



Translation

(1) **Type Examination Certificate**

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

(3) **BVS 06 ATEX E 093 X**

(4) **Equipment:** **Sensor type CMF**** *****V****, CNG050*****V****,**
F***V****, H*****V****, R*****V**** and**
T***V******

(5) **Manufacturer:** **Micro Motion, Inc.**

(6) **Anschrift:** **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 certifies that this equipment (or component) has been found to comply with the Essential Health and Safety Requirements relating to the design of Category 3 equipment intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in confidential test and assessment report BVS PP 06.2082 EG.


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

EN 60079-0:2004 General requirements
IEC 60079-15:2005 Type of protection 'n'
EN 50281-1-1:1998 +A1 Dust explosion protection

(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 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 3G Ex nA II T1-T5**
II 3D IP65 T* °C

EXAM BBG Prüf- und Zertifizier GmbH

Bochum, dated 02. August 2006

Signed: Dr. Jockers

Signed: Dr. Eickhoff

Certification body

Special services unit

(13) Appendix to

(14) **Type Examination Certificate**

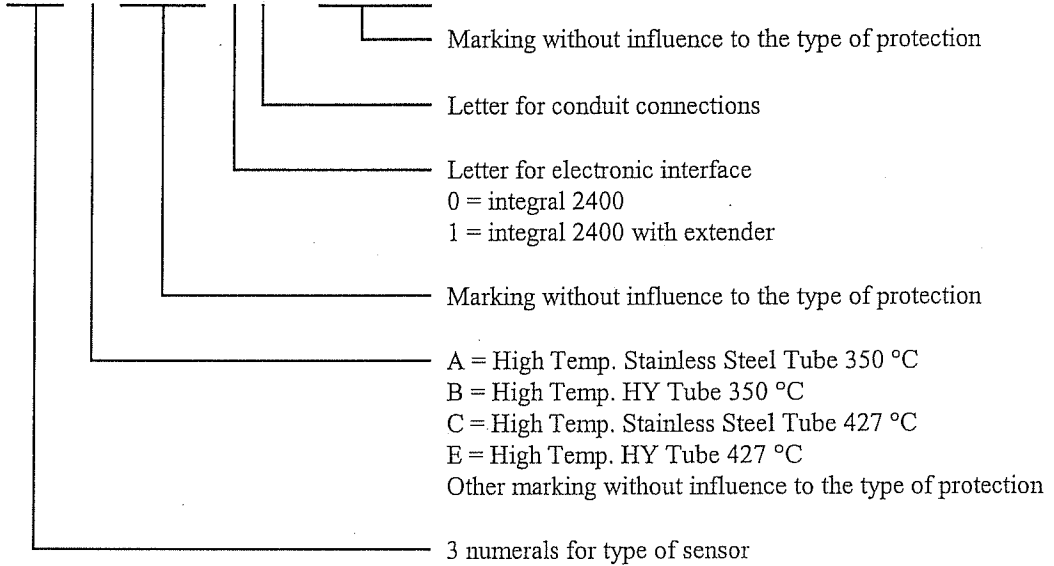
BVS 06 ATEX E 093 X

(15) 15.1 Subject and type

Sensor type CMF*****V****
 CNG050*****V****
 F*****V*****
 H*****V*****
 R*****V*****
 T*****V*****

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

C M F * * * * * * * * * V * * * *
 C N G 0 5 0 * * * * * * * * * V * * * *
 F * * * * * * * * * V * * * * *
 H * * * * * * * * * V * * * * *
 R * * * * * * * * * V * * * * *
 T * * * * * * * * * V * * * * *



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 sensor is designed for use in connection with a suitable transmitter, e. g. type 24*****L**** in accordance with BVS 05 E 116 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

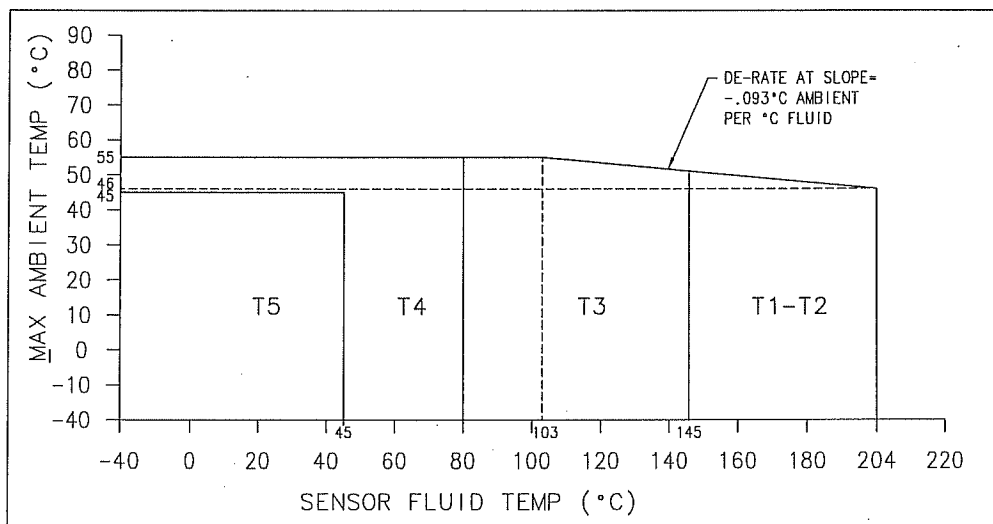
15.3 Parameters

15.3.1	Drive circuit (pin connections 7-8)			
	Voltage	DC	30	V
	Current		84	mA
15.3.2	Pick-Off circuit (pin connections 3-4)			
	Voltage	DC	30	V
	Current		25	mA
15.3.3	Temperature circuit (pin connections 1, 2 and 9)			
	Voltage	DC	30	V
	Current		25	mA

15.3.4 Thermal data
Regulation of 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 graphs:

15.3.4.1 Type CMF010*****V****, CMF025*****V****, CMF050*****V****, CMF100*****V****, CMF200*****V****, CMF300*****V**** with integral 2400, except CMF*** (A, B, C, E)*****V****

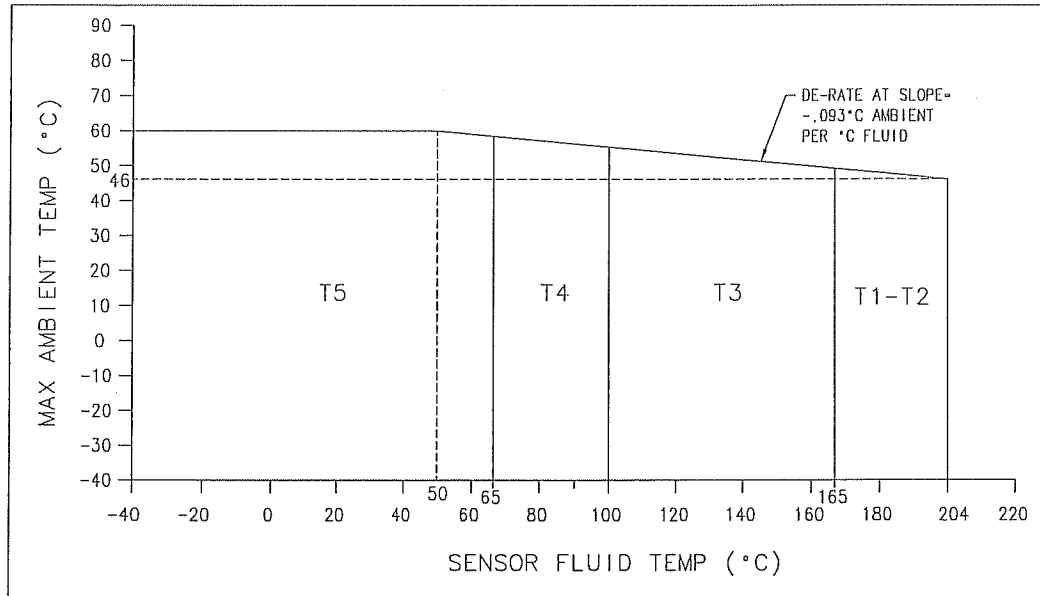


Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2: to T1: 254 °C.

Ambient temperature range

Ta -40 °C up to +55 °C

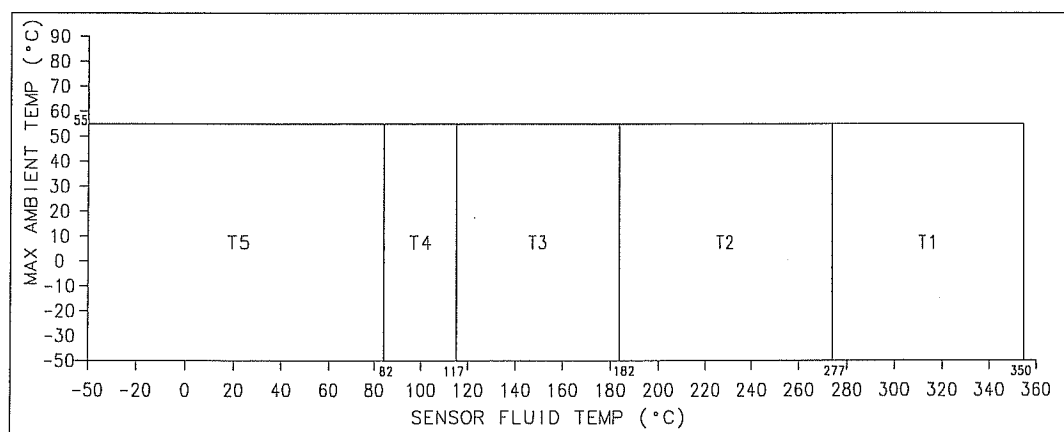
4.4.2 Type CMF400*****V**** with integral 2400



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: 234 °C.

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

4.4.3 Type CMF200(A, B)*****V****, CMF300(A, B)*****V****, CMF400(A, B)*****V**** with integral 2400



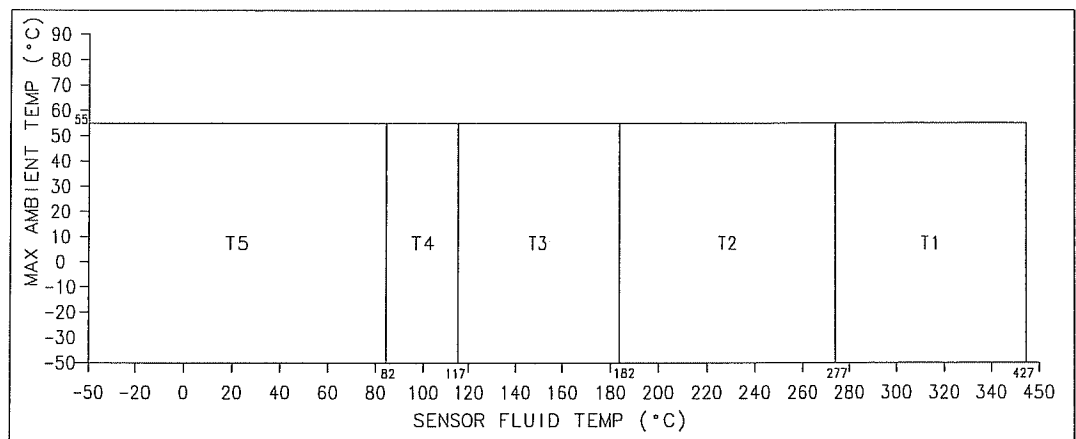
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2: 290 °C and T1: 363 °C.

Ambient temperature range T_a -50 °C up to +55 °C

The minimum ambient and process fluid temperature for dust is -40 °C.

Since the electronics are mounted approx. 1 meter away from the sensor by means of a flexible stainless steel hose, the use of the sensor at an ambient temperature higher than +55°C 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.

4.4.4 Type CMF200(C, E)*****V****, CMF300(C, E)*****V****, CMF400(C, E)*****V**** with integral 2400



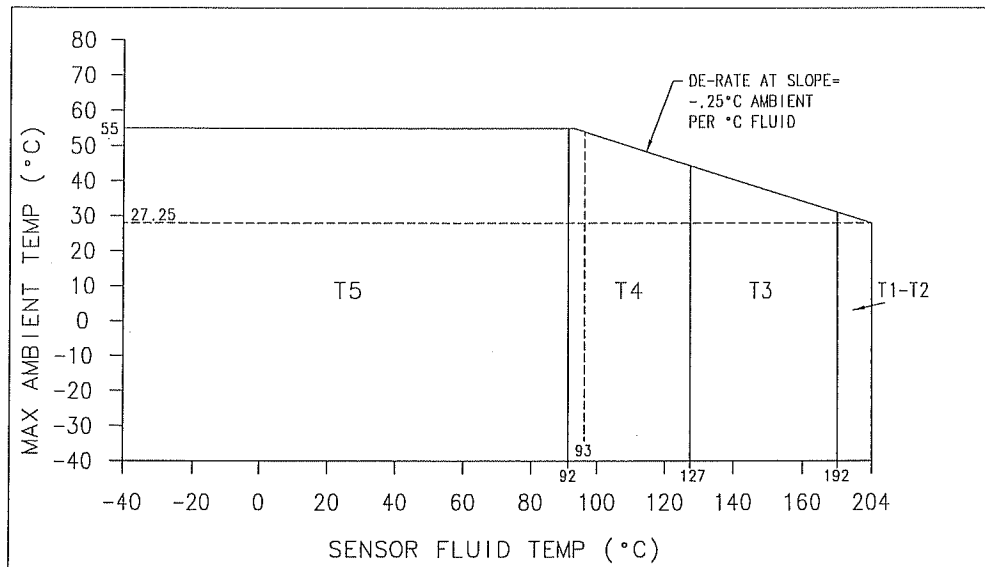
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2: 290 °C and T1: 440 °C.

Ambient temperature range T_a -50 °C up to +55 °C

The minimum ambient and process fluid temperature for dust is -40 °C.

Since the electronics are mounted approx. 1 meter away from the sensor by means of a flexible stainless steel hose, the use of the sensor at an ambient temperature higher than +55 °C 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.

15.3.4.5 Type F025*****V*****, F050*****V*****, H025*****V*****, H050*****V*****, R025*****V*****, R050*****V*****, and CNG050*****V*****, with integral 2400, except F***(A, B, C, E)*****V*****

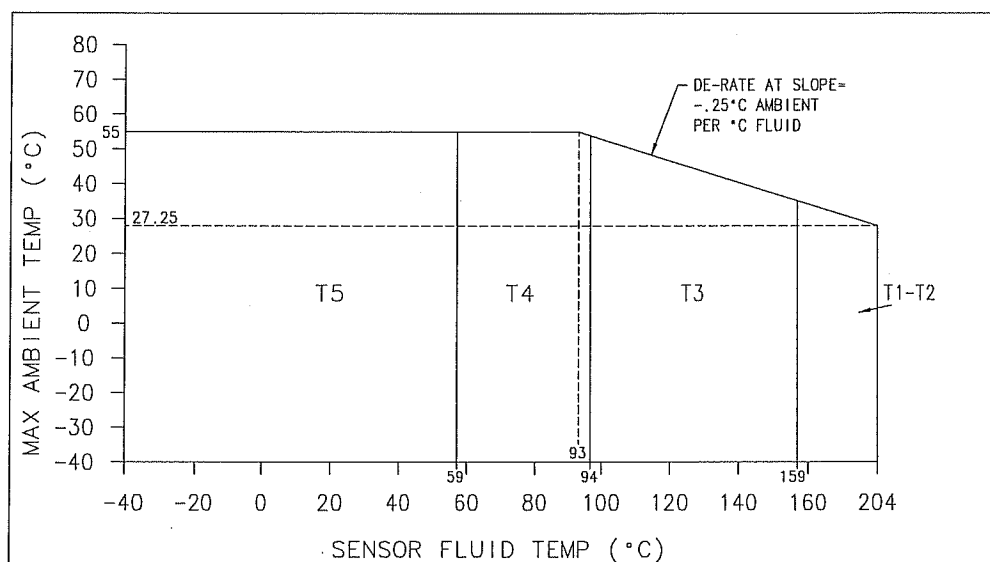


Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2: to T1: 207 °C.

Ambient temperature range

Ta -40 °C up to +55 °C

15.3.4.6 Type F100*****V*****, H100*****V*****, R100*****V*****, with integral 2400, except F100(A, B, C, E)*****V*****

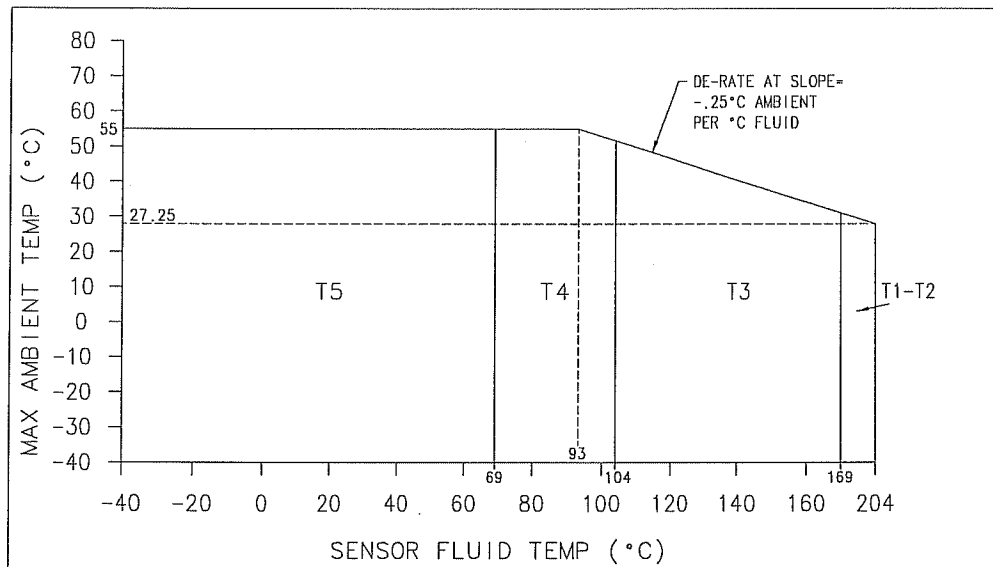


Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2: to T1: 240 °C.

Ambient temperature range

Ta -40 °C up to +55 °C

15.3.4.7 Type F200*****V*****, H200*****V*****, R200*****V*****
with integral 2400, except F200(A, B, C, E)*****V*****

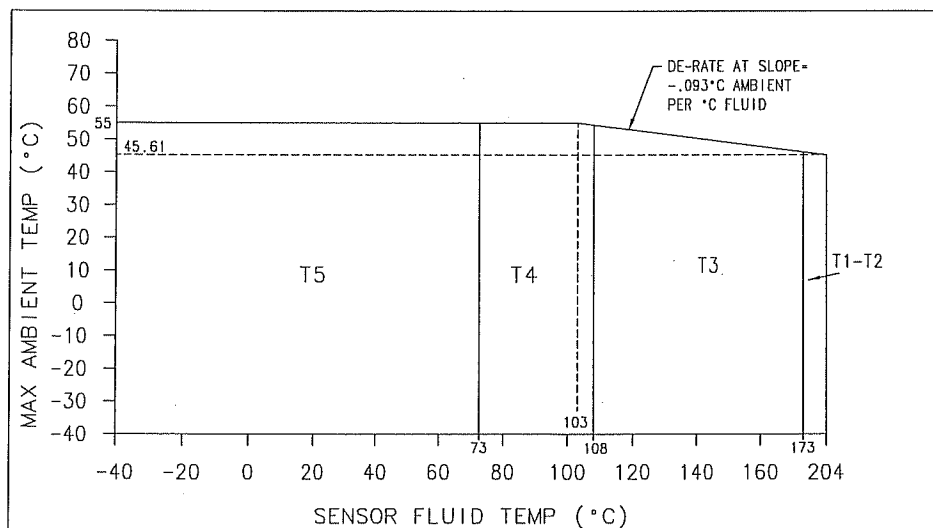


Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2: to T1: 230 °C.

Ambient temperature range

Ta -40 °C up to +55 °C

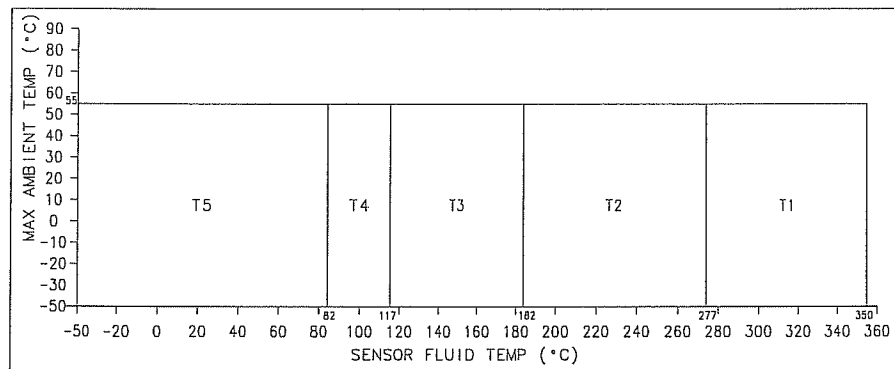
15.3.4.8 Type F300*****V*****, H300*****V*****, with integral 2400,
except F200(A, B, C, E)*****V*****



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: 226 °C.

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

15.3.4.9 Type F025(A, B)*****V*****, F050(A, B)*****V*****, F100(A, B)*****V*****, F300(A, B)*****V***** with integral 2400



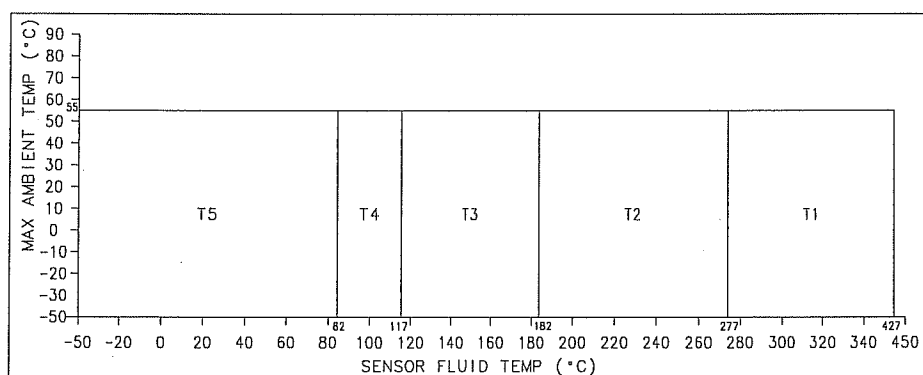
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2: 290 °C and T1: 363 °C.

Ambient temperature range Ta -50 °C up to +55 °C

The minimum ambient and process fluid temperature for dust is -40 °C.

Since the electronics are mounted approx. 1 meter away from the sensor by means of a flexible stainless steel hose, the use of the sensor at an ambient temperature higher than +55 °C 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.

15.3.4.10 Type F025(C, E)*****V*****, F050(C, E)*****V*****, F100(C, E)*****V*****, F300(C, E)*****V***** with integral 2400



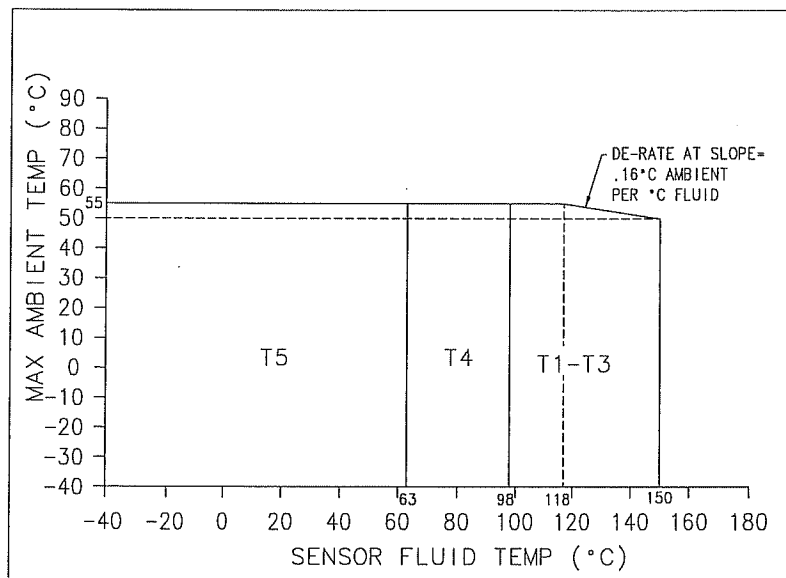
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature T for dust is as follows: T5: 95 °C, T4: 130 °C, T3: 195 °C, T2: 290 °C and T1: 440 °C.

Ambient temperature range Ta -50 °C up to +55 °C

The minimum ambient and process fluid temperature for dust is -40 °C.

Since the electronics are mounted approx. 1 meter away from the sensor by means of a flexible stainless steel hose, the use of the sensor at an ambient temperature higher than +55 °C 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.

15.4.11 Type T025*****V*****, T050*****V*****, T075*****V*****, T100*****V*****, T150*****V*****, with integral 2400



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: 182 °C.

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

(16) Test report
BVS PP 06.2082 EG, dated 02.08.2006

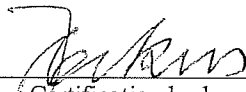
(17) Special condition for safe use

The sensor is designed for use in connection with a suitable transmitter, e. g. type 24*****L**** in accordance with BVS 05 E 116 X; only the assemblage of the sensor and the transmitter guarantees the necessary degrees of protection.

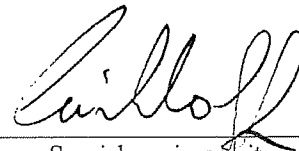
We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 02.08.2006
BVS-Schu/Mi A 20050713

EXAM BBG Prüf- und Zertifizier GmbH



Certification body



Special services unit