Translation

(1) Type Examination Certificate

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

(3) No. of Type Examination Certificate: **BVS 14 ATEX E 180 X**

(4) Equipment: **Transmitter type CMFS**********V******

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

(6) Address: **7070 Winchester Circle, Boulder, Co. 80301, USA**

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of DEKRA EXAM GmbH certifies that this equipment 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 the Test and Assessment Report BVS PP 14.xxxx EG.

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

EN 60079-0:2012 + A11:2013	**General requirements**
EN 60079-15:2010	**Equipment protection by type of protection 'n'**
EN 60079-31:2014	**Protection by enclosure 't'**

(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 appendix 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
II 3D
See clause 15.2

DEKRA EXAM GmbH
Bochum, dated 2014-12-09

Signed: Schumann
Certification body

Signed: Dr. Wittler
Special services unit

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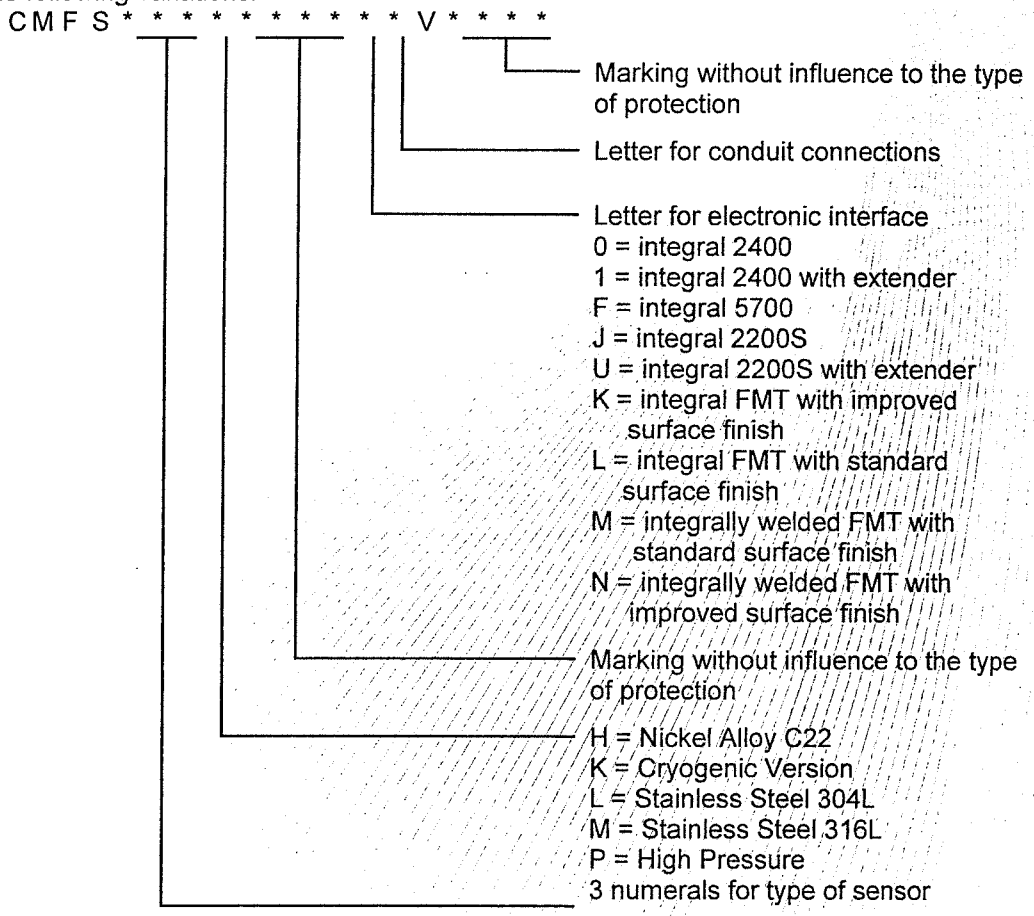
(13) Appendix to

(14) **Type Examination Certificate**
BVS 14 ATEX E 180 X

(15) 15.1 Subject and type

Transmitter type CMFS**********V****

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



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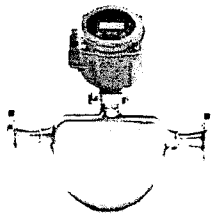
15.2 Description

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

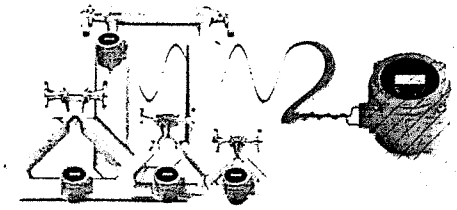
The flow sensor, which consists of magnetically excited oscillating tubes, contains as electrical components coils, resistors, temperature sensors and terminals and connectors.

The sensor is designed for use in connection with a suitable transmitter, e.g. type 2400S*****L**** in accordance with BVS 05 E 116 X, e.g. type 2200S*****L**** in accordance with BVS 08 ATEX E 112 X, e.g. type FMT*****L**** in accordance with BVS 10 ATEX E 115 X, e.g. type 5700*1***VA*** in accordance with BVS 14 ATEX E 055 X; only the assemblage of the sensor and the transmitter guarantees the necessary degrees of protection.

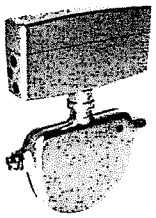
When used with an integral transmitter type 2400S*****L****, the variation gets the denomination type CMFS ******** (0 or 1) ******.



When used with an integral transmitter type 2200S*****L****, the variation gets the denomination type CMFS ******** (J or U) ******.



When used with an integral transmitter type FMT*****L****, the variation gets the denomination type CMFS ******** (K, L, M or N) ******.



When used with an integral transmitter type 5700*1***VA***, the variation gets the denomination type CMFS ********F******.

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Marking:

Type	Type of protection
CMFS********(0 or 1)*V****	Ex nA IIC T5...T1 Gc Ex tc IIIC T [1] °C Dc IP66/IP67
CMFS********(K, L, M or N)*V****	Ex nA IIC T5...T1 Gc Ex tc IIIC T [1] °C Dc IP66/IP67
CMFS********(J or U)*V**** without THUM 775 installed	Ex nA IIC T4...T1 Gc Ex tc IIIC T [1] °C Dc IP66/IP67
CMFS********(J or U)*V**** with THUM 775 installed	Ex nA IIC T4...T1 Gc IP66
CMFS********F*V**** without THUM 775 installed	Ex nA IIC T5...T1 Gc Ex tc IIIC T [1] °C Dc IP66/IP67
CMFS********F*V**** with THUM 775 installed	Ex nA IIC T4...T1 Gc IP66

[1] For dust temp ratings see temperature graphs clause 15.3.4

15.3 Parameters

15.3.1 Drive circuit (pin connection 7-8)

Voltage	DC	30	V
Current		84	mA

15.3.2 Pick-off circuit (pin connections 3-4 and 5-6)

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 Temperature class / maximum 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:

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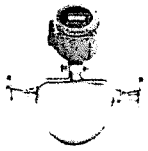
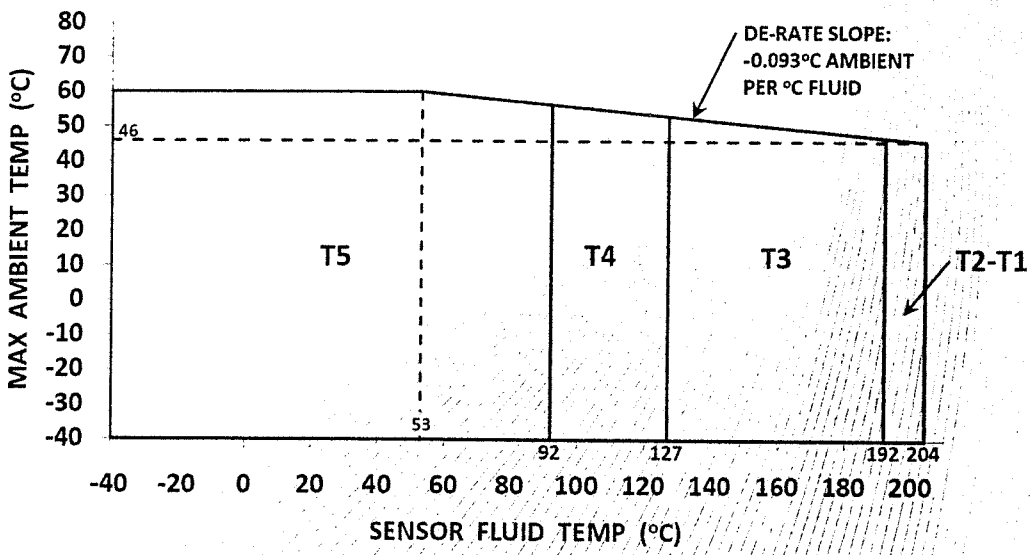
15.3.4.1 CMFS with integral 2400S:

Sensor type	
With 2400S	CMFS007*****(0,1)*V****
	CMFS010*****(0,1)*V****
	CMFS015*****(0,1)*V****



Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.
Note 2: The maximum surface temperature T for dust is as follows: T5: T 95 °C, T4:T 130 °C, T3:T 195 °C, T2 to T1:T 207 °C

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

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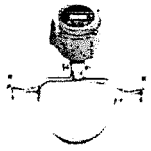
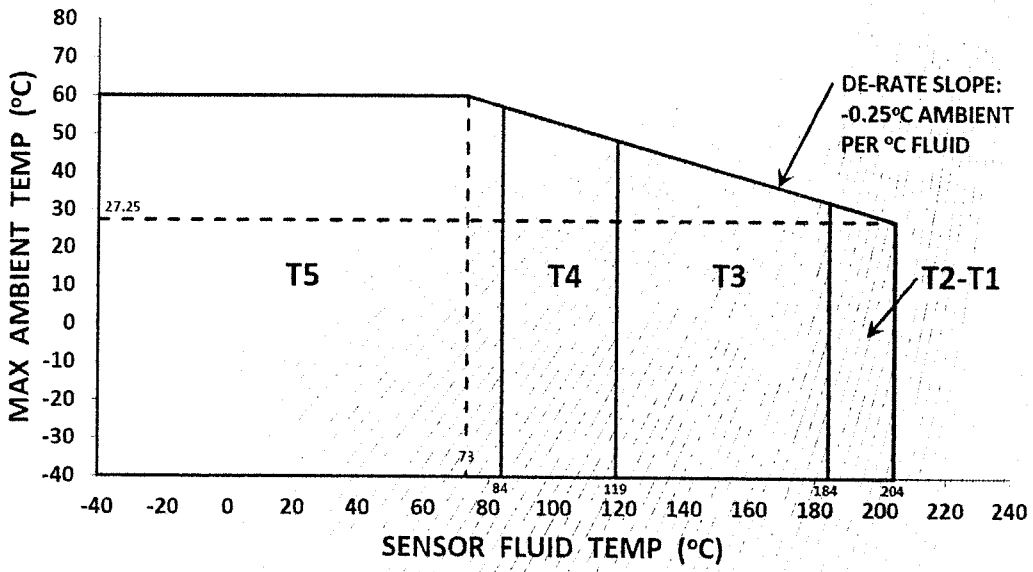
15.3.4.2 CMFS with integral 2400S:

Sensor type	
with 2400S	CMFS025*****(0,1)*V****
	CMFS040*****(0,1)*V****
	CMFS050*****(0,1)*V****
	CMFS075*****(0,1)*V****
	CMFS100*****(0,1)*V****
	CMFS150*****(0,1)*V****



Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.
Note 2: The maximum surface temperature for dust is as follows: T5: T 95 °C, T4:T 130 °C, T3:T 195 °C, T2 to T1:T 215 °C.

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

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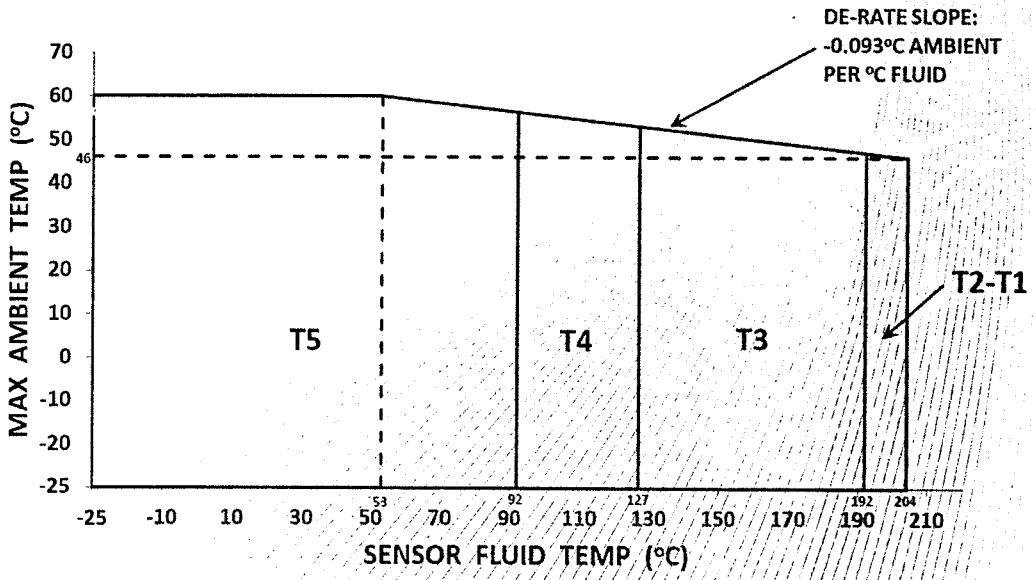
15.3.4.3 CMFS with integral FMT:

Sensor type	
With FMT	CMFS007*****(K,L,M,N)*V****
	CMFS010*****(K,L,M,N)*V****
	CMFS015*****(K,L,M,N)*V****



Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.
Note 2: The maximum surface temperature T for dust is as follows: T5: T 95 °C, T4: T 130 °C, T3:T 195 °C, T2 to T1:T 207 °C

Ambient temperature range: T_a -25 °C to +60 °C

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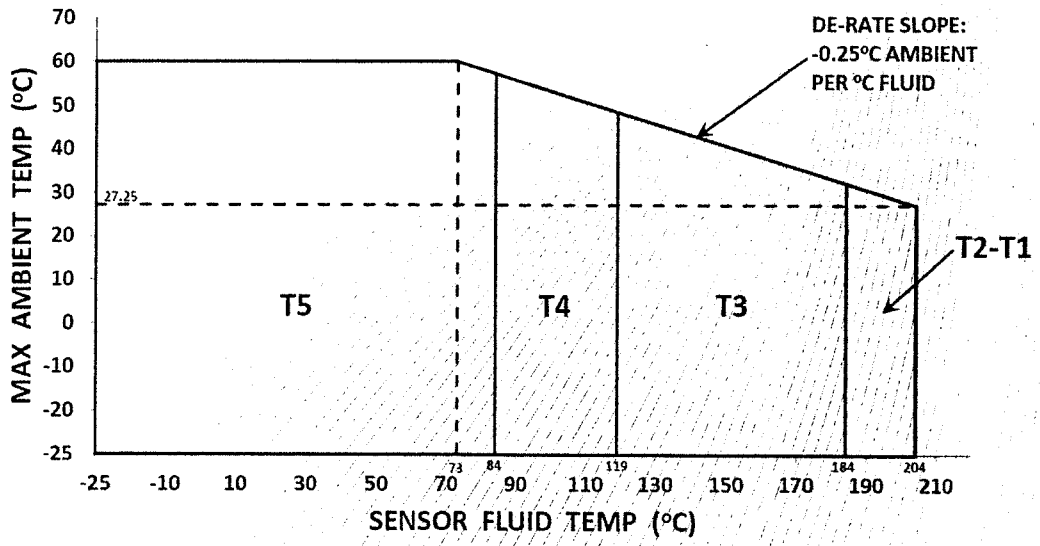
15.3.4.4 CMFS with integral FMT:

Sensor type	
with FMT	CMFS025*****(K,L,M,N)*V****
	CMFS040*****(K,L,M,N)*V****
	CMFS050*****(K,L,M,N)*V****
	CMFS075*****(K,L,M,N)*V****
	CMFS100*****(K,L,M,N)*V****
	CMFS150*****(K,L,M,N)*V****



Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.
Note 2: The maximum surface temperature for dust is as follows: T5: T 95 °C, T4:T 130 °C, T3:T 195 °C, T2 to T1:T 215 °C.

Ambient temperature range: T_a -25 °C up to +60 °C

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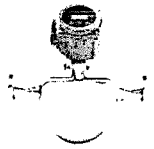
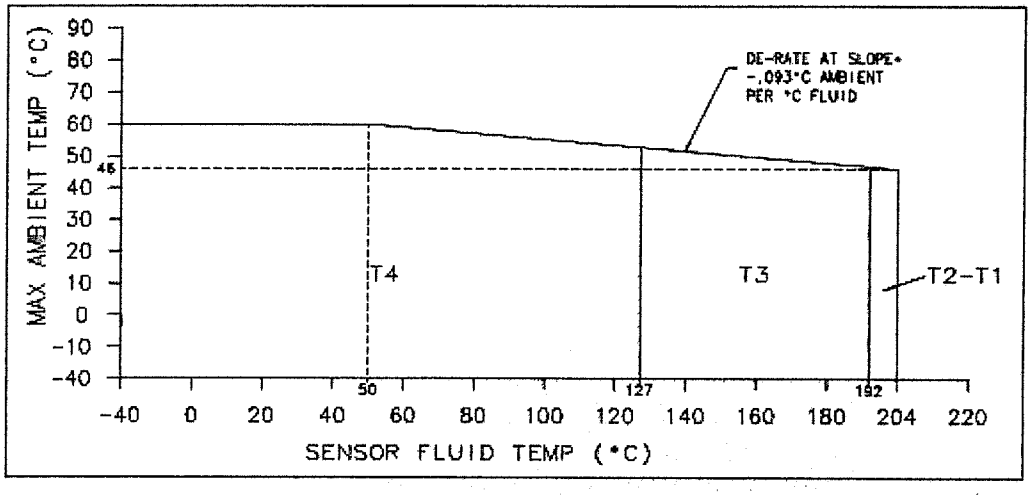
15.3.4.5 CMFS with integral 2200S:

Sensor type	
With 2200S	CMFS007*****(J,U)*V****
	CMFS010*****(J,U)*V****
	CMFS015*****(J,U)*V****



Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.
Note 2 (only when THUM 775 is not installed): The maximum surface temperature T for dust is as follows: T4: T 130 °C, T3:T 195 °C, T2 to T1:T 207 °C

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

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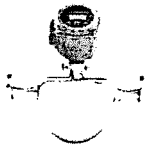
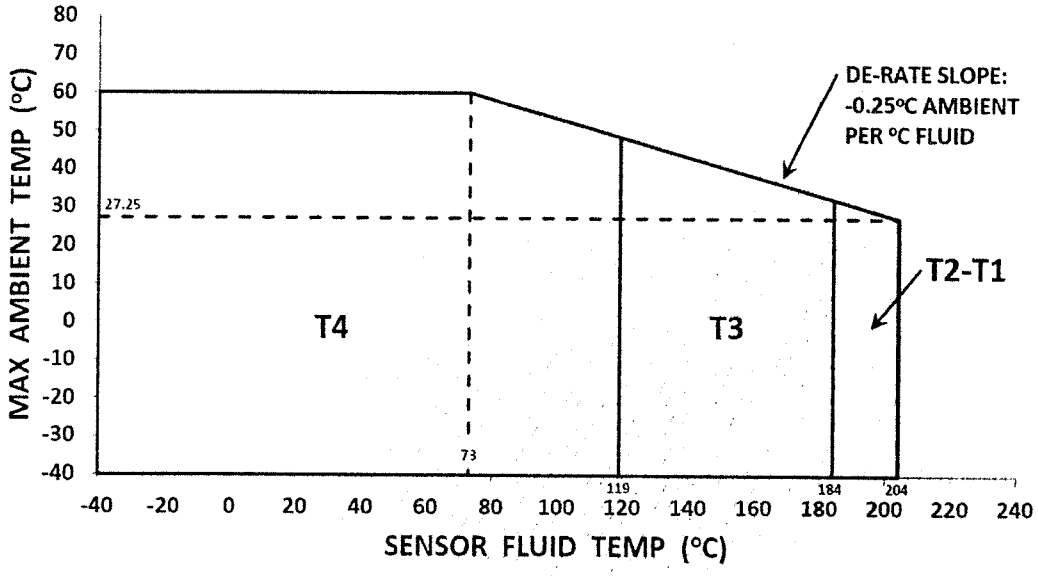
15.3.4.6 CMFS with integral 2200S:

Sensor type	
With 2200S	CMFS025*****(J,U)*V****
	CMFS040*****(J,U)*V****
	CMFS050*****(J,U)*V****
	CMFS075*****(J,U)*V****
	CMFS100*****(J,U)*V****
	CMFS150*****(J,U)*V****



Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Note 2 (only when THUM 775 is not installed): The maximum surface temperature for dust is as follows: T4: T 130 °C, T3: T 195 °C, T2 to T1: T 215 °C.

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

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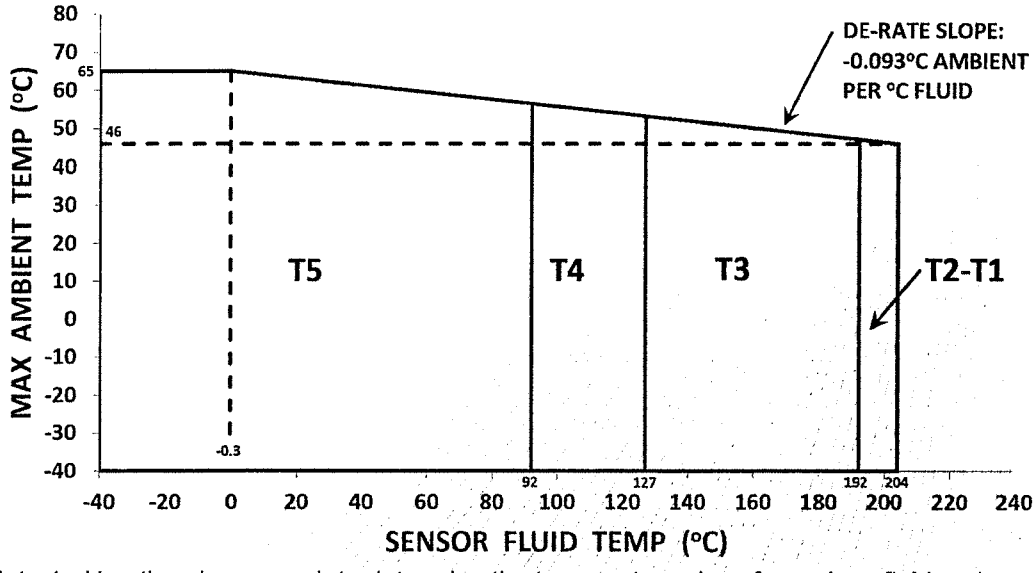
15.3.4.7 CMFS with integral 5700 without THUM 775 installed:

Sensor type	— —
With 5700	CMFS007*****F*V****
	CMFS010*****F*V****
	CMFS015*****F*V****



Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.
Note 2: The maximum surface temperature for dust is as follows: T5: T 95°C, T4: T 130°C, T3: T 195°C, T2 to T1:T 207°C.

Ambient temperature range: T_a -40 °C to + 65 °C

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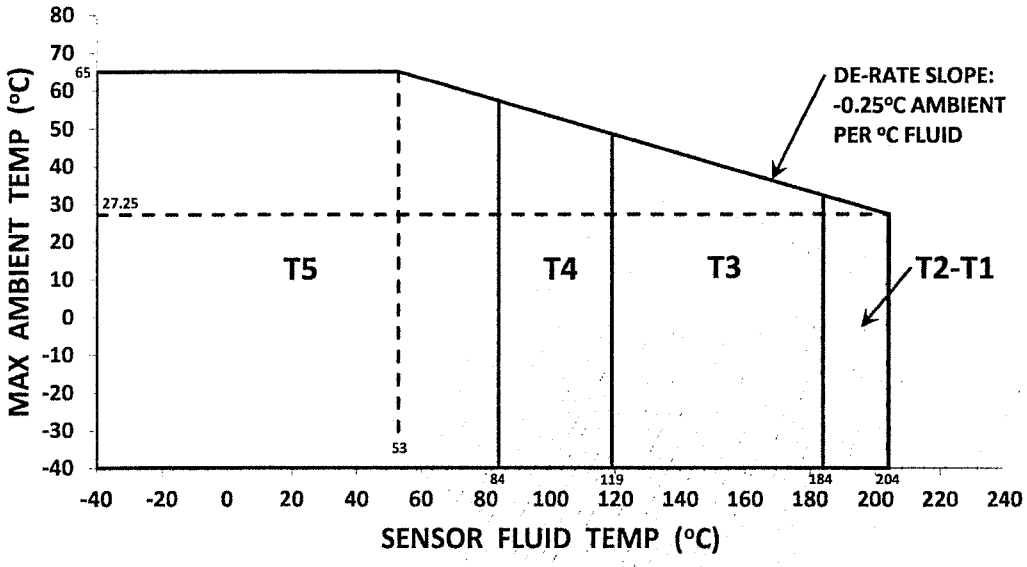
15.3.4.8 CMFS with integral 5700 without THUM 775 installed:

Sensor type	
With 5700	CMFS025*****F*V****
	CMFS040*****F*V****
	CMFS050*****F*V****
	CMFS075*****F*V****
	CMFS100*****F*V****
	CMFS150*****F*V****



Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.
Note 2: The maximum surface temperature for dust is as follows: T6: T 80 °C, T5: T 95 °C, T4: T 130 °C, T3: T 195 °C, T2 to T1: T 215 °C.

Ambient temperature range: T_a -40 °C to + 65 °C

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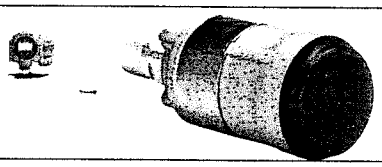
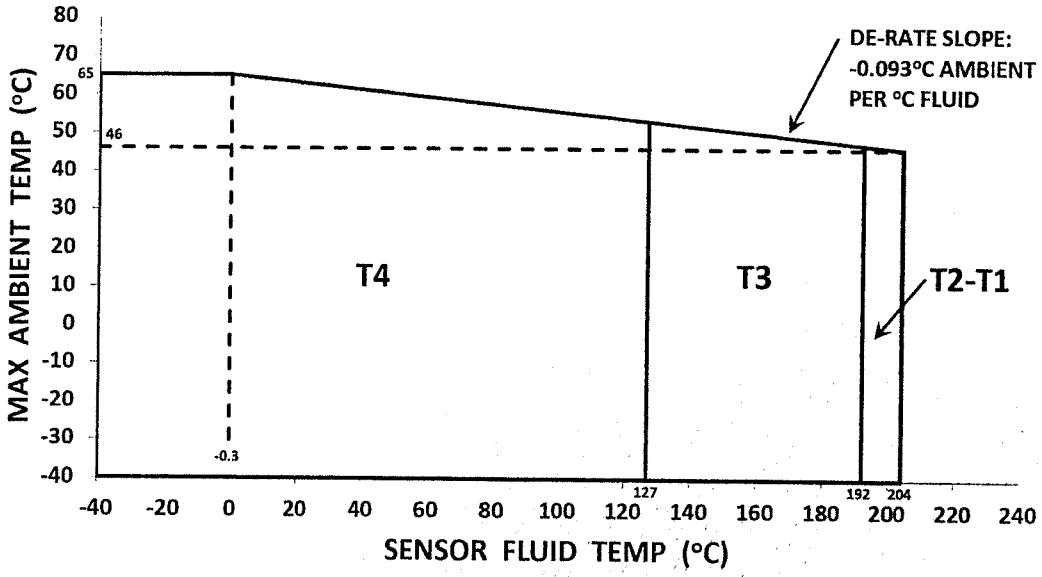
15.3.4.9 CMFS with integral 5700 and THUM 775 installed:

Sensor type	
With 5700	CMFS007*****F*V**** with THUM 775
	CMFS010*****F*V**** with THUM 775
	CMFS015*****F*V**** with THUM 775



Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range: T_a -40 °C to + 65 °C

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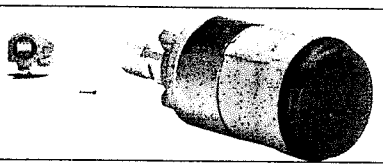
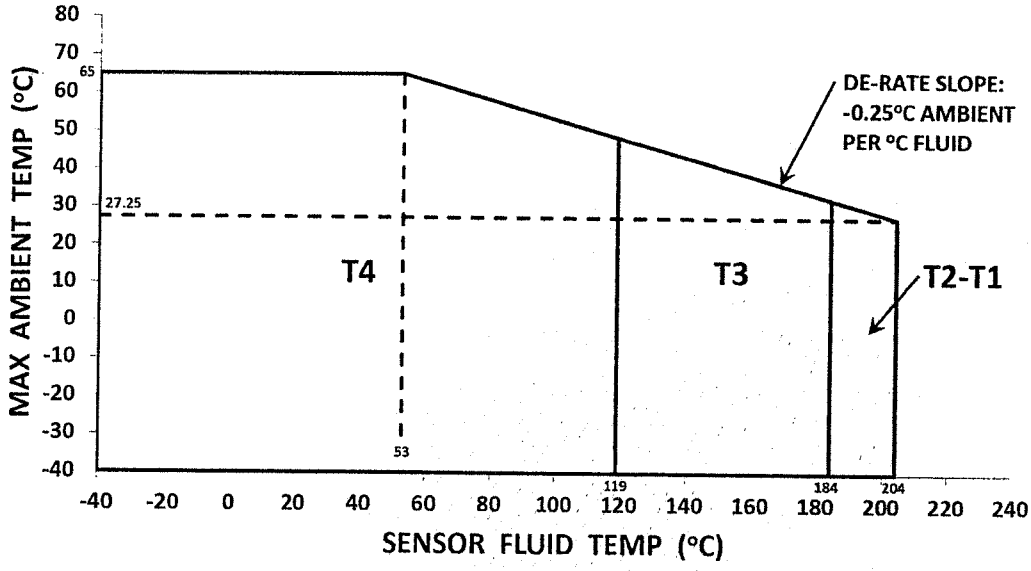
15.3.4.10 CMFS with integral 5700 and THUM 775 installed:

Sensor type	
with 5700	CMFS025*****F*V**** with THUM 775
	CMFS040*****F*V**** with THUM 775
	CMFS050*****F*V**** with THUM 775
	CMFS075*****F*V**** with THUM 775
	CMFS100*****F*V**** with THUM 775
	CMFS150*****F*V**** with THUM 775



Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range: T_a -40 °C to + 65 °C

(16) Test and Assessment Report

BVS PP 14.2251 EG as of 2014-12-09

DEKRA EXAM GmbH Dinnendahlstrasse 9 44809 Bochum Germany Phone +49.234.3696-105 Fax +49.234.3696-110 zs-exam@dekra.com

(17) Special conditions for safe use

The sensor is designed for use in connection with a suitable transmitter, e.g. type 2400S*****L**** in accordance with BVS 05 E 116 X, e.g. type 2200S*****L**** in accordance with BVS 08 ATEX E 112 X, e.g. type FMT*****L**** in accordance with BVS 10 ATEX E 115 X, e.g. type 5700*1***VA*** in accordance with BVS 14 ATEX E 055 X; only the assemblage of the sensor and the transmitter guarantees the necessary degrees of protection.

By mounting the sensor type directly to the transmitter 5700 the use of the unit will be modified according to the following:

	Sensor type
	CMFS007(H,L,M,P)****F*V**** CMFS010(H,L,M,P)****F*V**** CMFS015(H,L,M,P)****F*V**** CMFS025(H,L,M,P)****F*V**** CMFS040(H,L,M,P)****F*V**** CMFS050(H,L,M,P)****F*V**** CMFS075(H,L,M,P)****F*V**** CMFS100(H,L,M,P)****F*V**** CMFS150(H,L,M,P)****F*V****
Transmitter type 5700I12**VA*** w/o THUM 775	Ex nA nC IIB + H_2 T5...T1 Gc Ex tc IIIC T[1)]°C Dc IP66/IP67
Transmitter type 5700I1(3 or 5)**VA*** w/o THUM 775	Ex nA nC IIC T5...T1 Gc Ex tc IIIC T[1)]°C Dc IP66/IP67
Transmitter type 5700I12**VA*** with THUM 775	Ex nA nC IIB + H_2 T4...T1 Gc IP66
Transmitter type 5700I1(3 or 5)**VA*** with THUM 775	Ex nA nC IIC T4...T1 Gc IP66

1) For dust temp ratings see temperature graphs

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.

DEKRA EXAM GmbH
44809 Bochum, 2014-12-09
BVS-Yil/Mu A 20140984

Certification body

Special services unit

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