



Translation

EC-Type Examination Certificate

- Directive 94/9/EC -

**Equipment and protective systems intended for use
in potentially explosive atmospheres**

BVS 03 ATEX E 177 X

- (4) **Equipment:** **Sensor type H*** *****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 EXAM BBG Prüf- und Zertifizier 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 03.21 18 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) 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**

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 30. June 2003

Signed: Jockers

EXAM Certification body

Signed: Eickhoff

Head of special services unit

(13) Appendix to

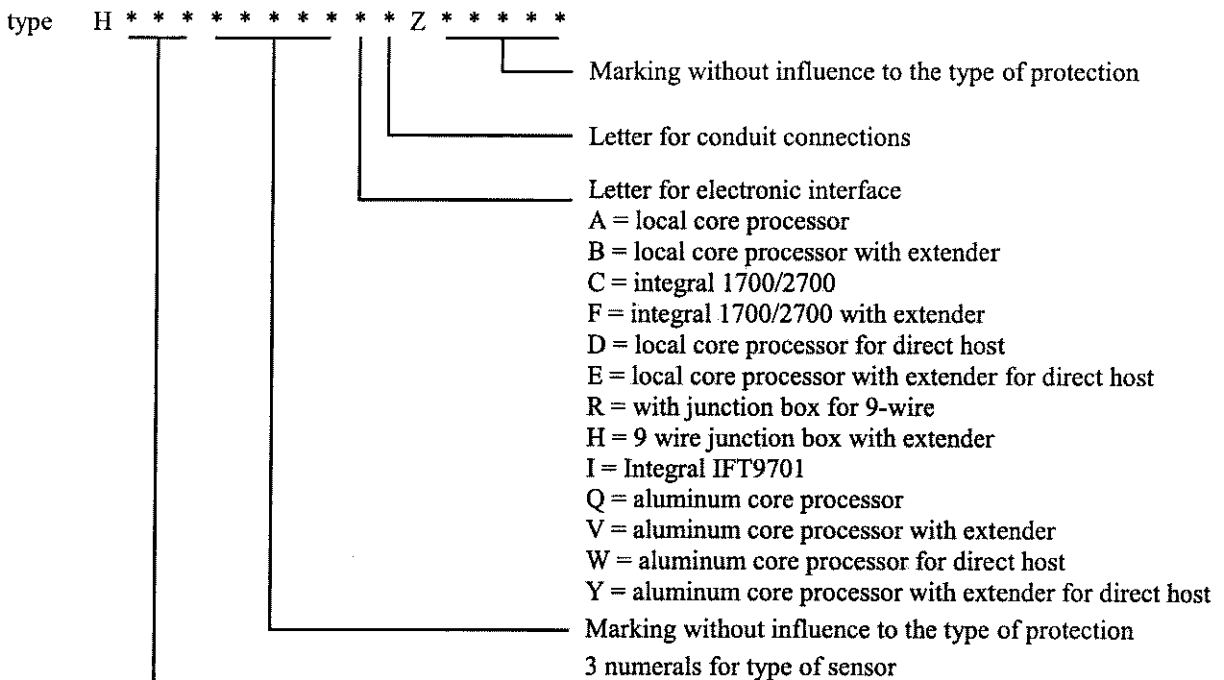
(14) **EC-Type Examination Certificate**

BVS 03 ATEX E 177 X

(15) 15.1 Subject and type

Sensor type H*** *****Z*****

Instead of the *** letters and numerals will be inserted which characterise the following modifications:



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.

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

Alternatively a transmitter type *700***** can be mounted directly to the junction box; this variation gets the denomination type H*** ***** (C or F) * Z*****.

Alternatively a transmitter type IFT9701***** can be integrally mounted on the sensor; this variation gets the denomination type H*** ***** I * Z*****.

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

Sensor	H025 ***** (C or F) *Z***** H050 ***** (C or F) *Z***** H100 ***** (C or F) *Z***** H200 ***** (C or F) *Z*****
Transmitter type *700*11*****	EEx ib IIB+H ₂ T1-T5
Transmitter type *700*1(3 or 4)*****	EEx ib IIC T1-T5

15.3 Parameters

15.3.1 Type H*** ***** (R or H) *Z*****

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

Voltage	U _i	DC	11,4	V
Current	I _i		2,45	A
Power	P _i		2,54	W

effective internal capacitance

negligible

sensor type	inductance [mH]	coil resistance at -40 °C [Ω]	serial resistor at -40 °C [Ω]
H025 *****R*Z***** H025 *****H*Z*****	5,83	24,1	988,8
H050 *****R*Z***** H050 *****H*Z*****	5,83	24,1	469,7
H100 *****R*Z***** H100 *****H*Z*****	29,9	262,1	207,7
H200 *****R*Z***** H200 *****H*Z*****	9,4	37,4	148,3

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

Voltage	U _i	DC	30	V
Current	I _i		101	mA
Power	P _i		750	mW

effective internal capacitance

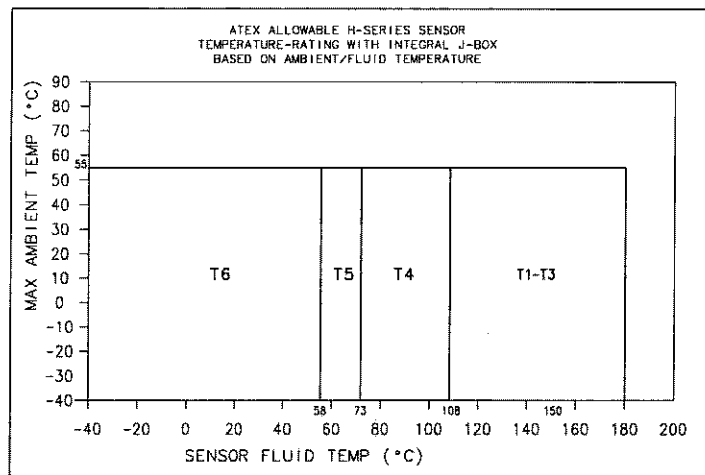
negligible

sensor type	inductance [mH]	coil resistance at -40 °C [Ω]	serial resistor at -40 °C [Ω]
H025 *****R*Z***** H025 *****H*Z*****	6,9	105	0
H050 *****R*Z***** H050 *****H*Z*****	6,9	105	0
H100 *****R*Z***** H100 *****H*Z*****	6,9	105	0
H200 *****R*Z***** H200 *****H*Z*****	23,8	182,5	0

15.3.1.3 Temperature circuit (terminals 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:



15.3.1.5 Ambient temperature range Ta -40 °C up to +55 °C

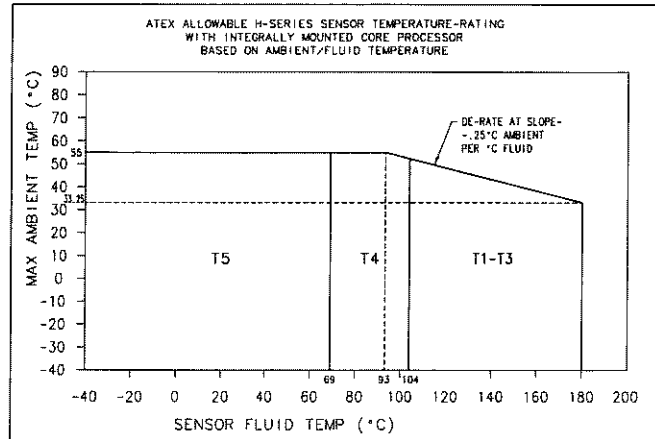
The use of the sensor at higher ambient temperatures is possible, provided that the ambient temperature does not exceed the maximum temperature of the medium taking into account the temperature classification and the maximum operating temperature of the sensor.

15.3.2 Type H*** *****(A,B,D,E,Q,V,W,Y)*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:



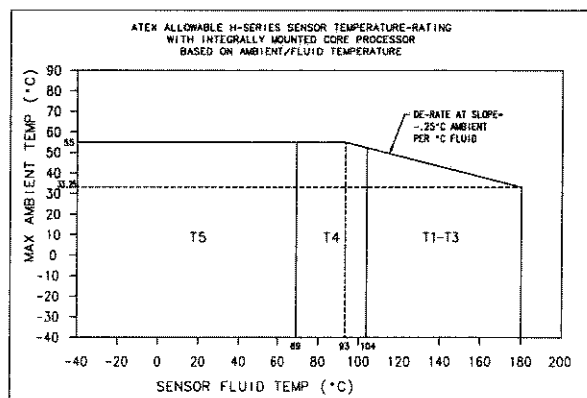
15.3.2.3 Ambient temperature range Ta -40 °C up to +55 °C

15.3.3 Type H*** *****(C oder 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:



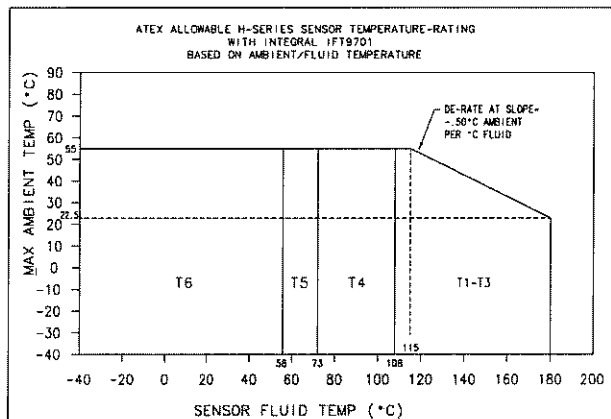
15.3.3.3 Ambient temperature range Ta -40 °C up to +55 °C

15.3.4 Type H*** *****I*Z*****

15.3.4.1 Electrical parameters see BVS 03 ATEX E 168 X for the transmitter type IFT9701*****

15.3.4.2 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:



15.3.4.3 Ambient temperature range

Ta

-40 °C up to +55 °C

(16) Test and assessment report

BVS PP 03.2118 EG as of 30.06.2003

(17) Special conditions for safe use

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

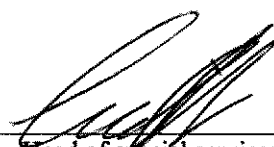
	H025 *****(C or F)*Z***** H050 *****(C or F)*Z***** H100 *****(C or F)*Z***** H200 *****(C or F)*Z*****
Transmitter type *700*11*****	EEx ib IIB+H ₂ T1-T5
Transmitter type *700*1(3 or 4)*****	EEx ib IIC T1-T5

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, 30.06.2003
BVS-Schu/Mi A 20030413

EXAM BBG Prüf- und Zertifizier GmbH


EXAM 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 177 X

Equipment: Sensor type H*** *****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 version

type H300 *****Z*****

type of protection EEx ib IIB T1 – T6 is also available.

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'

Parameters

1 Type H300 ***** (R or H) *Z*****

1.1 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]
H300 *****R*Z*****	11,75	83,5	7,9
H300 *****H*Z*****			

1.2	Pick-Off coil (Terminals 5/9 and 6/8 or wires green/white and blue/grey)				
	voltage	U _i	DC	30	V
	current	I _i		101	mA
	power	P _i		750	mW

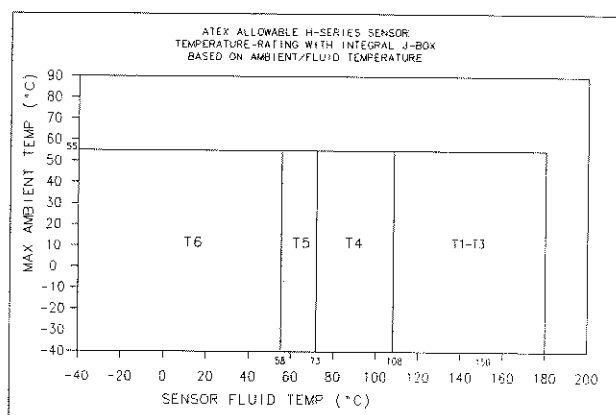
effective internal capacitance negligible

Sensor type	Inductance [mH]	Coil resistance at -40 °C [Ω]	Serial resistor at -40 °C [Ω]
H300 *****R*Z*****	12,4	128,4	569,3
H300 *****H*Z*****			

1.3	Temperature circuits (terminals 3, 4 and 7 or wires orange, yellow and violet)				
	Voltage	U _i	DC	30	V
	Current	I _i		101	mA
	Power	P _i		750	mW
	effective internal capacitance	C _i	negligible		
	effective internal inductance	L _i	negligible		

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:



1.5	Ambient temperature range	T _a	-40 °C up to +55 °C
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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.

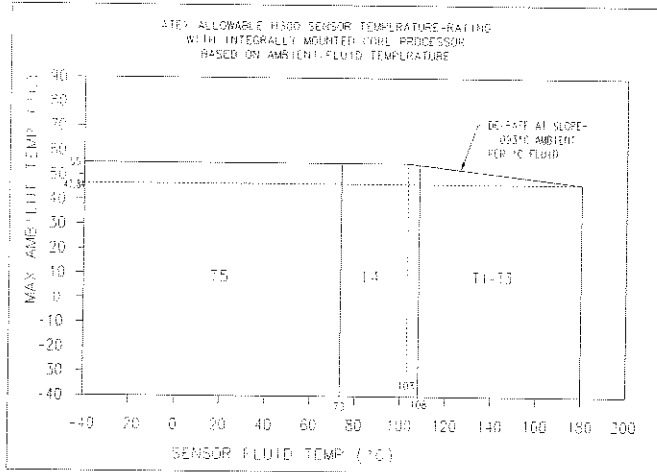
2 Type H300 ***** (A,B,D,E,Q,V,W,Y)*Z*****

2.1 Input circuits (terminals 1 - 4)

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

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:



2.3 Ambient temperature range

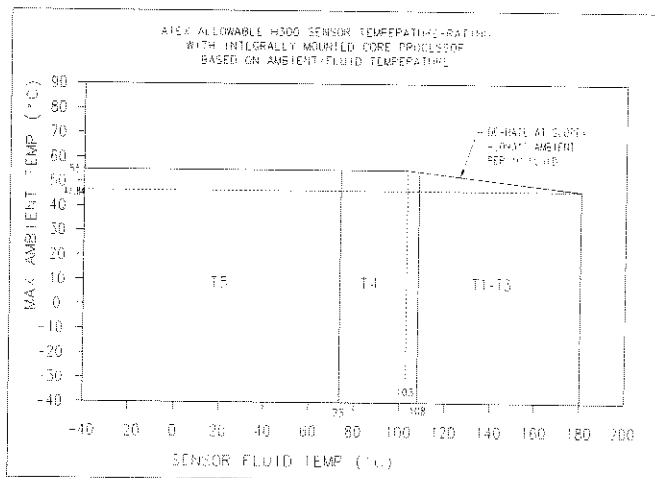
Ta -40 °C up to +55 °C

3 Type H300 *****(C oder F)*Z*****

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

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:





3.3 Ambient temperature range

Ta

-40 °C up to +55 °C

Test and assessment report

BVS PP 03.2118 EG as of 14. October 2003

Deutsche Montan Technologie GmbH

Bochum, dated 14. October 2003

Jockers

Certification body

Arnold

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, 14. October 2003

BVS-Schu/Kw A 20030558

Deutsche Montan Technologie GmbH

Jockers
Certification body

Arnold
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 177 X**

Equipment: Sensor type H*** *****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 H200 *****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 wires green/white and blue/grey)

voltage	U _i	DC	30	V
current	I _i		101	mA
power	P _i		750	mW

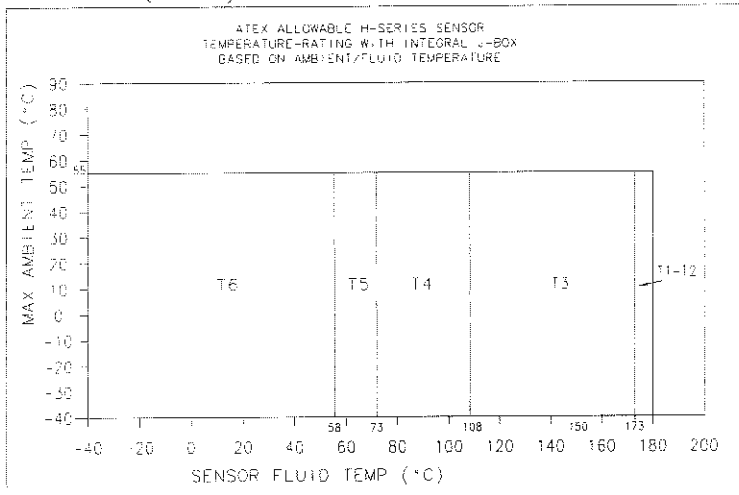
effective internal capacitance negligible

Sensor type	Inductance [mH]	Coil resistance at -40 °C [Ω]	Serial resistor at -40 °C [Ω]
H200 *****R*Z***** CIC A1	12,4	128,4	569,3
H200 *****H*Z***** CIC A1			

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 are shown in the following graphs:

2.1 Type H*** ***(R or H)*Z****



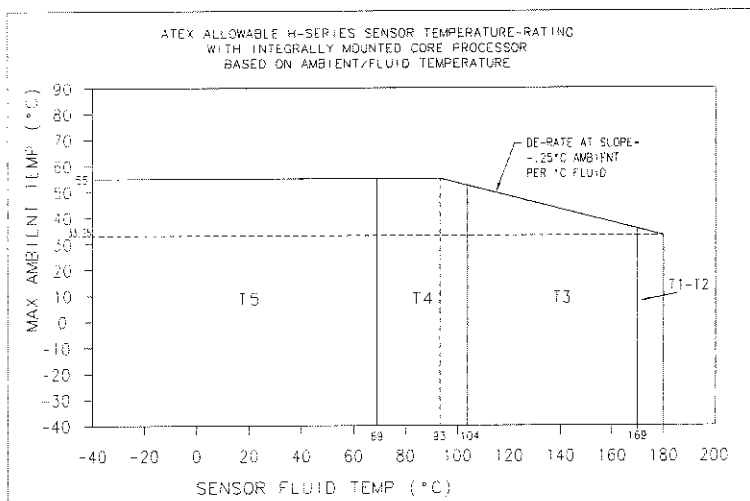
Ambient temperature range

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.

2.2 Type H025 *****(A,B,D,E,Q,V,W,Y)*Z****, H050 *****(A,B,D,E,Q,V,W,Y)*Z****, H100 *****(A,B,D,E,Q,V,W,Y)*Z****, H200 *****(A,B,D,E,Q,V,W,Y)*Z****

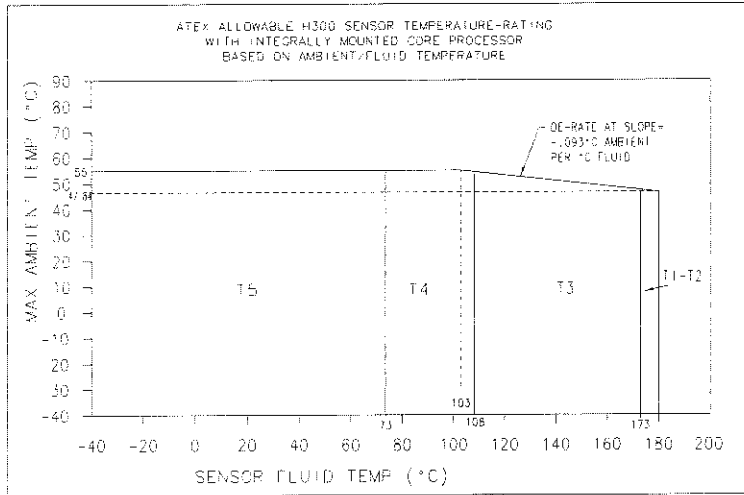


Ambient temperature range

Ta

-40 °C up to +55 °C

2.3 Type H300 *****(A,B,D,E,Q,V,W,Y)*Z*****

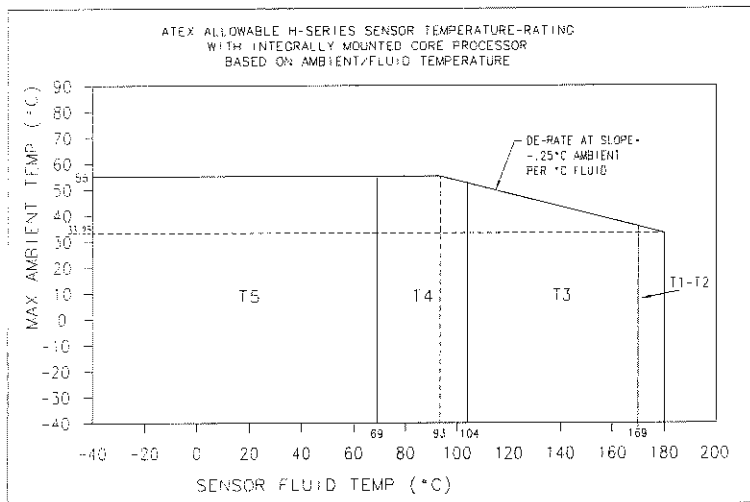


Ambient temperature range

Ta

-40 °C up to +55 °C

2.4 Type H025 *****(C or F)*Z***** , H050 *****(C or F)*Z***** , H100 *****(C or F)*Z*****
and H200 *****(C or F)*Z*****

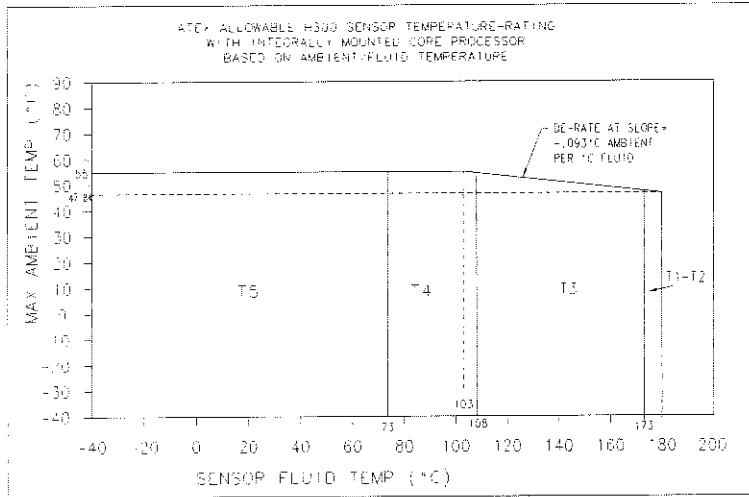


Ambient temperature range

Ta

-40 °C up to +55 °C

2.5 Type H300 *****(C or F)*Z*****

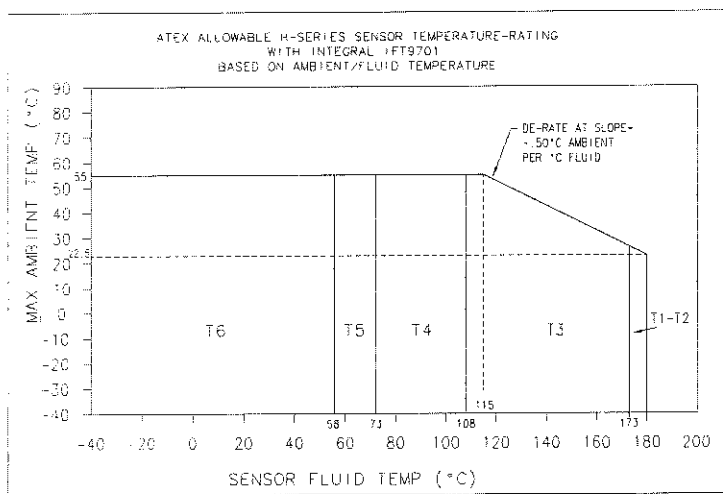


Ambient temperature range

Ta

-40 °C up to +55 °C

2.6 Type H*** *****I*Z*****



Ambient temperature range

Ta

-40 °C up to +55 °C

Special conditions for safe use

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

	H025 *****(C or F)*Z***** H050 *****(C or F)*Z***** H100 *****(C or F)*Z***** H200 *****(C or F)*Z*****	H300 *****(C or F)*Z*****
Transmitter type *700*1 ¹⁾ *****	EEx ib IIB+H ₂ T1-T5	EEx ib IIB T1-T5
Transmitter type *700*1 ²⁾ *****	EEx ib IIC T1-T5	EEx ib IIB T1-T5

- 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 03.2118 EG as of "Datum des Prüfprotokolls"

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 04. June 2004

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, 04.06.2004
 BVS-Schu/Mi A 20040056

EXAM BBG Prüf- und Zertifizier GmbH



 Certification body



 Special services unit



Translation
3rd Supplement

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

to the **EC-Type Examination Certificate**
BVS 03 ATEX E 177 X

Equipment: Sensor type H*** *****Z*****

Manufacturer: Micro Motion, Inc.

Address: Boulder, Co. 80301, USA

Description

The sensor type H*** *****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
H025 ***** (R, H oder I) *Z*****	EEx ib IIC T1-T6	IP65 T 202 °C – T 80 °C
H050 ***** (R, H oder I) *Z*****	EEx ib IIC T1-T6	IP65 T 202 °C – T 80 °C
H100 ***** (R, H oder I) *Z*****	EEx ib IIC T1-T6	IP65 T 202 °C – T 80 °C
H200 ***** (R, H oder I) *Z*****	EEx ib IIC T1-T6	IP65 T 202 °C – T 80 °C
H200 ***** (R, H oder I) *Z***** CIC A1	EEx ib IIC T1-T6	IP65 T 202 °C – T 80 °C
H300 ***** (R oder H) *Z*****	EEx ib IIB T1-T6	IP65 T 202 °C – T 80 °C
H025 ***** (A, B, D, E, Q, V, W, Y) *Z*****	EEx ib IIC T1-T5	IP65 T 206 °C – T 95 °C
H050 ***** (A, B, D, E, Q, V, W, Y) *Z*****	EEx ib IIC T1-T5	IP65 T 206 °C – T 95 °C
H100 ***** (A, B, D, E, Q, V, W, Y) *Z*****	EEx ib IIC T1-T5	IP65 T 206 °C – T 95 °C
H200 ***** (A, B, D, E, Q, V, W, Y) *Z*****	EEx ib IIC T1-T5	IP65 T 206 °C – T 95 °C
H200 ***** (A, B, D, E, Q, V, W, Y) *Z***** CIC A1	EEx ib IIC T1-T5	IP65 T 206 °C – T 95 °C
H300 ***** (A, B, D, E, Q, V, W, Y) *Z*****	EEx ib IIB T1-T5	IP65 T 202 °C – T 95 °C

Parameters

Type H*** *****R*Z***** and Typ - type H*** *****H*Z*****

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

voltage	U _i	DC	11,4	V
current	I _i		2,45	A
power	P _i		2,54	W

effective internal capacitance

negligible

Sensor type	Inductance [mH]	Coil resistance at -40 °C [Ω]	serial resistor at -40 °C [Ω]
H025 *****R*Z*****	5,83	24,1	988,8
H025 *****H*Z*****			
H050 *****R*Z*****	5,83	24,1	469,7
H050 *****H*Z*****			
H100 *****R*Z*****	29,9	262,1	207,7
H100 *****H*Z*****			
H200 *****R*Z*****	9,4	37,4	148,3
H200 *****H*Z*****			
H300 *****R*Z*****	11,75	83,5	7,9
H300 *****H*Z*****			

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

voltage	U _i	DC	30	V
current	I _i		101	mA
power	P _i		750	mW

effective internal capacitance

negligible

Sensor type	Inductance [mH]	Coil resistance at -40 °C [Ω]	Serial resistor at -40 °C [Ω]
H025 *****R*Z*****	6,9	105	0
H025 *****H*Z*****			
H050 *****R*Z*****	6,9	105	0
H050 *****H*Z*****			
H100 *****R*Z*****	6,9	105	0
H100 *****H*Z*****			
H200 *****R*Z*****	23,8	182,5	0
H200 *****H*Z*****			
H300 *****R*Z*****	12,4	128,4	569,3
H300 *****H*Z*****			

Pick-Off coil (Terminals 5/9 and 6/8 or wires green/white and blue/grey) for type with CIC A1

voltage	U _i	DC	30	V
current	I _i		101	mA
power	P _i		750	mW

effective internal capacitance C_i negligible

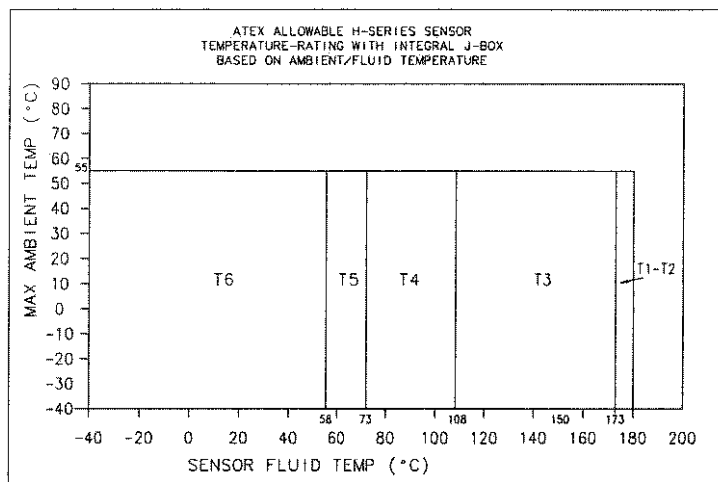
Sensor type	Inductance [mH]	Coil resistance at -40 °C [Ω]	Serial resistor at -40 °C [Ω]
H200 *****R*Z***** CIC A1	12,4	128,4	569,3
H200 *****H*Z***** CIC A1			

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

voltage	U_i	DC	30	V
current	I_i		101	mA
power	P_i		750	mW
effective internal capacitance	C_i	negligible		
effective internal inductance	L_i	negligible		

Temperature class/ max. surface temperature T (types H025 *****Z*****, H050 *****Z*****, H100 *****Z*****, H200 *****Z***** (incl. CIC A1), H300 *****Z*****)

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: 195 °C, T2 to T1: 202 °C.

ambient temperature range T_a -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 H*** ***** (A,B,D,E,Q,V,W,Y)*Z*****

(Types H025 *****Z*****, H050 *****Z*****, H100 *****Z*****, H200 *****Z***** (incl. CIC A1), H300 *****Z*****)

input circuits (terminals 1 - 4)

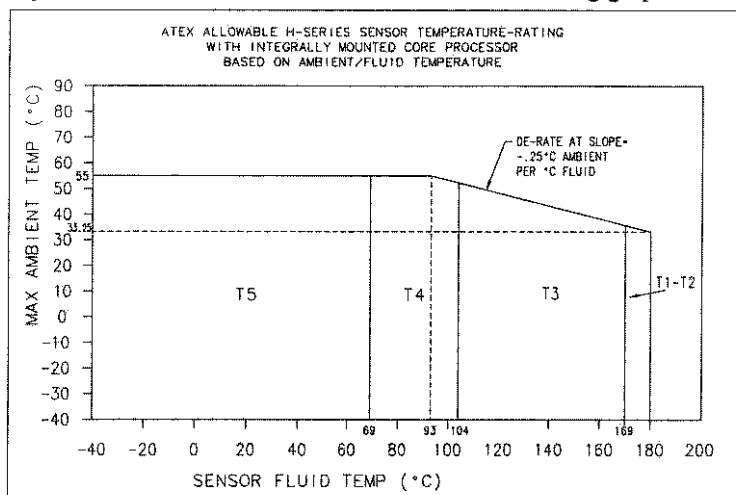
voltage	U _i	DC	17,3	V
current	I _i		484	mA
power	P _i		2,1	W
effective internal capacitance	C _i		2200	pF
effective internal inductance	L _i		30	μH

Temperature class/ max. surface temperature T

Type H*** ***** (A,B,D,E,Q,V,W,Y)*Z*****

(Types H025 *****Z*****, H050 *****Z*****, H100 *****Z*****, H200 *****Z***** (incl. CIC A1))

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:



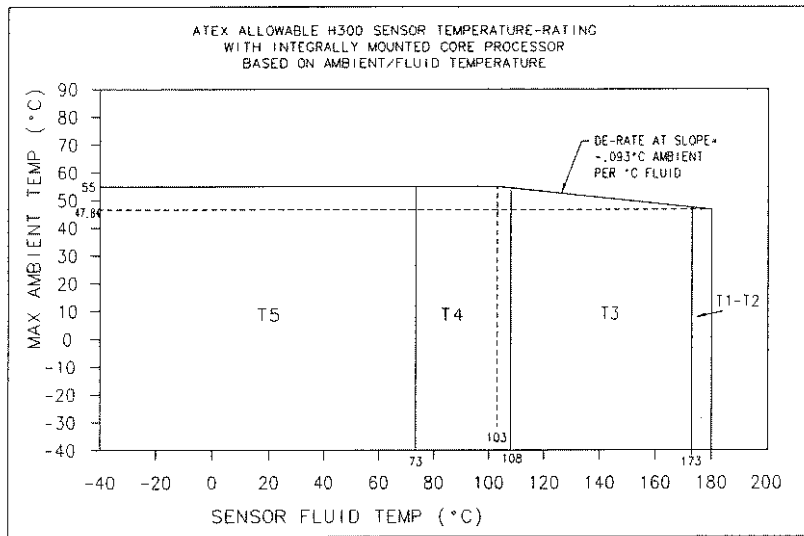
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 to T1: 206 °C.

Temperature class/ max. surface temperature T

Type H300 ***** (A,B,D,E,Q,V,W,Y)*Z*****

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: 195 °C, T2 to T1: 202 °C.

ambient temperature range

Ta

-40 °C bis +55 °C

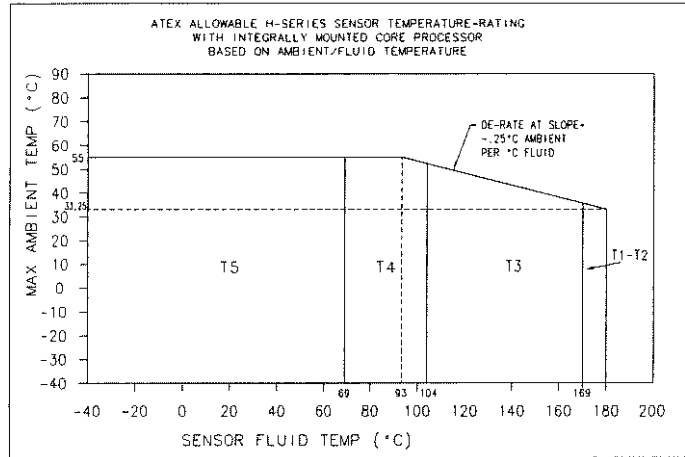
Type H025 ***** (C or F) *Z*****, H050 ***** (C or F) *Z*****, H100 ***** (C or F) *Z*****,
H200 ***** (C or F) *Z***** and H300 ***** (C or F) *Z*****

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

Temperature class/ max. surface temperature T

Type H025 ***** (C or F) *Z*****, H050 ***** (C or F) *Z*****,
H100 ***** (C or F) *Z***** and H200 ***** (C or F) *Z*****

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:

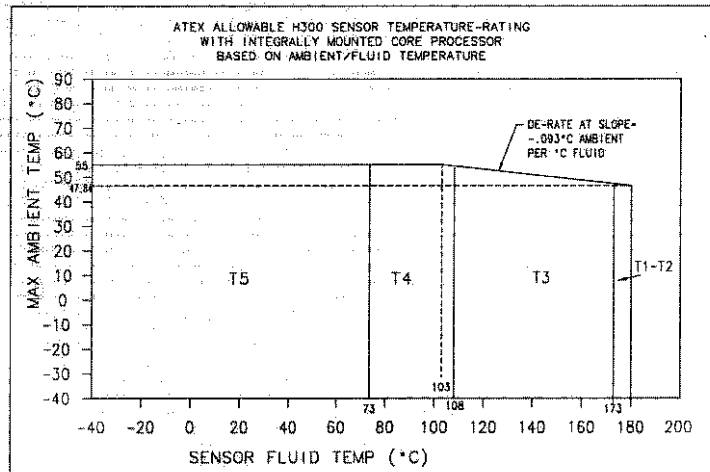


Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 to T1: 206 °C.

Temperature class/ max. surface temperature T
Type H300 ***** (C or F) *Z*****

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: 195 °C, T2 to T1: 202 °C.

ambient temperature range

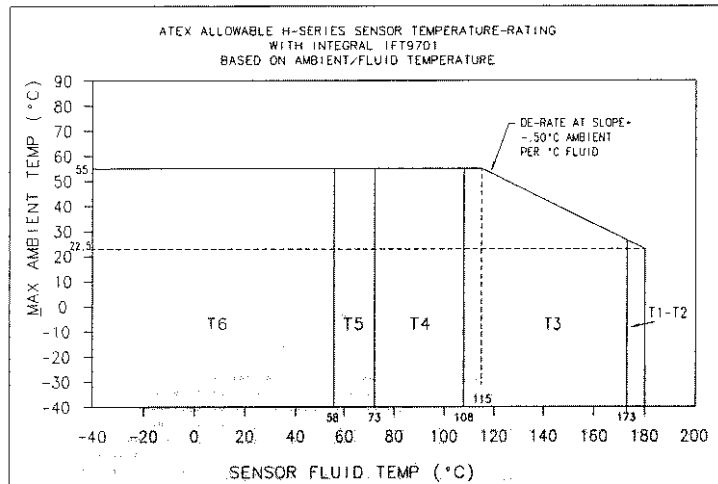
Ta

-40 °C bis +55 °C

Type H*** *****I*Z*****

Electrical parameters see BVS PP 03.2111 EG for the transmitter type IFT9701*****

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: 195 °C, T2 to T1: 202 °C.

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

Special conditions for safe use

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

Transmitter Typ - type	H025 ***** (C or F)*Z***** H050 ***** (C or F)*Z***** H100 ***** (C or F)*Z***** H200 ***** (C or F)*Z***** H200 ***** (C or F)*Z***** CIC A1	H300 ***** (C oder F)*Z*****
*700*1 ¹⁾ *****	EEx ib IIB+H ₂ T1-T5 IP65 T 206 °C – T 95 °C	EEx ib IIB T1-T5 IP65 T 202 °C – T 95 °C
*700*1 ²⁾ *****	EEx ib IIC T1-T5 IP65 T 206 °C – T 95 °C	EEx ib IIB T1-T5 IP65 T 202 °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 03.2118 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 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, 01.04.2005
BVS-Hk/Mi A 20040527

EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special services unit



Translation

4th Supplement

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

**to the EC-Type Examination Certificate
BVS 03 ATEX E 177 X**

Equipment: Sensor type H*** *****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 H025 *****Z*****, type H050 *****Z***** and type H100 *****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 H*** ***** (2, 3, 4, 5, 6, 7, 8, 9, S)*Z*****

Instead of the version with junction box (types H*** ***** (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 H*** ***** (A, B, D or E)*Z***** for a stainless steel enclosure and type H*** ***** (Q, V, W or Y)*Z***** for an aluminum enclosure.

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

The maximum fluid temperature and the minimum fluid / ambient temperature have 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
H025***** ¹⁾ *Z*****	II 2G EEx ib IIC T1-T6	II 2D IP65 T ³⁾ °C
H050***** ¹⁾ *Z*****	II 2G EEx ib IIC T1-T6	II 2D IP65 T ³⁾ °C
H100***** ¹⁾ *Z*****	II 2G EEx ib IIC T1-T6	II 2D IP65 T ³⁾ °C
H200***** ¹⁾ *Z*****	II 2G EEx ib IIC T1-T6	II 2D IP65 T ³⁾ °C
H200***** ¹⁾ *Z***** C.I.C A1	II 2G EEx ib IIC T1-T6	II 2D IP65 T ³⁾ °C
H300***** ¹⁾ *Z*****	II 2G EEx ib IIB T1-T6	II 2D IP65 T ³⁾ °C
H025 ***** ¹⁾ *Z*****	II 2G EEx ib IIC T1-T6	
H025 ***** ¹⁾ *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	
H050 ***** ¹⁾ *Z*****	II 2G EEx ib IIC T1-T6	
H050 ***** ¹⁾ *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	
H100 ***** ¹⁾ *Z*****	II 2G EEx ib IIC T1-T6	
H100 ***** ¹⁾ *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	
H200 ***** ¹⁾ *Z*****	II 2G EEx ib IIC T1-T6	
H200 ***** ¹⁾ *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	
H025***** ²⁾ *Z*****	II 2G EEx ib IIC T1-T5	II 2D IP65 T ³⁾ °C
H025***** ²⁾ *Z***** C.I.C A2	II 2G EEx ib IIC T1-T5	II 2D IP65 T ³⁾ °C
H050***** ²⁾ *Z*****	II 2G EEx ib IIC T1-T5	II 2D IP65 T ³⁾ °C
H050***** ²⁾ *Z***** C.I.C A2	II 2G EEx ib IIC T1-T5	II 2D IP65 T ³⁾ °C
H100***** ²⁾ *Z*****	II 2G EEx ib IIC T1-T5	II 2D IP65 T ³⁾ °C
H100***** ²⁾ *Z***** C.I.C A2	II 2G EEx ib IIC T1-T5	II 2D IP65 T ³⁾ °C
H200***** ²⁾ *Z*****	II 2G EEx ib IIC T1-T5	II 2D IP65 T ³⁾ °C
H200***** ²⁾ *Z***** C.I.C A1	II 2G EEx ib IIC T1-T5	II 2D IP65 T ³⁾ °C
H300***** ²⁾ *Z*****	II 2G EEx ib IIB T1-T5	II 2D IP65 T ³⁾ °C

For sensors with J-box connected to non-MVD transmitters (i. e. 9701) is valid:

Type	Type of protection gas	Min. ambient/fluid temp. gas	Type of protection dust
H025***** ¹⁾ *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	-68 °C	II 2D IP65 T ³⁾ °C
H050***** ¹⁾ *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	-68 °C	II 2D IP65 T ³⁾ °C
H100***** ¹⁾ *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	-68 °C	II 2D IP65 T ³⁾ °C
H200***** ¹⁾ *Z***** C.I.C A1	II 2G EEx ib IIC T1-T6	-90 °C	II 2D IP65 T ³⁾ °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
H025***** ¹⁾ *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	-83 °C	II 2D IP65 T ³⁾ °C
H050***** ¹⁾ *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	-83 °C	II 2D IP65 T ³⁾ °C
H100***** ¹⁾ *Z***** C.I.C A2	II 2G EEx ib IIC T1-T6	-83 °C	II 2D IP65 T ³⁾ °C
H200***** ¹⁾ *Z***** C.I.C A1	II 2G EEx ib IIC T1-T6	-138 °C	II 2D IP65 T ³⁾ °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 H*****(R, H or S)*Z*****

1.1 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 [Ω]	Serial resistor [Ω]	Minimum Ambient/Fluid Temperature. [$^{\circ}$ C]
H025 *****(R, H or S)*Z*****	5,83	24,1	988,8	-40 $^{\circ}$ C
H025 *****(R, H or S)*Z***** C.I.C A2	7,5	84,95	569,0	-68 $^{\circ}$ C
H025 *****(R, H or S)*Z***** C.I.C A2	7,5	77,27	568,83	-83 $^{\circ}$ C
H050 *****(R, H or S)*Z*****	5,83	24,1	469,7	-40 $^{\circ}$ C
H050 *****(R, H or S)*Z***** C.I.C A2	7,5	84,95	569,0	-68 $^{\circ}$ C
H050 *****(R, H or S)*Z***** C.I.C A2	7,5	77,27	568,83	-83 $^{\circ}$ C
H100 *****(R, H or S)*Z*****	29,9	262,1	207,7	-40 $^{\circ}$ C
H100 *****(R, H or S)*Z***** C.I.C A2	7,5	84,95	71,12	-68 $^{\circ}$ C
H100 *****(R, H or S)*Z***** C.I.C A2	7,5	77,27	71,1	-83 $^{\circ}$ C
H200 *****(R, H or S)*Z*****	9,4	37,4	148,3	-40 $^{\circ}$ C
H200 *****(R, H or S)*Z***** C.I.C A1	9,4	27,5	148,17	-90 $^{\circ}$ C
H200 *****(R, H or S)*Z***** C.I.C A1	9,4	18,43	148,03	-138 $^{\circ}$ C
H300 *****(R, H or S)*Z*****	11,75	83,5	7,9	-40 $^{\circ}$ C

1.2 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 [Ω]	Serial resistor [Ω]	Minimum Ambient/Fluid Temperature [$^{\circ}\text{C}$]
H025 ***** (R, H or S)*Z*****	6,9	105	0	-40 $^{\circ}\text{C}$
H025 ***** (R, H or S)*Z***** C.I.C A2	7,5	84,95	0 - 569	-68 $^{\circ}\text{C}$
H025 ***** (R, H or S)*Z***** C.I.C A2	7,5	77,27	0 - 568,83	-83 $^{\circ}\text{C}$
H050 ***** (R, H or S)*Z*****	6,9	105	0	-40 $^{\circ}\text{C}$
H050 ***** (R, H or S)*Z***** C.I.C A2	7,5	84,95	0 - 569	-68 $^{\circ}\text{C}$
H050 ***** (R, H or S)*Z***** C.I.C A2	7,5	77,27	0 - 568,83	-83 $^{\circ}\text{C}$
H100 ***** (R, H or S)*Z*****	6,9	105	0	-40 $^{\circ}\text{C}$
H100 ***** (R, H or S)*Z***** C.I.C A2	7,5	84,95	0 - 569	-68 $^{\circ}\text{C}$
H100 ***** (R, H or S)*Z***** C.I.C A2	7,5	77,27	0 - 568,83	-83 $^{\circ}\text{C}$
H200 ***** (R, H or S)*Z*****	23,8	182,5	0	-40 $^{\circ}\text{C}$
H200 ***** (R, H or S)*Z***** C.I.C A1	12,4	128,4	0 - 569,3	-40 $^{\circ}\text{C}$
H200 ***** (R, H or S)*Z***** C.I.C A1	12,4	94,3	0 - 568,73	-90 $^{\circ}\text{C}$
H200 ***** (R, H or S)*Z***** C.I.C A1	12,4	63,21	0 - 568,19	-138 $^{\circ}\text{C}$
H300 ***** (R, H or S)*Z*****	12,4	128,4	0 - 569,3	-40 $^{\circ}\text{C}$

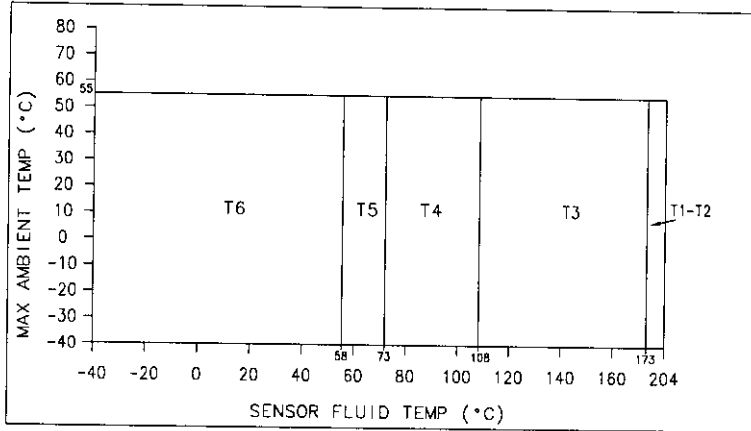
1.3 Temperature circuits (terminals 3, 4 and 7 or wires orange, yellow and violet)

Voltage	Ui	DC	30	V
Current	Ii		101	mA
Power	Pi		750	mW
effective internal capacitance			negligible	
effective internal inductance			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 H025 *****(R, H or S)*Z*****, H050 *****(R, H or S)*Z*****, H100 *****(R, H or S)*Z***** and H200 *****(R, H or S)*Z***** without Construction Identification Code (C.I.C) marking



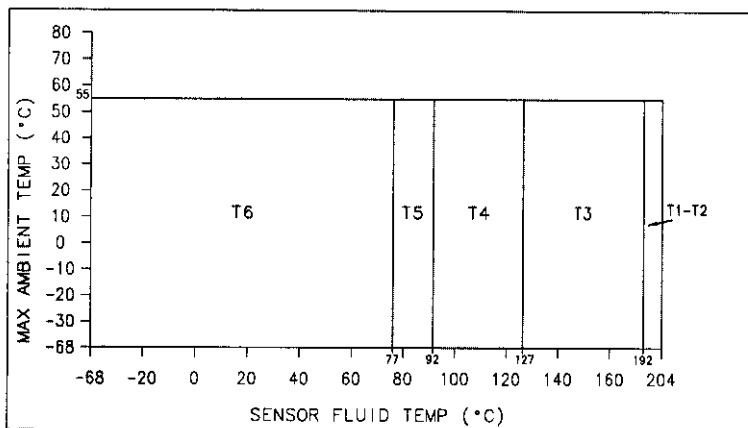
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T6: 80 °C, T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 226 °C.

Ambient temperature range

Ta -40 °C up to +55 °C

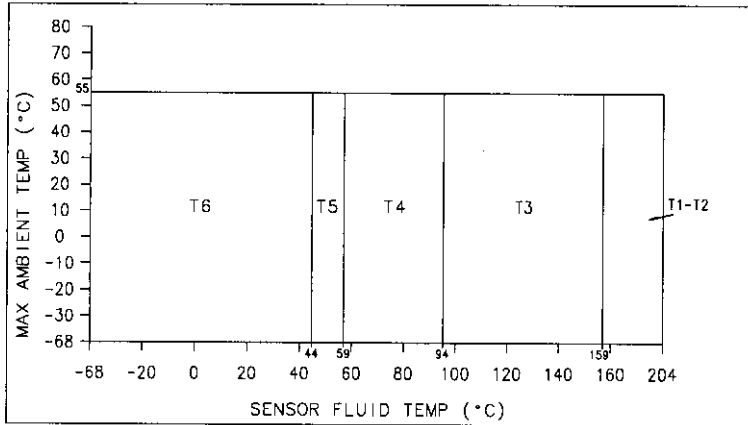
The use of the sensor at higher ambient temperatures is possible, provided that the ambient temperature does not exceed the maximum temperature of the medium taking into account the temperature classification and the maximum operating temperature of the sensor.

1.4.2 For types H025 *****(R, H or S)*Z***** and H050 *****(R, H or S)*Z***** with Construction Identification Code (C.I.C) marking A2 with J-box connected to non-MVD transmitters (i. e. 9701)



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 H100 *****(R, H or S)*Z***** with Construction Identification Code (C.I.C) marking A2 with J-box connected to non-MVD transmitters (i. e. 9701)

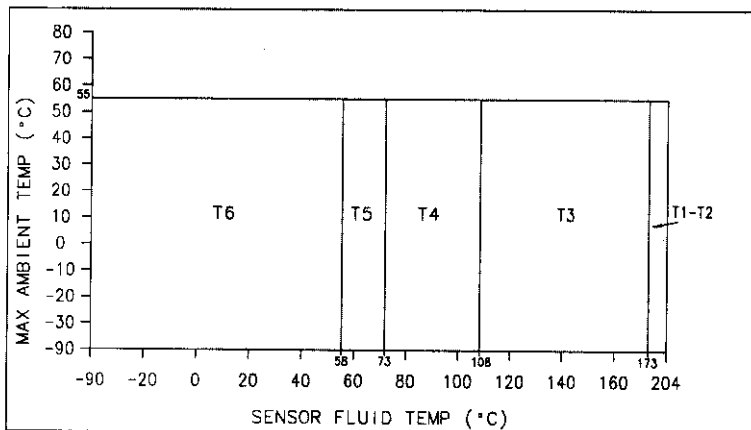


Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T6: 80 °C, T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 240 °C. The minimum ambient and process fluid temperature allowed for dust is -40°C.

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 H200 *******(R, H or S)***Z***** with Construction Identification Code (C.I.C) marking A1 with J-box connected to non-MVD transmitters (i. e. 9701)

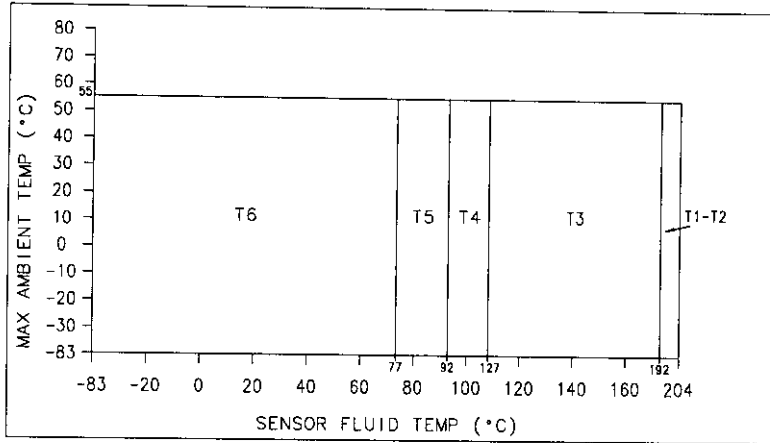


Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T6: 80 °C, T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 226 °C. The minimum ambient and process fluid temperature allowed for dust is -40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

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

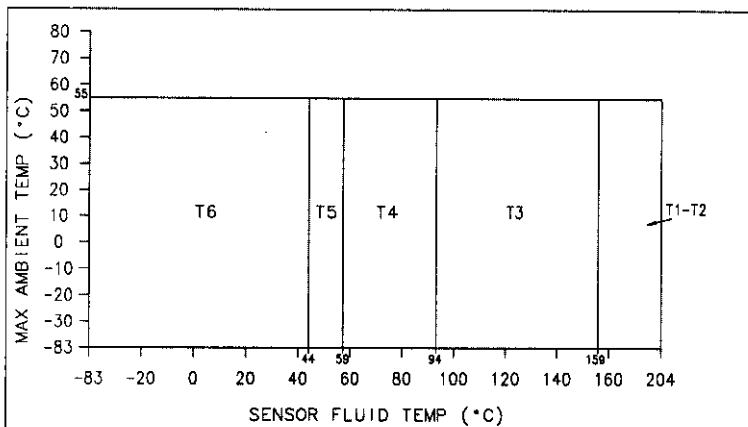
The use of the sensor at higher ambient temperatures is possible, provided that the ambient temperature does not exceed the maximum temperature of the medium taking into account the temperature classification and the maximum operating temperature of the sensor.

1.4.5 For types H025 ***** (R, H or S) *Z***** and H050 ***** (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 H100 ***** (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.

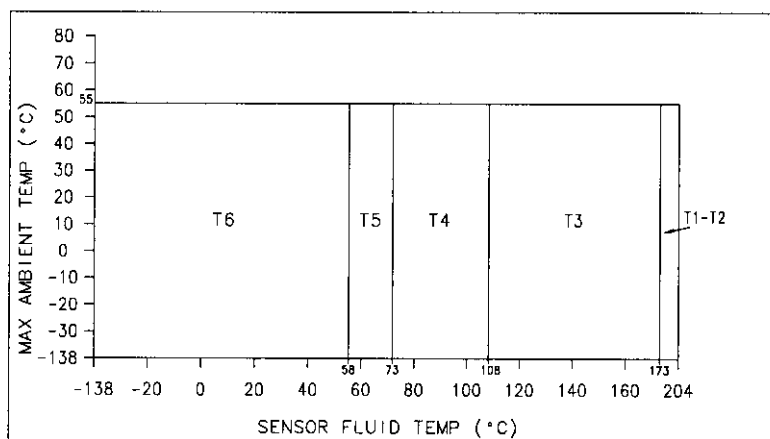
Ambient temperature range

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 H200 ***** (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)

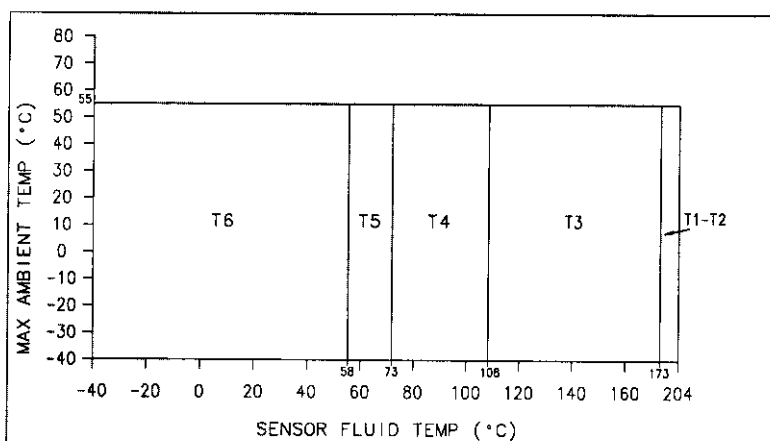


Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T6: 80 °C, T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 226 °C. The minimum ambient and process fluid temperature allowed for dust is -40°C.

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.

1.4.8 For type H300 ***** (R, H or S) *Z***** without Construction Identification Code (C.I.C) marking 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.

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.

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

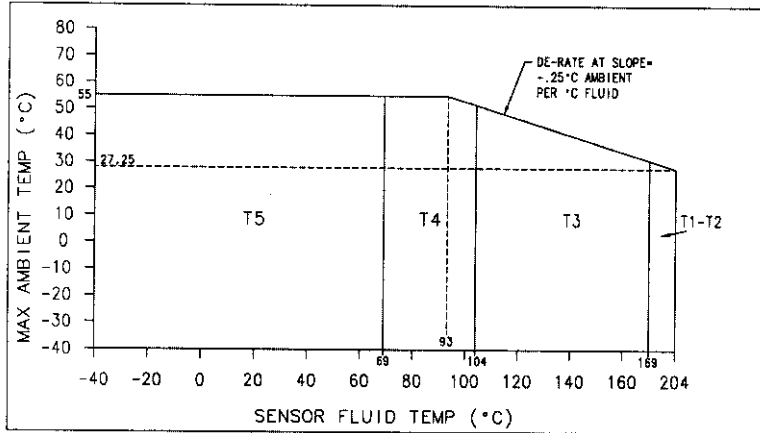
2.1 Input circuits (terminals 1 - 4)

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

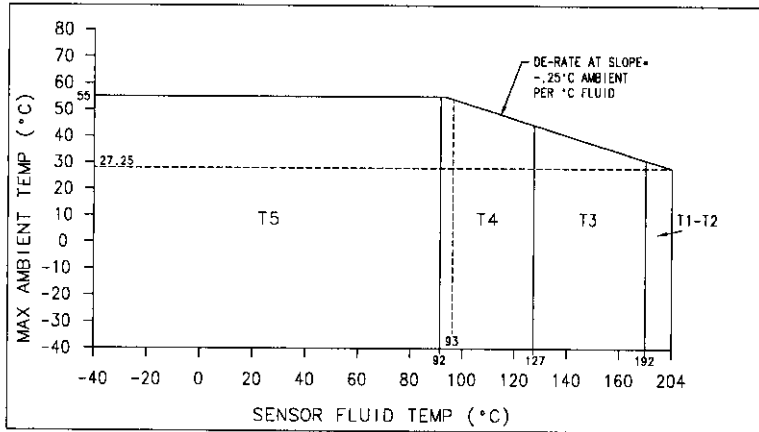
The classification into a temperature class/determination of the maximum surface temperature T depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:

2.2.1 For types H025 *****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W or Y)*Z*****,
H050 *****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W or Y)*Z*****,
H100 *****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W or Y)*Z***** and
H200 *****(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.



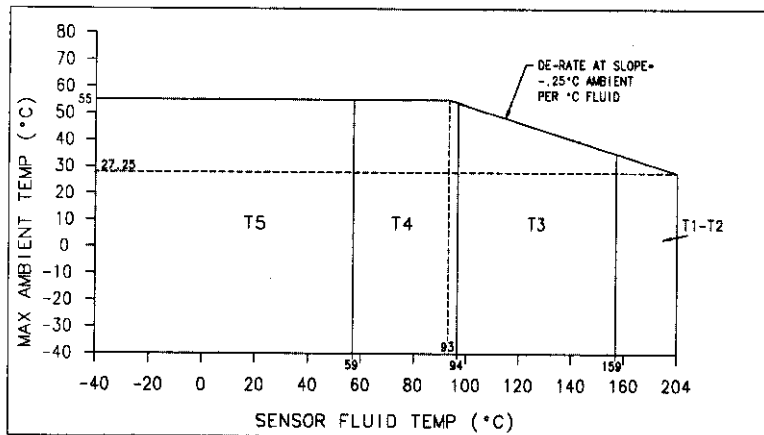
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 230 °C.

2.2.2 For types H025 *****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W or Y)*Z***** and
H050 *****(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.



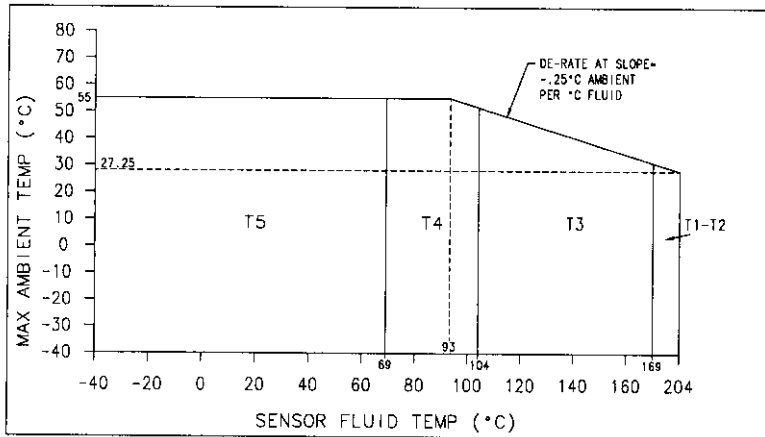
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 207 °C.

2.2.3 For type H100 ***** (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



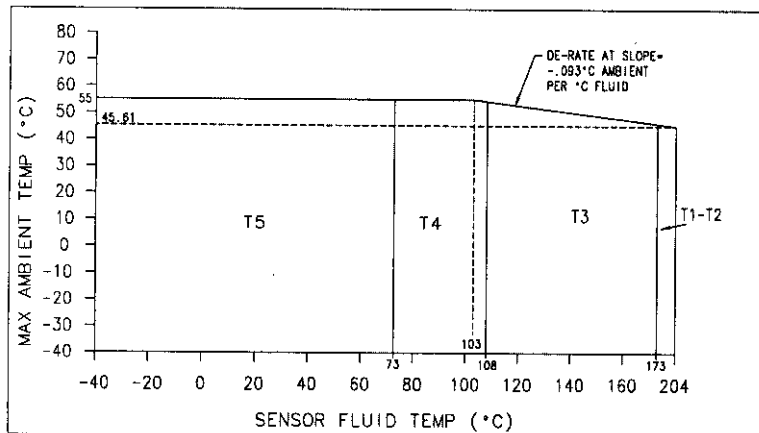
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 240 °C.

2.2.4 For type H200 ***** (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.

2.2.5 For type H300 ***** (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: 226 °C.

Ambient temperature range

Ta

-40 °C up to +55 °C

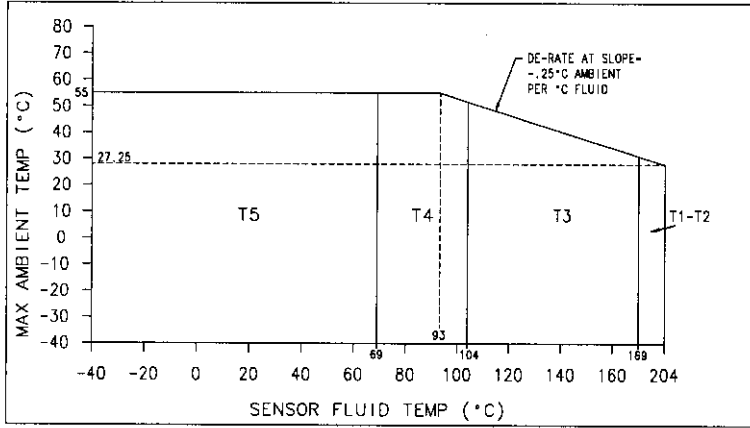
3 Type H*** *****(C or F)*Z*****

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

3.2 Temperature class/ max. surface temperature T

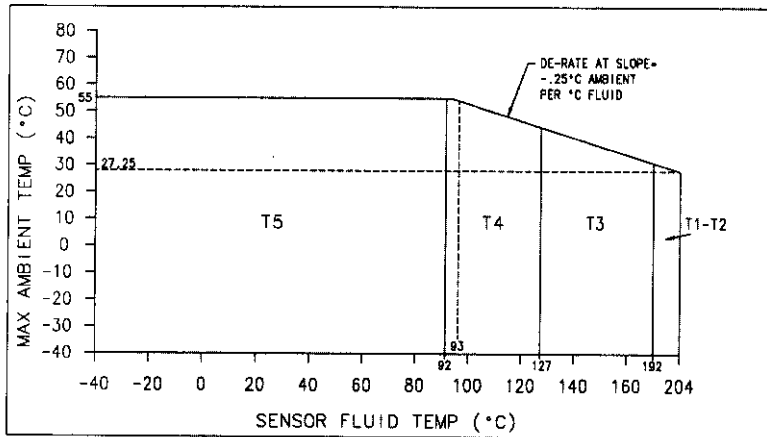
The classification into a temperature class/determination of the maximum surface temperature T depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:

3.2.1 For types H025 *****(C or F)*Z*****, H050 *****(C or F)*Z*****, H100 *****(C or F)*Z***** and H200 *****(C or F)*Z***** without Construction Identification Code (C.I.C) marking with integrally mounted core processor



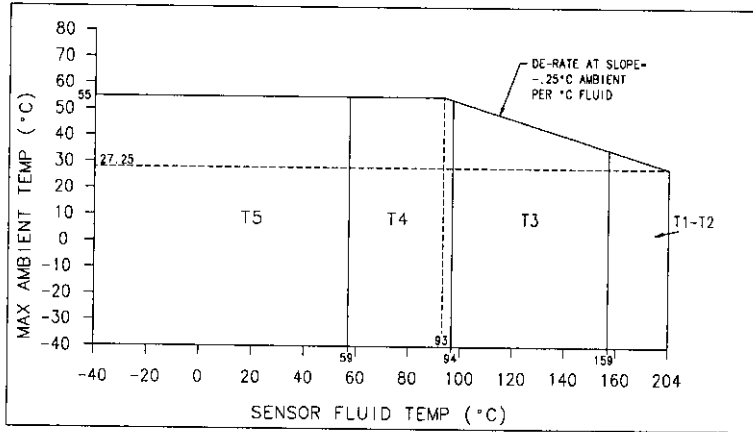
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 230 °C.

3.2.2 For types H025 *****(C or F)*Z***** and H050 *****(C or F)*Z***** with Construction Identification Code (C.I.C) marking A2 with integrally mounted core processor



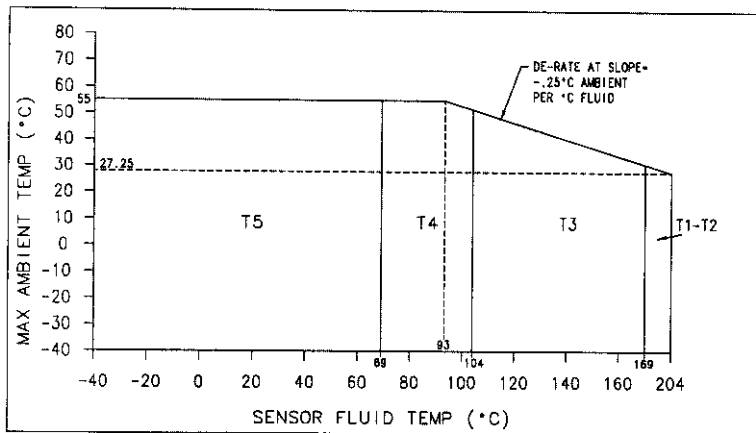
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 207 °C.

3.2.3 For type H100 *****(C or F)*Z***** with Construction Identification Code (C.I.C) marking A2 with integrally mounted core processor



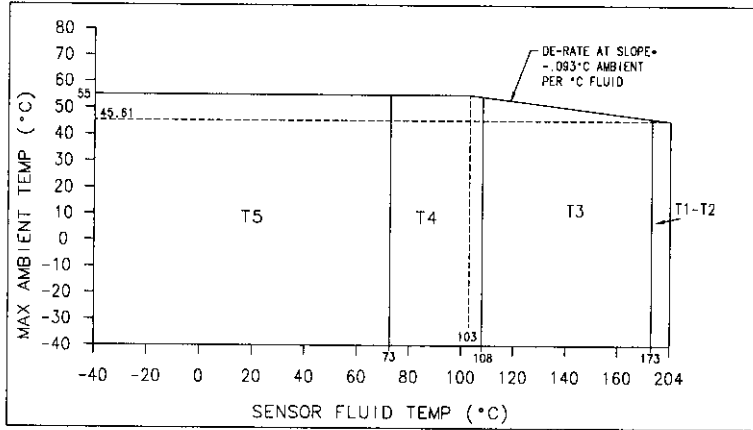
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 240 °C.

3.2.4 For type H200 *****(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.

3.2.5 For type H300 *****(C or F)*Z***** without Construction Identification Code (C.I.C) marking with integrally mounted core processor



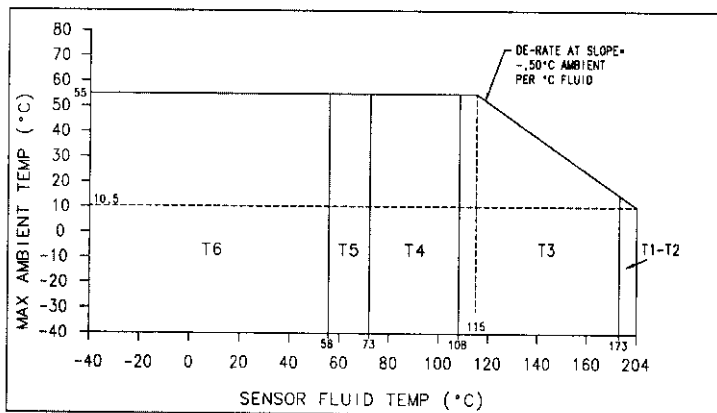
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 226 °C.

4 Type H*** *****I*Z***** (without type H300 *****I*Z*****)

4.1 Electrical parameters see BVS 03 ATEX E 168 X for transmitter type IFT9701*****

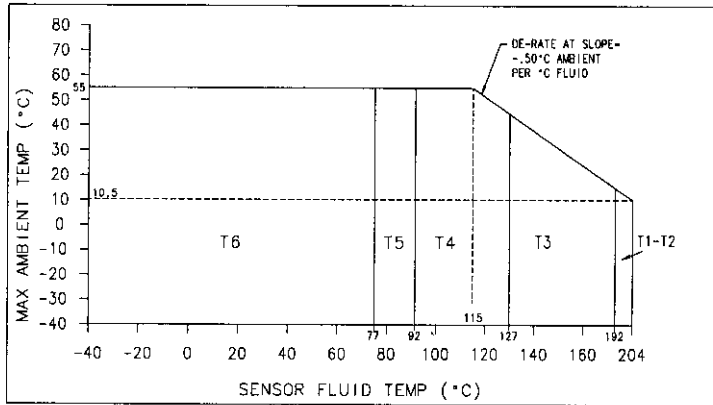
4.2 Temperature class/ max. surface temperature T
The classification into a temperature class/determination of the maximum surface temperature T depend on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:

4.2.1 For types H025 *****I*Z*****, H050 *****I*Z*****, H100 *****I*Z*****, H200 *****I*Z*****, H200 *****I*Z***** with Construction Identification Code (C.I.C) marking A1 with integrally mounted transmitter type IFT9701*****

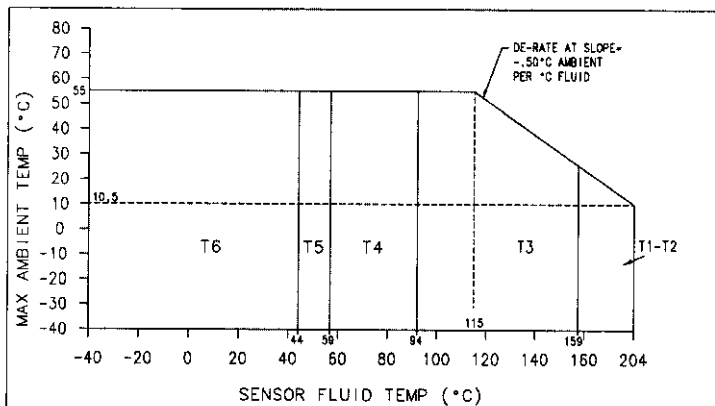


Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

4.2.2 For types H025 *****I*Z***** and H050 *****I*Z***** with Construction Identification Code (C.I.C) marking A2 with integrally mounted transmitter type IFT9701*****



4.2.3 Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. For types H100 *****I*Z***** with Construction Identification Code (C.I.C) marking A2 with integrally mounted transmitter type IFT9701*****



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.
 Ambient temperature range T_a -40 °C up to +55 °C

Special conditions for safe use

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

Transmitter type	H025 *(C or F)*Z***** + C.I.C A2 H050 *(C or F)*Z***** + C.I.C A2 H100 *(C or F)*Z***** + C.I.C A2 H200 *(C or F)*Z***** + C.I.C A1	H300 *(C or F)*Z*****
*700*1 ¹⁾ *****	EEx ib IIB+H ₂ T1-T5 IP65 T ³⁾ °C	EEx ib IIB T1-T5 IP65 T ³⁾ °C
*700*1 ²⁾ *****	EEx ib IIC T1-T5 IP65 T ³⁾ °C	EEx ib IIB T1-T5 IP65 T ³⁾ °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 03.2118 EG as of 15.02.2006

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 15. February 2006

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, 15.02. 2006

BVS-Schu/Mi A 20050663

EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special services unit

EXAM · Postfach 10 27 48 · 44727 Bochum

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Boulder, Co.
USA

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Telefax 0234 – 3696-110

Ihr Zeichen H. van Holland
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 03.2118 EG.

We confirm, that the Certificate

BVS 03 ATEX E 177 X as of 30.06.2003, last modification of 15.02.2006

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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Amtsgericht Bochum
HRB 5357

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Niederlande

Carl-Beyling-Haus
Dinnendahlstrasse 9
44809 Bochum

Telefon 0234 – 3696-105
Telefax 0234 – 3696-110

Ihr Zeichen H. van Holland
Ihre Nachricht 19.06.2006
Unser Zeichen BVS-Schu/Mi A 20060401
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 03.2118 EG.


We confirm, that the Certificate

BVS 03 ATEX E 177 X as of 30.06.2003, last modification of 15.02.2006

is still valid.

Kind regards
BBG Prüf- und Zertifizier GmbH


(Migenda)


(Dr. Wittler)

Enclosures: Revision Report
Descriptive Documents
Invoice

EXAM
BBG Prüf- und Zertifizier
GmbH

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Sitz: Bochum
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z.H. Herrn Henk van Holland
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6718 WX Ede
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Ihr Zeichen Henk van Holland
Ihre Nachricht 17.01.2007
Unser Zeichen BVS-Hk/Mi A 20070038
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 03.2118 EG.

We confirm, that the Certificate

BVS 03 ATEX E 177 X as of 30.06.2003, last modification of 15.02.2006

is still valid.

Kind regards
BBG Prüf- und Zertifizier GmbH


(Dr. Joekers)


(Dr. Eickhoff)

Enclosures: Revision Report

EXAM
BBG Prüf- und Zertifizier
GmbH

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5th Supplement

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

to the EC-Type Examination Certificate BVS 03 ATEX E 177 X

Equipment: Sensor type H*****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.

New versions type H***** (J or U)***** have been added.

New versions type H*****T***** have been added.

New versions type H300*****6***** have been added.

New versions type H300*****Z***** with Construction Identification Code CIC A4 have been added.

Change electrical parameters for sensors with junction box.

Add 1700/2700 Wireless HART Temp Diagrams.

Add Wireless Output Code 4 to 1700/2700 transmitters.

Add Wireless Output Code 5 and 6 to 2200 transmitters.

Revised Ambient Temp Limits to +60C for types H***** (2-9, A,B,D,E,Q,V,W,Y)*Z*****.

Also for testing of the sensors the standards EN 60079-0:2009, EN 60079-11:2007 and EN 61241-11:2006 have been taken as basis, a modified marking is the result.

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

- EN 60079-0:2009 General requirements
- EN 60079-11:2007 Intrinsic safety 'i'
- EN 61241-11:2006 Intrinsic safety 'iD'

Marking of sensors

Type	II 2G	II 2D
H025*****I)*Z*****	Ex ib IIC T1-T6 Gb	Ex ib IIIC T ³ °C Db, IP65
H050*****I)*Z*****	Ex ib IIC T1-T6 Gb	Ex ib IIIC T ³ °C Db, IP65
H100*****I)*Z*****	Ex ib IIC T1-T6 Gb	Ex ib IIIC T ³ °C Db, IP65
H200*****I)*Z*****	Ex ib IIC T1-T6 Gb	Ex ib IIIC T ³ °C Db, IP65
H200*****I)*Z***** C.I.C A1	Ex ib IIC T1-T6 Gb	Ex ib IIIC T ³ °C Db, IP65
H300*****I)*Z*****	Ex ib IIB T1-T6 Gb	Ex ib IIIC T ³ °C Db, IP65
H300*****I)*Z***** C.I.C A4	Ex ib IIC T1-T6 Gb	Ex ib IIIC T ³ °C Db, IP65
H300*****I)*6*****	Ex ib IIC T1-T6 Gb	Ex ib IIIC T ³ °C Db, IP65

Type	II 2G	II 2D
H025*****I*Z*****	Ex ib IIC T1-T6 Gb	
H025*****I*Z***** C.I.C A2	Ex ib IIC T1-T6 Gb	
H050*****I*Z*****	Ex ib IIC T1-T6 Gb	
H050*****I*Z***** C.I.C A2	Ex ib IIC T1-T6 Gb	
H100*****I*Z*****	Ex ib IIC T1-T6 Gb	
H100*****I*Z***** C.I.C A2	Ex ib IIC T1-T6 Gb	
H200*****I*Z*****	Ex ib IIC T1-T6 Gb	
H200*****I*Z***** C.I.C A1	Ex ib IIC T1-T6 Gb	
H025*****2)*Z*****	Ex ib IIC T1-T5 Gb	Ex ib IIIC T ³⁾ °C Db, IP65
H025*****2)*Z***** C.I.C A2	Ex ib IIC T1-T5 Gb	Ex ib IIIC T ³⁾ °C Db, IP65
H050*****2)*Z*****	Ex ib IIC T1-T5 Gb	Ex ib IIIC T ³⁾ °C Db, IP65
H050*****2)*Z***** C.I.C A2	Ex ib IIC T1-T5 Gb	Ex ib IIIC T ³⁾ °C Db, IP65
H100*****2)*Z*****	Ex ib IIC T1-T5 Gb	Ex ib IIIC T ³⁾ °C Db, IP65
H100*****2)*Z***** C.I.C A2	Ex ib IIC T1-T5 Gb	Ex ib IIIC T ³⁾ °C Db, IP65
H200*****2)*Z*****	Ex ib IIC T1-T5 Gb	Ex ib IIIC T ³⁾ °C Db, IP65
H200*****2)*Z***** C.I.C A1	Ex ib IIC T1-T5 Gb	Ex ib IIIC T ³⁾ °C Db, IP65
H300*****2)*Z*****	Ex ib IIB T1-T5 Gb	Ex ib IIIC T ³⁾ °C Db, IP65
H300*****2)*Z***** C.I.C A4	Ex ib IIC T1-T5 Gb	Ex ib IIIC T ³⁾ °C Db, IP65
H300*****2)*6*****	Ex ib IIC T1-T5 Gb	Ex ib IIIC T ³⁾ °C Db, IP65

For sensors with J-box connected to non-MVD transmitters (i. e. IFT9701/RFT9739) is valid:

Type	II 2G	Min. ambient/fluid temp. gas	II 2D
H025*****1)*Z*****	Ex ib IIC T1-T6 Gb	-40 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H025*****1)*Z***** C.I.C A2	Ex ib IIC T1-T6 Gb	-68 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H050*****1)*Z*****	Ex ib IIC T1-T6 Gb	-40 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H050*****1)*Z***** C.I.C A2	Ex ib IIC T1-T6 Gb	-68 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H100*****1)*Z*****	Ex ib IIC T1-T6 Gb	-40 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H100*****1)*Z***** C.I.C A2	Ex ib IIC T1-T6 Gb	-68 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H200*****1)*Z*****	Ex ib IIC T1-T6 Gb	-40 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H200*****1)*Z***** C.I.C A1	Ex ib IIC T1-T6 Gb	-90 °C	Ex ib IIIC T ³⁾ °C Db, IP65

For sensors with J-box connected to MVD transmitters (i. e. 1700/2700/9739MVD) is valid:

Type	II 2G	Min. ambient/fluid temp. gas	II 2D
H025*****1)*Z*****	Ex ib IIC T1-T6 Gb	-40 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H025*****1)*Z***** C.I.C A2	Ex ib IIC T1-T6 Gb	-83 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H050*****1)*Z*****	Ex ib IIC T1-T6 Gb	-40 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H050*****1)*Z***** C.I.C A2	Ex ib IIC T1-T6 Gb	-83 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H100*****1)*Z*****	Ex ib IIC T1-T6 Gb	-43 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H100*****1)*Z***** C.I.C A2	Ex ib IIC T1-T6 Gb	-83 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H200*****1)*Z*****	Ex ib IIC T1-T6 Gb	-40 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H200*****1)*Z***** C.I.C A1	Ex ib IIC T1-T6 Gb	-138 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H300*****1)*Z*****	Ex ib IIB T1-T6 Gb	-40 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H300*****1)*Z***** C.I.C A4	Ex ib IIC T1-T6 Gb	-100 °C	Ex ib IIIC T ³⁾ °C Db, IP65
H300*****1)*6*****	Ex ib IIC T1-T6 Gb	-100 °C	Ex ib IIIC T ³⁾ °C Db, IP65

Parameters

1 Type H*****(R,H,S,T)******* with J-box**

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

Voltage U_i	DC	11.4	V
Current I_i		2.45	A
Power P_i		2.54	W
Effective internal capacitance	negligible		

Sensor type	Inductance [mH]	Coil resistance [Ω]	Serial resistor [Ω]	Min. Ambient/ Fluid Temperature [$^{\circ}$ C]
H025***** (R,H,S,T) *Z*****	5.83	24.1	988.8	-40 $^{\circ}$ C
H025***** (R,H,S,T) *Z***** CIC A2	7.5	84.95 77.27	569.0 568.83	-68 $^{\circ}$ C -83 $^{\circ}$ C
H050***** (R,H,S,T) *Z*****	5.83	24.1	988.8	-40 $^{\circ}$ C
H050***** (R,H,S,T) *Z***** CIC A2	7.5	84.95 77.27	569.0 568.83	-68 $^{\circ}$ C -83 $^{\circ}$ C
H100***** (R,H,S,T) *Z*****	29.9	262.1	207.7	-40 $^{\circ}$ C
H100***** (R,H,S,T) *Z***** CIC A2	7.5	84.95 77.27	74.12 74.1	-68 $^{\circ}$ C -83 $^{\circ}$ C
H200***** (R,H,S,T) *Z*****	9.4	37.4	148.3	-40 $^{\circ}$ C
H200***** (R,H,S,T) *Z***** CIC A1	9.4	37.4 27.5 18.43	148.3 148.17 148.03	-40 $^{\circ}$ C -90 $^{\circ}$ C -138 $^{\circ}$ C
H300***** (R,H,S,T) *Z*****	11.75	83.5	7.9	-40 $^{\circ}$ C
H300***** (R,H,S,T) *Z***** CIC A4	11.75	57.8	129.0	-100 $^{\circ}$ C
H300***** (R,H,S,T) *6*****	11.75	57.8	129.0	-100 $^{\circ}$ C

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

Voltage U_i	DC	21.13	V
Current I_i		18.05	mA
Power P_i		45	mW
Effective internal capacitance C_i	negligible		

Sensor type	Inductance [mH]	Coil resistance [Ω]	Serial resistor [Ω]	Min. Ambient/ Fluid Temperature [$^{\circ}$ C]
025***** (R,H,S,T) *Z*****	6.9	105.0	0	-40 $^{\circ}$ C
025***** (R,H,S,T) *Z***** CIC A2	7.5	84.95 77.27	0-569 0-568.83	-68 $^{\circ}$ C -83 $^{\circ}$ C
050***** (R,H,S,T) *Z*****	6.9	105.0	0	-40 $^{\circ}$ C
050***** (R,H,S,T) *Z***** CIC A2	7.5	84.95 77.27	0-569 0-568.83	-68 $^{\circ}$ C -83 $^{\circ}$ C
100***** (R,H,S,T) *Z*****	6.9	105.0	0	-40 $^{\circ}$ C
100***** (R,H,S,T) *Z***** CIC A2	7.5	84.95 77.27	0-569 0-568.83	-68 $^{\circ}$ C -83 $^{\circ}$ C
200***** (R,H,S,T) *Z*****	23.8	182.5	0	-40 $^{\circ}$ C
200***** (R,H,S,T) *Z***** CIC A1	12.4	128.4 94.3 63.21	0-569.3 0-568.73 0-568.19	-40 $^{\circ}$ C -90 $^{\circ}$ C -138 $^{\circ}$ C
300***** (R,H,S,T) *Z*****	12.4	128.4	0-569.3	-40 $^{\circ}$ C
300***** (R,H,S,T) *Z***** CIC A4	12.4	88.6	0-568.63	-100 $^{\circ}$ C
300***** (R,H,S,T) *6*****	12.4	88.6	0-568.63	-100 $^{\circ}$ C

1.3	Temperature circuits (terminals 3, 4 and 7 or wires orange, yellow and violet)			
	Voltage	U _i	DC	21.13 V
	Current	I _i		26 mA
	Power	P _i		112 mW
	Effective internal capacitance	C _i	negligible	
	Effective internal inductance	L _i	negligible	

Identification resistor circuit (terminals 3 & 4 or wires orange and yellow)

Sensor type	Inductance [mH]	Coil resistance [Ω]	Serial resistor [Ω]	Min. Ambient/ Fluid Temperature [°C]
H300***** <u>(R,H,S,T)</u> *Z*****	N/A	N/A	42.2 to 44.3	-40 °C
H300***** <u>(R,H,S,T)</u> *Z***** CIC A4	N/A	N/A	42.2 to 44.3	-100 °C
H300***** <u>(R,H,S,T)</u> *6*****	N/A	N/A	42.2 to 44.3	-100 °C

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 is shown in the following graphs:

1.4.1 For types H025*****(R,H,S,T)*Z***** , H050*****(R,H,S,T)*Z***** , H100*****(R,H,S,T)*Z***** and H200*****(R,H,S,T)*Z***** with J-box

Not changed

1.4.2 For types H025*****(R,H,S,T)*Z***** and H050*****(R,H,S,T)*Z***** with Construction Identification Code (CIC) marking A2 with J-box connected to non-MVD transmitters (i.e. IFT9701, RFT9739)

Not changed

1.4.3 For type H100*****(R,H,S,T)*Z***** with Construction Identification Code (CIC) marking A2 with J-box connected to non-MVD transmitters (i.e. IFT9701, RFT9739)

Not changed

1.4.4 For type H200*****(R,H,S,T)*Z***** with Construction Identification Code (CIC) marking A1 with J-box connected to non-MVD transmitters (i.e. IFT97013, RFT9739)

Not changed

1.4.5 For types H025*****(R,H,S,T)*Z***** and H050*****(R,H,S,T)*Z***** with Construction Identification Code (CIC) marking A2 with J-box connected to MVD transmitters (i.e. 1700/2700/9739MVD)

Not changed

1.4.6 For type H100*****(R,H,S,T)*Z***** with Construction Identification Code (CIC) marking A2 with J-box connected to MVD transmitters (i.e. 1700/2700/9739MVD)

Not changed

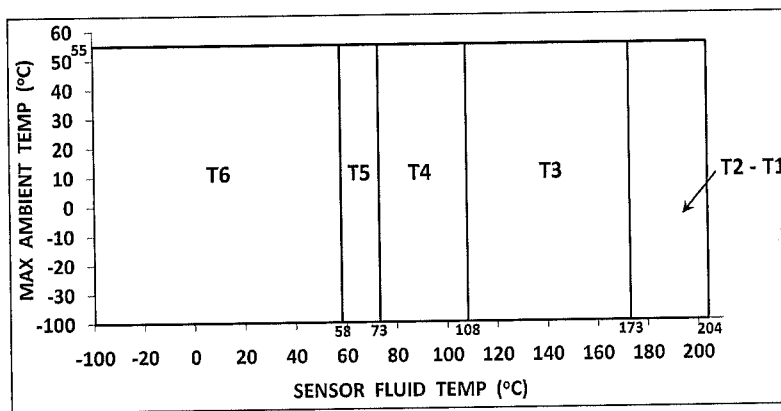
1.4.7 For type H200*****(R,H,S,T)*Z***** with Construction Identification Code (CIC) marking A1 with J-box connected to MVD transmitters (i.e. 1700/2700/9739MVD)

Not changed

1.4.8 For type H300*****(R,H,S,T)*Z***** with J-box connected to MVD transmitters (i.e. 1700/2700/ 9739MVD)

Not changed

1.4.9 For types H300*****(R,H,S,T)*Z***** with Construction Identification Code (CIC) marking A4 and H300*****(R,H,S,T)*6***** with J-box connected to MVD transmitters (i.e. 1700/2700/9739MVD)



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 temperature allowed for dust is -40 °C.

Ambient temperature range T_a -100 °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 H*** *****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W, Y)*Z*****

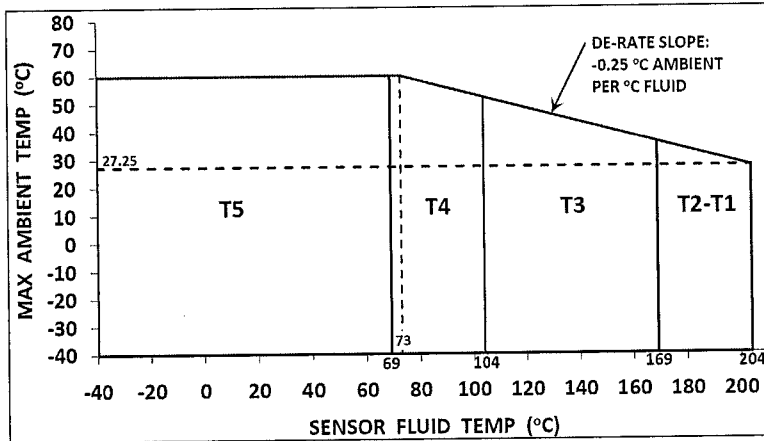
2.1 Input circuits (terminals 1 - 4)

Voltage	U_i	DC	17.3	V
Current	I_i		484	mA
Power	P_i		2.1	W
Effective internal capacitance	C_i		2200	pF
Effective internal inductance	L_i		30	μ H

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 graphs:

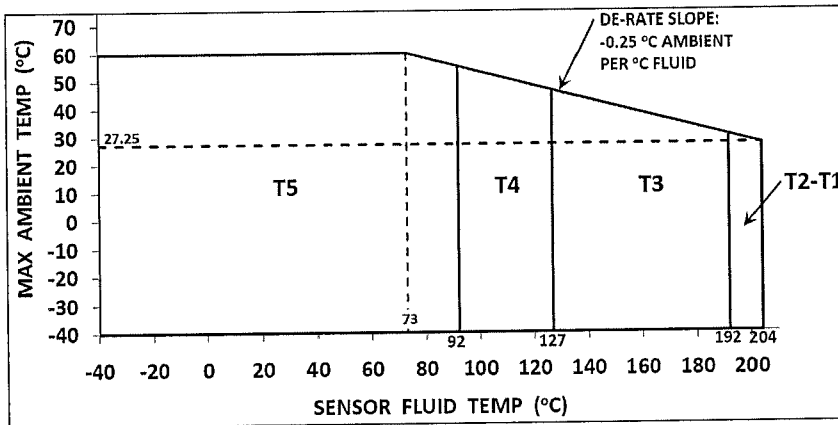
2.2.1 For types H025*****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W, Y)*Z*****, H050*****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W, Y)*Z*****, H100*****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W, Y)*Z***** and H200*****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W, Y)*Z***** no marking



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: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 230 °C.

Ambient temperature range T_a -40 °C up to +60 °C

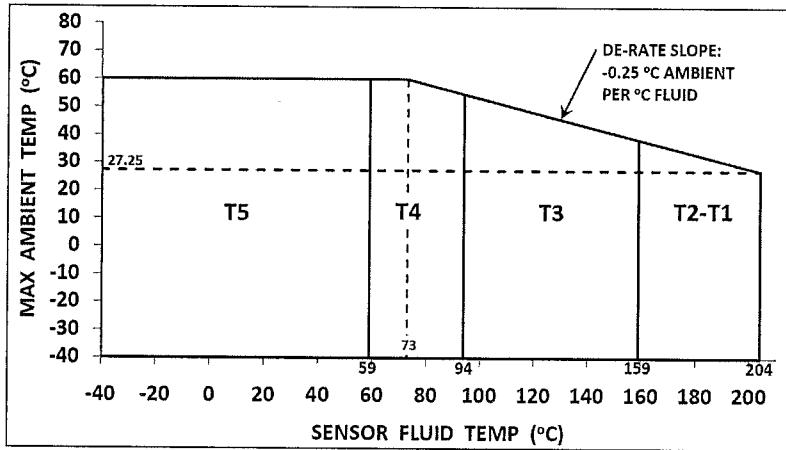
2.2.2 For types H025*****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W, Y)*Z***** and H050*****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W, Y)*Z***** with Construction Identification Code (CIC) marking A2



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.

Ambient temperature range T_a -40 °C up to +60 °C

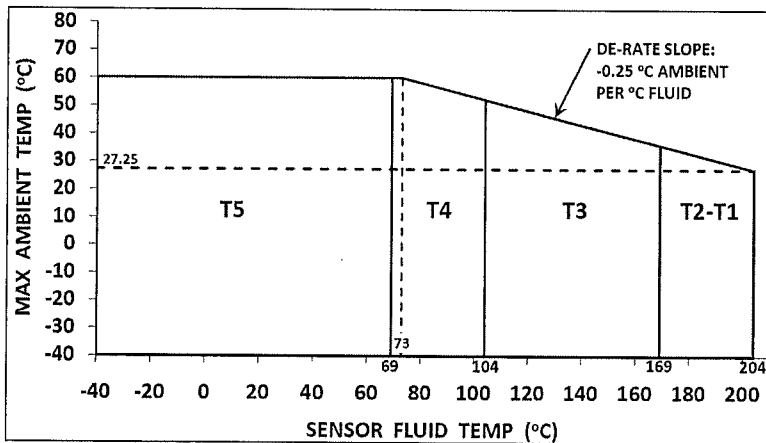
2.2.3 For type H100*****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W, Y)*Z***** with Construction Identification Code (CIC) marking A2



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.

Ambient temperature range T_a -40 °C up to +60 °C

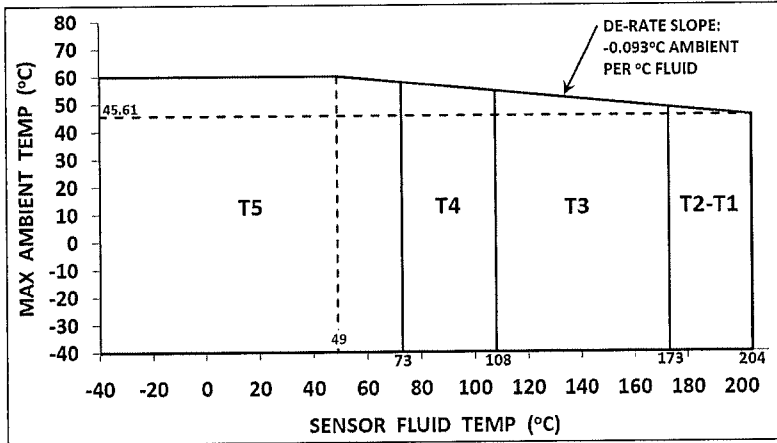
2.2.4. For type H200*****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W, Y)*Z***** with Construction Identification Code (CIC) marking A1



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 T_a -40 °C up to +60 °C

2.2.5 For types H300*****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W, Y)*Z***** with Construction Identification Code (CIC) marking A4 or no marking and H300*****(2, 3, 4, 5, 6, 7, 8, 9, A, B, D, E, Q, V, W, Y)*6*****



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: 226 °C.

Ambient temperature range T_a -40 °C up to +60 °C

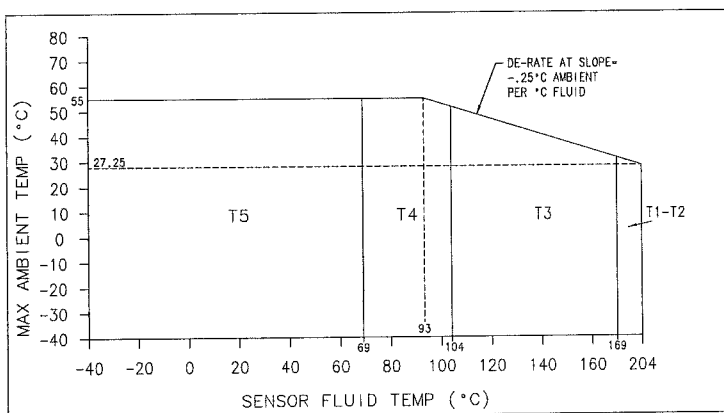
3 Type H*** *****(C, F)*Z*****

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 graphs:

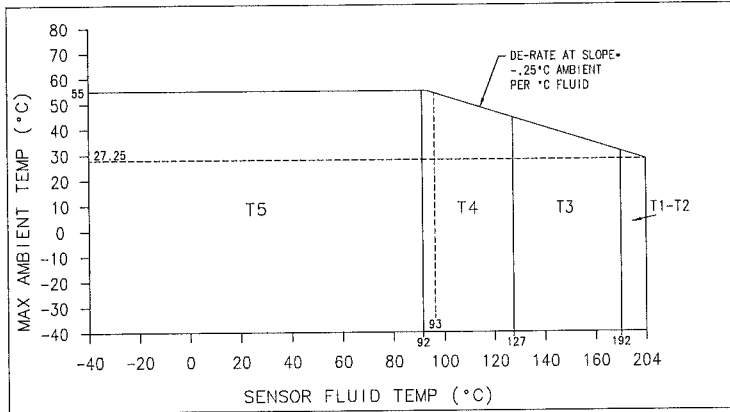
3.2.1 For types H025*****(C,F)*Z*****, H050*****(C,F)*Z*****, H100*****(C,F)*Z***** and H200*****(C,F)*Z***** no marking



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: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2 and T1: 230 °C.

Ambient temperature range T_a -40 °C up to +55 °C

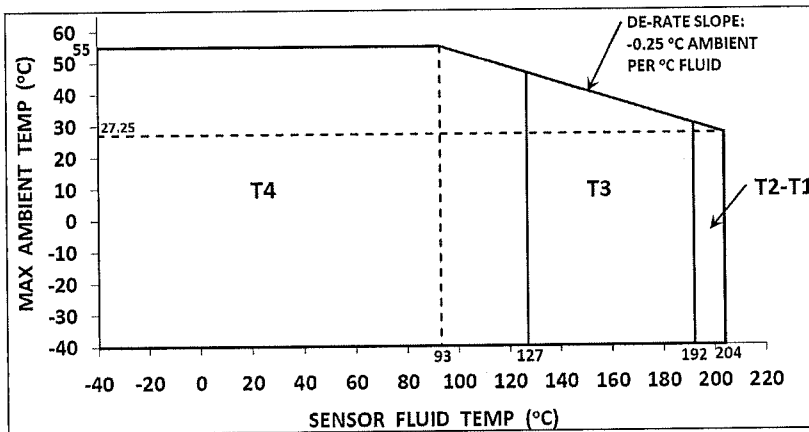
3.2.2 For types H025*****(C,F)*Z***** and H050*****(C,F)*Z***** with Construction Identification Code (CIC) marking A2



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.

Ambient temperature range T_a -40 °C up to +55 °C

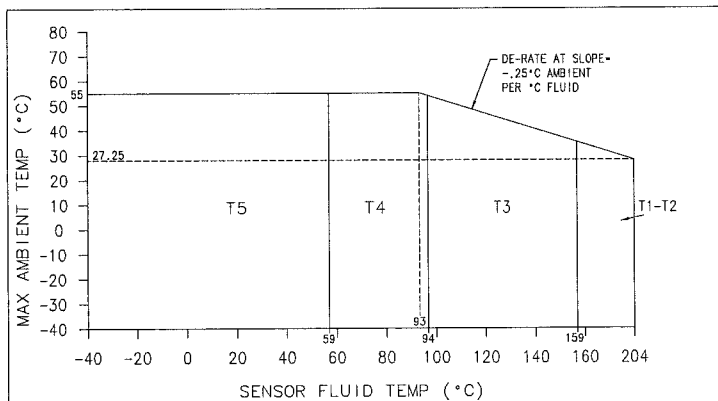
When used with 1700/2700 Transmitter with Wireless HART Output Option Code "4" (*700*1*4*****):



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

Ambient temperature range T_a -40 °C up to +55 °C

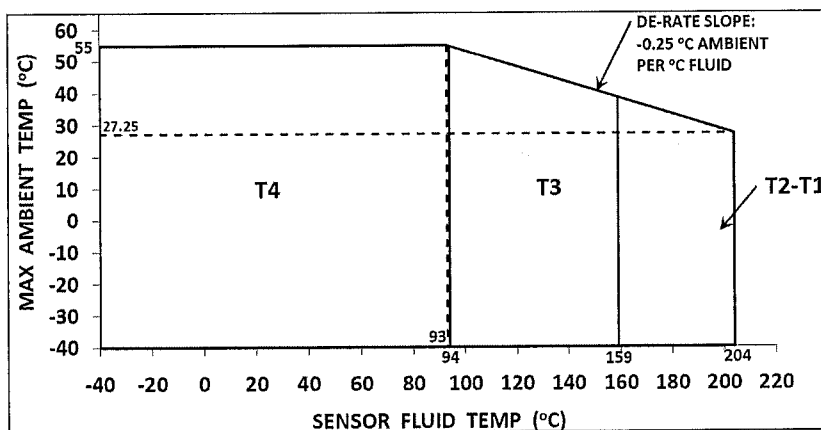
3.2.3 For type H100*****(C,F)*Z***** with Construction Identification Code (CIC) marking A2



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.

Ambient temperature range T_a -40 °C up to +55 °C

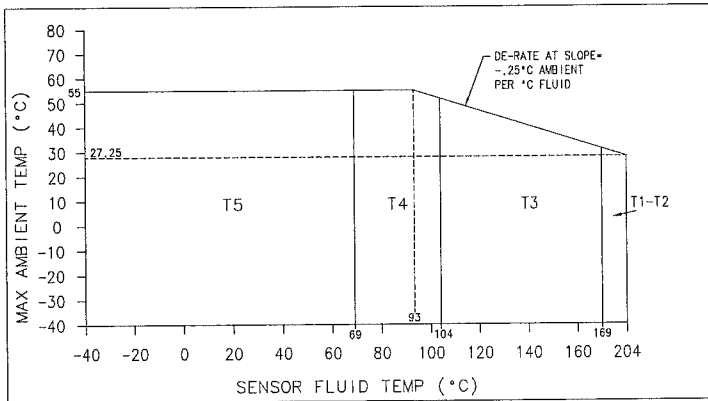
When used with 1700/2700 Transmitter with Wireless HART Output Option Code "4" (*700*1*4*****):



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

Ambient temperature range T_a -40 °C up to +55 °C

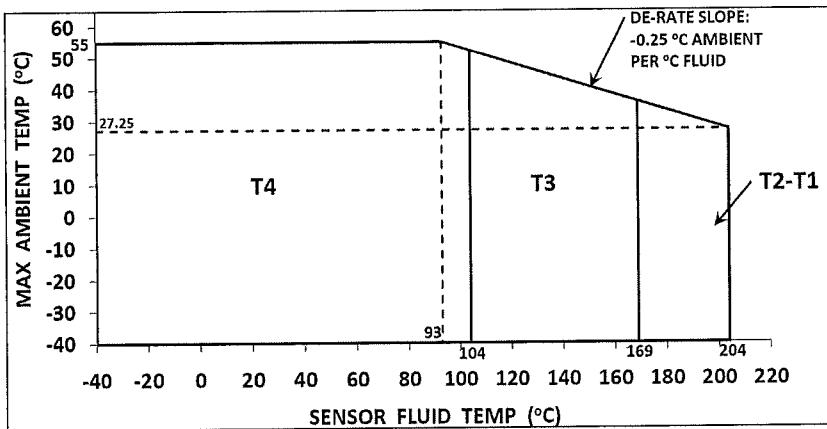
3.2.4 For type H200*****(C,F)*Z***** with Construction Identification Code (CIC) marking A1



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 T_a -40 °C up to +55 °C

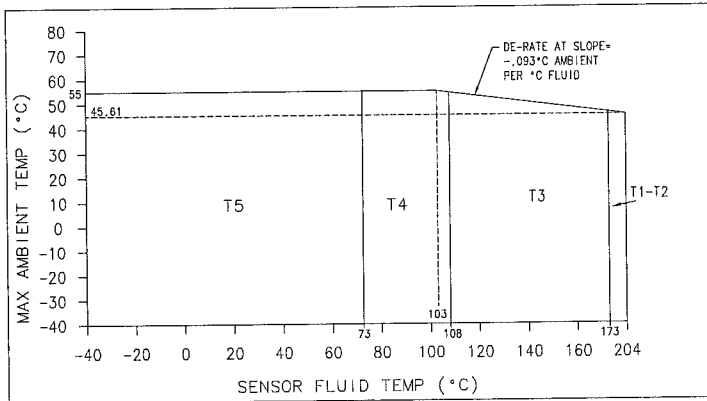
When used with 1700/2700 Transmitter with Wireless HART Output Option Code "4" (*700*1*4*****):



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

Ambient temperature range T_a -40 °C up to +55 °C

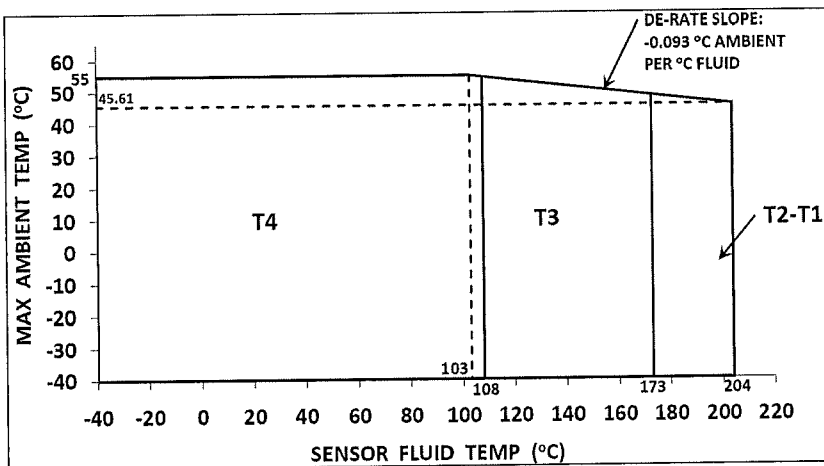
3.2.5 For types H300*****(C,F)*Z***** with Construction Identification Code (CIC) marking A4 or no marking and H300*****(C,F)*6*****



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: 226 °C.

Ambient temperature range T_a -40 °C up to +55 °C

When used with 1700/2700 Transmitter with Wireless HART Output Option Code "4" (*700*1*4*****):



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

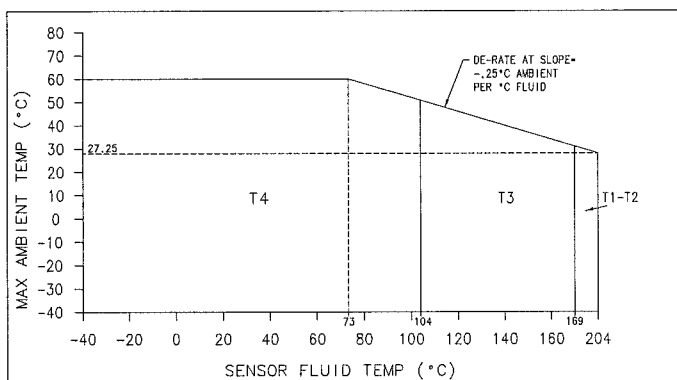
Ambient temperature range T_a -40 °C up to +55 °C

4 Type H*****(J,U)*****

4.1 Input circuits (terminals 1 - 2)

Voltage	U_i	DC	28	V
Current	I_i		120	mA
Power	P_i		0.84	W
Effective internal capacitance	C_i		2200	pF
Effective internal inductance	L_i		45	μ H

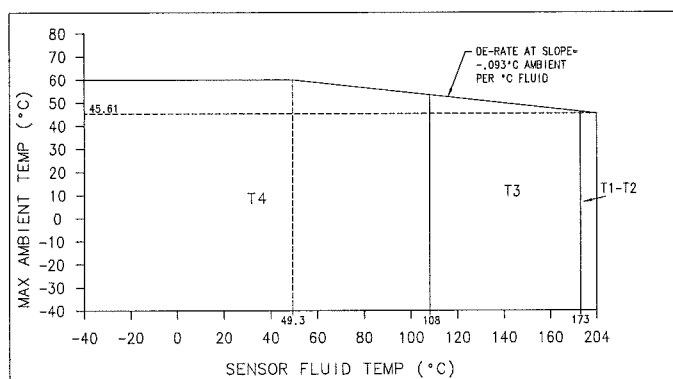
4.2.3 For type H200*****(J,U)*Z***** with Construction Identification Code (CIC) marking A1 or no marking



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: T4: 130 °C, T3: 195 °C, T2 and T1: 230 °C.

Ambient temperature range T_a -40 °C up to +60 °C

4.2.4 For types H300*****(J,U)*Z***** with Construction Identification Code (CIC) marking A4 or no marking and H300*****(J,U)*6*****



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: T4: 130 °C, T3: 195 °C, T2 and T1: 226 °C.

Ambient temperature range T_a -40 °C up to +60 °C

5 Type H*** *****I *Z***** except H300 *****Z*****.

Not changed

Special conditions for safe use

By mounting the sensor directly to the 2200S transmitter the use of the unit will be modified according to the following table:

	Sensor type	
	H025*****(J or U)*Z***** H025*****(J or U)*Z***** CIC A2 H050*****(J or U)*Z***** H050*****(J or U)*Z***** CIC A2 H100*****(J or U)*Z***** H100*****(J or U)*Z***** CIC A2 H200*****(J or U)*Z***** H200*****(J or U)*Z***** CIC A1 H300*****(J or U)*Z***** CIC A4 H300*****(J or U)*6*****	H300***** (J or U)*Z*****
Transmitter type 2200S* (H or K)*1*Z*****	Ex ib IIC T1-T4, Ex ibD 21 T ¹⁾ °C	Ex ib IIB T1-T4 Ex ibD 21 T ¹⁾ °C
Transmitter type 2200S* (5 or 6)*1*Z*****	Ex ib IIC T1-T4	Ex ib IIB T1-T4

¹⁾ FOR DUST TEMP RATINGS SEE TEMPERATURE GRAPHS AND MANUAL

By mounting the sensor directly to the *700 transmitter the use of the unit will be modified according to the following table:

Sensor	H025*****(C or F)*Z***** H025*****(C or F)*Z***** CIC A2 H050*****(C or F)*Z***** H050*****(C or F)*Z***** CIC A2 H100*****(C or F)*Z***** H100*****(C or F)*Z***** CIC A2 H200*****(C or F)*Z***** H200*****(C or F)*Z***** CIC A1 H300*****(C or F)*Z***** CIC A4 H300*****(C or F)*6*****	H300***** (C or F)*Z*****
Transmitter type *700*1 (1 or 2)*****	Ex ib IIB+H ₂ T1-5 Ex tD A21 IP 65 T ¹⁾ °C	Ex ib IIB T1-5 Ex tD A21 IP 65 T ¹⁾ °C
Transmitter type *700*1 (3, 4 or 5)*****	Ex ib IIC T1-5 Ex tD A21 IP 65 T ¹⁾ °C	Ex ib IIB T1-5 Ex tD A21 IP 65 T ¹⁾ °C
Transmitter type *700*1 (1 or 2)D*****	Ex ib IIB+H ₂ T1-5 Ex tD A21 IP 65 T ¹⁾ °C	Ex ib IIB T1-5 Ex tD A21 IP 65 T ¹⁾ °C
Transmitter type *700*1 (3, 4 or 5)D*****	Ex ib IIC T1-5 Ex tD A21 IP 65 T ¹⁾ °C	Ex ib IIB T1-5 Ex tD A21 IP 65 T ¹⁾ °C
Transmitter type 2700*1 (1 or 2)(E or G)*****	Ex ib IIB+H ₂ T1-5 Ex tD A21 IP 65 T ¹⁾ °C	Ex ib IIB T1-5 Ex tD A21 IP 65 T ¹⁾ °C
Transmitter type 2700*1 (3, 4 or 5)(E or G)*****	Ex ib IIC T1-5 Ex tD A21 IP 65 T ¹⁾ °C	Ex ib IIB T1-5 Ex tD A21 IP 65 T ¹⁾ °C
Transmitter type *700*1(1 or 2)4*****	Ex ib IIB+H ₂ T1-4	Ex ib IIB T1-4
Transmitter type *700*1(3, 4 or 5)4*****	Ex ib IIC T1-4	Ex ib IIB T1-4

¹⁾ FOR DUST TEMP RATINGS SEE TEMPERATURE GRAPHS AND MANUAL



Test and assessment report

BVS PP 03.2118 EG as of 17.11.2010

DEKRA EXAM GmbH

Bochum, dated 17.11.2010

Signed: Hans Christian Simanski

Signed: Dr. Franz 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, 17.11.2010
BVS-Schu/Schae A 20090522

DEKRA EXAM GmbH

Certification body

Special services unit

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Date	15.06.2011

Our reference:	BSV-Schu/Sch	A 20110440
Your sign:	H. van Holland	
Your reference:	11.05.2011	

Dear Sir or Madame,

We added the Revision Report as of 15.06.2011 to the Test and Assessment Report BVS PP 03.2118 EG.

We confirm, that the Certificate

BVS 03 ATEX E 177 X as of 30.06.2003, last modification as of 17.11.2010

is still valid.

Yours sincerely
DEKRA EXAM GmbH



Christian Simanski



Dr. Franz Eickhoff

Enclosures Revision Report
 Descriptive documents