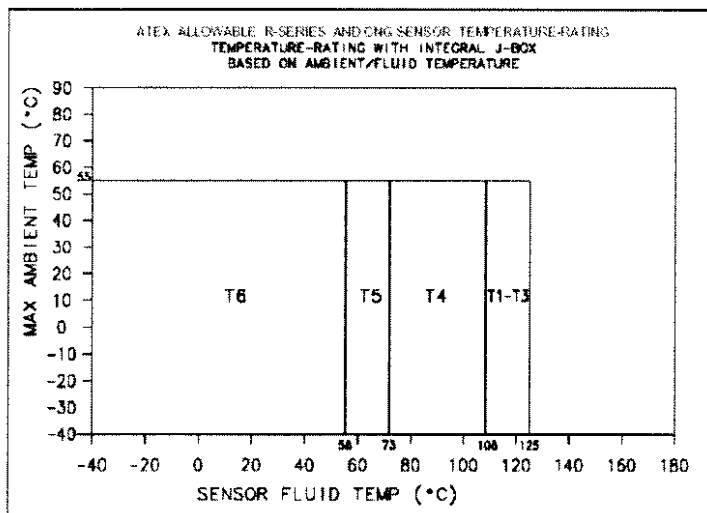
Sensor type	Inductance [mH]	Coil resistance at -40 °C [ $\Omega$ ]	Serial resistor at -40 °C [ $\Omega$ ]
R025 *****R*Z***** R025 *****H*Z*****	6,9	105	0
R050 *****R*Z***** R050 *****H*Z***** CNG050 *****R*Z***** CNG050 *****H*Z*****	6,9	105	0
R100 *****R*Z***** R100 *****H*Z*****	6,9	105	0
R200 *****R*Z***** R200 *****H*Z*****	23,8	182,5	0
R200 *****R*Z***** CIC A1 R200 *****H*Z***** CIC A1	12,4	128,4	569,3

All other electrical parameters leave unchanged.

## 2 Regulation of temperature class

The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and is shown in the following graph:

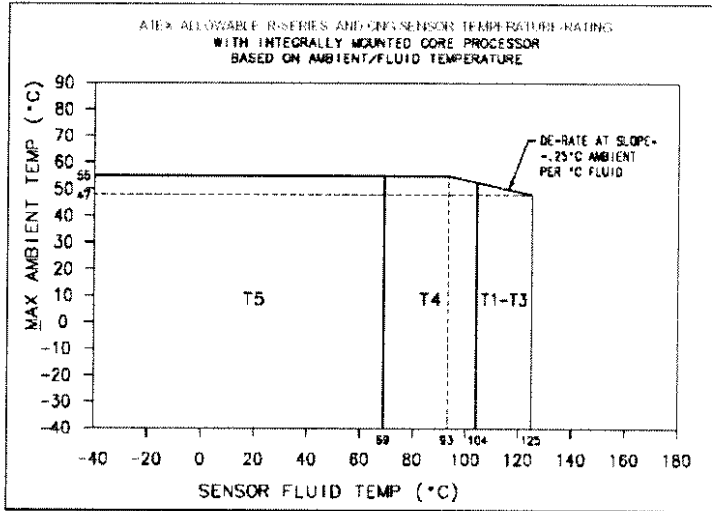
### 2.1 Type (R\*\*\* or CNG050) \*\*\*\*\*(R or H)\*Z\*\*\*\*\*



Minimum medium temperature is  $-40\text{ °C}$ .

The use of the sensor at higher ambient temperatures is possible, provided that the ambient temperature does not exceed the maximum temperature of the medium taking into account the temperature classification and the maximum operating temperature of the sensor.

2.2 Type (R\*\*\* or CNG050) \*\*\*\*\*( A, B, D, E, Q, V, W or Y)\*Z\*\*\*\*\*

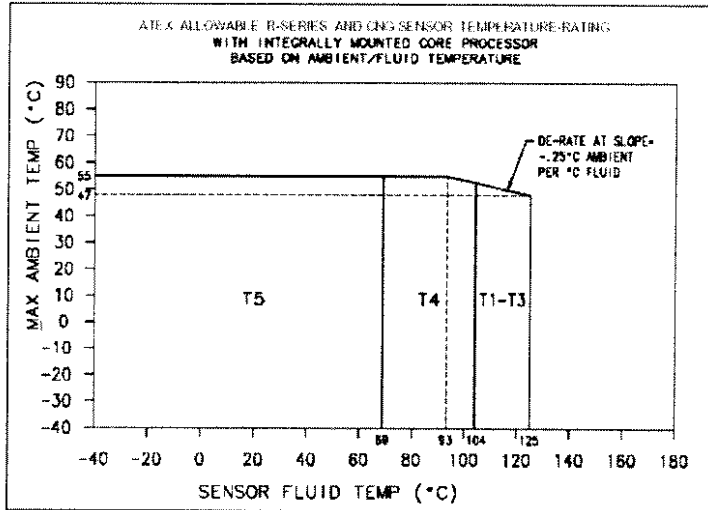


Ambient temperature range

Ta

-40 °C up to +55 °C

2.3 Type (R\*\*\* or CNG050) \*\*\*\*\*(C or F)\*Z\*\*\*\*\*



Ambient temperature range

Ta

-40 °C up to +55 °C



Special conditions for safe use

By mounting the sensor type R\*\*\* \*\*\*\*C\*Z\*\*\*\*, R\*\*\* \*\*\*\*F\*Z\*\*\*\*, CNG050 \*\*\*\*C\*Z\*\*\*\* oder CNG050 \*\*\*\*F\*Z\*\*\*\* directly to the transmitter \*700\*\*\*\*\* the use of the unit will be modified according to the following :

	R025 ****C*Z**** R050 ****C*Z**** CNG050 ****C*Z**** R100 ****C*Z**** R200 ****C*Z**** R025 ****F*Z**** CNG050 ****F*Z**** R050 ****F*Z**** R100 ****F*Z**** R200 ****F*Z****
Transmitter type *700*1 <sup>1)</sup> *****	EEx ib IIB+H <sub>2</sub> T1-5
Transmitter type *700*1 <sup>2)</sup> *****	EEx ib IIC T1-5

- 1) At this place the numeral 1 or 2 will be inserted.  
2) At this place the numeral 3, 4 or 5 will be inserted.

Test and assessment report  
BVS PP 01.2114 EG as of 26.05.2004

**EXAM BBG Prüf- und Zertifizier GmbH**  
Bochum, dated 26. May 2004

Signed: Dr. Jockers

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

Signed: Dr. Eickhoff

\_\_\_\_\_  
Special services

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, 26. May 2004  
BVS-Schu/Kw A 20040054

**EXAM BBG Prüf- und Zertifizier GmbH**

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

  
\_\_\_\_\_  
Special services



**Translation**

**4<sup>th</sup> Supplement**

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

**to the EC-Type Examination Certificate  
DMT 01 ATEX E 159 X**

**Equipment:** Sensor type R\*\*\* \*\*\*\*\*Z\*\*\*\*\* and CNG050 \*\*\*\*\*Z\*\*\*\*\*

**Manufacturer:** Micro Motion, Inc.

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

Description

The sensor type R\*\*\* \*\*\*\*\*Z\*\*\*\*\* and CNG050 \*\*\*\*\*Z\*\*\*\*\*meets as well category 2D

The sensors can also have an alternative 9-wire feed-through.

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 50281-1-1:1998+A1 Dust explosion protection

Marking of the sensors:

Type	Type of protection gas	Type of protection dust
R025***** (R oder H) *Z*****	EEx ib IIC T1-T6	IP65 T 147 °C – T 80 °C
R050***** (R oder H) *Z*****	EEx ib IIC T1-T6	IP65 T 147 °C – T 80 °C
CNG050***** (R oder H) *Z*****	EEx ib IIC T1-T6	IP65 T 147 °C – T 80 °C
R100***** (R oder H) *Z*****	EEx ib IIC T1-T6	IP65 T 147 °C – T 80 °C
R200***** (R oder H) *Z*****	EEx ib IIC T1-T6	IP65 T 147 °C – T 80 °C
R200***** (R oder H) *Z***** CIC A1	EEx ib IIC T1-T6	IP65 T 147 °C – T 80 °C
R025***** (A, B, D, E, Q, V, W, Y) *Z*****	EEx ib IIC T1-T5	IP65 T 151 °C – T 95 °C
R050***** (A, B, D, E, Q, V, W, Y) *Z*****	EEx ib IIC T1-T5	IP65 T 151 °C – T 95 °C
CNG050***** (A, B, D, E, Q, V, W, Y) *Z*****	EEx ib IIC T1-T5	IP65 T 151 °C – T 95 °C
R100***** (A, B, D, E, Q, V, W, Y) *Z*****	EEx ib IIC T1-T5	IP65 T 151 °C – T 95 °C
R200***** (A, B, D, E, Q, V, W, Y) *Z*****	EEx ib IIC T1-T5	IP65 T 151 °C – T 95 °C
R200***** (A, B, D, E, Q, V, W, Y) *Z***** CIC A1	EEx ib IIC T1-T5	IP65 T 151 °C – T 95 °C

Parameter

Type R\*\*\* \*\*\*\*\*R\*Z\*\*\*\*\*, CNG050 \*\*\*\*\*R\*Z\*\*\*\*\*, R\*\*\* \*\*\*\*\*H\*Z\*\*\*\*\*  
and type CNG050 \*\*\*\*\*H\*Z\*\*\*\*\*

Drive circuit (connections 1 - 2 or wires red and brown)

voltage	Ui	DC	11,4	V
current	Ii		2,45	A
power	Pi		2,54	W

effective internal capacitance negligible

Sensor type	Inductance [mH]	Coil resistance at -40 °C [Ω]	Serial resistor at -40 °C [Ω]
R025 *****R*Z***** R025 *****H*Z*****	5,83	24,1	988,8
R050 *****R*Z***** R050 *****H*Z*****	5,83	24,1	469,7
CNG050 *****R*Z***** CNG050 *****H*Z*****	5,83	24,1	469,7
R100 *****R*Z***** R100 *****H*Z*****	29,9	262,1	207,7
R200 *****R*Z***** R200 *****H*Z*****	9,4	37,4	148,3

Pick-Off coil (Terminals 5/9 and 6/8 or wires green/white and blue/grey)

voltage	Ui	DC	30	V
current	Ii		101	mA
power	Pi		750	mW

effective internal capacitance negligible

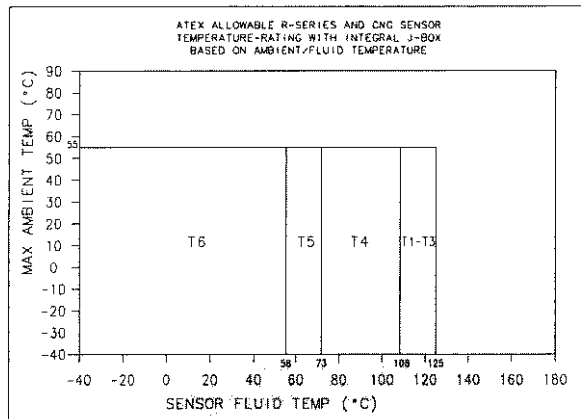
Sensor type	Inductance [mH]	Coil resistance at -40 °C [Ω]	Serial resistor at -40 °C [Ω]
R025 *****R*Z***** R025 *****H*Z*****	6,9	105	0
R050 *****R*Z***** R050 *****H*Z*****	6,9	105	0
CNG050 *****R*Z***** CNG050 *****H*Z*****	6,9	105	0
R100 *****R*Z***** R100 *****H*Z*****	6,9	105	0
R200 *****R*Z***** R200 *****H*Z*****	23,8	182,5	0
R200 *****R*Z***** CIC A1 R200 *****H*Z***** CIC A1	12,4	128,4	569,3

temperature circuits (Terminals 5/9 and 6/8 or wires orange, yellow and violet)

voltage	Ui	DC	30	V
current	Ii		101	mA
power	Pi		750	mW
effective internal capacitance	Ci	negligible		
effective internal inductance	Li	negligible		

Temperature class/ max. surface temperature T

The classification into a temperature class/determination of the maximum surface temperature T depend on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

The maximum surface temperature T for dust is as follows: T6: 80 °C, T5: 95 °C, T4: 130 °C, T3 to T1: 147 °C.

ambient temperature range

Ta -40 °C bis +55 °C

The use of the sensor at higher ambient temperatures is possible, provided that the ambient temperature does not exceed the maximum temperature of the medium taking into account the temperature classification and the maximum operating temperature of the sensor.

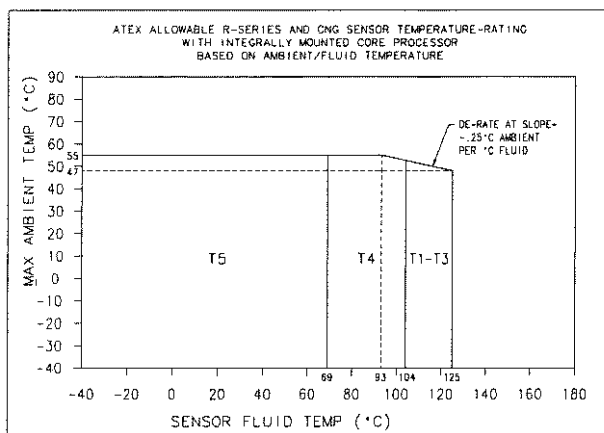
Type R\*\*\* \*\*\*\*\*(A,B,D,E,Q,V,W,Y)\*Z\*\*\*\*\* and CNG050 \*\*\*\*\*(A,B,D,E,Q,V,W,Y)\*Z\*\*\*\*\*

input circuits ( terminals 1 - 4)

voltage	Ui	DC	17,3	V
current	Ii		484	mA
power	Pi		2,1	W
effective internal capacitance	Ci		2200	pF
effective internal inductance	Li		30	µH

Temperature class/ max. surface temperature T

The classification into a temperature class/determination of the maximum surface temperature T depend on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3 to T1: 151 °C.

ambient temperature range

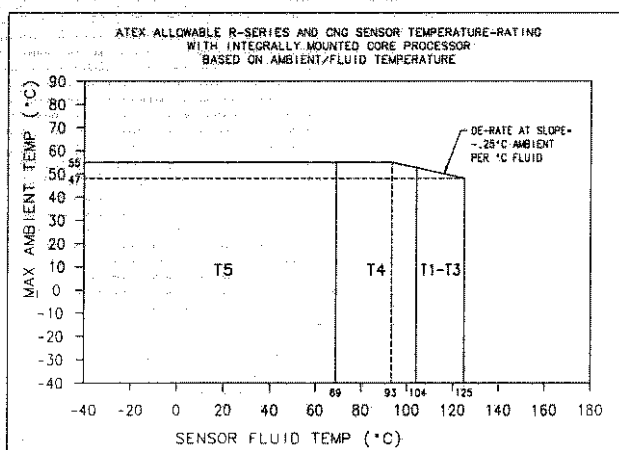
Ta

-40 °C bis +55 °C

Type R\*\* \*(C oder - or F)\*Z\*\*\*\*\* und - and CNG050 \*(C oder - or F)\*Z\*\*\*\*\*

Electrical parameters see BVS PP 01.2061 EG for the transmitter type \*700\*\*\*\*\*

The classification into a temperature class/determination of the maximum surface temperature T depend on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



Hinweis: Der obige Graph dient zur Bestimmung der Temperaturklasse bei definierter Medien- und Umgebungstemperatur. Die max. Oberflächentemperatur T bei Staubanwendungen berechnet sich daraus wie folgt: T5: 95 °C, T4: 130 °C, T3 bis T1: 151°C.

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3 to T1: 151 C.

ambient temperature range

Ta

-40 °C bis +55 °C

Special conditions for safe use

By mounting the sensor type R\*\*\* \*\*\*\*\*(C or F)\*Z\*\*\*\*\* or R\*\*\* \*\*\*\*\*(F)\*Z\*\*\*\*\* or CNG050 \*\*\*\*\*(C or F)\*Z\*\*\*\*\* or CNG050 \*\*\*\*\*(F)\*Z\*\*\*\*\*, directly to the transmitter \*700\*\*\*\*\* the use of the unit will be modified according to the following:

Transmitter type	R025 *****(C or F)*Z***** R050 *****(C or F)*Z***** CNG050 *****(C or F)*Z***** R100 *****(C or F)*Z***** R200 *****(C or F)*Z***** R200 *****(C or F)*Z***** CIC A1
*700*1 <sup>1)</sup> *****	EEx ib IIB+H <sub>2</sub> T1-T5 IP65 T 151 °C – T 95 °C
*700*1 <sup>2)</sup> *****	EEx ib IIC T1-T5 IP65 T 151 °C – T 95 °C

- 1) At this place the numeral 1 or 2 will be inserted.  
2) At this place the numeral 3, 4 or 5 will be inserted.

Test and assessment report  
BVS PP 01.2114 EG as of 01.04.2005

**EXAM BBG Prüf- und Zertifizier GmbH**  
Bochum, dated 01. April 2005

Signed: Dr. Jockers

Signed: Schumann

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

\_\_\_\_\_  
Special services

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, 01.04.2005  
BVS-Hk/Mi A 20040528

**EXAM BBG Prüf- und Zertifizier GmbH**

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

  
\_\_\_\_\_  
Special services



**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 159 X**

**Equipment:** Sensor type R\*\*\* \*\*\*\*\*Z\*\*\*\* and CNG050 \*\*\*\*\*Z\*\*\*\*

**Manufacturer:** Micro Motion, Inc.

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

Description

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

The sensors type R025 \*\*\*\*\*Z\*\*\*\*, type R050 \*\*\*\*\*Z\*\*\*\*, type R100 \*\*\*\*\*Z\*\*\*\* and type CNG050 \*\*\*\*\*Z\*\*\*\* may be produced with other coil parameters and get the Construction Identification Code (C.I.C) A2.

The sensors can be manufactured with modified electronic options:

type R\*\*\* \*\*\*\*\* (2, 3, 4, 5, 6, 7, 8, 9, S)\*Z\*\*\*\*  
type CNG050 \*\*\*\*\* (2, 3, 4, 5, 6, 7, 8, 9, S)\*Z\*\*\*\*

Instead of the version with junction box (types R\*\*\* \*\*\*\*\* (R, H or S)\*Z\*\*\*\* and CNG050 \*\*\*\*\* (R, H or S)\*Z\*\*\*\*) an enclosure with an integral mounted signal processing device type 700 can be used; this variation gets the denomination type R\*\*\* \*\*\*\*\* (A, B, D or E)\*Z\*\*\*\* or CNG050 \*\*\*\*\* (A, B, D or E)\*Z\*\*\*\* for a stainless steel (SS) enclosure and type R\*\*\* \*\*\*\*\* (Q, V, W or Y)\*Z\*\*\*\* or CNG050 \*\*\*\*\* (Q, V, W or Y)\*Z\*\*\*\* for an aluminium enclosure.

When used with an integral mounted enhanced signal processing device type 800; the variation gets the denomination type R\*\*\* \*\*\*\*\* (3, 5, 7 or 9)\*Z\*\*\*\* or CNG050 \*\*\*\*\* (3, 5, 7 or 9)\*Z\*\*\*\* for a stainless steel (SS) enclosure and type R\*\*\* \*\*\*\*\* (2, 4, 6 or 8)\*Z\*\*\*\* or CNG050 \*\*\*\*\* (2, 4, 6 or 8)\*Z\*\*\*\* for an aluminium enclosure.

The maximum fluid temperature and the minimum fluid / ambient temperature has been modified.

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 50281-1-1:1998 +A1 Dust explosion protection

Marking of sensors

Type	Type of protection gas	Type of protection dust
R025***** <sup>1)</sup> *Z*****	II 2G EEx ib IIC T1-T6	II 2D IP65 T <sup>3)</sup> °C
R050***** <sup>1)</sup> *Z*****	II 2G EEx ib IIC T1-T6	II 2D IP65 T <sup>3)</sup> °C
CNG050***** <sup>1)</sup> *Z*****	II 2G EEx ib IIC T1-T6	II 2D IP65 T <sup>3)</sup> °C
R100***** <sup>1)</sup> *Z*****	II 2G EEx ib IIC T1-T6	II 2D IP65 T <sup>3)</sup> °C
R200***** <sup>1)</sup> *Z*****	II 2G EEx ib IIC T1-T6	II 2D IP65 T <sup>3)</sup> °C
R025 ***** <sup>1)</sup> *Z*****	II 2G EEx ib IIC T1-T6	
R025 ***** <sup>1)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	
R050 ***** <sup>1)</sup> *Z*****	II 2G EEx ib IIC T1-T6	
R050 ***** <sup>1)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	
CNG050 ***** <sup>1)</sup> *Z*****	II 2G EEx ib IIC T1-T6	
CNG050 ***** <sup>1)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	
R100 ***** <sup>1)</sup> *Z*****	II 2G EEx ib IIC T1-T6	
R100 ***** <sup>1)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	
R200 ***** <sup>1)</sup> *Z*****	II 2G EEx ib IIC T1-T6	
R200 ***** <sup>1)</sup> *Z***** C.I.C A1	II 2G EEx ib IIC T1-T6	
R025***** <sup>2)</sup> *Z*****	II 2G EEx ib IIC T1-T5	II 2D IP65 T <sup>3)</sup> °C
R025***** <sup>2)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T5	II 2D IP65 T <sup>3)</sup> °C
R050***** <sup>2)</sup> *Z*****	II 2G EEx ib IIC T1-T5	II 2D IP65 T <sup>3)</sup> °C
R050***** <sup>2)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T5	II 2D IP65 T <sup>3)</sup> °C
CNG050***** <sup>2)</sup> *Z*****	II 2G EEx ib IIC T1-T5	II 2D IP65 T <sup>3)</sup> °C
CNG050***** <sup>2)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T5	II 2D IP65 T <sup>3)</sup> °C
R100***** <sup>2)</sup> *Z*****	II 2G EEx ib IIC T1-T5	II 2D IP65 T <sup>3)</sup> °C
R100***** <sup>2)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T5	II 2D IP65 T <sup>3)</sup> °C
R200***** <sup>2)</sup> *Z*****	II 2G EEx ib IIC T1-T5	II 2D IP65 T <sup>3)</sup> °C
R200***** <sup>2)</sup> *Z***** C.I.C A1	II 2G EEx ib IIC T1-T5	II 2D IP65 T <sup>3)</sup> °C

For sensors with J-box connected to non-MVD transmitters (i.e. 9703) is valid:

Type	Type of protection gas	Min. ambient/ fluid temp. gas	Type of protection dust
R025***** <sup>1)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	-68 °C	II 2D IP65 T <sup>3)</sup> °C
R050***** <sup>1)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	-68 °C	II 2D IP65 T <sup>3)</sup> °C
CNG050***** <sup>1)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	-68 °C	II 2D IP65 T <sup>3)</sup> °C
R100***** <sup>1)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	-68 °C	II 2D IP65 T <sup>3)</sup> °C
R200***** <sup>1)</sup> *Z***** C.I.C A1	II 2G EEx ib IIC T1-T6	-90 °C	II 2D IP65 T <sup>3)</sup> °C

For sensors with J-box connected to MVD transmitters (i.e.1700/2700) is valid:

Type	Type of protection gas	Min. ambient/ fluid temp. gas	Type of protection dust
R025***** <sup>1)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	-83 °C	II 2D IP65 T <sup>3)</sup> °C
R050***** <sup>1)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	-83 °C	II 2D IP65 T <sup>3)</sup> °C
CNG050***** <sup>1)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	-83 °C	II 2D IP65 T <sup>3)</sup> °C
R100***** <sup>1)</sup> *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	-83 °C	II 2D IP65 T <sup>3)</sup> °C
R200***** <sup>1)</sup> *Z***** C.I.C A1	II 2G EEx ib IIC T1-T6	-138 °C	II 2D IP65 T <sup>3)</sup> °C

1) At this place the letter R, H or S will be inserted.

2) At this place the numeral 2, 3, 4, 5, 6, 7, 8 or 9 or the letter A, B, D, E, Q, V, W or Y will be inserted.

3) Max. surface temperature T for dust see temperature graphs and manufacturer's instructions. Min. ambient and process temperature for dust is -40 °C.



Parameters

1 Type R\*\*\* \*\*\*\*\*(R, H or S)\*Z\*\*\*\*\* or CNG050 \*\*\*\*\*(R, H or S)\*Z\*\*\*\*\*

1.1 Drive circuit (connections 1 - 2 or red and brown)

Voltage	Ui	DC	11,4	V
Current	Ii		2,45	A
Power	Pi		2,54	W

effective internal capacitance

negligible

Sensor type	Inductance [mH]	Coil resistance [ $\Omega$ ]	Serial resistor [ $\Omega$ ]	Minimum Ambient/Fluid Temperature [ $^{\circ}\text{C}$ ]
R025 *****(R, H, S)*Z*****	5,83	24,1	988,8	-40 $^{\circ}\text{C}$
R025 *****(R, H, S)*Z***** CIC A2	7,5	84,95	569,0	-68 $^{\circ}\text{C}$
		77,27	568,83	-83 $^{\circ}\text{C}$
R050 *****(R, H, S)*Z*****	5,83	24,1	469,7	-40 $^{\circ}\text{C}$
R050 *****(R, H, S)*Z***** CIC A2	7,5	84,95	569,0	-68 $^{\circ}\text{C}$
		77,27	568,83	-83 $^{\circ}\text{C}$
CNG050 *****(R, H, S)*Z*****	5,83	24,1	469,7	-40 $^{\circ}\text{C}$
CNG050 *****(R, H, S)*Z***** CIC A2	7,5	84,95	569,0	-68 $^{\circ}\text{C}$
		77,27	568,83	-83 $^{\circ}\text{C}$
R100 *****(R, H, S)*Z*****	29,9	262,1	207,7	-40 $^{\circ}\text{C}$
R100 *****(R, H, S)*Z***** CIC A2	7,5	84,95	71,12	-68 $^{\circ}\text{C}$
		77,27	71,1	-83 $^{\circ}\text{C}$
R200 *****(R, H, S)*Z*****	9,4	37,4	148,3	-40 $^{\circ}\text{C}$
R200 *****(R, H, S)*Z***** CIC A1	9,4	37,4	148,3	-40 $^{\circ}\text{C}$
		27,5	148,17	-90 $^{\circ}\text{C}$
		18,43	148,03	-138 $^{\circ}\text{C}$



1.2 Pick-Off coil (Terminals 5/9 and 6/8 or wires green/white and blue/grey)

Voltage	U <sub>i</sub>	DC	30	V
Current	I <sub>i</sub>		101	mA
Power	P <sub>i</sub>		750	mW

effective internal capacitance negligible

Sensor type	Inductance [mH]	Coil resistance[Ω]	Serial resistor [Ω]	Minimum Ambient/Fluid Temperature [°C]
R025 ***** (R, H, S)*Z*****	6,9	105	0	-40°C
R025 ***** (R, H, S)*Z***** CIC A2	7,5	84,95	0 - 569	-68°C
		77,27	0 - 568,83	-83°C
R050 ***** (R, H, S)*Z*****	6,9	105	0	-40°C
R050 ***** (R, H, S)*Z***** CIC A2	7,5	84,95	0 - 569	-68°C
		77,27	0 - 568,83	-83°C
CNG050 ***** (R, H, S)*Z*****	6,9	105	0	-40°C
CNG050 ***** (R, H, S)*Z***** CIC A2	7,5	84,95	0 - 569	-68°C
		77,27	0 - 568,83	-83°C
R100 ***** (R, H, S)*Z*****	6,9	105	0	-40°C
R100 ***** (R, H, S)*Z***** CIC A2	7,5	84,95	0 - 569	-68°C
		77,27	0 - 568,83	-83°C
R200 ***** (R, H, S)*Z*****	23,8	182,5	0	-40°C
R200 ***** (R, H, S)*Z***** CIC A1	12,4	128,4	0 - 569,3	-40°C
		94,3	0 - 568,73	-90°C
		63,21	0 - 568,19	-138°C

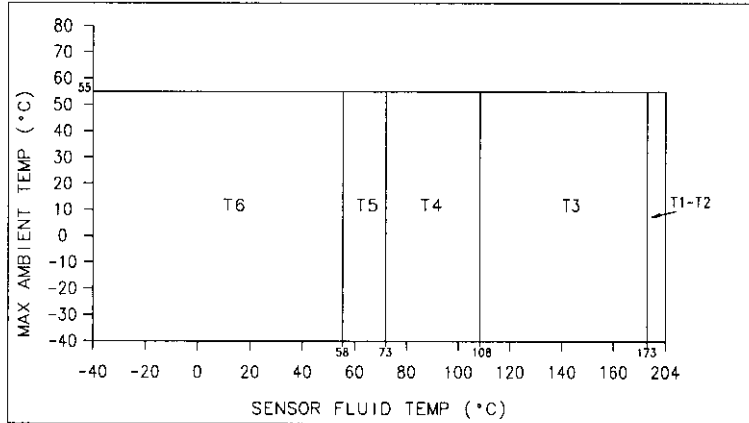
1.3 Temperature circuits (terminals 3, 4 and 7 or wires orange, yellow and violet)

Voltage	U <sub>i</sub>	DC	30	V
Current	I <sub>i</sub>		101	mA
Power	P <sub>i</sub>		750	mW
effective internal capacitance	C <sub>i</sub>	negligible		
effective internal inductance	L <sub>i</sub>	negligible		

1.4 Temperature class/ max. surface temperature T  
The classification into a temperature class/determination of the maximum surface temperature T depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:

1.4.1 For types R025 \*\*\*\*\* (R, H or S)\*Z\*\*\*\*\*, R050 \*\*\*\*\* (R, H or S)\*Z\*\*\*\*\*, CNG050 \*\*\*\*\* (R, H or S)\*Z\*\*\*\*\*, R100 \*\*\*\*\* (R, H or S)\*Z\*\*\*\*\* and R200 \*\*\*\*\* (R, H or S)\*Z\*\*\*\*\* without Construction Identification Code (C.I.C) marking

1.4.1 For types R025 \*\*\*\*\*(R, H or S)\*Z\*\*\*\*\*, R050 \*\*\*\*\*(R, H or S)\*Z\*\*\*\*\*, CNG050 \*\*\*\*\*(R, H or S)\*Z\*\*\*\*\*, R100 \*\*\*\*\*(R, H or S)\*Z\*\*\*\*\* and R200 \*\*\*\*\*(R, H or S)\*Z\*\*\*\*\* without Construction Identification Code (C.I.C) marking



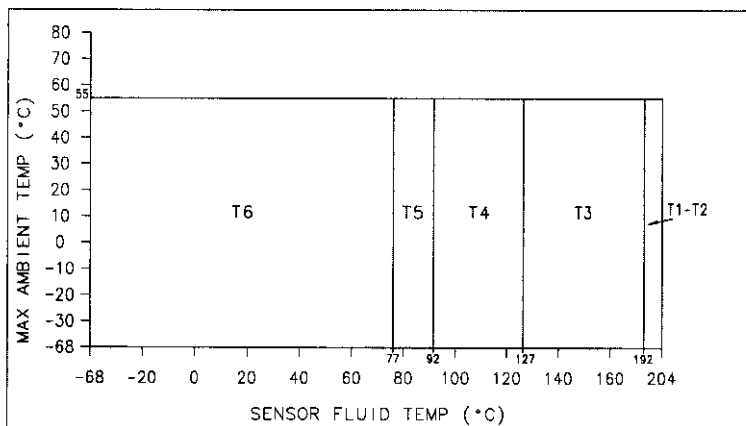
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T6: 80 °C, T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 226 °C.

Ambient temperature range

Ta -40 °C up to +55 °C

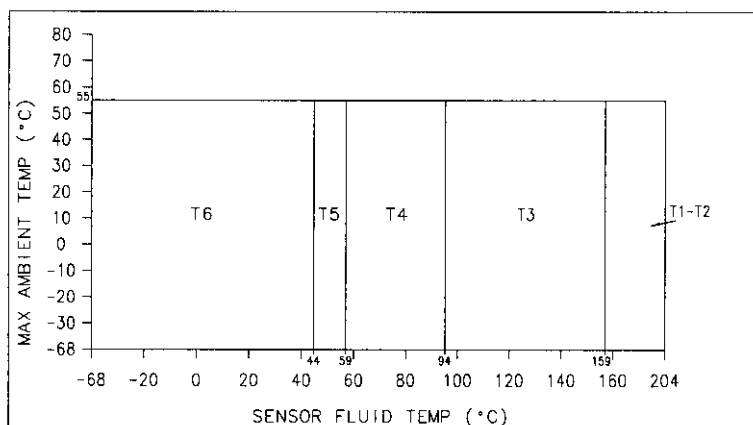
The use of the sensor at higher ambient temperatures is possible, provided that the ambient temperature does not exceed the maximum temperature of the medium taking into account the temperature classification and the maximum operating temperature of the sensor.

1.4.2 For types R025 \*\*\*\*\*(R, H or S)\*Z\*\*\*\*\*, R050 \*\*\*\*\*(R, H or S)\*Z\*\*\*\*\* and CNG050 \*\*\*\*\*(R, H or S)\*Z\*\*\*\*\* with Construction Identification Code (C.I.C) marking A2 with J-box connected to non-MVD transmitters (i.e. 9703)



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T6: 80 °C, T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 207 °C. The minimum ambient and process fluid temperature allowed for dust is -40 °C.

1.4.3 For type R100 \*\*\*\*\* (R, H or S)\*Z\*\*\*\*\* with Construction Identification Code (C.I.C) marking A2 with J-box connected to non-MVD transmitters (i.e. 9703)

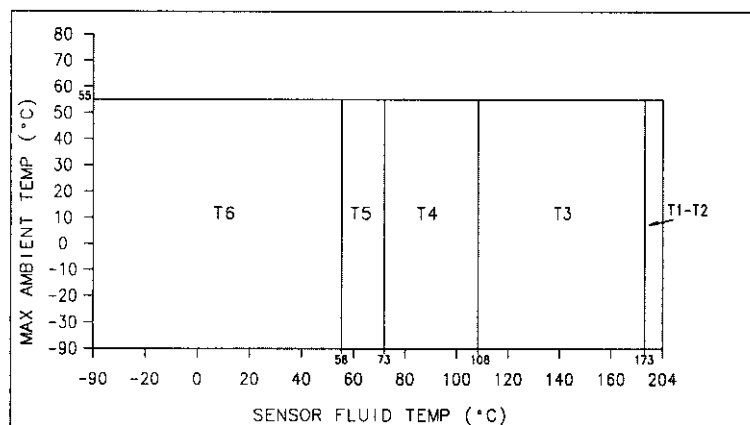


Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T6: 80 °C, T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 240 °C. The minimum ambient and process fluid temperature allowed for dust is -40 °C.

Ambient temperature range Ta -68 °C up to +55 °C

The use of the sensor at higher ambient temperatures is possible, provided that the ambient temperature does not exceed the maximum temperature of the medium taking into account the temperature classification and the maximum operating temperature of the sensor.

1.4.4 For type R200 \*\*\*\*\* (R, H or S)\*Z\*\*\*\*\* with Construction Identification Code (C.I.C) marking A1 with J-box connected to non-MVD transmitters (i.e. 9703)

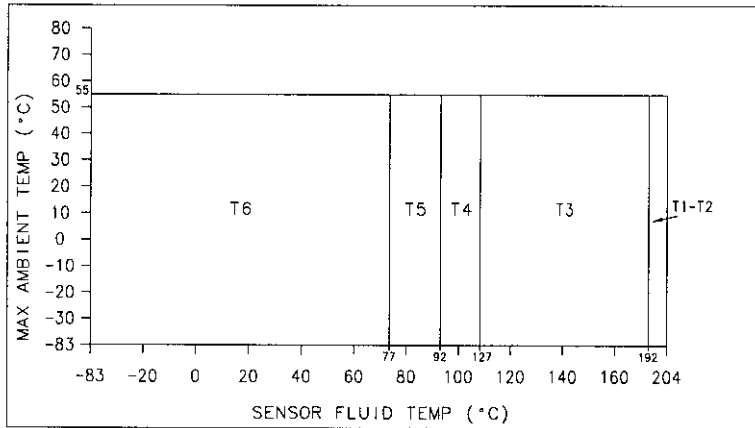


Note: Use the above graph to determine the temperature class for a given fluid and Ambient temperature. The maximum surface temperature T for dust is as follows: T6: 80 °C, T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 226 °C. The minimum Ambient and process fluid temperature allowed for dust is -40 °C.

Ambient temperature range Ta -90 °C up to +55 °C

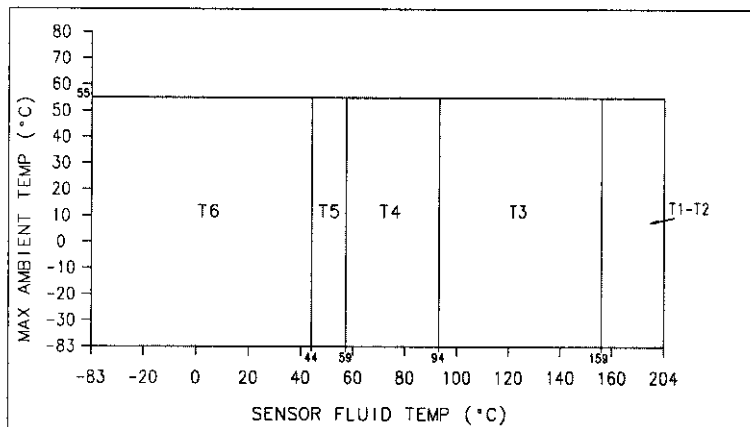
The use of the sensor at higher ambient temperatures is possible, provided that the ambient temperature does not exceed the maximum temperature of the medium taking into account the temperature classification and the maximum operating temperature of the sensor.

1.4.5 For types R025 \*\*\*\*\* (R, H or S) \*Z\*\*\*\*\*, R050 \*\*\*\*\* (R, H or S) \*Z\*\*\*\*\* and CNG050 \*\*\*\*\* (R, H or S) \*Z\*\*\*\*\* with Construction Identification Code (C.I.C) marking A2 with J-box connected to MVD transmitters (i. e. 1700/2700)



Note: Use the above graph to determine the temperature class for a given fluid and Ambient temperature. The maximum surface temperature T for dust is as follows: T6: 80 °C, T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 226 °C. The minimum Ambient and process fluid temperature allowed for dust is -40°C.

1.4.6 For type R100 \*\*\*\*\* (R, H or S) \*Z\*\*\*\*\* with Construction Identification Code (C.I.C) marking A2 with J-box connected to MVD transmitters (i.e. 1700/2700)



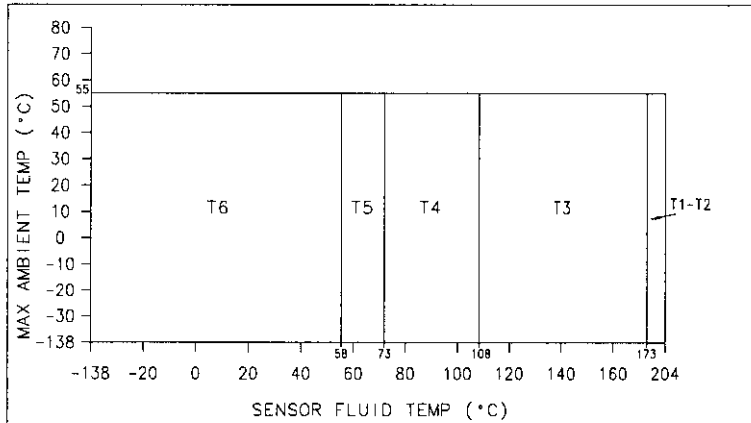
Note: Use the above graph to determine the temperature class for a given fluid and Ambient temperature. The maximum surface temperature T for dust is as follows: T6: 80 °C, T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 226 °C. The minimum Ambient and process fluid temperature allowed for dust is -40 °C.

Ambient temperature range

Ta -83 °C up to +55 °C

The use of the sensor at higher ambient temperatures is possible, provided that the ambient temperature does not exceed the maximum temperature of the medium taking into account the temperature classification and the maximum operating temperature of the sensor.

1.4.7 For type R200 \*\*\*\*\*(R, H or S)\*Z\*\*\*\*\* with Construction Identification Code (C.I.C) marking A1 with J-box connected to MVD transmitters (i.e. 1700/2700)



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T6: 80 °C, T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 226 °C. The minimum Ambient and process fluid temperature allowed for dust is -40 °C.

Ambient temperature range Ta -138 °C up to +55 °C

The use of the sensor at higher ambient temperatures is possible, provided that the ambient temperature does not exceed the maximum temperature of the medium taking into account the temperature classification and the maximum operating temperature of the sensor.

2 Type R\*\*\* \*(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W or Y)\*Z\*\*\*\*\* and CNG050 \*(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W or Y)\*Z\*\*\*\*\*

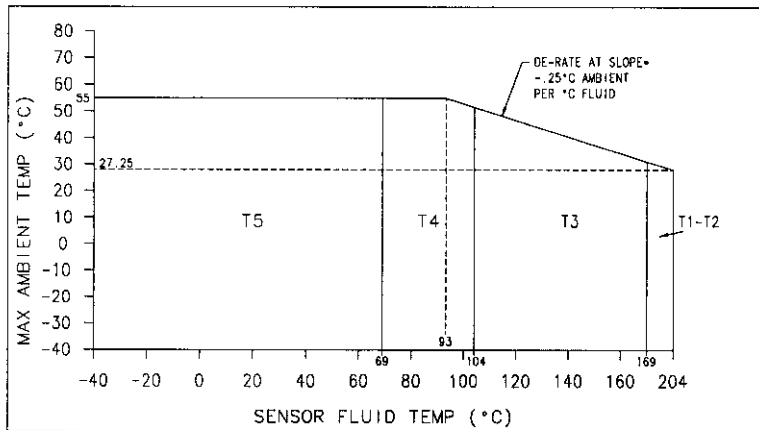
2.1 Input circuits (terminals 1 - 4)

Voltage	Ui	DC	17,3	V
Current	Ii		484	mA
Power	Pi		2,1	W
effective internal capacitance	Ci		2200	pF
effective internal inductance	Li		30	μH

2.2 Temperature class/ max. surface temperature T

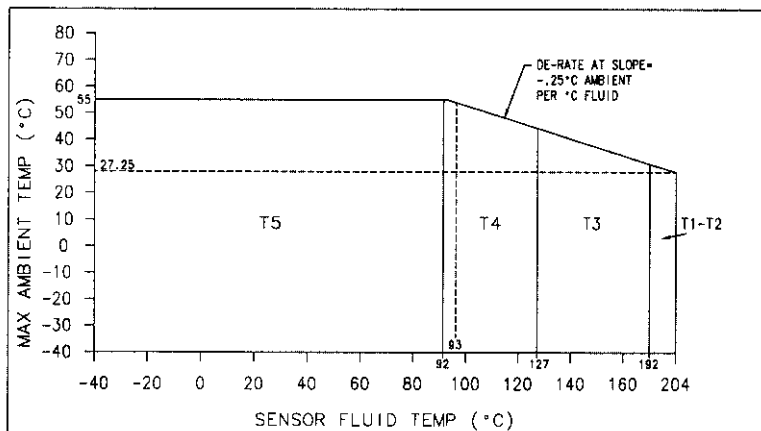
The classification into a temperature class/determination of the maximum surface temperature T depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:

- 2.2.1 For types R025 \*\*\*\*\*(2, 3, 4, 5, 6, 7, 8, 9, A,B,D,E,Q,V,W or Y)\*Z\*\*\*\*\*,  
R050 \*\*\*\*\*(2, 3, 4, 5, 6, 7, 8, 9, A,B,D,E,Q,V,W or Y)\*Z\*\*\*\*\*,  
CNG050 \*\*\*\*\*(2, 3, 4, 5, 6, 7, 8, 9, A,B,D,E,Q,V,W or Y)\*Z\*\*\*\*\*,  
R100 \*\*\*\*\*(2, 3, 4, 5, 6, 7, 8, 9, A,B,D,E,Q,V,W or Y)\*Z\*\*\*\*\*, and  
R200 \*\*\*\*\*(2, 3, 4, 5, 6, 7, 8, 9, A,B,D,E,Q,V,W or Y)\*Z\*\*\*\*\*, without Construction Identification Code (C.I.C) marking with integrally mounted core processor



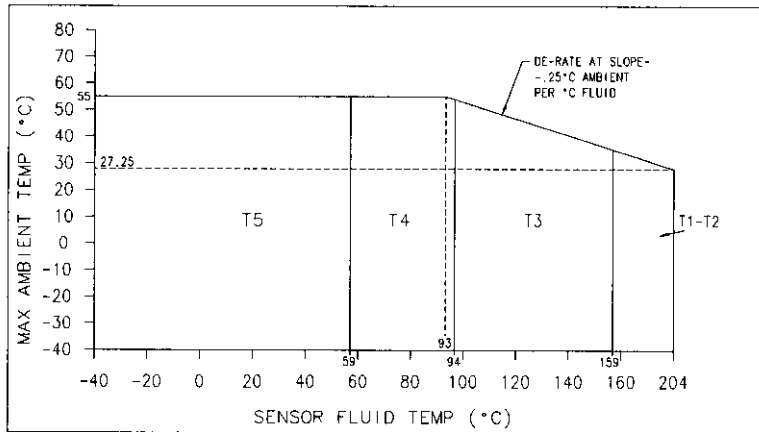
Note: Use the above graph to determine the temperature class for a given fluid and Ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 230 °C.

- 2.2.2 For types R025 \*\*\*\*\*(2, 3, 4, 5, 6, 7, 8, 9, A,B,D,E,Q,V,W or Y)\*Z\*\*\*\*\*,  
R050 \*\*\*\*\*(2, 3, 4, 5, 6, 7, 8, 9, A,B,D,E,Q,V,W or Y)\*Z\*\*\*\*\*, and  
CNG050 \*\*\*\*\*(2, 3, 4, 5, 6, 7, 8, 9, A,B,D,E,Q,V,W or Y)\*Z\*\*\*\*\*, with Construction Identification Code (C.I.C) marking A2 with integrally mounted core processor



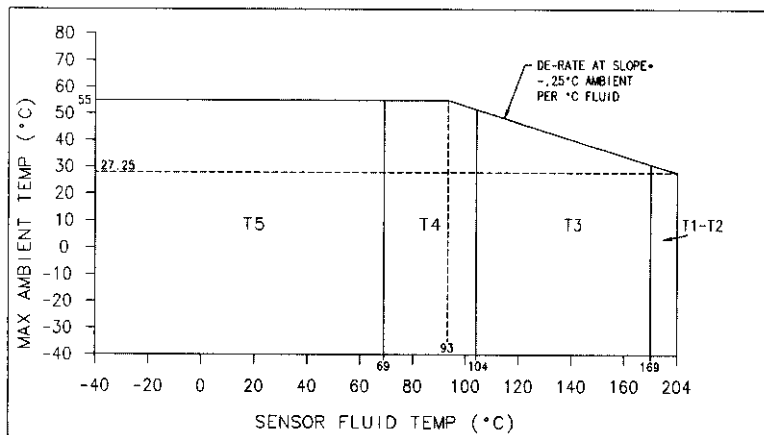
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 207 °C.

2.2.3 For type R100 \*\*\*\*\* (2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W or Y)\*Z\*\*\*\*\* with Construction Identification Code (C.I.C) marking A2 with integrally mounted core processor



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95°C, T4: 130°C, T3: 195°C, T2 and T1: 240 °C.

2.2.4 For type R200 \*\*\*\*\* (2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W or Y)\*Z\*\*\*\*\* with Construction Identification Code (C.I.C) marking A1 with integrally mounted core processor



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 230 °C.

Ambient temperature range

Ta -40 °C up to +55 °C

3 Type R\*\*\* \*\*\*\*\*(C or F)\*Z\*\*\*\*\* and CNG050 \*\*\*\*\*(C or F)\*Z\*\*\*\*\*

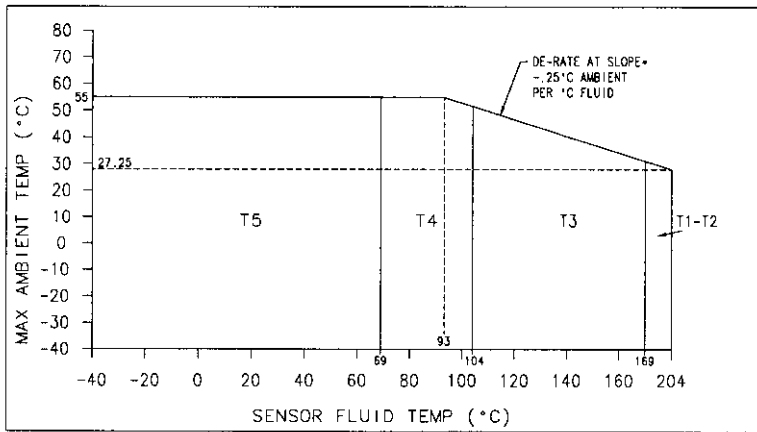
3.1 Electrical parameters see DMT 01 ATEX E 082 X for the transmitter type \*700\*\*\*\*\*

3.2 Temperature class/ max. surface temperature T

The classification into a temperature class/determination of the maximum surface temperature T depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:

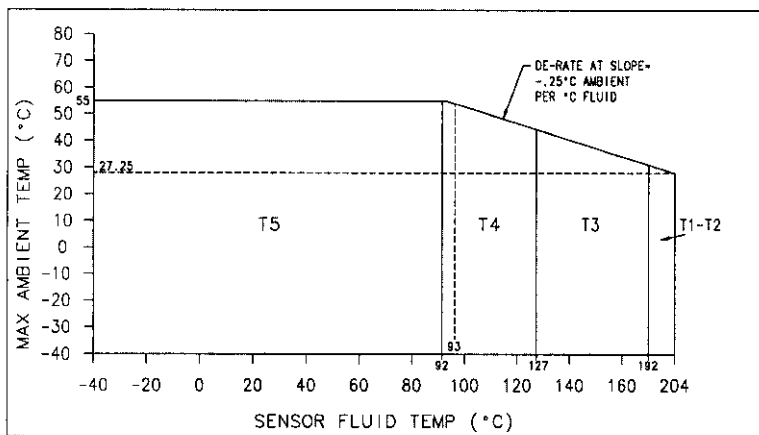


3.2.1 For types R025 \*\*\*\*\*(C or F)\*Z\*\*\*\*\*, R050 \*\*\*\*\*(C or F)\*Z\*\*\*\*\*, CNG050 \*\*\*\*\*(C or F)\*Z\*\*\*\*\*, R100 \*\*\*\*\*(C or F)\*Z\*\*\*\*\* and R200 \*\*\*\*\*(C or F)\*Z\*\*\*\*\* without Construction Identification Code (C.I.C) marking with integrally mounted core processor



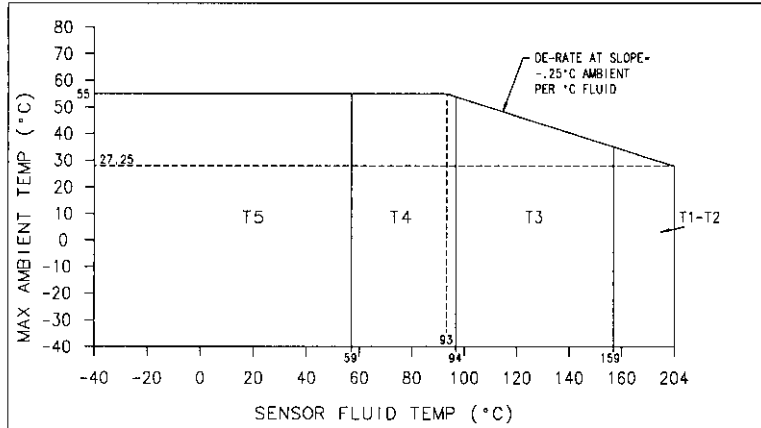
Note: Use the above graph to determine the temperature class for a given fluid and Ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 230 °C.

3.2.2 For types R025 \*\*\*\*\*(C or F)\*Z\*\*\*\*\*, R050 \*\*\*\*\*(C or F)\*Z\*\*\*\*\* and CNG050 \*\*\*\*\*(C or F)\*Z\*\*\*\*\* with Construction Identification Code (C.I.C) marking A2 with integrally mounted core processor



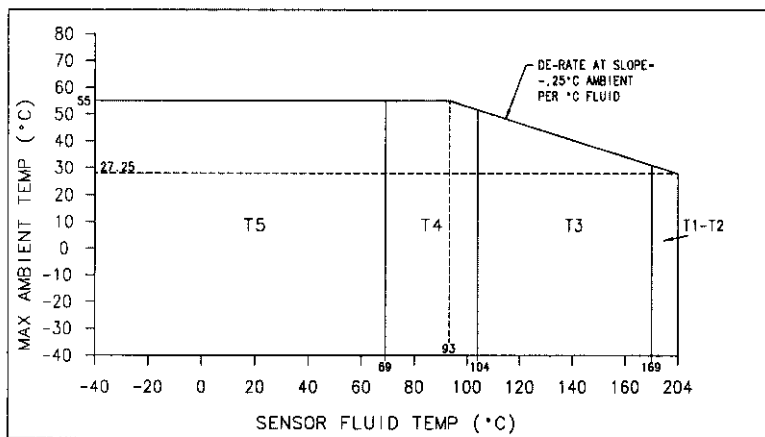
Note: Use the above graph to determine the temperature class for a given fluid and Ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95°C, T4: 130°C, T3: 195°C, T2 and T1: 207 °C.

3.2.3 For type R100 \*\*\*\*\* (C or F) \*Z\*\*\*\*\* with Construction Identification Code (C.I.C) marking A2 with integrally mounted core processor



Note: Use the above graph to determine the temperature class for a given fluid and Ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 240 °C.

3.2.4 For type R200 \*\*\*\*\* (C or F) \*Z\*\*\*\*\* with Construction Identification Code (C.I.C) marking A1 with integrally mounted core processor



Note: Use the above graph to determine the temperature class for a given fluid and Ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 230 °C.

Ambient temperature range

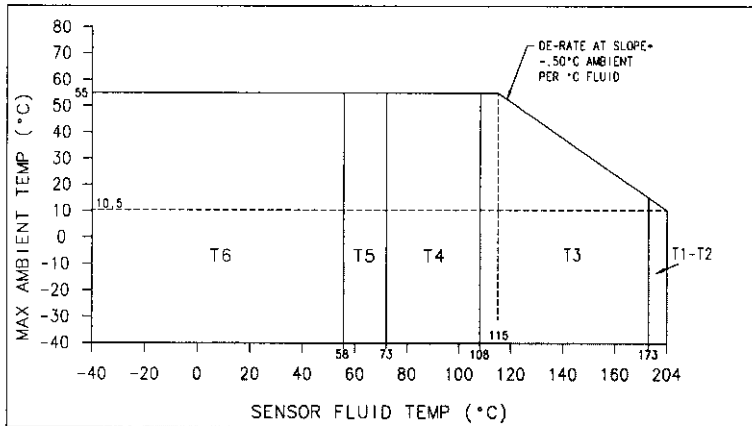
Ta -40 °C up to +55 °C

4 Type R\*\*\* \*\*\*\*\*I\*Z\*\*\*\*\* and CNG050 \*\*\*\*\*I\*Z\*\*\*\*\*

4.1 Electrical parameters see BVS 03 ATEX E 168 X for the transmitter type IFT9703\*\*\*\*\*

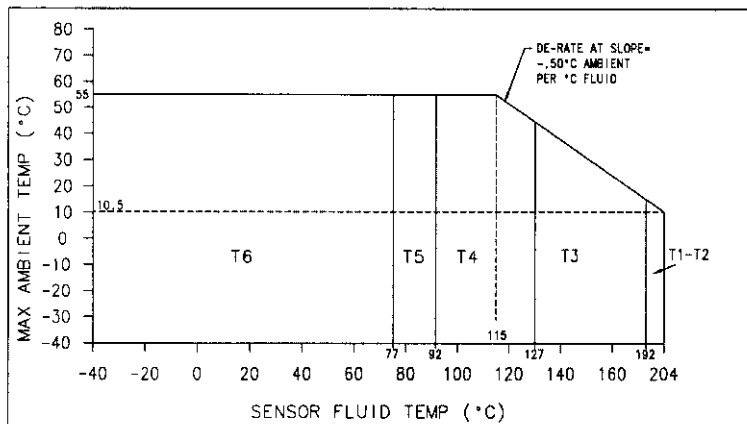
4.2 Temperature class/ max. surface temperature T  
The classification into a temperature class/determination of the maximum surface temperature T depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:

4.2.1 For types R025 \*\*\*\*\*I\*Z\*\*\*\*\*, R050 \*\*\*\*\*I\*Z\*\*\*\*\*, CNG050 \*\*\*\*\*I\*Z\*\*\*\*\*, R100 \*\*\*\*\*I\*Z\*\*\*\*\*, R200 \*\*\*\*\*I\*Z\*\*\*\*\*, without Construction Identification Code (C.I.C) marking and type R200 \*\*\*\*\*I\*Z\*\*\*\*\*, with Construction Identification Code (C.I.C) marking A1 with integrally mounted transmitter type IFT9703\*\*\*\*\*



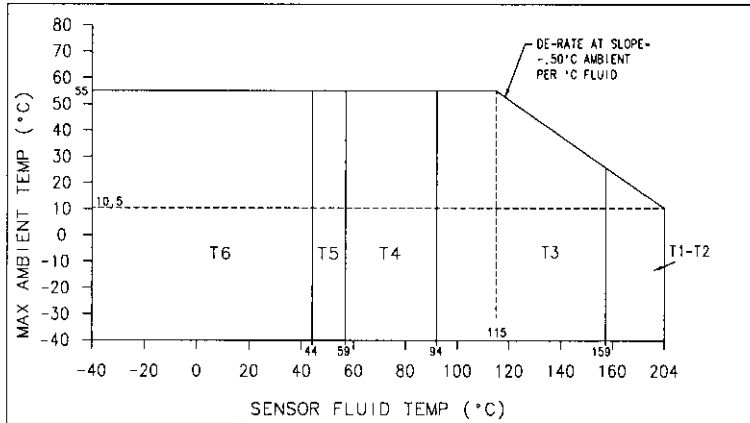
Note: Use the above graph to determine the temperature class for a given fluid and Ambient temperature.

4.2.2 For types R025 \*\*\*\*\*I\*Z\*\*\*\*\*, R050 \*\*\*\*\*I\*Z\*\*\*\*\*, and CNG050 \*\*\*\*\*I\*Z\*\*\*\*\*, with Construction Identification Code (C.I.C) marking A2 with integrally mounted transmitter type IFT9703\*\*\*\*\*



Note: Use the above graph to determine the temperature class for a given fluid and Ambient temperature.

4.2.3 For types R100 \*\*\*\*\*I\*Z\*\*\*\*\* with Construction Identification Code (C.I.C) marking A2 with integrally mounted transmitter type IFT9703\*\*\*\*\*



Note: Use the above graph to determine the temperature class for a given fluid and Ambient temperature.

Ambient temperature range

Ta -40 °C up to +55 °C

Special conditions for safe use

By mounting the sensor type R\*\*\* \*\*\*\*\*C\*Z\*\*\*\*\* or R\*\*\* \*\*\*\*\*F\*Z\*\*\*\*\* or CNG050 \*\*\*\*\*C\*Z\*\*\*\*\* or CNG050 \*\*\*\*\*F\*Z\*\*\*\*\*, directly to the transmitter \*700\*\*\*\*\* the use of the unit will be modified according to the following:

Transmitter type	R025 ***** (C or F) *Z***** + C.I.C. A2 R050 ***** (C or F) *Z***** + C.I.C. A2 CNG050 ***** (C or F) *Z***** + C.I.C. A2 R100 ***** (C or F) *Z***** + C.I.C. A2 R200 ***** (C or F) *Z***** + C.I.C. A2 R200 ***** (C or F) *Z***** + C.I.C. A1
*700*1 <sup>1)</sup> *****	EEx ib IIB+H <sub>2</sub> T1-T5 IP65 T <sup>3)</sup> °C
*700*1 <sup>2)</sup> *****	EEx ib IIC T1-T5 IP65 T <sup>3)</sup> °C

- 1) At this place the numeral 1 or 2 will be inserted.
- 2) At this place the numeral 3, 4 or 5 will be inserted.
- 3) Max. surface temperature T for dust see temperature graphs and manufacturer's instructions.

Test and assessment report

BVS PP 01.2114 EG as of 23.02.2006

**EXAM BBG Prüf- und Zertifizier GmbH**

Bochum, dated 23. February 2006

Signed: Dr. Jockers

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

Signed: Dr. Eickhoff

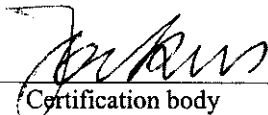
\_\_\_\_\_  
Special services unit

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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, 23.02.2006  
BVS-Schu/Ar A 20050662

**EXAM BBG Prüf- und Zertifizier GmbH**

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

  
\_\_\_\_\_  
Special services unit



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44809 Bochum

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Boulder, Co.  
USA

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Ihre Nachricht	16.03.2006
Unser Zeichen	A 20060200 BVS-Schu/Mi
Durchwahl	Tel.: (0234) 3696 105 Fax: (0234) 3696 110
e-mail	Schumann@bg-exam.de
Datum	03.04.2006

Ladies and Gentlemen,

we added the Revision Report as of 03.04.2006 to the Test and Assessment Report  
BVS PP 01.2114 EG.

We confirm, that the Certificate

BVS 01 ATEX E 159 X as of 03.12.2001, last modification of 23.02.2006

is still valid.

Kind regards  
BBG Prüf- und Zertifizier GmbH



(Dr. Jockers)



(Dr. Eickhoff)

Enclosures: Revision Report  
Descriptive Documents

**EXAM**  
**BBG Prüf- und Zertifizier**  
**GmbH**

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Ihr Zeichen H. van Holland  
Ihre Nachricht 19.06.2006  
Unser Zeichen BVS-Schu/Mi A 20060399  
Durchwahl Tel.: (0234) 3696 105 Fax: (0234) 3696 110  
e-mail Schumann@bg-exam.de  
Datum 12.07.2006

Ladies and Gentlemen,

we added the Revision Report as of 12.07.2006 to the Test and Assessment Report  
BVS PP 01.2114 EG.


We confirm, that the Certificate

DMT 01 ATEX E 159 X as of 03.12.2001, last modification of 23.02.2006

is still valid.

Kind regards  
BBG Prüf- und Zertifizier GmbH

  
(Migenda)

  
(Dr. Wittler)

Enclosures: Revision Report  
Descriptive Documents

**EXAM**  
BBG Prüf- und Zertifizier  
GmbH

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Mr. Henk van Holland  
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Nederland

Ihr Zeichen Henk van Holland  
Ihre Nachricht 17.01.2007  
Unser Zeichen BVS-Hk/Mi A 20070034  
Durchwahl Tel.: (0234) 3696 105 Fax: (0234) 3696 110  
e-mail Hauke@bg-exam.de  
Datum 24.01.2007

Ladies and Gentlemen,

we added the Revision Report as of 24.01.2007 to the Test and Assessment Report  
BVS PP 01.2114 EG.

We confirm, that the Certificate

DMT 01 ATEX E 159 X as of 03.12.2001, last modification of 23.02.2006

is still valid.

Kind regards  
BBG Prüf- und Zertifizier GmbH

  
(Dr. Jockers)

  
(Dr. Eickhoff)

Enclosures: Revision Report

**EXAM**  
**BBG Prüf- und Zertifizier**  
**GmbH**

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