# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx BVS 06.0011X** Issue No.: **0**

Status: **Current**

Date of Issue: **2006-08-07** Page **1** of **3**

Applicant: **Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Electrical Apparatus: **Sensor type CMF**********3*****, CNG050*******3*****, F**********3*****, H**********3*****, R**********3*****, T**********3*****
*Optional accessory:*

Type of Protection: **Type of Protection "n" electrical apparatus**

Marking: **Ex nA II T1-T5**

*Approved for issue on behalf of the IECEx Certification Body:* Dr. R. Jockers

*Position:* Head of Certification Body

*Signature:*
*(for printed version)*

*Date:* 07.08.2006

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

**EXAM BBG Prüf- und Zertifizier GmbH**
**Dinnendahlstrasse 9**
**44809 Bochum**
**Germany**

EXAM
BBG Prüf- und Zertifizier GmbH

# IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 06.0011X**

Date of Issue: **2006-08-07** Issue No.: **0**



Manufacturer:

**Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Manufacturing location(s):

**Micro Motion Inc.**
Ave. Miguel de Cervantes 111
Complejo Industrial
Chihuahua
Chihuahua 31109
Mexico

**Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
United States of America

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacture'rs quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| **IEC 60079-0 : 2004**<br>Edition: 4.0 | Electrical apparatus for explosive gas atmospheres - Part 0: General requirements |
| **IEC 60079-15 : 2005-03**<br>Edition: Ed 3 | Electrical apparatus for explosive gas atmospheres Part 15: Contruction, test and Marking of Type of Protection "n" electrical apparatus |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

DE/BVS/ExTR06.0040/00

Quality Assessment Report:

CA/CSA/QAR06.0002/00
CA/CSA/QAR06.0003/00

# IECEx Certificate of Conformity

Certificate No.: **IECEx BVS 06.0011X**

Date of Issue: **2006-08-07** Issue No.: **0**



## Schedule

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

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. 24********3**** in accordance with IECEx BVS 05.0014 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

**CONDITIONS OF CERTIFICATION: YES as shown below:**

Special conditions for safe use

The sensor is designed for use in connection with a suitable transmitter, e.g. 24********3**** in accordance with IECEx BVS 05.0014 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

**Annexe:** Annex_IECEx_BVS_06_0011X.pdf

# IECEx Certificate of Conformity

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**Certificate No.:** **IECEx BVS 06.0011X**
**Annex**

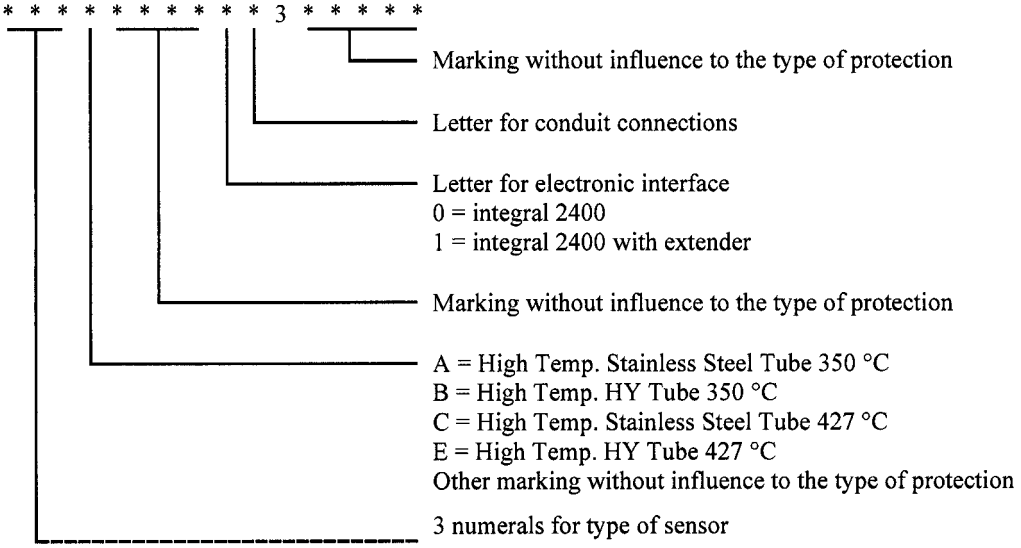

**Subject and Type**

Sensor types:

CMF**********3****
CNG050*******3****
F**********3*****
H**********3*****
R**********3*****
T**********3*****

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

CMF * * * * * * * * * * 3 * * * *
CNG 0 5 0 * * * * * * * 3 * * * *
F * * * * * * * * * * 3 * * * * *
H * * * * * * * * * * 3 * * * * *
R * * * * * * * * * * 3 * * * * *
T * * * * * * * * * * 3 * * * * *



# IECEx Certificate of Conformity

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**Certificate No.:** **IECEx BVS 06.0011X**
**Annex**


**Parameters**

1 Type: CMF**********3****
CNG050*******3****
F**********3*****
H**********3*****
R**********3*****
T**********3*****

1.1 Drive circuit (pin connections 7-8)

| | |
|---|---|
| Voltage | 30 VDC max |
| Current | 84 mA max |

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

| | |
|---|---|
| Voltage | 30 VDC max |
| Current | 25 mA max |

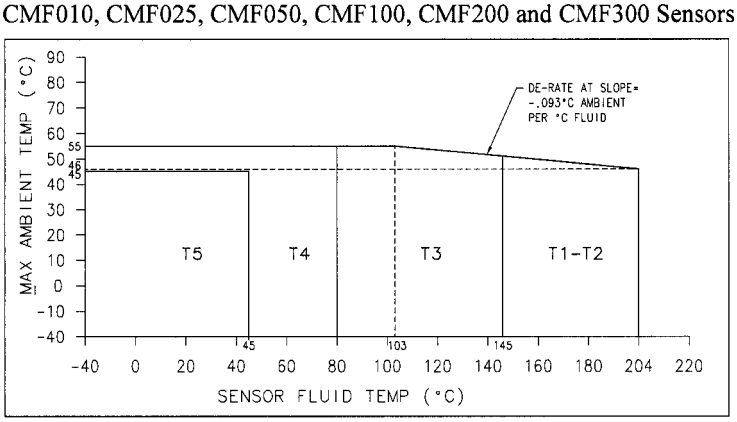
1.3 Temperature circuit (pin connections 1, 2 and 9)

| | |
|---|---|
| Voltage | 30 VDC max |
| Current | 25 mA max |

2 Type CMF**********3****, except CMF***(A, B, C or E)******3****

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 graphs:

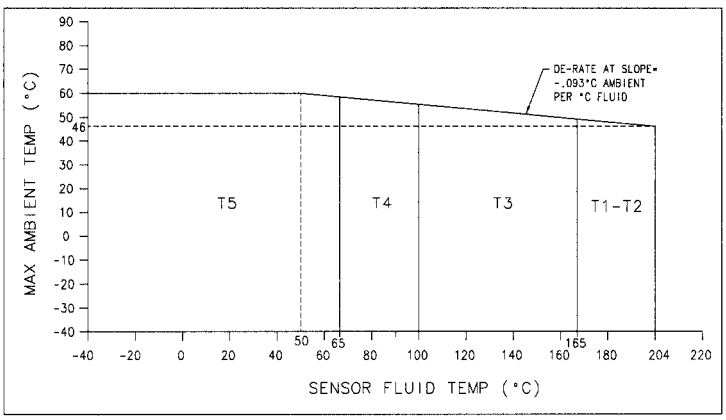
2.1 For CMF010, CMF025, CMF050, CMF100, CMF200 and CMF300 Sensors with Integral 2400




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

Ambient temperature range. Ta –40 °C to + 55 °C

2.2 For CMF400 Sensor with Integral 2400



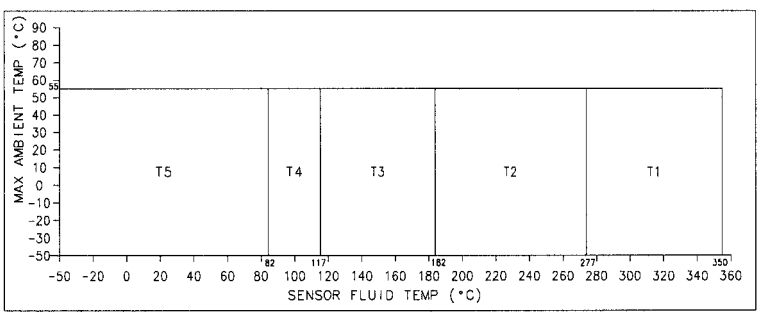

Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range. Ta –40 °C to + 60 °C

3 Type CMF***(A, B, C or E)******3****

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:

3.1 For CMF200(A or B), CMF300(A or B) and CMF400(A or B) with Integral 2400:

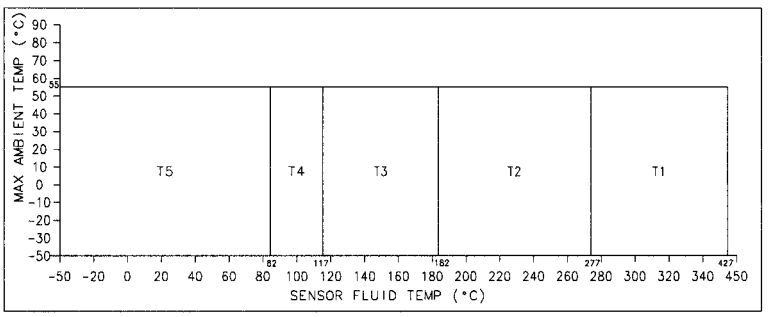



Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range. Ta –50 °C to + 55 °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.

3.2 For CMF200(C or E), CMF300(C or E) and CMF400(C or E) with Integral 2400:




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

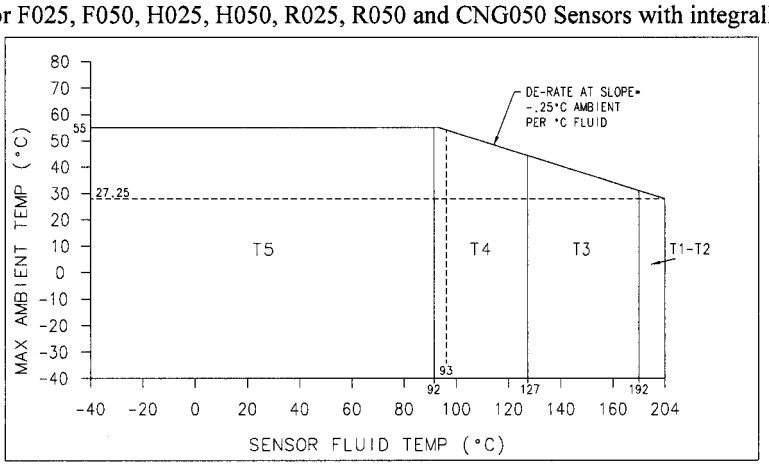
Ambient temperature range. Ta –50 °C to + 55 °C

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 Type F**********3*****, H**********3***** , R**********3***** and type CNG050*******3**** ,
except F***(A, B, C or E)*****3*****

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 graphs:

4.1 For F025, F050, H025, H050, R025, R050 and CNG050 Sensors with integrally mounted 2400




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

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

# IECEx Certificate of Conformity

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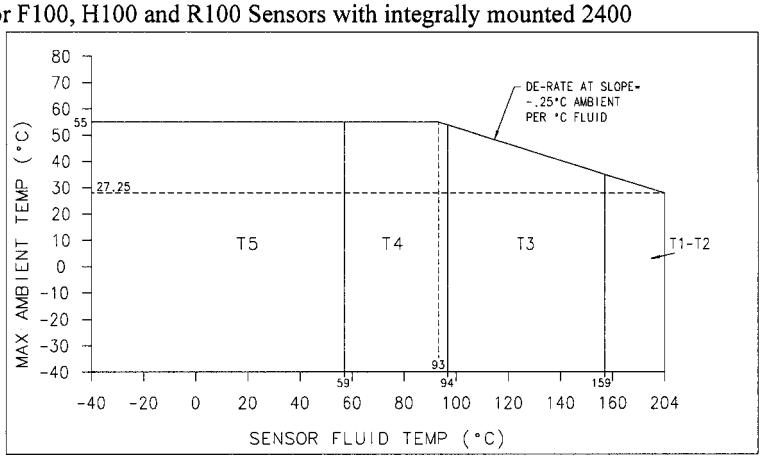
**Certificate No.:** **IECEx BVS 06.0011X**

**Annex**



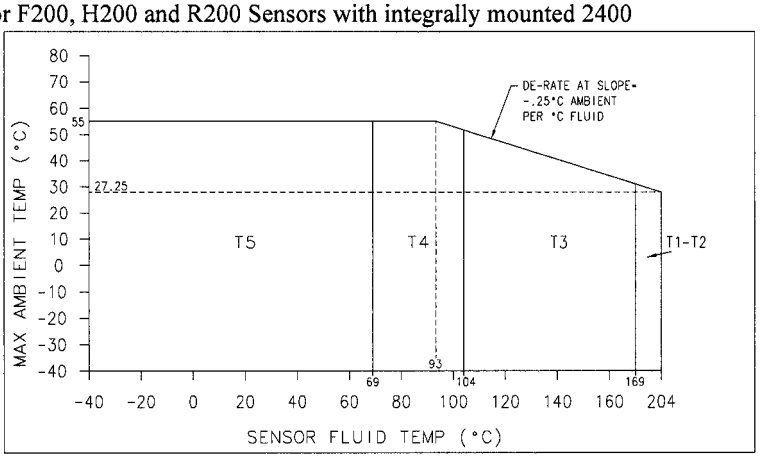
4.2 For F100, H100 and R100 Sensors with integrally mounted 2400




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

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

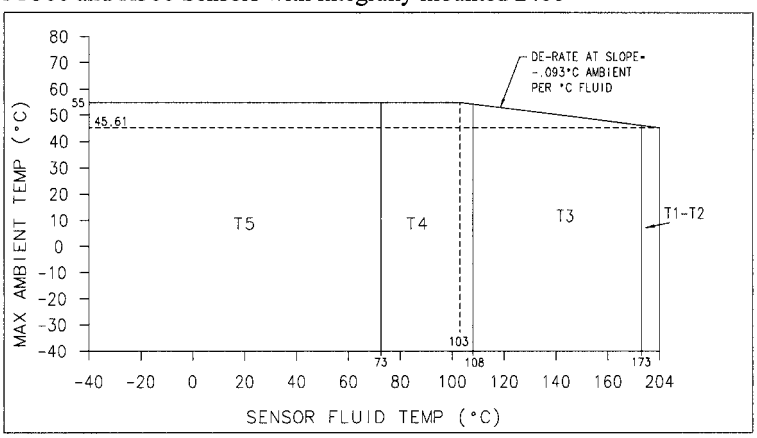
4.3 For F200, H200 and R200 Sensors with integrally mounted 2400




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

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

4.4 For F300 and H300 Sensors with integrally mounted 2400



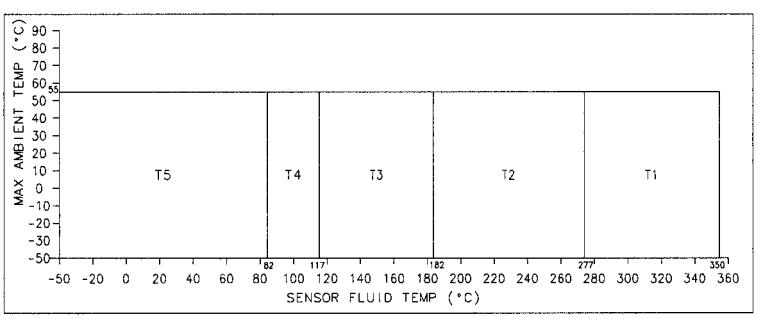

Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

5 Type F***(A, B, C or E)******3*****

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:

5.1 For F025(A or B), F050(A or B), F100(A or B) and F300(A or B) Sensors with integral 2400

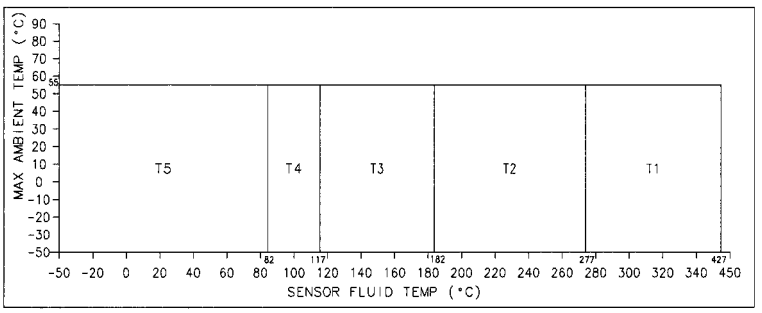



Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range. Ta –50 °C to + 55 °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.

5.2 For F025(C or E), F050(C or E), F100(C or E) and F300(C or E) Sensors with integral 2400




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

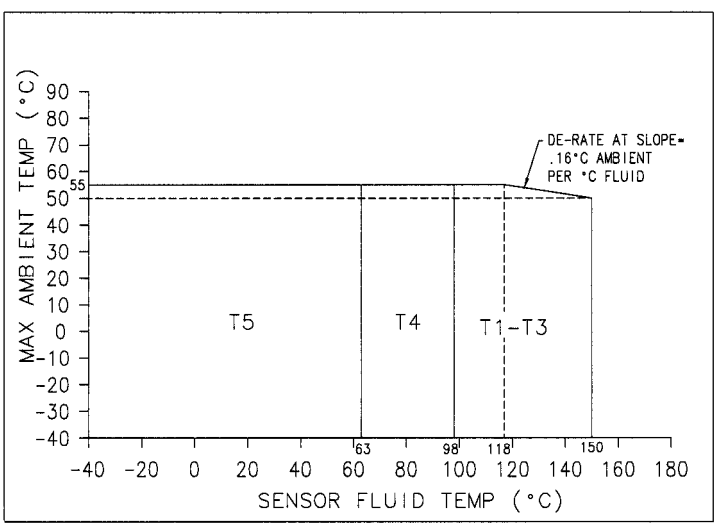
Ambient temperature range. Ta –50 °C to + 55 °C

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.

6 Type T**********3*****

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 graphs:

For T025, T050, T075, T100 and T150 Sensors with integral 2400




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

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

# IECEx Certificate of Conformity

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BBG Prüf- und Zertifizier GmbH

**Certificate No.:** **IECEx BVS 06.0011X**

**Annex**



**Marking**

The name and address of the manufacturer
Type CMF**********3****, CNG050*******3****, F**********3*****,
H**********3*****, R**********3***** and T**********3*****
Year of construction
Ex nA II T1 - T5
Serial number
Certificate number
Ambient temperature range

# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

| | | |
|---|---|---|
| Certificate No.: | IECEx BVS 06.0011X issue No.:1 | Certificate history: Issue No. 1 (2007-6-21) Issue No. 0 (2006-8-7) |
| Status: | **Current** | |
| Date of Issue: | **2007-06-21** | Page 1 of 4 |
| Applicant: | **Micro Motion, Inc.**<br>7070 Winchester Circle<br>Boulder, CO 80301<br>**United States of America** | |
| Electrical Apparatus: | **Sensor type CMF**********3****, CNG050*******3****, F**********3*****, H**********3*****, R**********3*****, T**********3***** | |
| *Optional accessory:* | | |
| Type of Protection: | **Type of Protection "n" electrical apparatus** | |
| Marking: | **Ex nA II T1-T5** | |
| *Approved for issue on behalf of the IECEx Certification Body:* | Dr. R. Jockers | |
| *Position:* | Head of Certification Body | |
| *Signature:*<br>*(for printed version)* | | |
| *Date:* | 21.06.2007 | |

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Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
DEKRA EXAM GmbH

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2007-06-21** Issue No.: **1**



Manufacturer:

**Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Manufacturing location(s):

**Micro Motion Inc.**
Ave. Miguel de Cervantes 111
Complejo Industrial
Chihuahua
Chihuahua 31109
Mexico

**Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
United States of America

**Emerson Process Management Co., Ltd**
1277 Xin Jin Qiao Rd
Jin Qiao Export Processing Zone
Pudong
Shanghai 201206
China

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacture'rs quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| **IEC 60079-0 : 2004**<br>Edition: 4.0 | Electrical apparatus for explosive gas atmospheres - Part 0: General requirements |
| **IEC 60079-15 : 2005-03**<br>Edition: Ed 3 | Electrical apparatus for explosive gas atmospheres Part 15: Contruction, test and Marking of Type of Protection "n" electrical apparatus |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

DE/BVS/ExTR06.0040/00

Quality Assessment Report:
NO/DNV/QAR07.0002/00
NO/DNV/QAR07.0003/00
NO/DNV/QAR07.0004/00

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2007-06-21** Issue No.: **1**



**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

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. 24********3**** in accordance with IECEx BVS 05.0014 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

**CONDITIONS OF CERTIFICATION: YES as shown below:**

Special conditions for safe use

The sensor is designed for use in connection with a suitable transmitter, e.g. 24********3**** in accordance with IECEx BVS 05.0014 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2007-06-21** Issue No.: **1**



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

Issue 1

The manufacturing location Emerson Process Management Co., Ltd, Pudong Shanghai, People's Pepublic of China was added.

The manufacturer Micro Motion Inc., Boulder, United States of America changed the EXCB for quality supervision. Responsible is now DNV for all production sites.

**Annexe:** Annex_IECEx_BVS_06_0011X.pdf

# IECEx Certificate of Conformity

EXAM
BBG Prüf- und Zertifizier GmbH

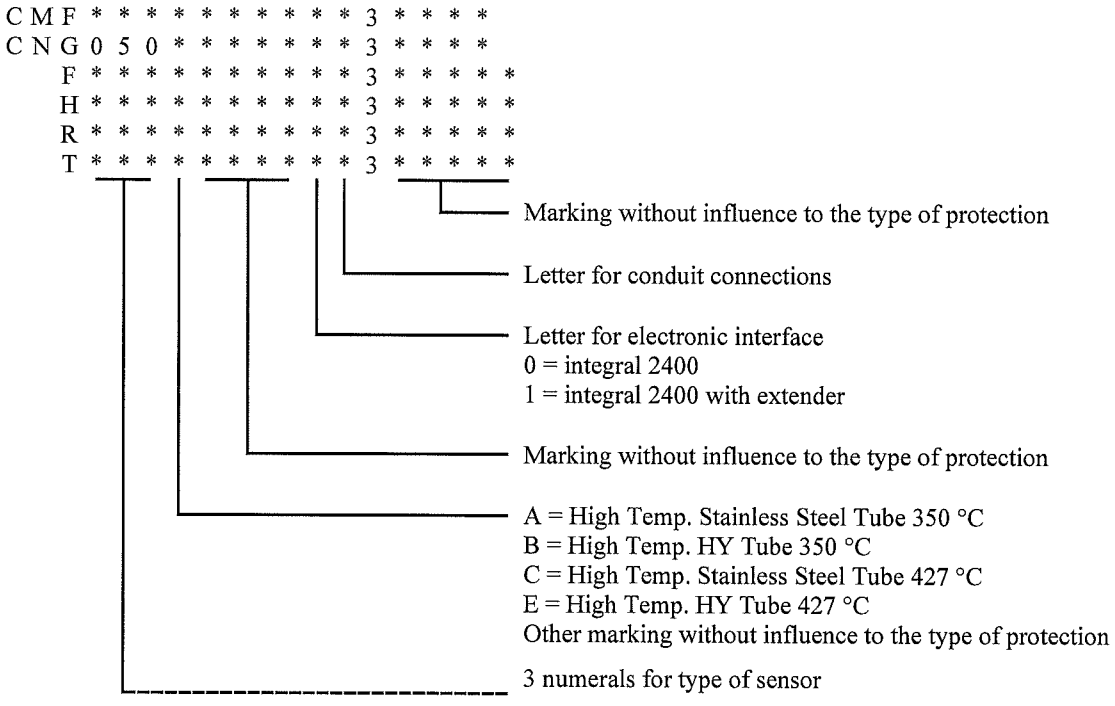
**Certificate No.:** **IECEx BVS 06.0011X**
**Annex**


**Subject and Type**

Sensor types:

CMF**********3****
CNG050*******3****
F**********3*****
H**********3*****
R**********3*****
T**********3*****

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



# IECEx Certificate of Conformity

EXAM BBG Prüf- und Zertifizier GmbH

**Certificate No.:** **IECEx BVS 06.0011X**
**Annex**


**Parameters**

1 Type: CMF**********3****
CNG050*******3****
F**********3*****
H**********3*****
R**********3*****
T**********3*****

1.1 Drive circuit (pin connections 7-8)

| | |
|---|---|
| Voltage | 30 VDC max |
| Current | 84 mA max |

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

| | |
|---|---|
| Voltage | 30 VDC max |
| Current | 25 mA max |

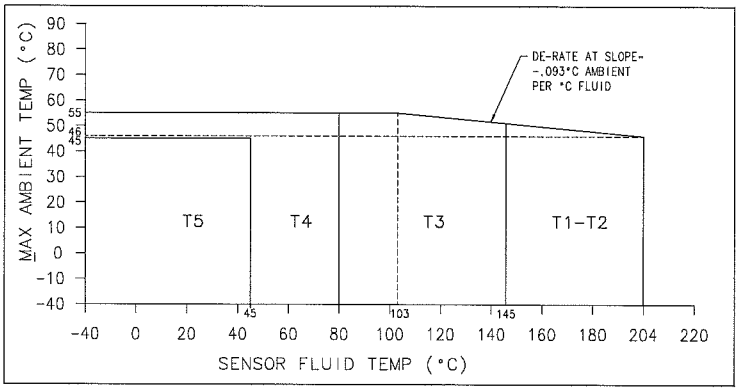
1.3 Temperature circuit (pin connections 1, 2 and 9)

| | |
|---|---|
| Voltage | 30 VDC max |
| Current | 25 mA max |

2 Type CMF**********3****, except CMF***(A, B, C or E)******3****

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 graphs:

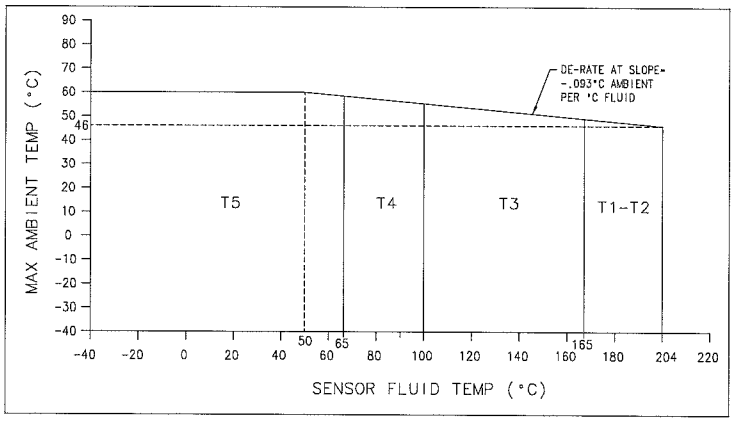
2.1 For CMF010, CMF025, CMF050, CMF100, CMF200 and CMF300 Sensors with Integral 2400




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

Ambient temperature range. Ta –40 °C to + 55 °C

2.2 For CMF400 Sensor with Integral 2400



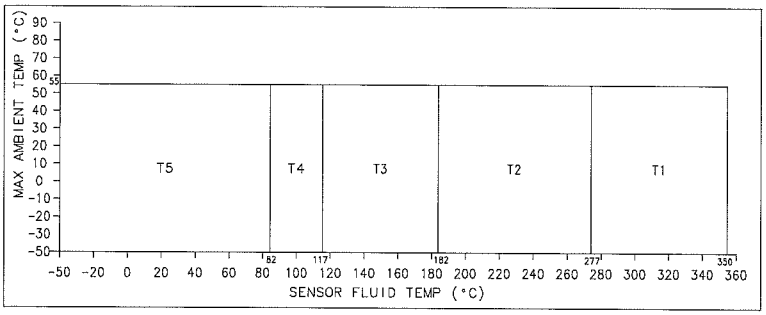

Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range. Ta –40 °C to + 60 °C

3 Type CMF***(A, B, C or E)******3****

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:

3.1 For CMF200(A or B), CMF300(A or B) and CMF400(A or B) with Integral 2400:

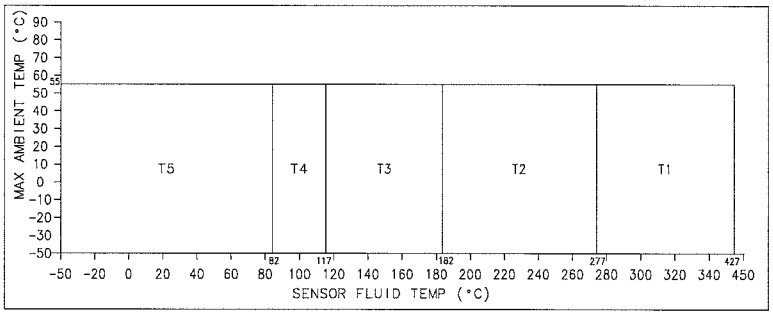



Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range. Ta –50 °C to + 55 °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.

3.2 For CMF200(C or E), CMF300(C or E) and CMF400(C or E) with Integral 2400:




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

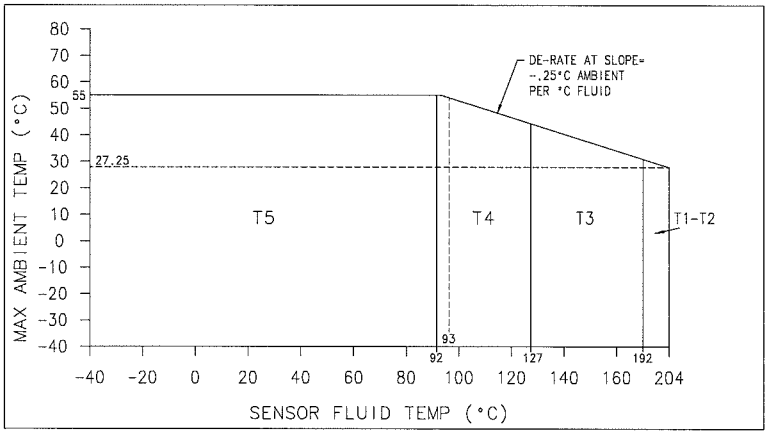
Ambient temperature range. Ta –50 °C to + 55 °C

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 Type F**********3*****, H**********3***** , R**********3***** and type CNG050*******3**** ,
except F***(A, B, C or E)*****3*****

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 graphs:

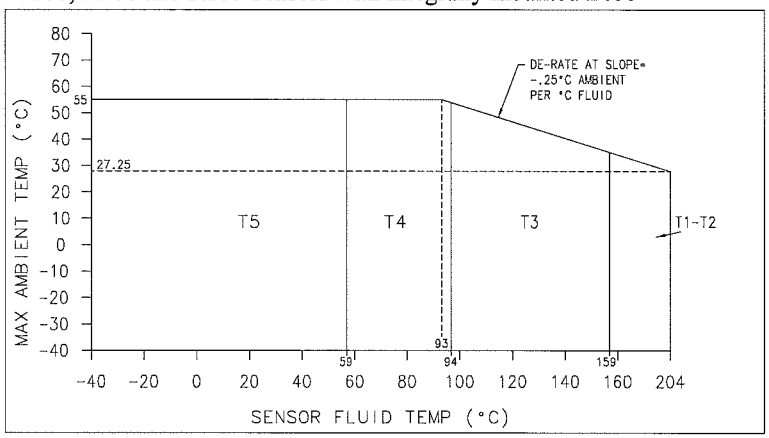
4.1 For F025, F050, H025, H050, R025, R050 and CNG050 Sensors with integrally mounted 2400




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

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

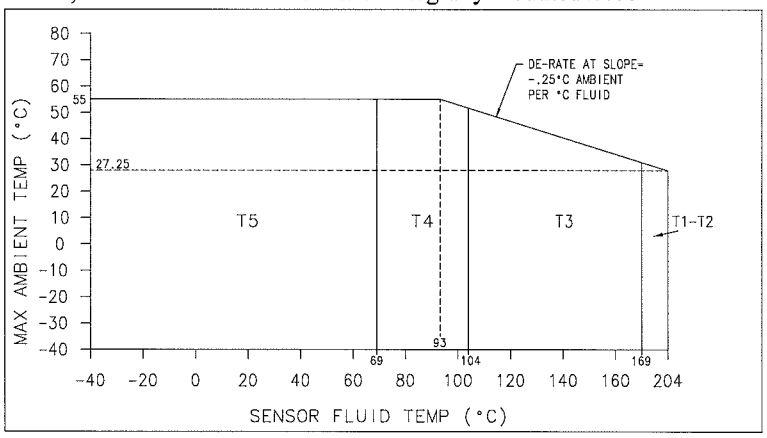
4.2 For F100, H100 and R100 Sensors with integrally mounted 2400




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

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

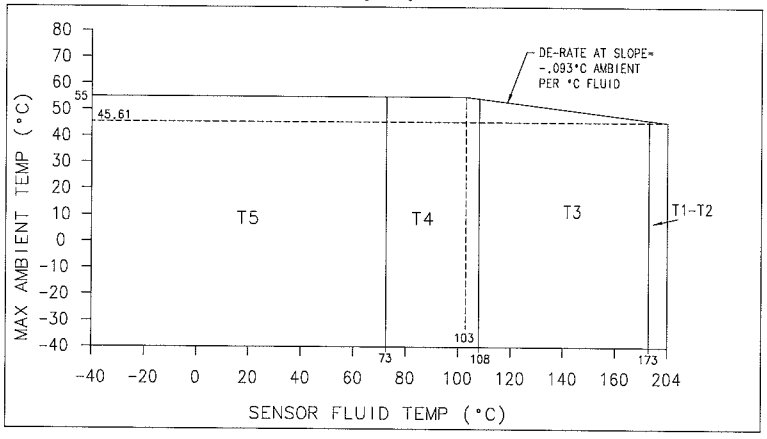
4.3 For F200, H200 and R200 Sensors with integrally mounted 2400




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

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

4.4 For F300 and H300 Sensors with integrally mounted 2400



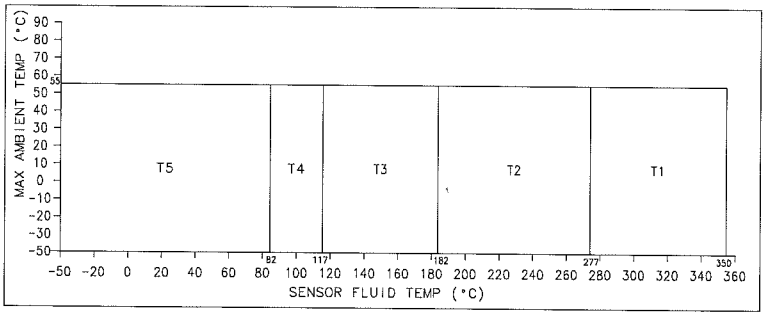

Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

5 Type F***(A, B, C or E)******3*****

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:

5.1 For F025(A or B), F050(A or B), F100(A or B) and F300(A or B) Sensors with integral 2400

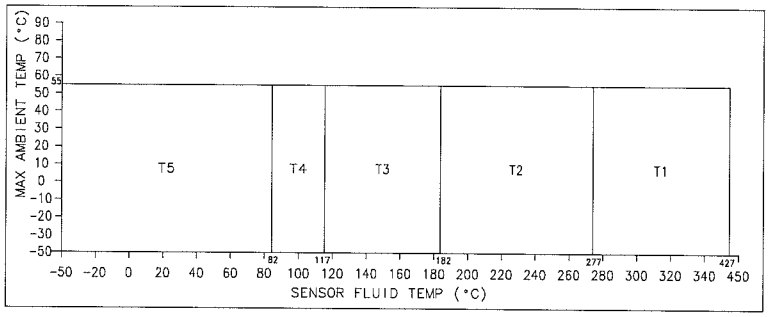



Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range. Ta –50 °C to + 55 °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.

5.2 For F025(C or E), F050(C or E), F100(C or E) and F300(C or E) Sensors with integral 2400




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

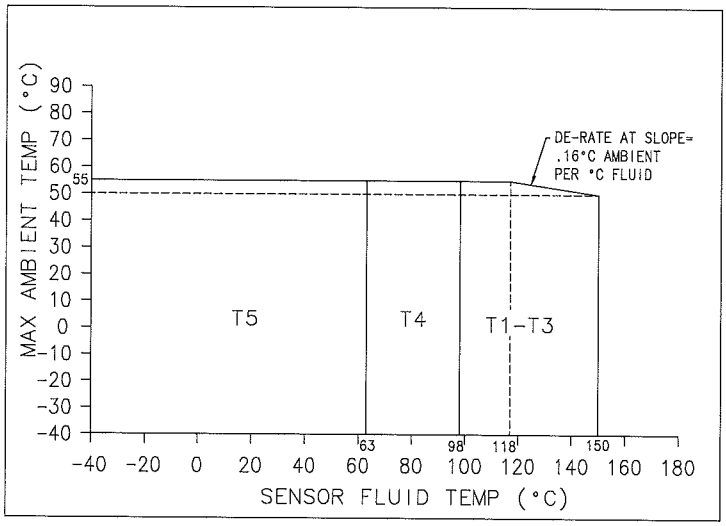
Ambient temperature range. Ta –50 °C to + 55 °C

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.

6 Type T**********3*****

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 graphs:

For T025, T050, T075, T100 and T150 Sensors with integral 2400




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

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

# IECEx Certificate of Conformity

EXAM
BBG Prüf- und Zertifizier GmbH

**Certificate No.:** **IECEx BVS 06.0011X**

**Annex**



## Marking

The name and address of the manufacturer
Type CMF**********3****, CNG050******3****, F**********3*****,
H**********3*****, R**********3***** and T**********3*****
Year of construction
Ex nA II T1 - T5
Serial number
Certificate number
Ambient temperature range

# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | IECEx BVS 06.0011X | issue No.:2 | Certificate history: Issue No. 2 (2007-11-13) Issue No. 1 (2007-6-21) Issue No. 0 (2006-8-7) |
| Status: | **Current** | | |
| Date of Issue: | **2007-11-13** | Page 1 of 4 | |

Applicant: **Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Electrical Apparatus: **Sensor type CMF**********3*****, CNG050*******3*****, F**********3*****, H**********3*****, R**********3*****, T**********3*****

*Optional accessory:*

Type of Protection: **Type of Protection "n" electrical apparatus**

Marking: **Ex nA II T1-T5**

*Approved for issue on behalf of the IECEx Certification Body:* Dr. R. Jockers

*Position:* Head of Certification Body

*Signature:*
*(for printed version)*

*Date:* 13.11.2007

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
DEKRA EXAM GmbH

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2007-11-13** Issue No.: **2**



Manufacturer: **Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Manufacturing location(s):

**Micro Motion Inc.**
Ave. Miguel de Cervantes 111
Complejo Industrial Chihuahua
Chihuahua 31109
Mexico

**Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
United States of America

**Emerson Process Management Co., Ltd**
1277 Xin Jin Qiao Rd
Jin Qiao Export Processing Zone
Pudong
Shanghai 201206
China

**Emerson Process Management Flow BV**
Neonstraat 1
6718 WX Ede
The Netherlands

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacture'rs quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| **IEC 60079-0 : 2004**<br>Edition: 4.0 | Electrical apparatus for explosive gas atmospheres - Part 0: General requirements |
| **IEC 60079-15 : 2005-03**<br>Edition: Ed 3 | Electrical apparatus for explosive gas atmospheres Part 15: Contruction, test and Marking of Type of Protection "n" electrical apparatus |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

DE/BVS/ExTR06.0040/00
DE/BVS/ExTR06.0040/01

Quality Assessment Report:
NO/DNV/QAR07.0002/00
NO/DNV/QAR07.0003/00
NO/DNV/QAR07.0004/00
NO/DNV/QAR07.0008/00

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2007-11-13** Issue No.: **2**



**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

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. 24********3**** in accordance with IECEx BVS 05.0014 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

**CONDITIONS OF CERTIFICATION: YES as shown below:**

Special conditions for safe use

The sensor is designed for use in connection with a suitable transmitter, e.g. 24********3**** in accordance with IECEx BVS 05.0014 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2007-11-13** Issue No.: **2**



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

Issue 2

The sensor can be modified:
New versions

type CMF800*******3**** and type CMFCH3*******3****

are possible.

A new manufacturing location has been added: Emerson Process Management Flow B.V., 6718 WX Ede, The Netherlands

Electrical parameters for the new versions see Annex_IECEx_BVS_06_0011X_issue_2

**Annexe:** Annex_IECEx_BVS_06_0011X.pdf, Annex_IECEx_BVS_06_0011X_issue_2.pdf

# IECEx Certificate of Conformity

**Certificate No.:** **IECEx BVS 06.0011X Issue 2**
**Annex**


**General product information:**

Modified Parameters

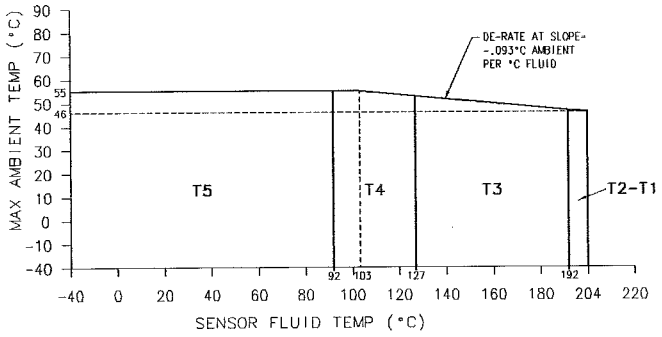
1 Type CMF800*****(0,1)*3**** - and CMFHC3*****(0,1)*3**** , including type CMF800(A,B,C,E)****(0,1)*3**** and CMFHC3(A,B,C,E)****(0,1)*3****.

| | | | | |
|---|---|---|---|---|
| 1.1 | Drive circuit (pin connections 7-8) | | | |
| | Voltage | DC | 30 | V |
| | Current | | 84 | mA |
| 1.2 | Pick-Off circuit (pin connections 3-4) | | | |
| | Voltage | DC | 30 | V |
| | Current | | 25 | mA |
| 1.3 | Temperature circuit (pin connections 1, 2 and 9) | | | |
| | Voltage | DC | 30 | V |
| | Current | | 25 | mA |

2 Thermal data
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:

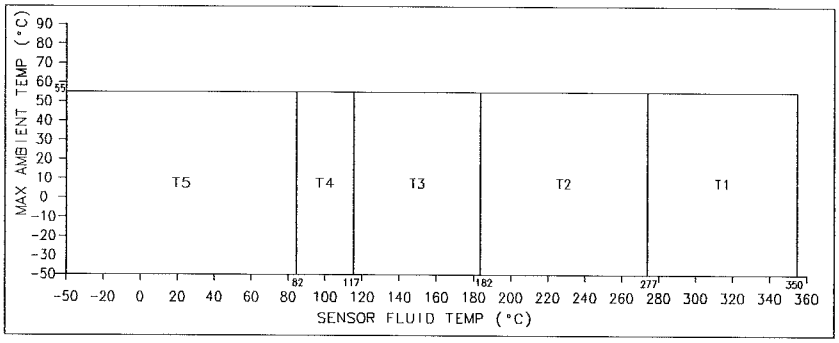
2.1 Types CMF800*****(0,1)*3**** and CMFHC3*****(0,1)*3**** with integral 2400




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

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

2.2 Type CMF800(A,B)****(0,1)*3**** and CMFHC3(A,B)*****(0,1)*3**** with integral 2400

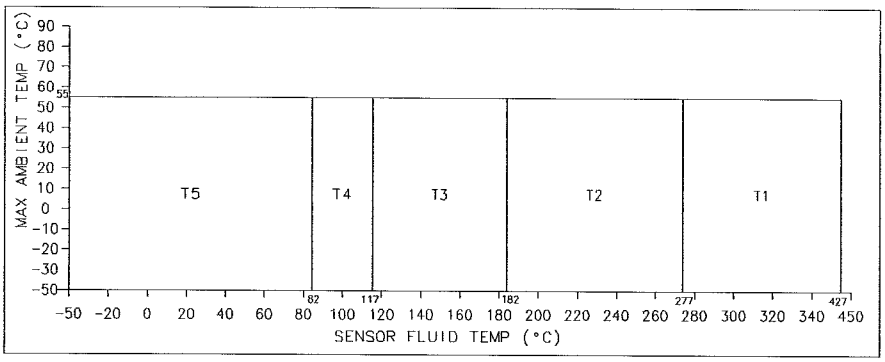



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

2.3 Type CMF800(C,E)****(0,1)*3**** and CMFHC3(C,E)*****(0,1)*3**** with integral 2400




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

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

# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

| | | | |
|---|---|---|---|
| Certificate No.: | IECEx BVS 06.0011X | issue No.:2 | Certificate history: Issue No. 2 (2007-11-13) Issue No. 1 (2007-6-21) Issue No. 0 (2006-8-7) |
| Status: | **Current** | | |
| Date of Issue: | **2007-11-13** | Page 1 of 4 | |

Applicant: **Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Electrical Apparatus: **Sensor type CMF**********3*****, CNG050*******3*****, F**********3*****, H**********3*****, R**********3*****, T**********3*****

*Optional accessory:*

Type of Protection: **Type of Protection "n" electrical apparatus**

Marking: **Ex nA II T1-T5**

*Approved for issue on behalf of the IECEx Certification Body:* Dr. R. Jockers

*Position:* Head of Certification Body

*Signature:*
*(for printed version)*

*Date:* 13.11.2007

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
DEKRA EXAM GmbH

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2007-11-13** Issue No.: **2**



Manufacturer: **Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Manufacturing location(s):

**Micro Motion Inc.**
Ave. Miguel de Cervantes 111
Complejo Industrial Chihuahua
Chihuahua 31109
Mexico

**Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
United States of America

**Emerson Process Management Co., Ltd**
1277 Xin Jin Qiao Rd
Jin Qiao Export Processing Zone
Pudong
Shanghai 201206
China

**Emerson Process Management Flow BV**
Neonstraat 1
6718 WX Ede
The Netherlands

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacture'rs quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| **IEC 60079-0 : 2004**<br>Edition: 4.0 | Electrical apparatus for explosive gas atmospheres - Part 0: General requirements |
| **IEC 60079-15 : 2005-03**<br>Edition: Ed 3 | Electrical apparatus for explosive gas atmospheres Part 15: Contruction, test and Marking of Type of Protection "n" electrical apparatus |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

DE/BVS/ExTR06.0040/00
DE/BVS/ExTR06.0040/01

Quality Assessment Report:
NO/DNV/QAR07.0002/00
NO/DNV/QAR07.0003/00
NO/DNV/QAR07.0004/00
NO/DNV/QAR07.0008/00

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2007-11-13** Issue No.: **2**



**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

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. 24********3**** in accordance with IECEx BVS 05.0014 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

**CONDITIONS OF CERTIFICATION: YES as shown below:**

Special conditions for safe use

The sensor is designed for use in connection with a suitable transmitter, e.g. 24********3**** in accordance with IECEx BVS 05.0014 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2007-11-13** Issue No.: **2**



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

Issue 2

The sensor can be modified:
New versions

type CMF800*******3**** and type CMFCH3*******3****

are possible.

A new manufacturing location has been added: Emerson Process Management Flow B.V., 6718 WX Ede, The Netherlands

Electrical parameters for the new versions see Annex_IECEx_BVS_06_0011X_issue_2

**Annexe:** Annex_IECEx_BVS_06_0011X.pdf, Annex_IECEx_BVS_06_0011X_issue_2.pdf

# IECEx Certificate of Conformity

**Certificate No.:** **IECEx BVS 06.0011X Issue 2**
**Annex**


**General product information:**

Modified Parameters

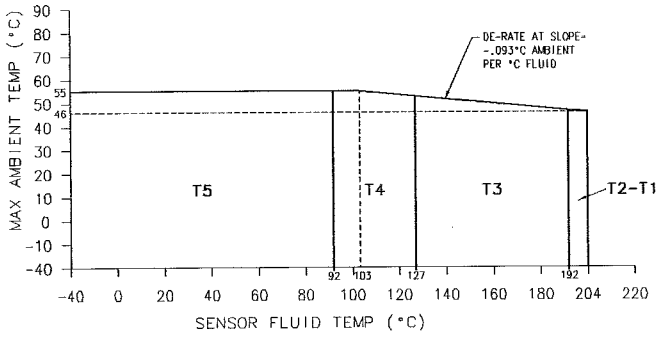
1 Type CMF800*****(0,1)*3**** - and CMFHC3*****(0,1)*3**** , including type CMF800(A,B,C,E)****(0,1)*3**** and CMFHC3(A,B,C,E)****(0,1)*3****.

| | | | | |
|---|---|---|---|---|
| 1.1 | Drive circuit (pin connections 7-8) | | | |
| | Voltage | DC | 30 | V |
| | Current | | 84 | mA |
| 1.2 | Pick-Off circuit (pin connections 3-4) | | | |
| | Voltage | DC | 30 | V |
| | Current | | 25 | mA |
| 1.3 | Temperature circuit (pin connections 1, 2 and 9) | | | |
| | Voltage | DC | 30 | V |
| | Current | | 25 | mA |

2 Thermal data
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:

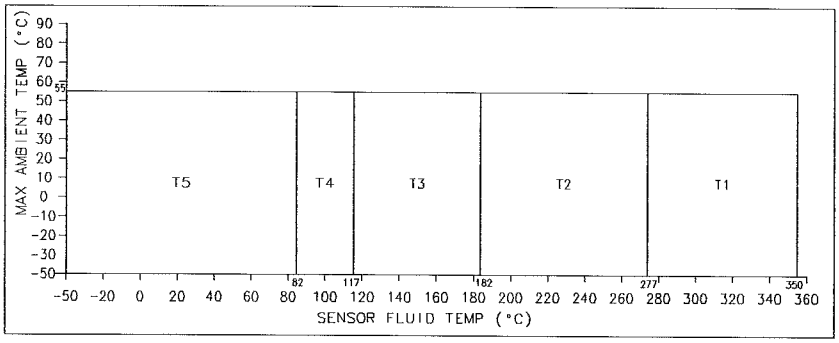
2.1 Types CMF800*****(0,1)*3**** and CMFHC3*****(0,1)*3**** with integral 2400




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

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

2.2 Type CMF800(A,B)****(0,1)*3**** and CMFHC3(A,B)*****(0,1)*3**** with integral 2400

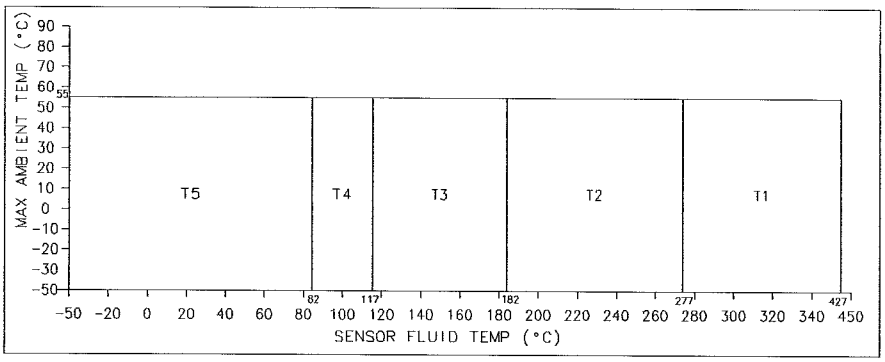



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

2.3 Type CMF800(C,E)****(0,1)*3**** and CMFHC3(C,E)*****(0,1)*3**** with integral 2400




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

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

# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

| | | |
|---|---|---|
| Certificate No.: | IECEx BVS 06.0011X issue No.:3 | Certificate history: Issue No. 3 (2008-11-19) Issue No. 2 (2007-11-13) Issue No. 1 (2007-6-21) Issue No. 0 (2006-8-7) |
| Status: | **Current** | |
| Date of Issue: | **2008-11-19** Page 1 of 4 | |
| Applicant: | **Micro Motion, Inc.**<br>7070 Winchester Circle<br>Boulder, CO 80301<br>**United States of America** | |
| Electrical Apparatus: | **Sensor type CMF**********3****, CNG050*******3****, F**********3*****, H**********3*****, R**********3*****, T**********3***** | |
| *Optional accessory:* | | |
| Type of Protection: | **Type of Protection "n" electrical apparatus** | |
| Marking: | **Ex nA II T1-T4/T5** | |
| *Approved for issue on behalf of the IECEx Certification Body:* | Dr. R. Jockers | |
| *Position:* | Head of Certification Body | |
| *Signature:*<br>*(for printed version)* | | |
| *Date:* | 19.11.2008 | |

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
DEKRA EXAM GmbH

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2008-11-19** Issue No.: **3**



Manufacturer:

**Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Manufacturing location(s):

**Micro Motion Inc.**
Ave. Miguel de Cervantes 111
Complejo Industrial Chihuahua
Chihuahua 31109
Mexico

**Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
United States of America

**Emerson Process Management Co., Ltd**
1277 Xin Jin Qiao Rd
Jin Qiao Export Processing Zone
Pudong
Shanghai 201206
China

**Emerson Process Management Flow BV**
Neonstraat 1
6718 WX Ede
The Netherlands

**Emerson Process Management Flow Technologies Co., Ltd.**
111, Xing Min South Road
Jiangning, Nanjing
Jiangsu Province
China

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| **IEC 60079-0 : 2004**<br>Edition: 4.0 | Electrical apparatus for explosive gas atmospheres - Part 0: General requirements |
| **IEC 60079-15 : 2005-03**<br>Edition: Ed 3 | Electrical apparatus for explosive gas atmospheres Part 15: Contruction, test and Marking of Type of Protection "n" electrical apparatus |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

DE/BVS/ExTR06.0040/00
DE/BVS/ExTR06.0040/01
DE/BVS/ExTR06.0040/02

Quality Assessment Report:
NO/DNV/QAR07.0002/00
NO/DNV/QAR07.0003/00
NO/DNV/QAR07.0004/00
NO/DNV/QAR07.0008/00
NO/DNV/QAR08.0005/00

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2008-11-19** Issue No.: **3**



**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

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. 24********3**** in accordance with IECEx BVS 05.0014 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

**CONDITIONS OF CERTIFICATION: YES as shown below:**

Special conditions for safe use

The sensor is designed for use in connection with a suitable transmitter, e.g. 24*******3**** in accordance with IECEx BVS 05.0014 X resp. type 2200S*****3**** in accordance with
IECEx BVS 08.0042 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2008-11-19** Issue No.: **3**



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

The sensor can be modified:
Versions type CMF800*******3**** have been removed.New versions type CMFHC2*******3**** are possible.New versions with integral 2200S*****3**** (IECEx BVS 08.0042 X) are possible:Type **********(J,U)*3***** ot type **********(J,U)*3****. A new manufacturing location has been added: Emerson Process Management Flow Technologies Co., Ltd., Nanjing, China
For the modified equipment the existing ExTR´s are valid without change.

Electrical parameters and type designation for the new versions see Annex_IECEx_BVS_06_0011X_issue_3.

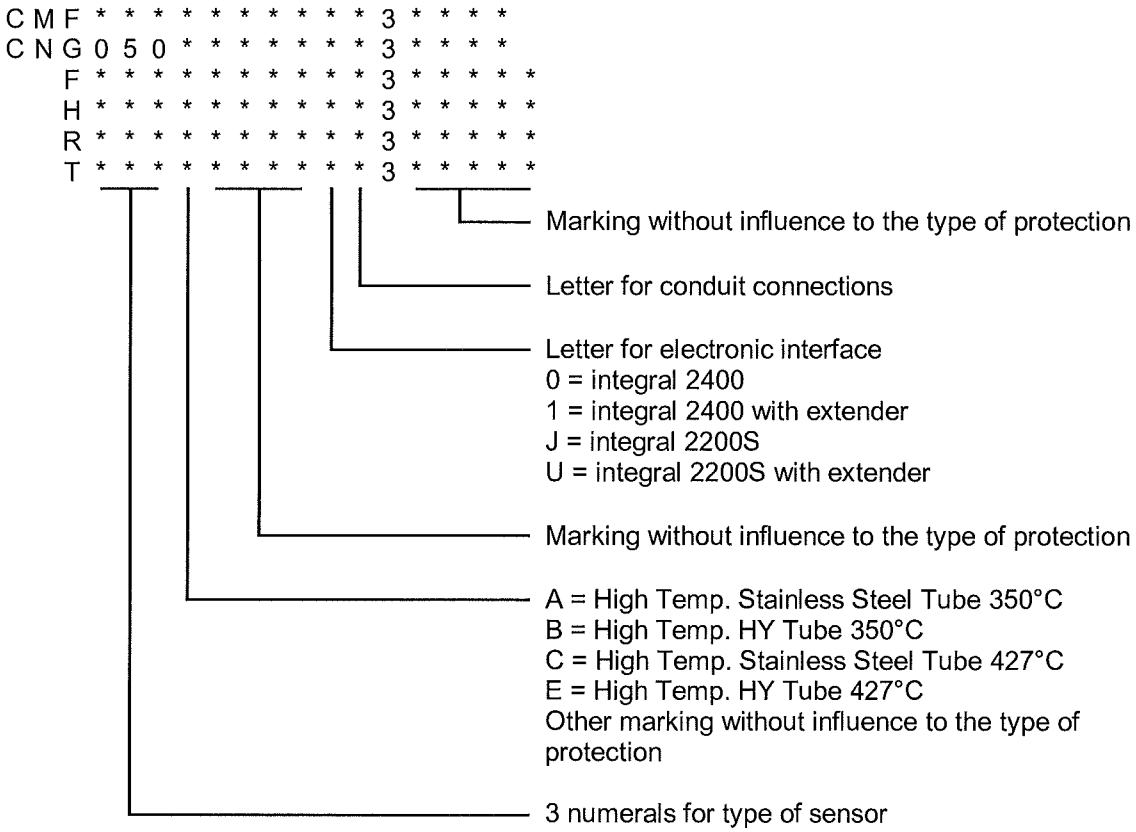
**Annexe:** Annex_IECEx_BVS_06_0011X.pdf, Annex_IECEx_BVS_06_0011X_issue_2.pdf, BVS_06_0011X_issue_3_MicroMotion_Annex.pdf

# IECEx Certificate of Conformity

**Certificate No.:** **IECEx BVS 06.0011X Issue 3**
**Annex**


Type designation

Instead of the *** in the complete denomination letters and numerals will be inserted which characterize modifications.



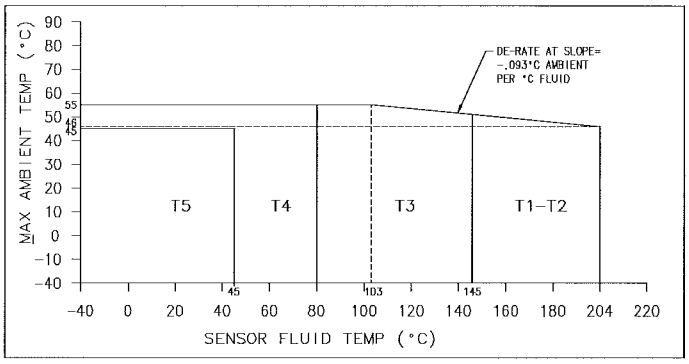

Parameters

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

4 Thermal data type CMF**********3****
Regulation of temperature class/max. surface temperature T

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:

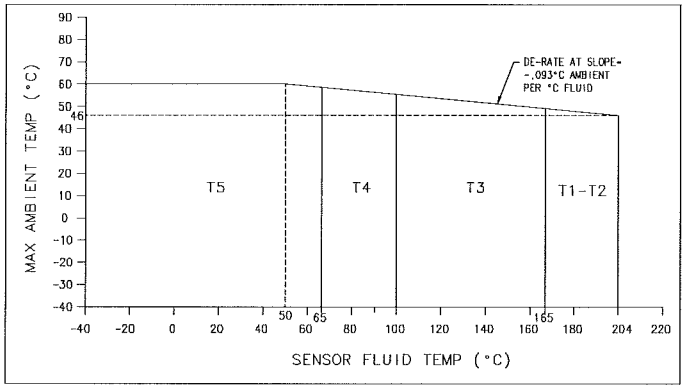
4.1 Type CMF010*****(0,1)*3****, CMF025*****(0,1)*3****, CMF050*****(0,1)*3****, CMF100***(0,1)*3****, CMF200*****(0,1)*3****, CMF300*****(0,1)*3**** with integral 2400, **except** CMF***(A,B,C,E)****(0,1)*3****




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

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

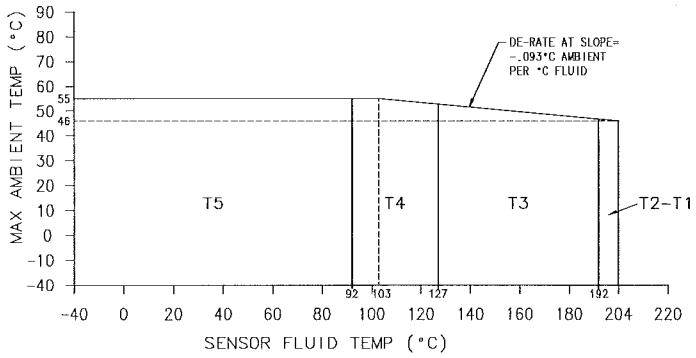
4.2 Type CMF400*****(0,1)*3**** with integral 2400




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

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

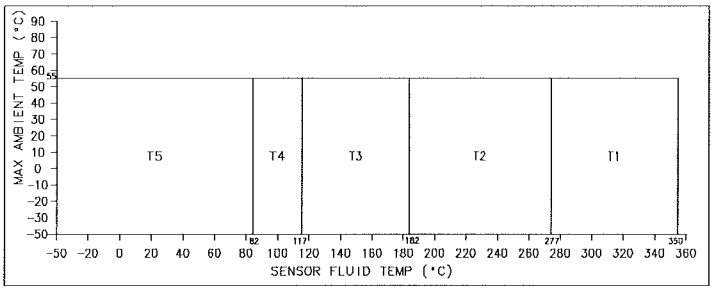
4.3 Types CMFHC2*****(0,1)*3**** and CMFHC3*****(0,1)*3*** with integral 2400




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

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

4.4 Type CMF200(A,B)****(0,1)*3****, CMF300(A,B)****(0,1)*3****, CMF400(A,B)****(0,1)*3****, CMFHC2(A,B)****(0,1)*3**** and CMFHC3(A,B)****(0,1)*3**** with integral 2400

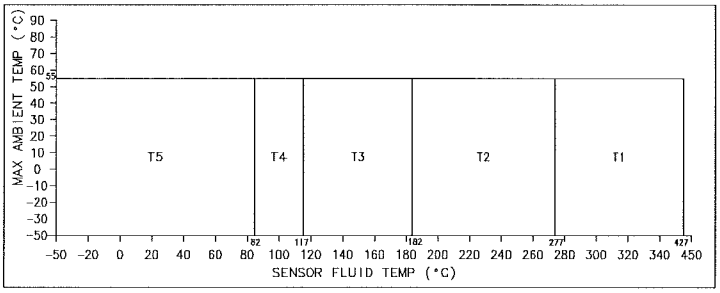



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.5 Type CMF200(C,E)****(0,1)*3****, CMF300(C,E)****(0,1)*3****, CMF400(C,E)****(0,1)*3**** CMFHC2(C,E)****(0,1)*3**** and CMFHC3(C,E)****(0,1)*3**** with integral 2400

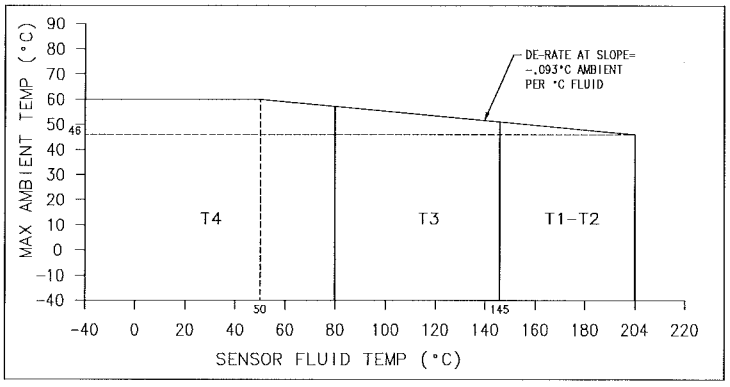



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

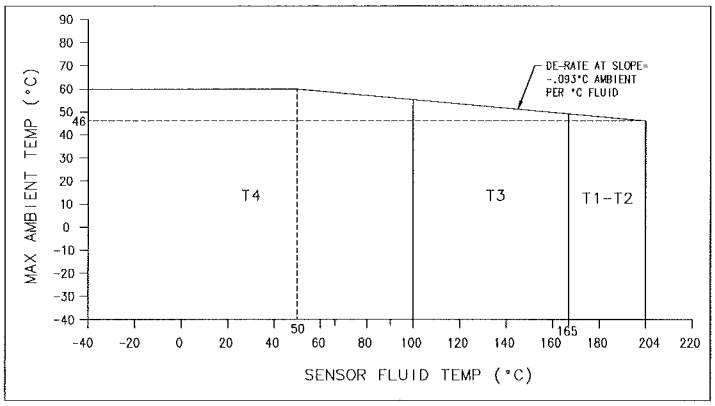
4.6 Type CMF010*****(J,U)*3****, CMF025*****(J,U)*3****, CMF050*****(J,U)*3****, CMF100***(J,U)*3****, CMF200*****(J,U)*3****, CMF300*****(J,U)*3**** with integral 2200S, **except** CMF***(A,B,C,E)****(J,U)*3****




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

| | | |
|---|---|---|
| Ambient temperature range | Ta | -40 °C up to +60 °C |

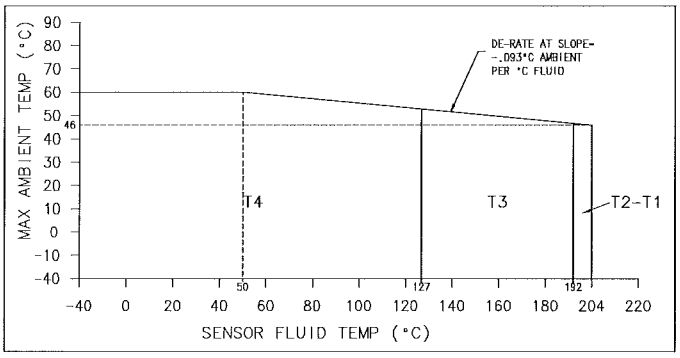
4.7 Type CMF400*****(J,U)*3**** with integral 2200S




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

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

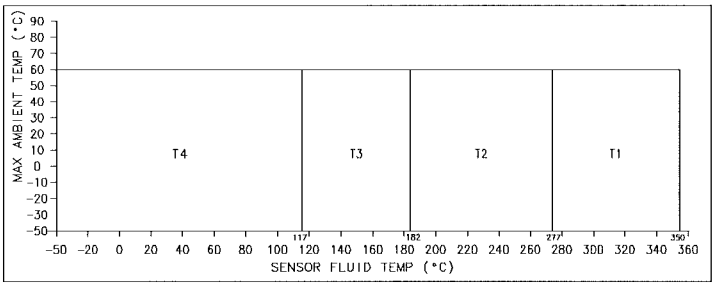
4.8 Types CMFHC2*****(J,U)*3**** and CMFHC3*****(J,U)*3**** with integral 2200S




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

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

4.9 Type CMF200(A,B)****(J,U)*3****, CMF300(A,B)****(J,U)*3****, CMF400(A,B)****(J,U)*3****, CMFHC2(A,B)****(J,U)*3**** and CMFHC3(A,B)****(J,U)*3**** with integral 2200S

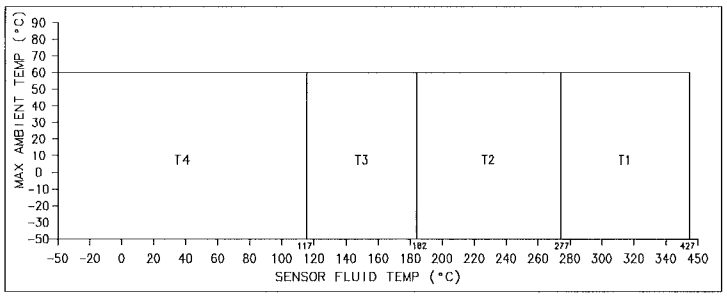



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range Ta -50 °C up to +60 °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 +60°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.

4.10 Type CMF200(C,E)****(J,U)*3****, CMF300(C,E)****(J,U)*3****, CMF400(C,E)****(J,U)*3**** CMFHC2(C,E)****(J,U)*3**** und CMFHC3(C,E)****(J,U)*3**** with integral 2200S




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

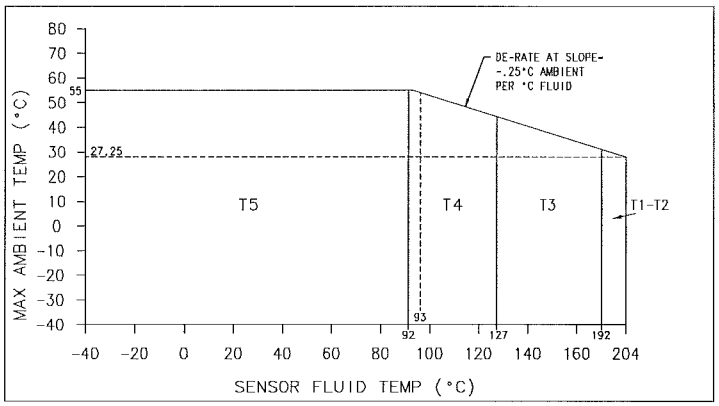
Ambient temperature range Ta -50 °C up to +60 °C

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 +60°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.

5 Thermal data type F**********3*****, H**********3*****, R**********3*****, CNG050*****3****
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:

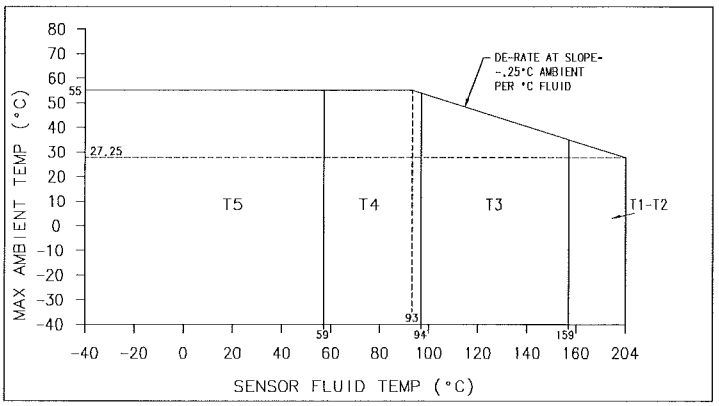
5.1 Type F025*****(0,1)*3*****, F050*****(0,1)*3*****, H025****(0,1)*3*****, H050*****(0,1)*3*****, R025*****(0,1)*3*****, R050*****(0,1)*3***** and CNG050***(0,1)*3****
with integral 2400, **except** F***(A,B,C,E)****(0,1)*3*****




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

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

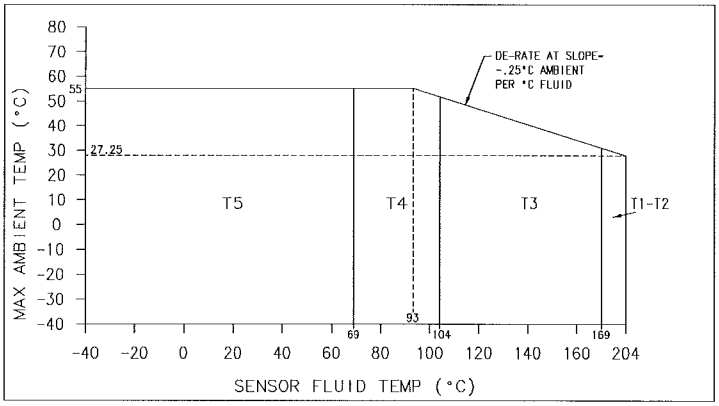
5.2 Type F100*****(0,1)*3*****, H100****(0,1)*3*****, R100****(0,1)*3*****
with integral 2400, **except** F100(A,B,C,E)****(0,1)*3*****




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

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

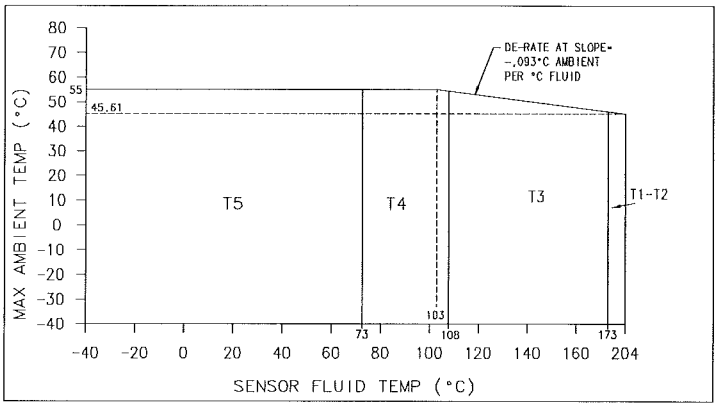
5.3 Type F200*****(0,1)*3*****, H200****(0,1)*3*****, R200*****(0,1)*3*****
with integral 2400, **except** F200(A,B,C,E)****(0,1)*3*****




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

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

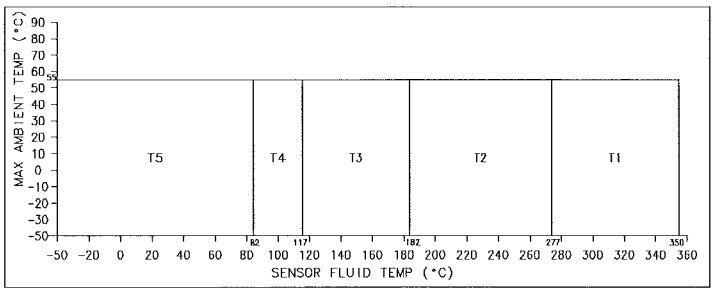
5.4 Type F300*****(0,1)*3*****, H300*****(0,1)*3*****, with integral 2400,
**except** F300(A,B,C,E)****(0,1)*3*****




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

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

5.5 Type F025(A,B)****(0,1)*3*****, F050(A,B)****(0,1)*3*****, F100(A,B)****(0,1)*3*****, F300(A,B)****(0,1)*3***** with integral 2400

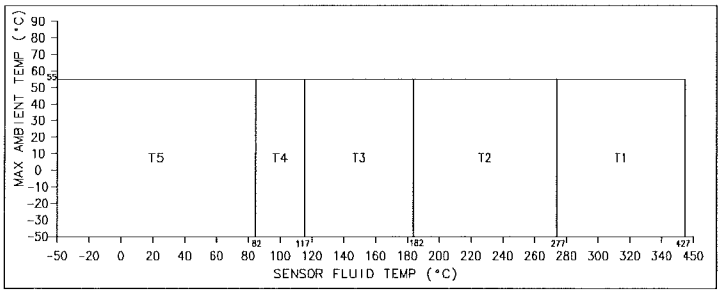



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

5.6 Type F025(C,E)****(0,1)*3*****, F050(C,E)****(0,1)*3*****, F100(C,E)****(0,1)*3*****, F300(C,E)****(0,1)*3***** with integral 2400

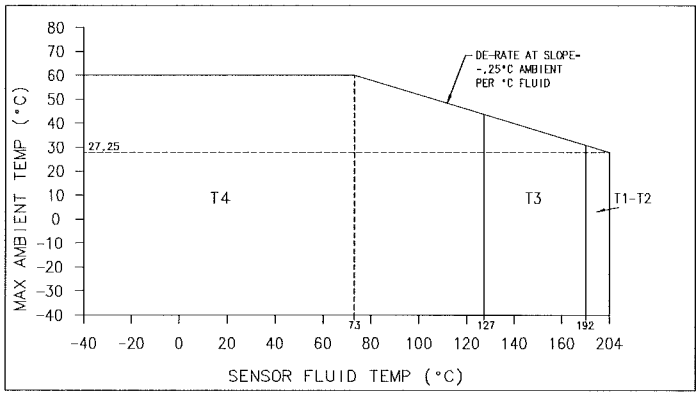



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

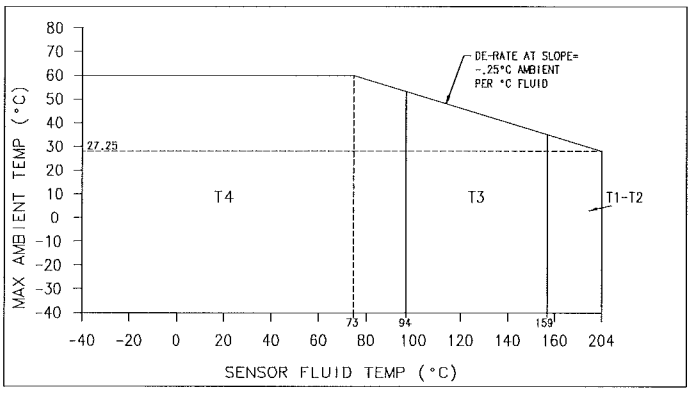
5.7 Type F025*****(J,U)*3*****, F050*****(J,U)*3*****, H025*****(J,U)*3*****, H050*****(J,U)*3*****, R025*****(J,U)*3*****, R050*****(J,U)*3***** and CNG050***(J,U)*3****
with integral 2200S, **except** F***(A,B,C,E)****(J,U)*3*****




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

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

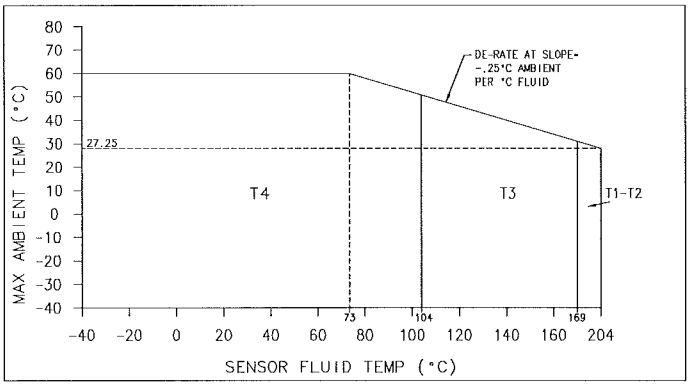
5.8 Type F100*****(J,U)*3*****, H100*****(J,U)*3*****, R100*****(J,U)*3*****
with integral 2200S, **except** F100(A,B,C,E)****(J,U)*3*****




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

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

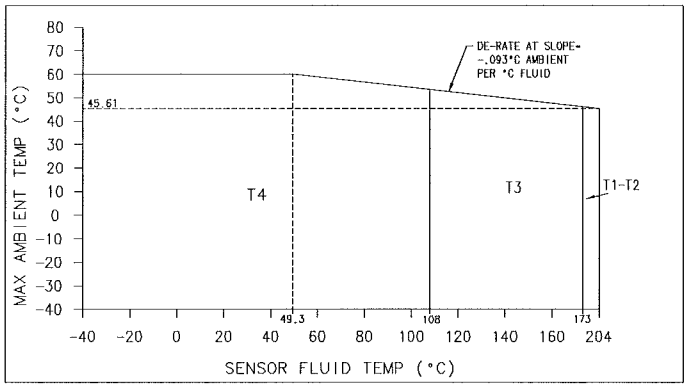
5.9 Type F200*****(J,U)*3*****, H200*****(J,U)*3*****, R200*****(J,U)*3*****
with integral 2200S, **except** F200(A,B,C,E)****(J,U)*3*****




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

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

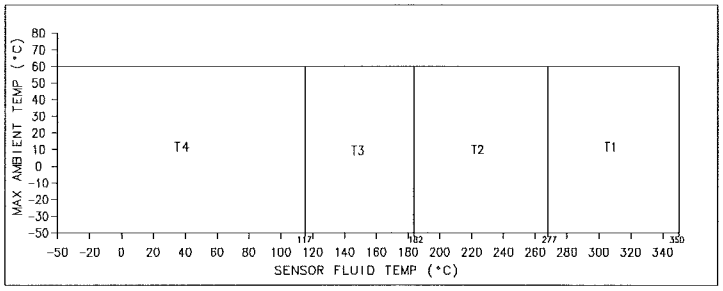
5.10 Type F300*****(J,U)*3*****, H300*****(J,U)*3*****, with integral 2200S,
**except** F300(A,B,C,E)****(J,U)*3*****




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

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

5.11 Type F025(A,B)****(J,U)*3*****, F050(A,B)****(J,U)*3*****, F100(A,B)****(J,U)*3*****, F300(A,B)****(J,U)*3***** with integral 2200S

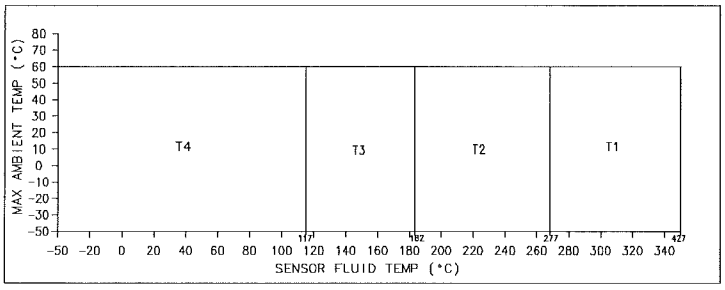



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range Ta -50 °C up to +60 °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 +60°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.

5.12 Type F025(C,E)****(J,U)*3*****, F050(C,E)****(J,U)*3*****, F100(C,E)****(J,U)*3*****, F300(C,E)****(J,U)*3***** with integral 2200S




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

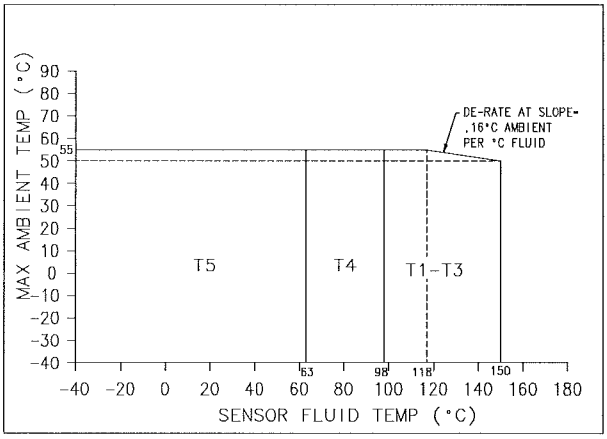
Ambient temperature range Ta -50 °C up to +60 °C

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 +60°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.

6 Thermal data type T**********3*****
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:

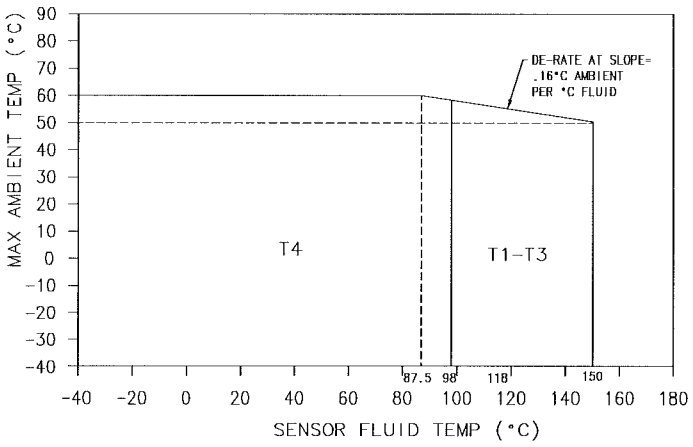
6.1 Type T025*****(0,1)*3*****, T050*****(0,1)*3*****, T075*****(0,1)*3*****, T100*****(0,1)*3*****, T150*****(0,1)*3*****, with integral 2400




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

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

6.2 Type T025*****(J,U)*3*****, T050*****(J,U)*3*****, T075*****(J,U)*3*****, T100*****(J,U)*3*****, T150*****(J,U)*3*****, with integral 2200S




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

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

# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

| | | |
|---|---|---|
| Certificate No.: | IECEx BVS 06.0011X issue No.:4 | Certificate history: Issue No. 4 (2009-3-2) Issue No. 3 (2008-11-19) Issue No. 2 (2007-11-13) Issue No. 1 (2007-6-21) Issue No. 0 (2006-8-7) |
| Status: | **Current** | |
| Date of Issue: | **2009-03-02** Page 1 of 4 | |
| Applicant: | **Micro Motion, Inc.**<br>7070 Winchester Circle<br>Boulder, CO 80301<br>**United States of America** | |
| Electrical Apparatus: | **Sensor type CMF**********3****, CNG050*******3****, F**********3*****, H**********3*****, R**********3*****, T**********3*****, CMFS**********3**** | |
| *Optional accessory:* | | |
| Type of Protection: | **Type of Protection "n" electrical apparatus** | |
| Marking: | **Ex nA II T1-T4/T5** | |
| *Approved for issue on behalf of the IECEx Certification Body:* | Dr. F. Eickhoff | |
| *Position:* | Deputy Head of Certification Body | |
| *Signature:*<br>*(for printed version)* | | |
| *Date:* | 2009-03-02 | |

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2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
DEKRA EXAM GmbH

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2009-03-02** Issue No.: **4**



Manufacturer:

**Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Manufacturing location(s):

**Micro Motion Inc.**
Ave. Miguel de Cervantes 111
Complejo Industrial Chihuahua
Chihuahua 31109
Mexico

**Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
United States of America

**Emerson Process Management Co., Ltd**
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Jin Qiao Export Processing Zone
Pudong
Shanghai 201206
China

**Emerson Process Management Flow BV**
Neonstraat 1
6718 WX Ede
The Netherlands

**Emerson Process Management Flow Technologies Co., Ltd.**
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Jiangning, Nanjing
Jiangsu Province
China

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| **IEC 60079-0 : 2004**<br>Edition: 4.0 | Electrical apparatus for explosive gas atmospheres - Part 0: General requirements |
| **IEC 60079-15 : 2005-03**<br>Edition: 3 | Electrical apparatus for explosive gas atmospheres Part 15: Contruction, test and Marking of Type of Protection "n" electrical apparatus |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

DE/BVS/ExTR06.0040/00
DE/BVS/ExTR06.0040/01
DE/BVS/ExTR06.0040/02
DE/BVS/ExTR06.0040/03

Quality Assessment Report:
NO/DNV/QAR07.0002/00
NO/DNV/QAR07.0003/00
NO/DNV/QAR07.0004/00
NO/DNV/QAR07.0008/00
NO/DNV/QAR08.0005/00

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2009-03-02** Issue No.: **4**



**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

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. 24********3**** in accordance with IECEx BVS 05.0014 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

**CONDITIONS OF CERTIFICATION: YES as shown below:**

Special conditions for safe use

The sensor is designed for use in connection with a suitable transmitter, e.g. 24*******3**** in accordance with IECEx BVS 05.0014 X resp. type 2200S*****3**** in accordance with
IECEx BVS 08.0042 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2009-03-02** Issue No.: **4**



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

New versions type CMFS**********3**** are possible.

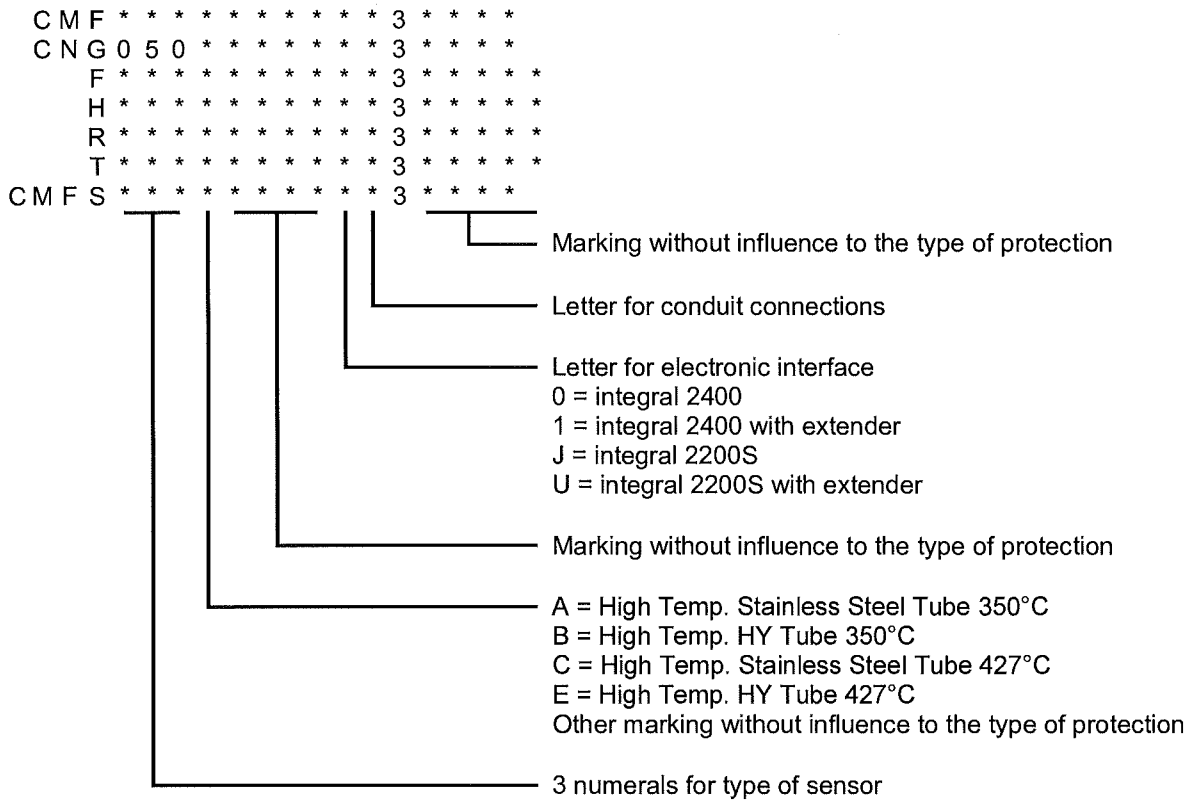
**Annexe:** BVS_06_0011X_issue_4_MicroMotion_Annex.pdf

# IECEx Certificate of Conformity

**Certificate No.:** **IECEx BVS 06.0011X Issue 4**
**Annex**


Type designation

Instead of the *** in the complete denomination letters and numerals will be inserted which characterize modifications.




Description

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

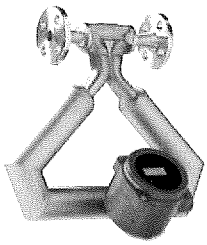
The flow sensor, which consists of magnetically excited oscillating tubes, contains as electrical components coils, resistors, temperature sensors and terminals and connectors.

The sensor is designed for use in connection with a suitable transmitter, e.g. 24********3**** in accordance with IECEx BVS 05.0014 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

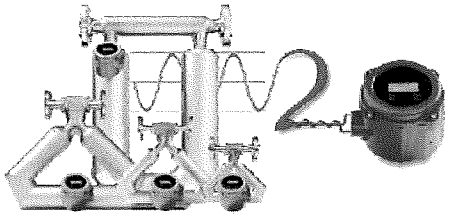
Alternatively a transmitter type 22********3**** in accordance with IECEx BVS 08.0042 X can be used; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

# IECEx Certificate of Conformity

**Certificate No.:** **IECEx BVS 06.0011X Issue 4**
**Annex**

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



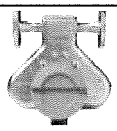
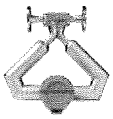
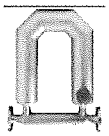
When used with an integral transmitter type 2200S*********, the variation gets the denomination type **********(J or U)******.

Parameters

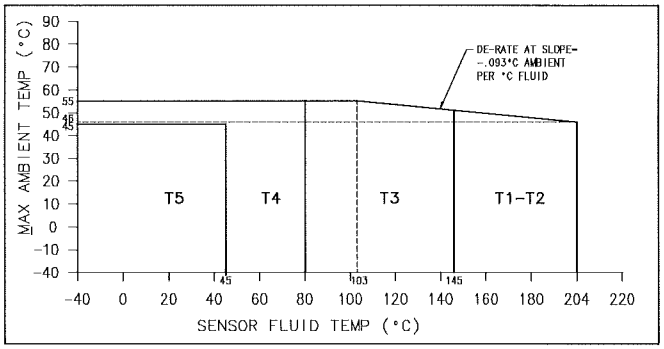
| | | | | |
|---|---|---|---|---|
| 1 | Drive circuit (pin connections 7-8) | | | |
| | Voltage | DC | 30 | V |
| | Current | | 84 | mA |
| 2 | Pick-Off circuit (pin connections 3-4) | | | |
| | Voltage | DC | 30 | V |
| | Current | | 25 | mA |
| 3 | Temperature circuit (pin connections 1,2 and 9) |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

4 Thermal data type CMF**********3****
Regulation of temperature class/max. surface temperature T

4.1 Type CMF010*****(0,1)*3****, CMF025*****(0,1)*3****, CMF050*****(0,1)*3****, CMF100***(0,1)*3****, CMF200*****(0,1)*3****, CMF300*****(0,1)*3**** with integral 2400, **except** CMF***(A,B,C,E)****(0,1)*3****

| Sensor type |  |  |  |
|---|---|---|---|
| With 2400S | CMF010*****(0,1)*3**** | CMF025*****(0,1)*3****<br>CMF050*****(0,1)*3****<br>CMF100*****(0,1)*3**** | CMF200*****(0,1)*3****<br>CMF300*****(0,1)*3**** |

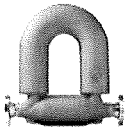
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



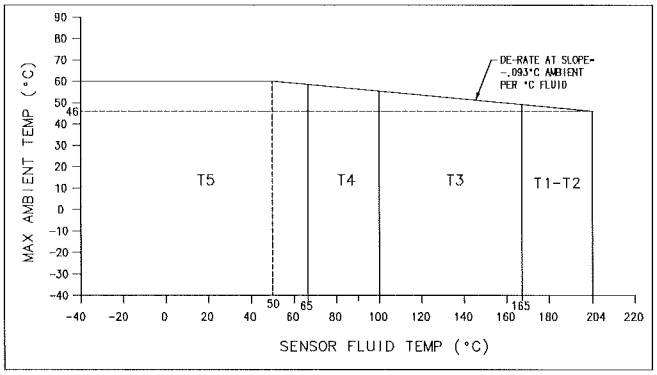

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.2 Type CMF400*****(0,1)*3**** with integral 2400

| Sensor type |  |
|---|---|
| with 2400S | CMF400*****(0,1)*3**** |

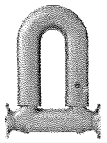
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



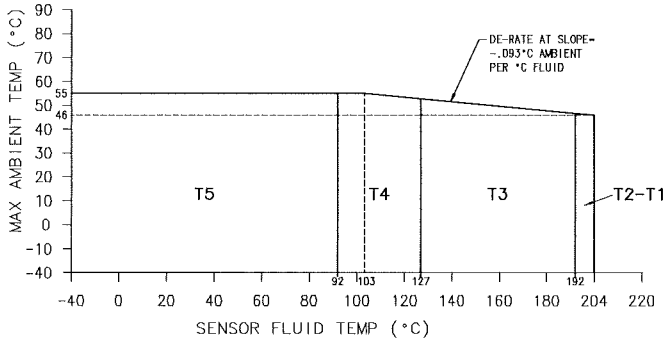

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.3 Types CMFHC2*****(0,1)*3**** and CMFHC3*****(0,1)*3*** with integral 2400

| Sensor type |  |
|---|---|
| With 2400S | CMFHC2*****(0,1)*3****<br>CMFHC3*****(0,1)*3**** |

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 graph:



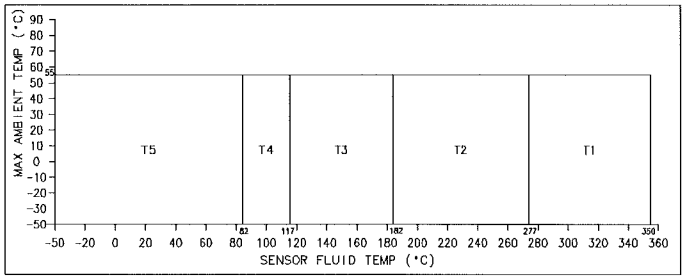
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.4 Type CMF200(A,B)****(0,1)*3****, CMF300(A,B)****(0,1)*3****, CMF400(A,B)****(0,1)*3****, CMFHC2(A,B)****(0,1)*3**** and CMFHC3(A,B)****(0,1)*3**** with integral 2400

| Sensor type |  |
|---|---|
| With 2400S | CMF200(A,B)****(0,1)*3**** |
| | CMF300(A,B)****(0,1)*3**** |
| | CMF400(A,B)****(0,1)*3**** |
| | CMFHC2(A,B)****(0,1)*3**** |
| | CMFHC3(A,B)****(0,1)*3**** |

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 graph:

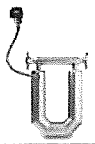



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

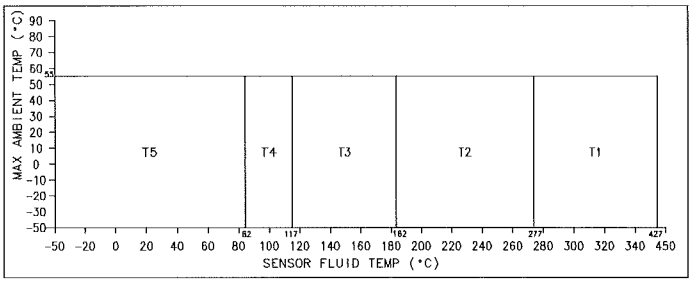
Ambient temperature range Ta -50 °C up to +55 °C

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.

4.5 Type CMF200(C,E)****(0,1)*3****, CMF300(C,E)****(0,1)*3****, CMF400(C,E)****(0,1)*3**** CMFHC2(C,E)****(0,1)*3**** and CMFHC3(C,E)****(0,1)*3**** with integral 2400

| Sensor type |  |
|---|---|
| with 2400S | CMF200(C,E)****(0,1)*3**** |
| | CMF300(C,E)****(0,1)*3**** |
| | CMF400(C,E)****(0,1)*3**** |
| | CMFHC2(C,E)****(0,1)*3**** |
| | CMFHC3(C,E)****(0,1)*3**** |

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 graph:

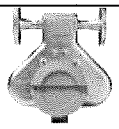
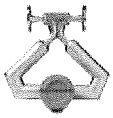
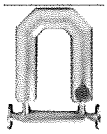



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

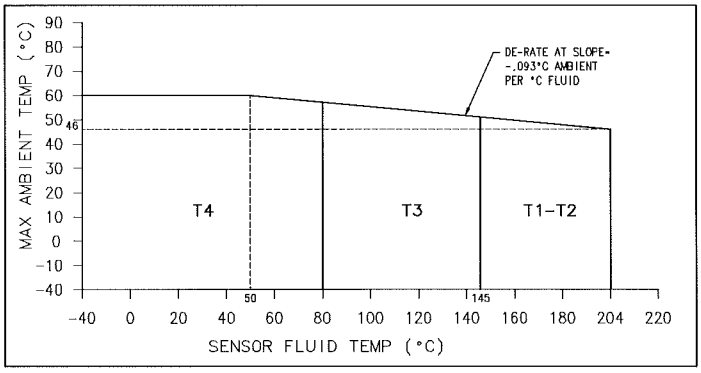
Ambient temperature range Ta -50 °C up to +55 °C

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.

4.6 Type CMF010*****(J,U)*3****, CMF025*****(J,U)*3****, CMF050*****(J,U)*3****, CMF100***(J,U)*3****, CMF200*****(J,U)*3****, CMF300*****(J,U)*3**** with integral 2200S, **except** CMF***(A,B,C,E)****(J,U)*3****

| Sensor type |  |  |  |
|---|---|---|---|
| With 2200S | CMF010*****(J,U)*3**** | CMF025*****(J,U)*3****<br>CMF050*****(J,U)*3****<br>CMF100*****(J,U)*3**** | CMF200*****(J,U)*3****<br>CMF300*****(J,U)*3**** |

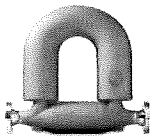
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



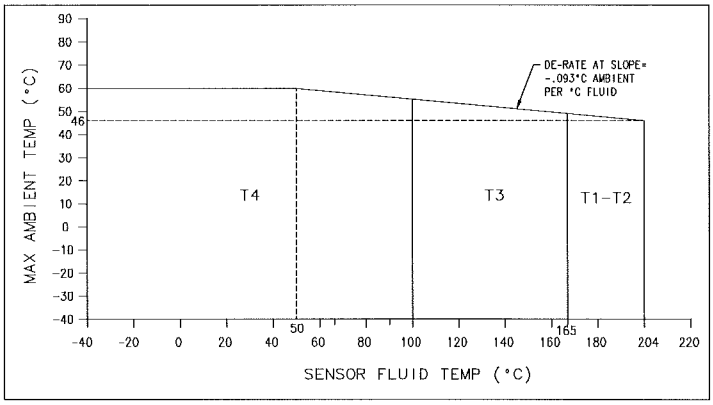

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.7 Type CMF400*****(J,U)*3**** with integral 2200S

| Sensor type |  |
|---|---|
| with 2200S | CMF400*****(J,U)*3**** |

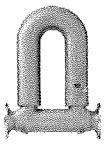
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



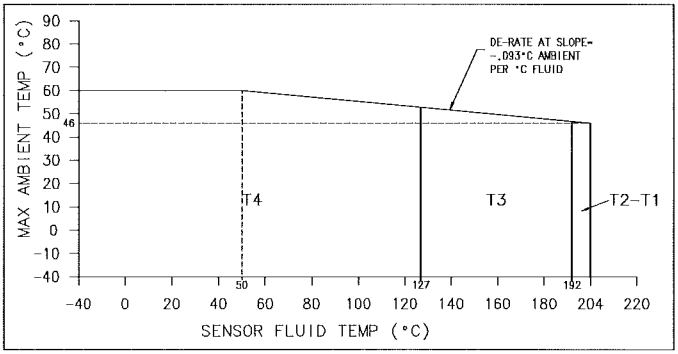

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.8 Types CMFHC2*****(J,U)*3**** and CMFHC3*****(J,U)*3**** with integral 2200S

| Sensor type |  |
|---|---|
| with 2200S | CMFHC2*****(J,U)*3****<br>CMFHC3*****(J,U)*3**** |

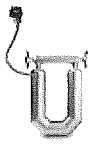
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



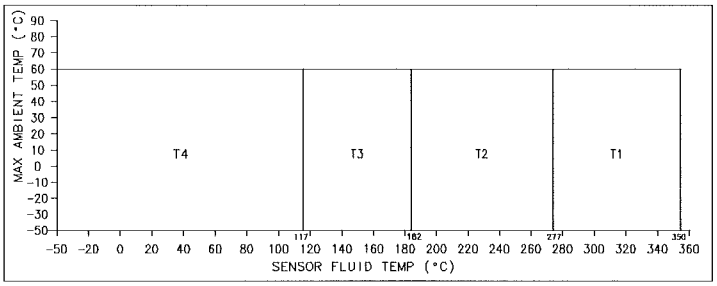

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.9 Type CMF200(A,B)****(J,U)*3****, CMF300(A,B)****(J,U)*3****, CMF400(A,B)****(J,U)*3****, CMFHC2(A,B)****(J,U)*3**** and CMFHC3(A,B)****(J,U)*3**** with integral 2200S

| Sensor type |  |
|---|---|
| with 2200S | CMF200(A,B)****(J,U)*3**** |
| | CMF300(A,B)****(J,U)*3**** |
| | CMF400(A,B)****(J,U)*3**** |
| | CMFHC2(A,B)****(J,U)*3**** |
| | CMFHC3(A,B)****(J,U)*3**** |

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 graph:




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

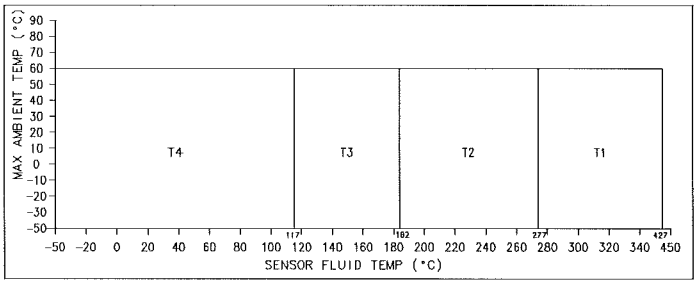
Ambient temperature range Ta -50 °C up to +60 °C

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 +60°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.

4.10 Type CMF200(C,E)****(J,U)*3****, CMF300(C,E)****(J,U)*3****, CMF400(C,E)****(J,U)*3**** CMFHC2(C,E)****(J,U)*3**** und CMFHC3(C,E)****(J,U)*3**** with integral 2200S

| Sensor type |  |
|---|---|
| with 2200S | CMF200(C,E)****(J,U)*3**** |
| | CMF300(C,E)****(J,U)*3**** |
| | CMF400(C,E)****(J,U)*3**** |
| | CMFHC2(C,E)****(J,U)*3**** |
| | CMFHC3(C,E)****(J,U)*3**** |

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 graph:



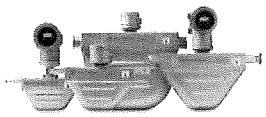

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range Ta -50 °C up to +60 °C

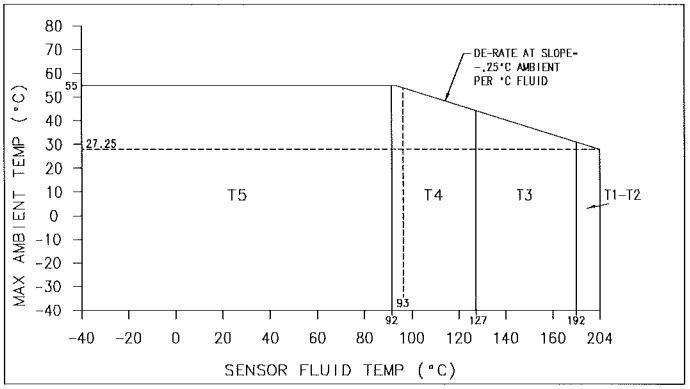
Since the electronics are mounted approx. 1 meter away from the sensor by means of a flexible stainless steel hose, the use of the sensor at an ambient temperature higher than +60°C is possible, provided that the ambient temperature does not exceed the maximum temperature of the medium taking into account the temperature classification and the maximum operating temperature of the sensor.

5 Type F**********3*****, H**********3*****, R**********3*****, CNG050*****3****
Regulation of temperature class

5.1 Type F025*****(0,1)*3*****, F050*****(0,1)*3*****, H025****(0,1)*3*****, H050*****(0,1)*3*****, R025*****(0,1)*3*****, R050*****(0,1)*3***** and CNG050***(0,1)*3****
with integral 2400, **except** F***(A,B,C,E)****(0,1)*3*****

| Sensor type |  |  |
|---|---|---|
| with 2400S | F025******(0,1)*3*****<br>F050******(0,1)*3*****<br>H025******(0,1)*3*****<br>H050******(0,1)*3*****<br>R025******(0,1)*3*****<br>R050******(0,1)*3***** | CNG050***(0,1)*3**** |

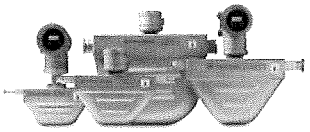
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



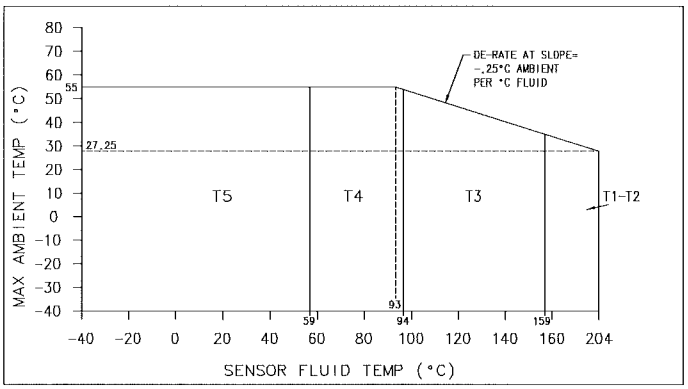

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

5.2 Type F100*****(0,1)*3*****, H100****(0,1)*3*****, R100****(0,1)*3*****
with integral 2400, **except** F100(A,B,C,E)****(0,1)*3*****

| Sensor type |  |
|---|---|
| with 2400S | F100******(0,1)*3***** |
| | H100******(0,1)*3***** |
| | R100******(0,1)*3***** |

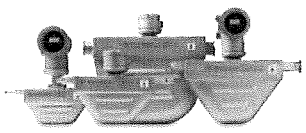
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



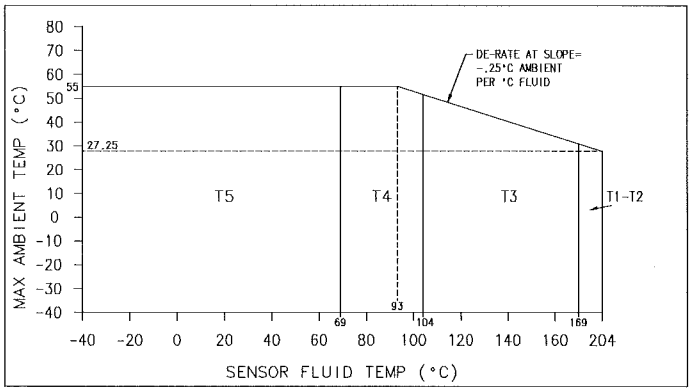
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

5.3 Type F200*****(0,1)*3*****, H200****(0,1)*3*****, R200*****(0,1)*3*****
with integral 2400, **except** F200(A,B,C,E)****(0,1)*3*****

| Sensor type |  |
|---|---|
| with 2400S | F200******(0,1)*3***** |
| | H200******(0,1)*3***** |
| | R200******(0,1)*3***** |

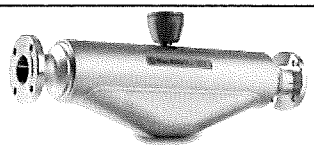
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



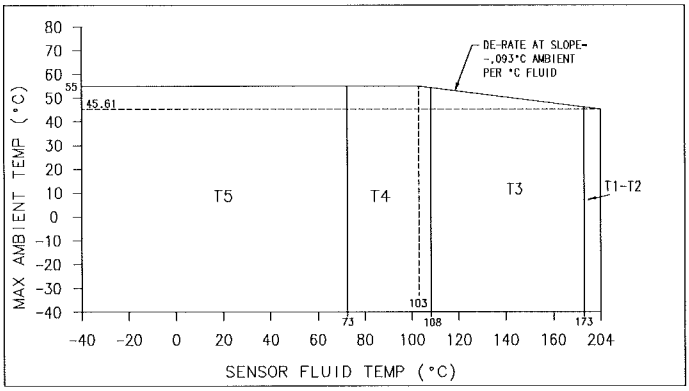

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

5.4 Type F300*****(0,1)*3*****, H300*****(0,1)*3*****, with integral 2400,
**except** F300(A,B,C,E)****(0,1)*3*****

| Sensor type |  |
|---|---|
| with 2400S | F300******(0,1)*3***** |
| | H300******(0,1)*3***** |

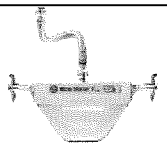
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



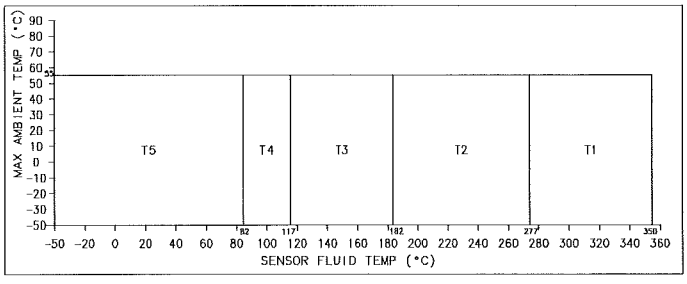

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

5.5 Type F025(A,B)****(0,1)*3*****, F050(A,B)****(0,1)*3*****, F100(A,B)****(0,1)*3*****, F300(A,B)****(0,1)*3***** with integral 2400

| Sensor type |  |
|---|---|
| with 2400S | F025(A,B)*****(0,1)*3***** |
| | F050(A,B)*****(0,1)*3***** |
| | F100(A,B)*****(0,1)*3***** |
| | F300(A,B)*****(0,1)*3***** |

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 graph:

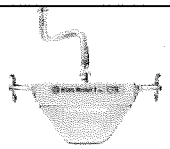



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

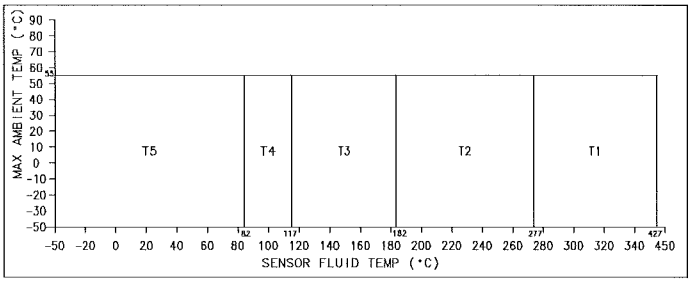
Ambient temperature range Ta -50 °C up to +55 °C

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.

5.6 Type F025(C,E)****(0,1)*3*****, F050(C,E)****(0,1)*3*****, F100(C,E)****(0,1)*3*****, F300(C,E)****(0,1)*3***** with integral 2400

| Sensor type |  |
|---|---|
| with 2400S | F025(C,E)*****(0,1)*3***** |
| | F050(C,E)*****(0,1)*3***** |
| | F100(C,E)*****(0,1)*3***** |
| | F300(C,E)*****(0,1)*3***** |

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 graph:

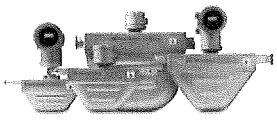



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

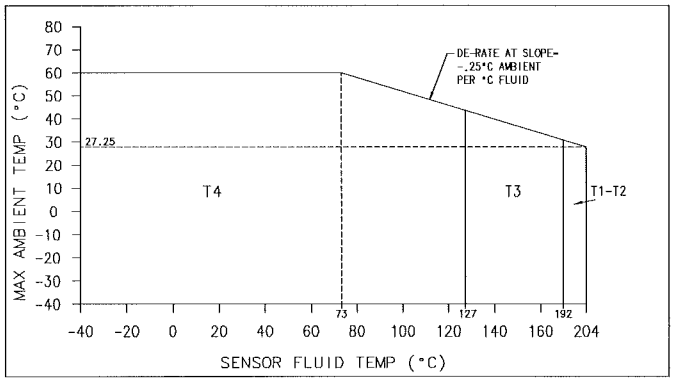
Ambient temperature range Ta -50 °C up to +55 °C

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.

5.7 Type F025*****(J,U)*3*****, F050*****(J,U)*3*****, H025*****(J,U)*3*****, H050*****(J,U)*3*****, R025*****(J,U)*3*****, R050*****(J,U)*3***** and CNG050***(J,U)*3****
with integral 2200S, **except** F***(A,B,C,E)****(J,U)*3*****

| Sensor type |  |  |
|---|---|---|
| with 2200S | F025******(J,U)*3*****<br>F050******(J,U)*3*****<br>H025******(J,U)*3*****<br>H050******(J,U)*3*****<br>R025******(J,U)*3*****<br>R050******(J,U)*3***** | CNG050***(J,U)*3**** |

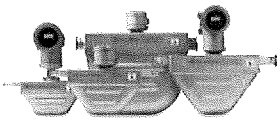
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



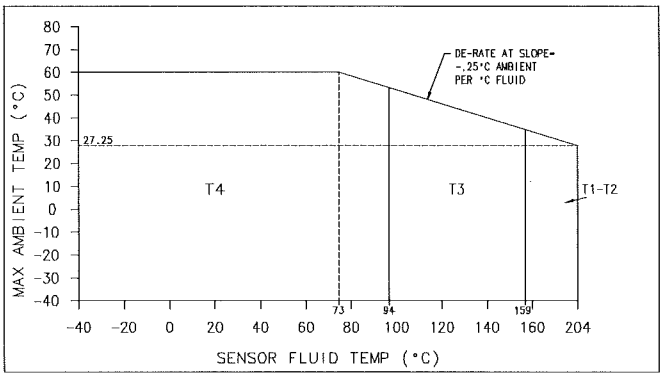

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

5.8 Type F100*****(J,U)*3*****, H100*****(J,U)*3*****, R100*****(J,U)*3*****
with integral 2200S, **except** F100(A,B,C,E)****(J,U)*3*****

| Sensor type |  |
|---|---|
| with 2200S | F100******(J,U)*3*****<br>H100******(J,U)*3*****<br>R100******(J,U)*3***** |

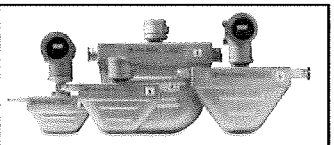
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



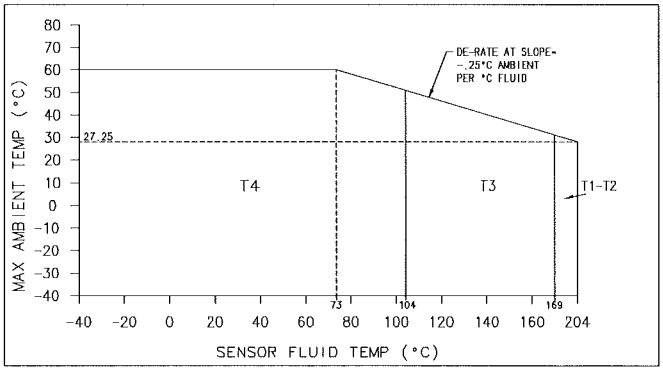

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

5.9 Type F200*****(J,U)*3*****, H200*****(J,U)*3*****, R200*****(J,U)*3*****
with integral 2200S, **except** F200(A,B,C,E)****(J,U)*3*****

| Sensor type |  |
|---|---|
| with 2200S | F200******(J,U)*3*****<br>H200******(J,U)*3*****<br>R200******(J,U)*3***** |

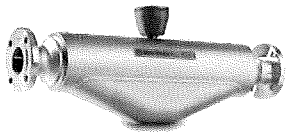
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



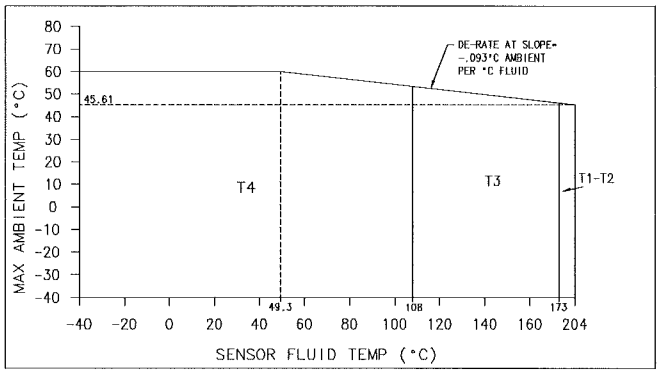
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

5.10 Type F300*****(J,U)*3*****, H300*****(J,U)*3*****, with integral 2200S, **except** F300(A,B,C,E)****(J,U)*3*****

| Sensor type |  |
|---|---|
| with 2200S | F300******(J,U)*3***** |
| | H300******(J,U)*3***** |

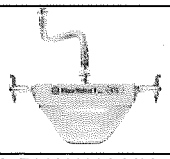
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



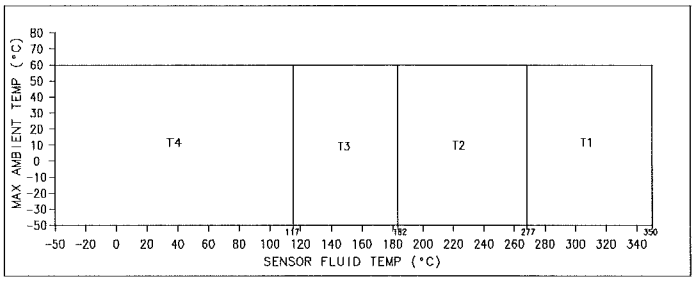

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

5.11 Type F025(A,B)****(J,U)*3*****, F050(A,B)****(J,U)*3*****, F100(A,B)****(J,U)*3*****, F300(A,B)****(J,U)*3***** with integral 2200S

| Sensor type |  |
|---|---|
| with 2200S | F025(A,B)*****(J,U)*3***** |
| | F050(A,B)*****(J,U)*3***** |
| | F100(A,B)*****(J,U)*3***** |
| | F300(A,B)*****(J,U)*3***** |

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 graph:

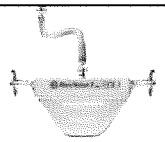



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

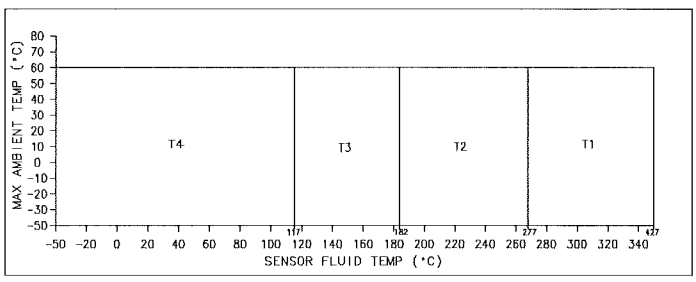
Ambient temperature range Ta -50 °C up to +60 °C

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 +60°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.

5.12 Type F025(C,E)****(J,U)*3*****, F050(C,E)****(J,U)*3*****, F100(C,E)****(J,U)*3*****, F300(C,E)****(J,U)*3***** with integral 2200S

| | |
|---|---|
| Sensor type |  |
| with 2200S | F025(C,E)*****(J,U)*3***** |
| | F050(C,E)*****(J,U)*3***** |
| | F100(C,E)*****(J,U)*3***** |
| | F300(C,E)*****(J,U)*3***** |

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 graph:



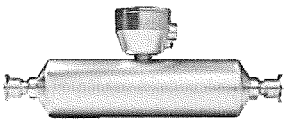

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range Ta -50 °C up to +60 °C

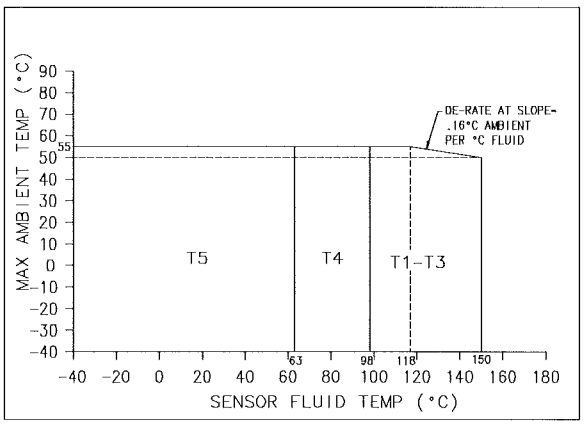
Since the electronics are mounted approx. 1 meter away from the sensor by means of a flexible stainless steel hose, the use of the sensor at an ambient temperature higher than +60°C is possible, provided that the ambient temperature does not exceed the maximum temperature of the medium taking into account the temperature classification and the maximum operating temperature of the sensor.

6 Type T**********3*****

6.1 Type T025*****(0,1)*3*****, T050*****(0,1)*3*****, T075*****(0,1)*3*****, T100*****(0,1)*3*****, T150*****(0,1)*3*****, with integral 2400

| Sensor type |  |
|---|---|
| with 2400S | T025******(0,1)*3***** |
| | T050******(0,1)*3***** |
| | T100******(0,1)*3***** |
| | T150******(0,1)*3***** |

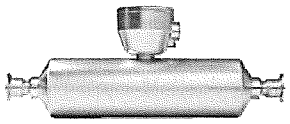
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



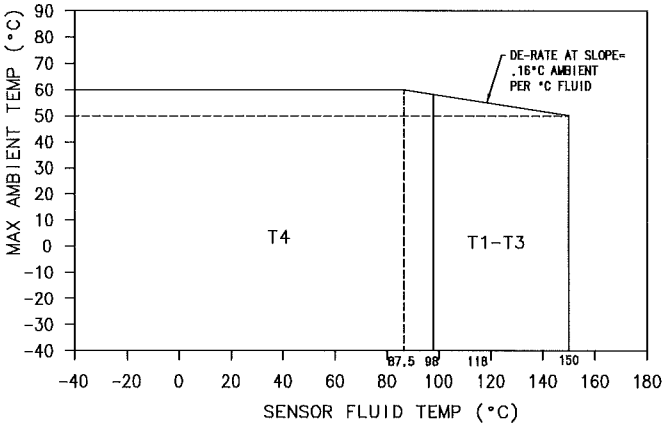

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

6.2 Type T025*****(J,U)*3*****, T050*****(J,U)*3*****, T075*****(J,U)*3*****, T100*****(J,U)*3*****, T150*****(J,U)*3*****, with integral 2200S

| | |
|---|---|
| Sensor type |  |
| with 2200S | T025******(J,U)*3***** |
| | T050******(J,U)*3***** |
| | T100******(J,U)*3***** |
| | T150******(J,U)*3***** |

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 graph:

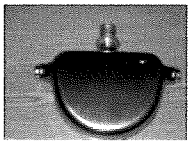



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

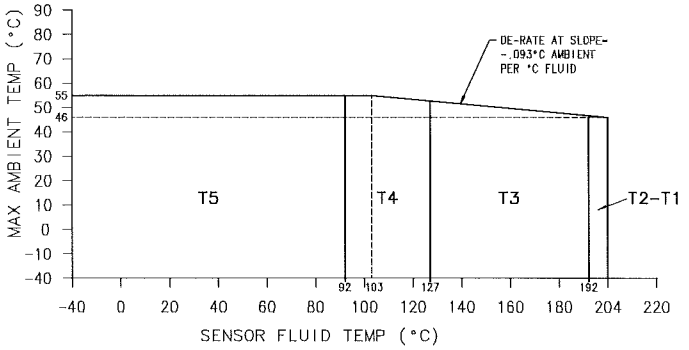
Ambient temperature range Ta -40 °C up to +60 °C

7 Type CMFS**********3*****

7.1 Type CMFS010*****(0,1)*3****, CMFS015*****(0,1)*3**** with integral 2400

| | |
|---|---|
| Sensor type |  |
| With 2400S | CMFS010*****(0,1)*3**** |
| | CMFS015*****(0,1)*3**** |

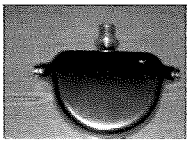
The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and are shown in the following graph:



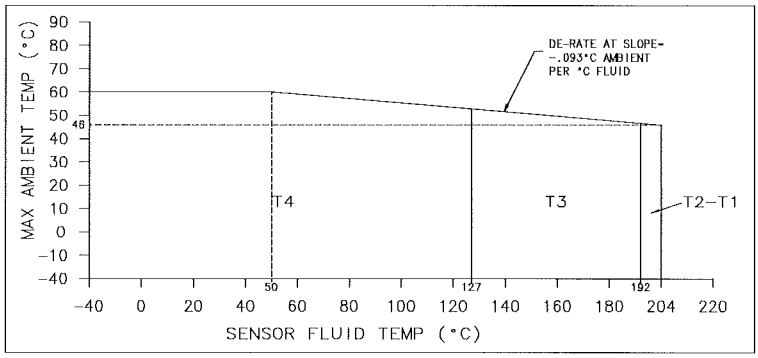

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

7.2 Type CMFS010*****(J,U)*3****, CMFS015*****(J,U)*3**** with integral 2200

| | |
|---|---|
| Sensor type |  |
| With 2200S | CMFS010*****(J,U)*3****<br>CMFS015*****(J,U)*3**** |

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 graph:




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

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

# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx BVS 06.0011X issue No.:5

Status: Current

Date of Issue: 2009-08-12 Page 1 of 4

Applicant: **Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Certificate history:
Issue No. 5 (2009-8-12)
Issue No. 4 (2009-3-2)
Issue No. 3 (2008-11-19)
Issue No. 2 (2007-11-13)
Issue No. 1 (2007-6-21)
Issue No. 0 (2006-8-7)

Electrical Apparatus: **Type CMF**********3****, CNG050*******3****, F**********3*****, H**********3*****, R**********3*****, T**********3*****, CMFS**********3****

*Optional accessory:*

Type of Protection: **Type of Protection "n" electrical apparatus**

Marking: **Ex nA II T1-T4/T5**

*Approved for issue on behalf of the IECEx Certification Body:* Dr. F. Eickhoff

*Position:* Deputy Head of Certification Body

*Signature: (for printed version)*

*Date:* 2008-08-12

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
DEKRA EXAM GmbH

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2009-08-12** Issue No.: **5**



Manufacturer:

**Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Manufacturing location(s):

**Micro Motion Inc.**
Ave. Miguel de Cervantes 111
Complejo Industrial Chihuahua
Chihuahua 31109
Mexico

**Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
United States of America

**Emerson Process Management Flow BV**
Neonstraat 1
6718 WX Ede
The Netherlands

**Emerson Process Management Flow Technologies Co., Ltd.**
111, Xing Min South Road
Jiangning, Nanjing
Jiangsu Province
China

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

| | |
|---|---|
| **IEC 60079-0 : 2004**<br>Edition: 4.0 | Electrical apparatus for explosive gas atmospheres - Part 0: General requirements |
| **IEC 60079-15 : 2005-03**<br>Edition: 3 | Electrical apparatus for explosive gas atmospheres Part 15: Contruction, test and Marking of Type of Protection "n" electrical apparatus |

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

DE/BVS/ExTR06.0040/00
DE/BVS/ExTR06.0040/01
DE/BVS/ExTR06.0040/02
DE/BVS/ExTR06.0040/03
DE/BVS/ExTR06.0040/04

Quality Assessment Report:
NO/DNV/QAR07.0002/00
NO/DNV/QAR07.0003/00
NO/DNV/QAR07.0008/01
NO/DNV/QAR08.0005/00

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2009-08-12** Issue No.: **5**



**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

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. 24********3**** in accordance with

IECEx BVS 05.0014 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.
Type designation and parameters
see Annex

**CONDITIONS OF CERTIFICATION: YES as shown below:**

Special conditions for safe use

The sensor is designed for use in connection with a suitable transmitter, e.g. 24*******3**** in accordance with IECEx BVS 05.0014 X resp. type 2200S*****3**** in accordance with IECEx BVS 08.0042 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2009-08-12** Issue No.: **5**



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

The sensor can be modified:
New versions type CMFHC*Y*******3**** are possible.
This issue of the test report is also issued to remove manufacturing location Pudong, China, from the manufacturing locations due to a decision by the manufacturer to no longer produce products covered by this report at this location, from September 2009. Products produced at this facility prior to September 2009 remain covered by this report.

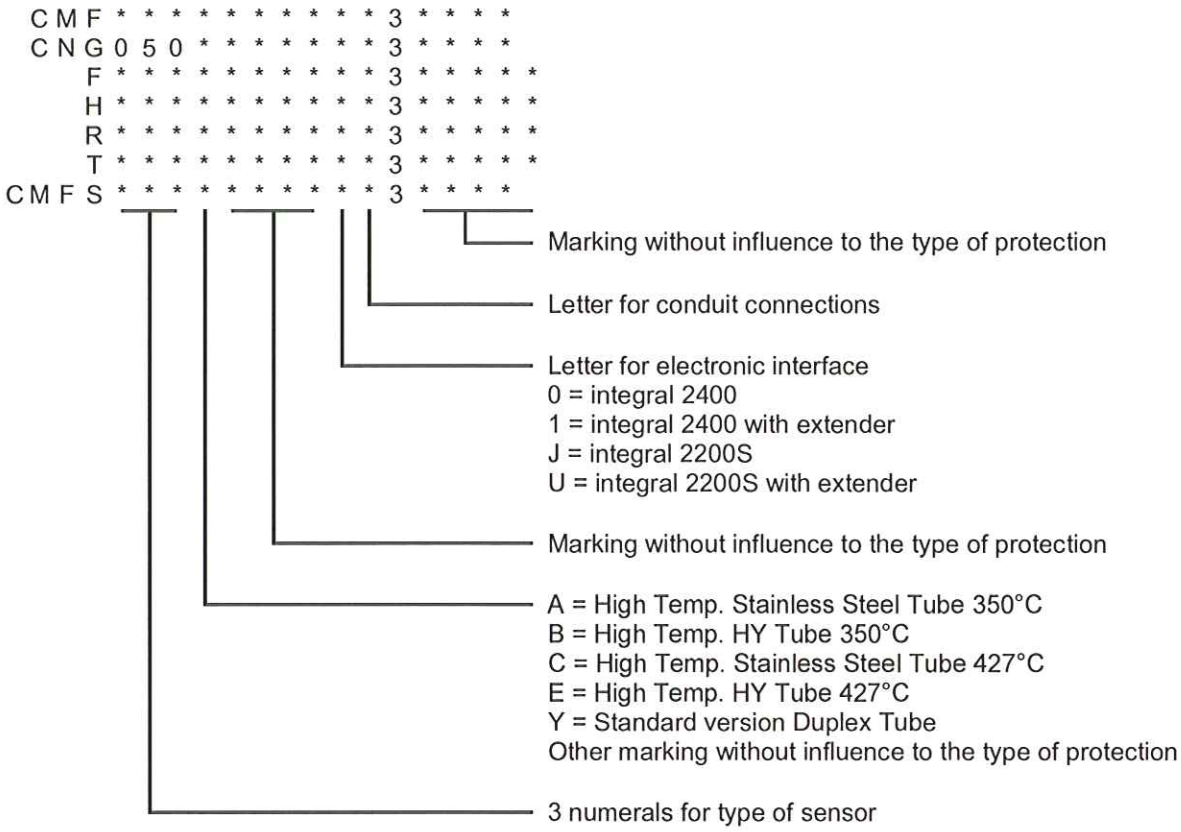
**Annexe:** Annex_IECEx_BVS_06_0011X.pdf, BVS_06_0011 X_Micro_Annex issue 5.pdf

# IECEx Certificate of Conformity

**Certificate No.:** **IECEx BVS 06.0011 X issue no. 5**
**Annex**


Type Code

Instead of the *** in the complete denomination letters and numerals will be inserted which characterize modifications.



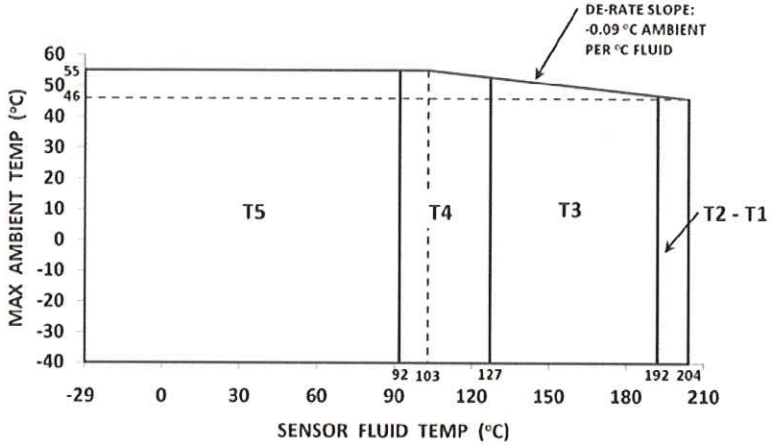

Parameters for type CMFHC*Y*******3****

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

4 Thermal data type CMFHC*Y*******3****
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:

| Sensor type |  |
|---|---|
| With 2400S | CMFHC*Y****(0,1)*3**** |
| | CMFHC*Y****(0,1)*3**** |




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

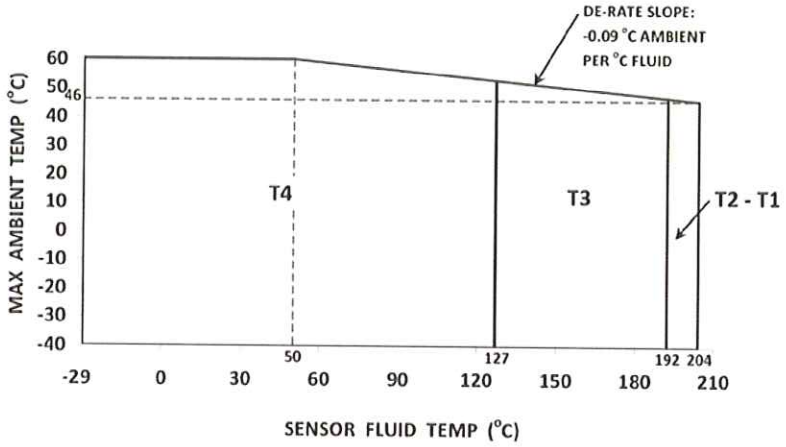
Ambient temperature range Ta -40 °C up to +55 °C

| Sensor type |  |
|---|---|
| with 2200S | CMFHC*Y****(J,U)*3**** |
| | CMFHC*Y****(J,U)*3**** |

# IECEx Certificate of Conformity

**Certificate No.:** **IECEx BVS 06.0011 X issue no. 5**






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

| | | |
|---|---|---|
| Ambient temperature range | Ta | -40 °C up to +60 °C |

# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx BVS 06.0011X Issue No.:6

Status: **Current**

Date of Issue: **2010-11-17** Page 1 of 4

Applicant: **Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Certificate history:
Issue No. 6 (2010-11-17)
Issue No. 5 (2009-8-12)
Issue No. 4 (2009-3-2)
Issue No. 3 (2008-11-19)
Issue No. 2 (2007-11-13)
Issue No. 1 (2007-6-21)
Issue No. 0 (2006-8-7)

Electrical Apparatus: **Sensor Type CMF**********3*****, CNG050*******3*****, F**********3*****, H**********3*****, R**********3*****, T**********3*****, CMFS**********3*****

*Optional accessory:*

Type of Protection: **Type of Protection "n" electrical apparatus**

Marking: **Ex nA IIC T1-T4/T5 Gc**

*Approved for issue on behalf of the IECEx Certification Body:* H.-Ch. Simanski

*Position:* Head of Certification Body

*Signature: (for printed version)*

*Date:* 17.11.2010

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
DEKRA EXAM GmbH

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2010-11-17** Issue No.: **6**



Manufacturer:

**Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Manufacturing location(s):

**Micro Motion Inc.**
Ave. Miguel de Cervantes 111
Complejo Industrial
Chihuahua
Chihuahua 31109
Mexico

**Emerson Process Management Flow BV**
Neonstraat 1
6718 WX Ede
The Netherlands

**Emerson Process Management Flow Technologies Co., Ltd.**
111, Xing Min South Road
Jiangning, Nanjing
Jiangsu Province
China

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

**IEC 60079-0 : 2007-10** Explosive atmospheres - Part 0:Equipment - General requirements
Edition: 5

**IEC 60079-15 : 2010** Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition: 4

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

DE/BVS/ExTR06.0040/05

Quality Assessment Report:
NO/DNV/QAR07.0002/02
NO/DNV/QAR07.0003/02
NO/DNV/QAR07.0008/02
NO/DNV/QAR08.0005/02

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2010-11-17** Issue No.: **6**



**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

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. 24********3**** in accordance with IECEx BVS 05.0014 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

Type designation and parameters

See Annex

**CONDITIONS OF CERTIFICATION: YES as shown below:**

Special conditions for safe use

The sensor is designed for use in connection with a suitable transmitter, e.g. 24*******3**** in accordance with IECEx BVS 05.0014 X resp. type 2200S*****3**** in accordance with IECEx BVS 08.0042 X resp. type FMT*****3**** in accordance with IECEx BVS 10.0073 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2010-11-17** Issue No.: **6**



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

The sensor can be modified:
New versions with integral transmitter type FMT***3*L**** are possible: A new sensor type CMFHC4*******3**** is possible.
Versions 2200S with THUM Wireless Hart Adaptor are possible.
Revised flex conduit for CMF High Temperature versions can be used.
Also the sensors have been tested in acc. with the standards IEC 60079-0:2007 and IEC 60079-15:2010; this leads to a modified marking.

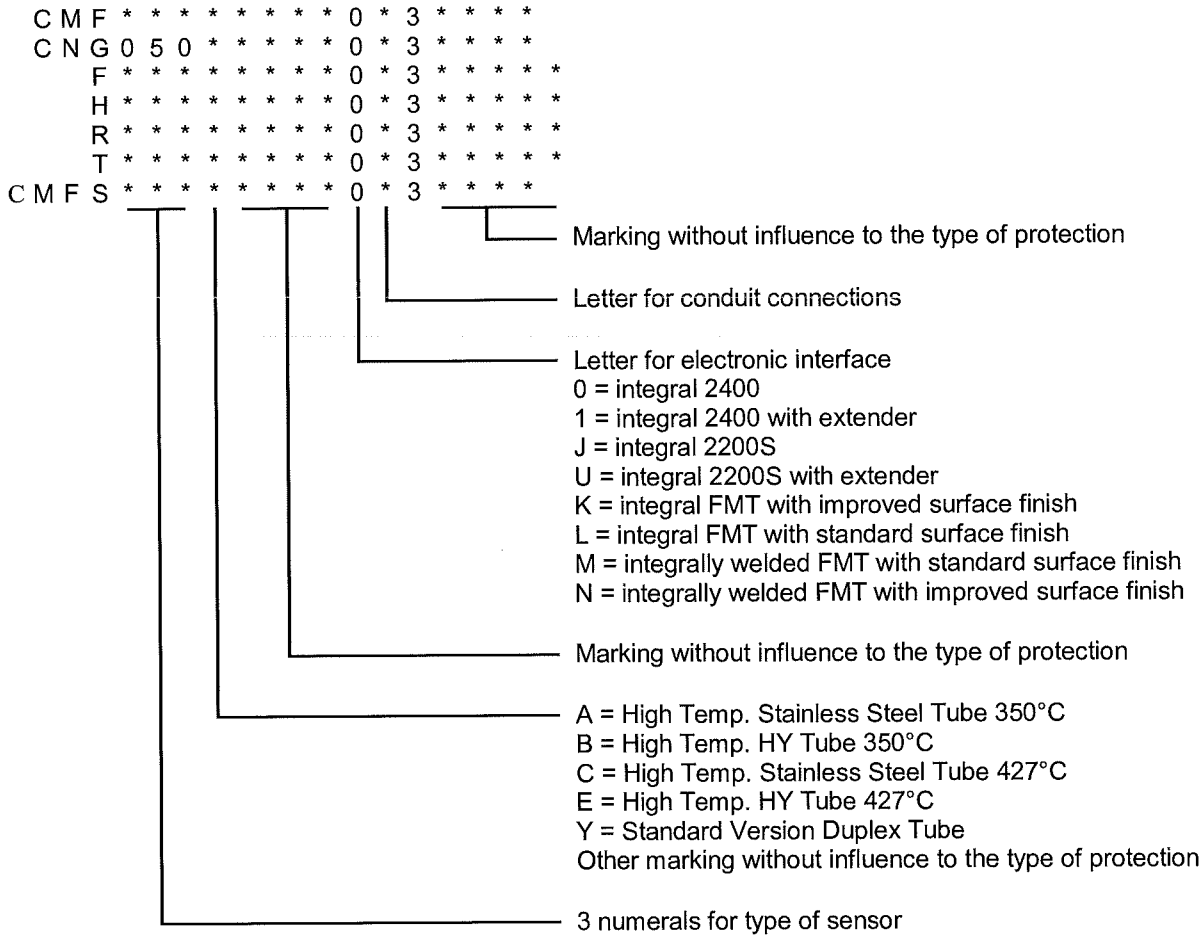
**Annexe:** BVS_06_0011X_Micro_Annex_issue6.pdf

# IECEx Certificate of Conformity

**Certificate No.:** **IECEx BVS 06.0011X**
**Annex**


Type Code

Instead of the *** in the complete denomination letters and numerals will be inserted which characterize modifications.



# IECEx Certificate of Conformity

**Certificate No.:** **IECEx BVS 06.0011X**
**Annex**

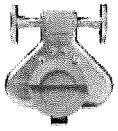
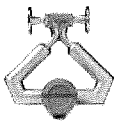
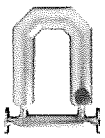

Parameters

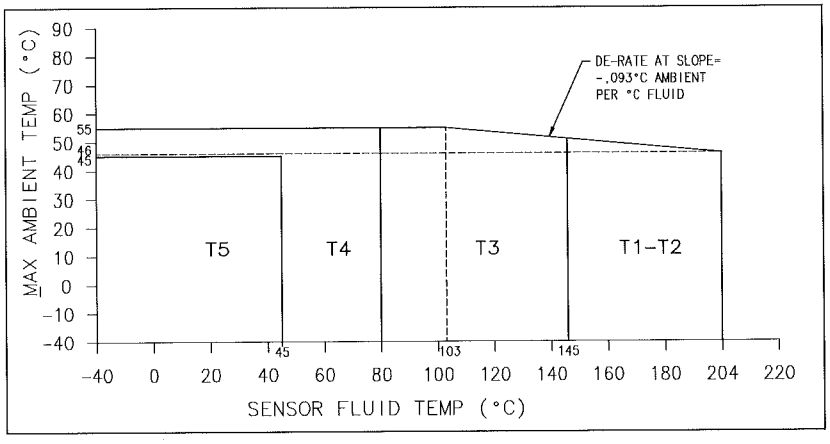
| | | | | |
|---|---|---|---|---|
| 1 | Drive circuit (pin connections 7-8) | | | |
| | Voltage | DC | 30 | V |
| | Current | | 84 | mA |
| 2 | Pick-Off circuit (pin connections 3-4) | | | |
| | Voltage | DC | 30 | V |
| | Current | | 25 | mA |
| 3 | Temperature circuit (pin connections 1, 2 and 9) |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

4 Thermal data
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:

4.1 Excluding CMF***(A, B, C , E)****(0,1,K,L,M, N)*3****

| Sensor type |  |  |  |
|---|---|---|---|
| With 2400S | CMF010*****(0,1)*3**** | CMF025*****(0,1)*3****<br>CMF050*****(0,1)*3****<br>CMF100*****(0,1)*3**** | CMF200*****(0,1)*3****<br>CMF300*****(0,1)*3**** |
| With FMT | CMF010*****(K,L,M,N)*3**** | CMF025*****(K,L,M,N)*3****<br>CMF050*****(K,L,M,N)*3****<br>CMF100*****(K,L,M,N)*3**** | CMF200*****(K,L,M,N)*3****<br>CMF300*****(K,L,M,N)*3**** |



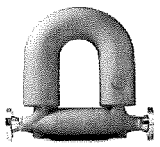

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature

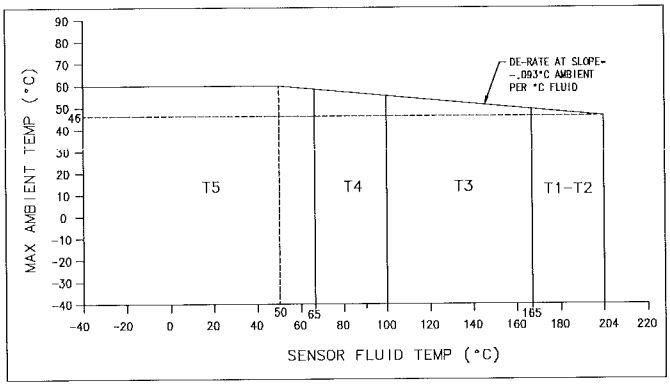
| | | |
|---|---|---|
| Ambient temperature range | Ta | -40 °C up to +55 °C |

# IECEx Certificate of Conformity

**Certificate No.:** **IECEx BVS 06.0011X**
**Annex**


4.2 Excluding CMF***(A, B, C , E)****(0,1,K,L,M, N)*3****

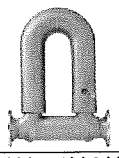
| Sensor type |  |
|---|---|
| With 2400S | CMF400*****(0,1)*3**** |
| With FMT | CMF400*****(K,L,M,N)*3**** |

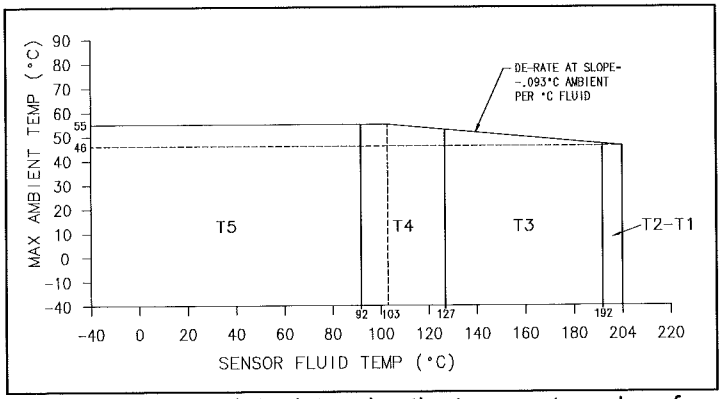



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.3 Excluding CMF***(A, B, C , E)****(0,1,K,L,M, N)*3****

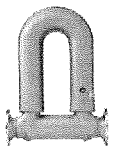
| Sensor type |  |
|---|---|
| With 2400S | CMFHC2*****(0,1)*3**** |
| | CMFHC3*****(0,1)*3**** |
| | CMFHC4*****(0,1)*3**** |
| With FMT | CMFHC2*****(K,L,M,N)*3**** |
| | CMFHC3*****(K,L,M,N)*3**** |
| | CMFHC4*****(K,L,M,N)*3**** |

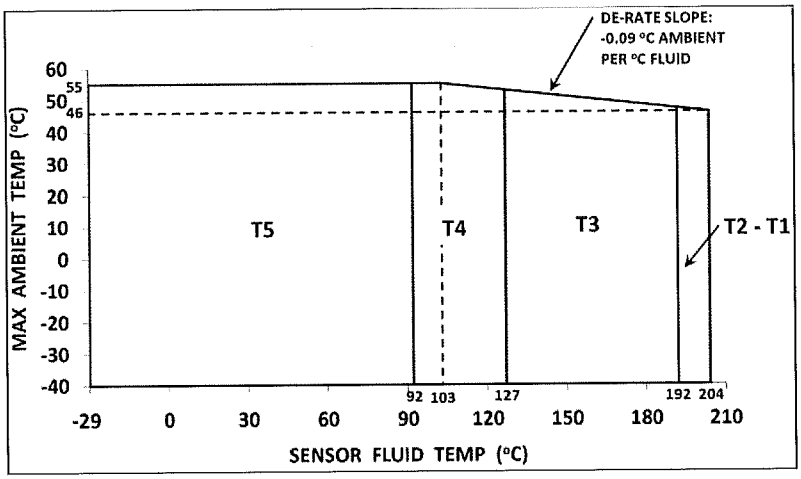



Note: Use the above graph to determine the temperature class for a given fluid and ambient

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

4.4 Excluding CMF***(A, B, C , E)****(0,1,K,L,M, N)*3****

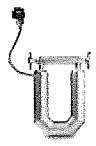
| Sensor type |  |
|---|---|
| With 2400S | CMFHC*Y****(0,1)*3**** |
| With FMT | CMFHC*Y****(K,L,M,N)*3**** |

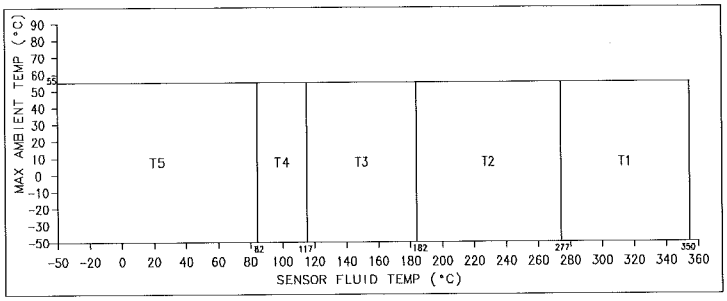



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.5 CMF***(A, B)****(0,1,K,L,M, N)*3****

| Sensor type |  |
|---|---|
| With 2400S | CMF200(A,B)****(0,1)*3**** |
| | CMF300(A,B)****(0,1)*3**** |
| | CMF400(A,B)****(0,1)*3**** |
| | CMFHC2(A,B)****(0,1)*3**** |
| | CMFHC3(A,B)****(0,1)*3**** |
| | CMFHC4(A,B)****(0,1)*3**** |
| With FMT | CMF200(A,B)****(K,L,M,N)*3**** |
| | CMF300(A,B)****(K,L,M,N)*3**** |
| | CMF400(A,B)****(K,L,M,N)*3**** |
| | CMFHC2(A,B)****(K,L,M,N)*3**** |
| | CMFHC3(A,B)****(K,L,M,N)*3**** |
| | CMFHC4(A,B)****(K,L,M,N)*3**** |

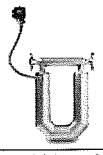


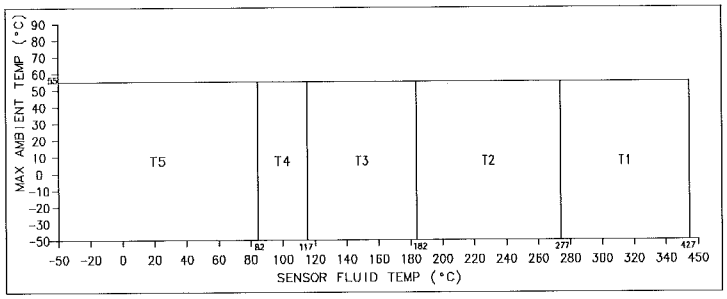

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.6 CMF***(C , E)****(0,1,K,L,M, N)*3****

| Sensor type |  |
|---|---|
| With 2400S | CMF200(C,E)****(0,1)*3**** |
| | CMF300(C,E)****(0,1)*3**** |
| | CMF400(C,E)****(0,1)*3**** |
| | CMFHC2(C,E)****(0,1)*3**** |
| | CMFHC3(C,E)****(0,1)*3**** |
| | CMFHC4(C,E)****(0,1)*3**** |
| With FMT | CMF200(C,E)****(K,L,M,N)*3**** |
| | CMF300(C,E)****(K,L,M,N)*3**** |
| | CMF400(C,E)****(K,L,M,N)*3**** |
| | CMFHC2(C,E)****(K,L,M,N)*3**** |
| | CMFHC3(C,E)****(K,L,M,N)*3**** |
| | CMFHC4(C,E)****(K,L,M,N)*3**** |

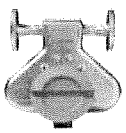
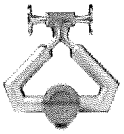
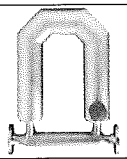


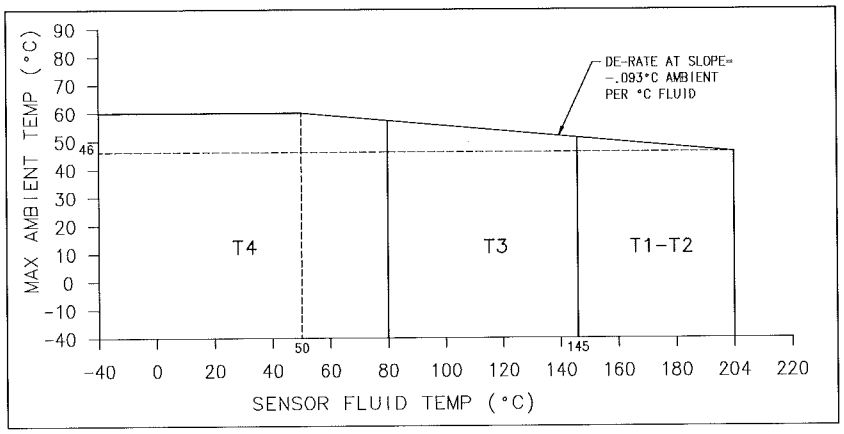

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.7 Excluding CMF***(A, B, C , E)****(J,U)*3****

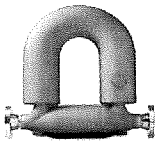
| Sensor type |  |  |  |
|---|---|---|---|
| With 2200S | CMF010*****(J,U)*3**** | CMF025*****(J,U)*3****<br>CMF050*****(J,U)*3****<br>CMF100*****(J,U)*3**** | CMF200*****(J,U)*3****<br>CMF300*****(J,U)*3**** |

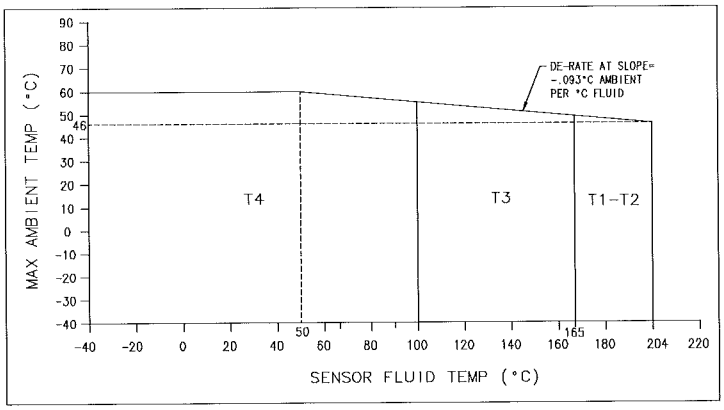



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.8 Excluding CMF***(A, B, C , E)****(J,U)*3****

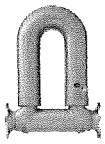
| Sensor type |  |
|---|---|
| With 2200S | CMF400*****(J,U)*3**** |

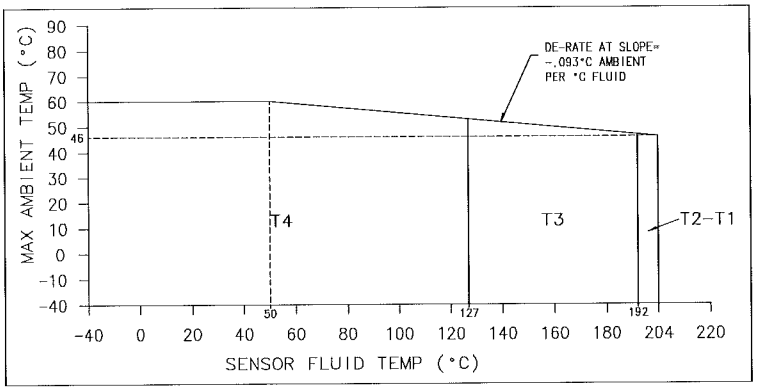



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.9 Excluding CMF***(A, B, C , E)****(J,U)*3****

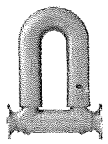
| Sensor type |  |
|---|---|
| With 2200S | CMFHC2*****(J,U)*3****<br>CMFHC3*****(J,U)*3****<br>CMFHC4*****(J,U)*3**** |

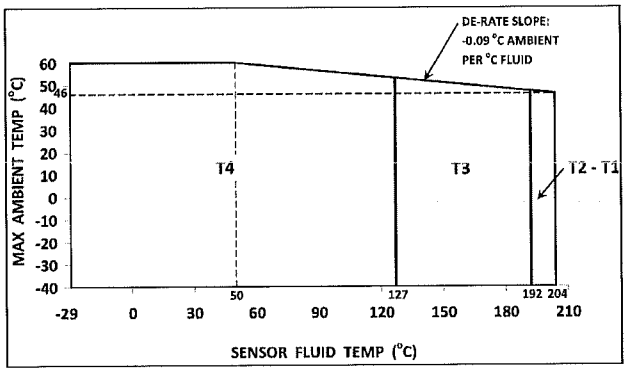



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.10 Excluding CMF***(A, B, C , E)****(J,U)*3****

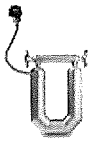
| Sensor type |  |
|---|---|
| With 2200S | CMFHC*Y****(J,U)*3**** |

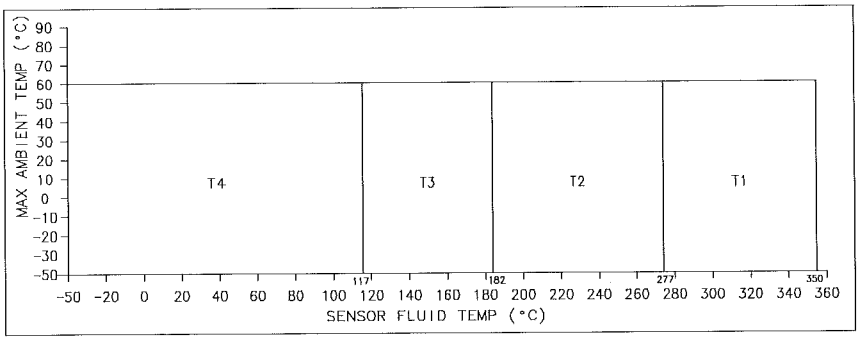



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.11 CMF***(A, B)****(J,U)*3****

| Sensor type |  |
|---|---|
| With 2200S | CMF200(A,B)****(J,U)*3**** |
| | CMF300(A,B)****(J,U)*3**** |
| | CMF400(A,B)****(J,U)*3**** |
| | CMFHC2(A,B)****(J,U)*3**** |
| | CMFHC3(A,B)****(J,U)*3**** |
| | CMFHC4(A,B)****(J,U)*3**** |

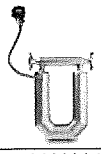


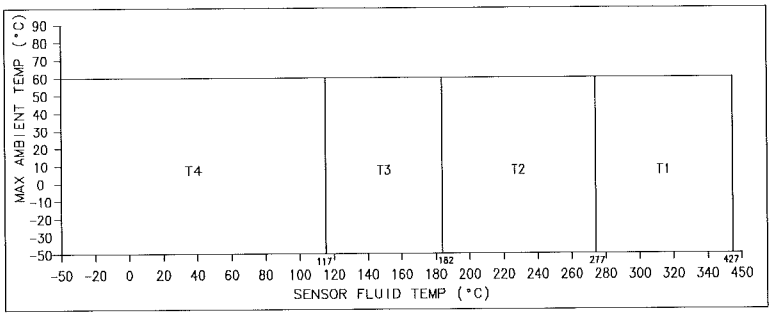

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range Ta -50 °C up to +60 °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 +60 °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.

4.12 CMF***(C , E)****(J,U)*3****

| Sensor type |  |
|---|---|
| With 2200S | CMF200(C,E)****(J,U)*3**** |
| | CMF300(C,E)****(J,U)*3**** |
| | CMF400(C,E)****(J,U)*3**** |
| | CMFHC2(C,E)****(J,U)*3**** |
| | CMFHC3(C,E)****(J,U)*3**** |
| | CMFHC4(C,E)****(J,U)*3**** |

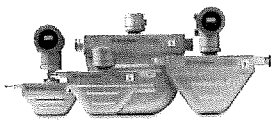


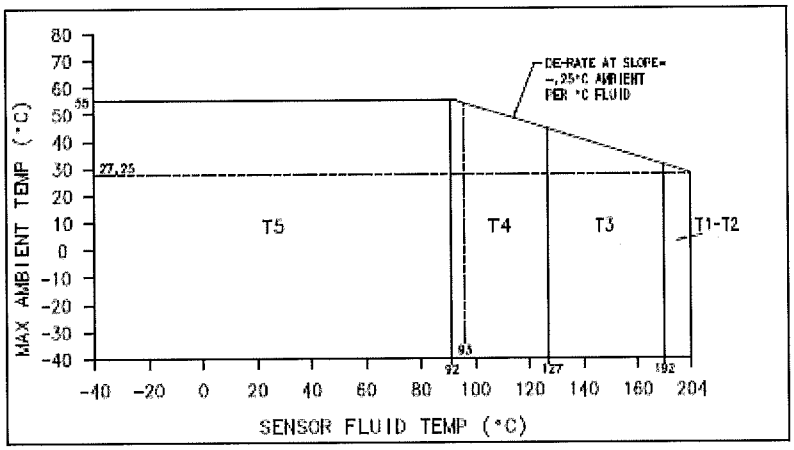

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range Ta -50 °C up to +60 °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 +60 °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.

4.13 Excluding F***(A, B, C , E)*****(0,1,K,L,M, N)*3*****

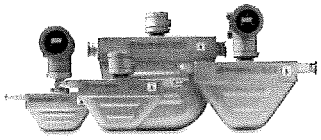
| Sensor type |  |  |
|---|---|---|
| With 2400S | F025******(0,1)*3*****<br>F050******(0,1)*3*****<br>H025******(0,1)*3*****<br>H050******(0,1)*3*****<br>R025******(0,1)*3*****<br>R050******(0,1)*3***** | CNG050***(0,1)*3**** |
| With FMT | F025******(K,L,M,N)*3*****<br>F050******(K,L,M,N)*3*****<br>H025******(K,L,M,N)*3*****<br>H050******(K,L,M,N)*3*****<br>R025******(K,L,M,N)*3*****<br>R050******(K,L,M,N)*3***** | CNG050***(K,L,M,N)*3**** |

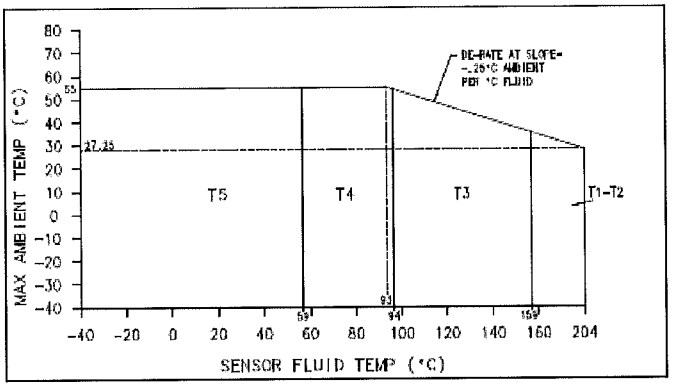



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.14 Excluding F***(A, B, C , E)*****(0,1,K,L,M, N)*3*****

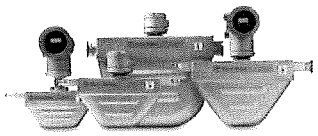
| Sensor type |  |
|---|---|
| With 2400S | F100******(0,1)*3*****<br>H100******(0,1)*3*****<br>R100******(0,1)*3***** |
| With FMT | F100******(K,L,M,N)*3*****<br>H100******(K,L,M,N)*3*****<br>R100******(K,L,M,N)*3***** |

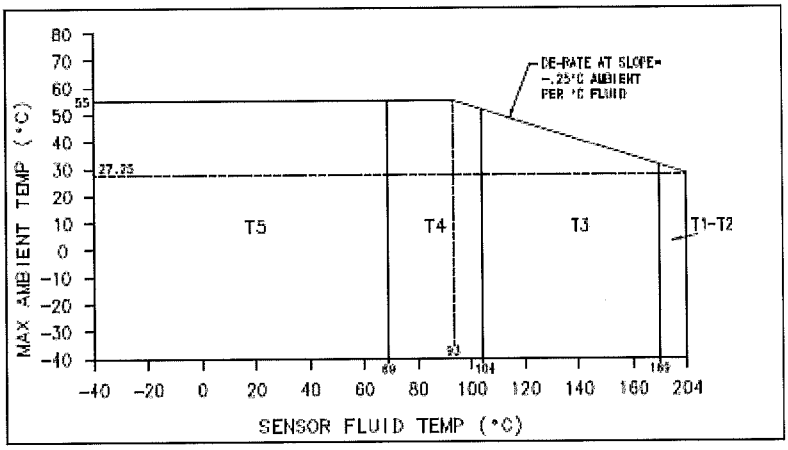



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.15 Excluding F***(A, B, C , E)*****(0,1,K,L,M, N)*3*****

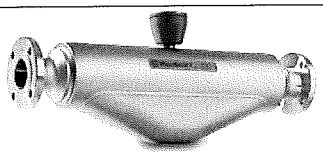
| Sensor type |  |
|---|---|
| With 2400S | F200******(0,1)*3***** |
| | H200******(0,1)*3***** |
| | R200******(0,1)*3***** |
| With FMT | F200******(K,L,M,N)*3***** |
| | H200******(K,L,M,N)*3***** |
| | R200******(K,L,M,N)*3***** |

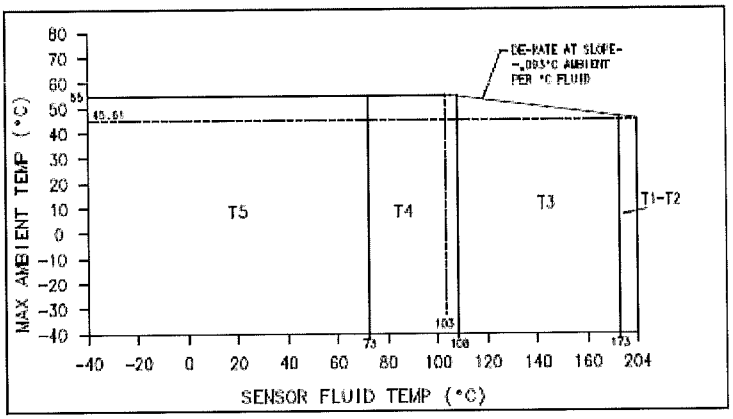



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.16 Excluding F***(A, B, C , E)*****(0,1,K,L,M, N)*3*****

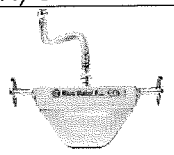
| Sensor type |  |
|---|---|
| With 2400S | F300******(0,1)*3***** |
| | H300******(0,1)*3***** |
| With FMT | F300******(K,L,M,N)*3***** |
| | H300******(K,L,M,N)*3***** |

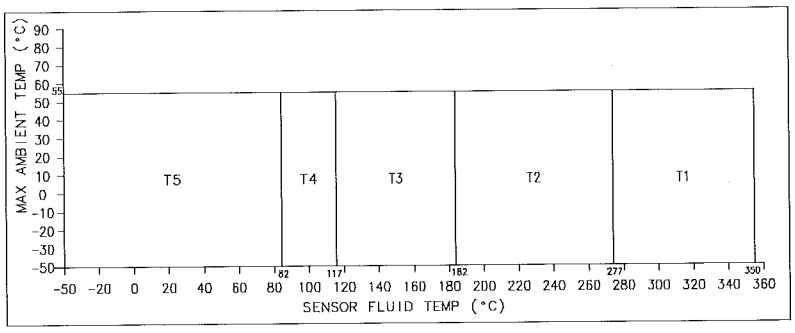



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.17 F***(A, B)*****(0,1,K,L,M, N)*3*****

| Sensor type |  |
|---|---|
| With 2400S | F025(A,B)*****(0,1)*3***** |
| | F050(A,B)*****(0,1)*3***** |
| | F100(A,B)*****(0,1)*3***** |
| | F300(A,B)*****(0,1)*3***** |
| With FMT | F025(A,B)*****(K,L,M,N)*3***** |
| | F050(A,B)*****(K,L,M,N)*3***** |
| | F100(A,B)*****(K,L,M,N)*3***** |
| | F300(A,B)*****(K,L,M,N)*3***** |

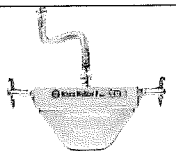


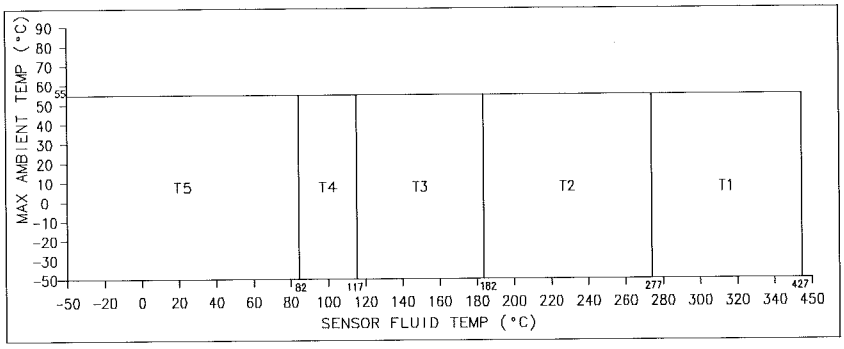

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.18 F***(C , E)*****(0,1,K,L,M, N)*3*****

| Sensor type |  |
|---|---|
| With 2400S | F025(C,E)*****(0,1)*3***** |
| | F050(C,E)*****(0,1)*3***** |
| | F100(C,E)*****(0,1)*3***** |
| | F300(C,E)*****(0,1)*3***** |
| With FMT | F025(C,E)*****(K,L,M,N)*3***** |
| | F050(C,E)*****(K,L,M,N)*3***** |
| | F100(C,E)*****(K,L,M,N)*3***** |
| | F300(C,E)*****(K,L,M,N)*3***** |

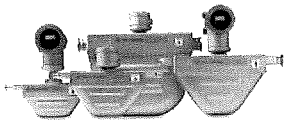
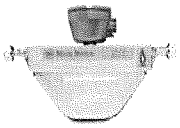


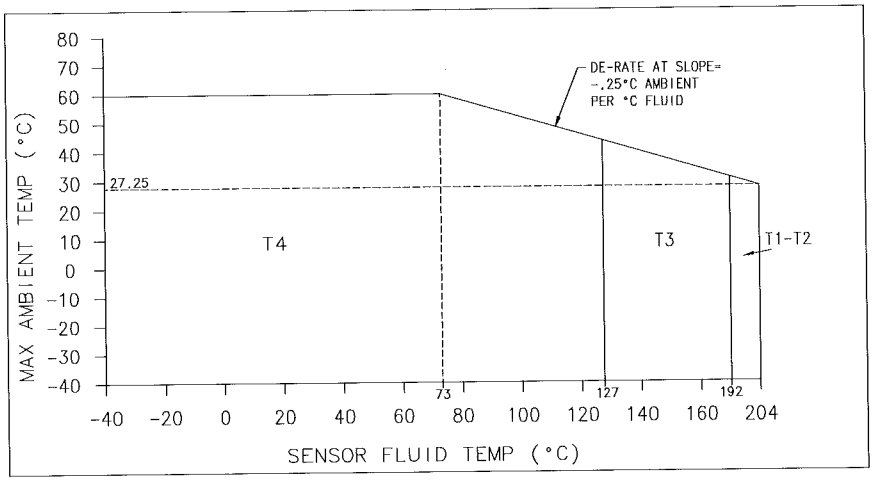

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.19 Excluding F***(A, B, C , E)*****(J,U)*3*****

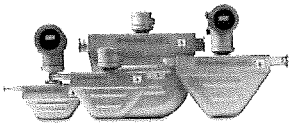
| Sensor type |  |  |
|---|---|---|
| With 2200S | F025******(J,U)*3*****<br>F050******(J,U)*3*****<br>H025******(J,U)*3*****<br>H050******(J,U)*3*****<br>R025******(J,U)*3*****<br>R050******(J,U)*3***** | CNG050***(J,U)*3**** |

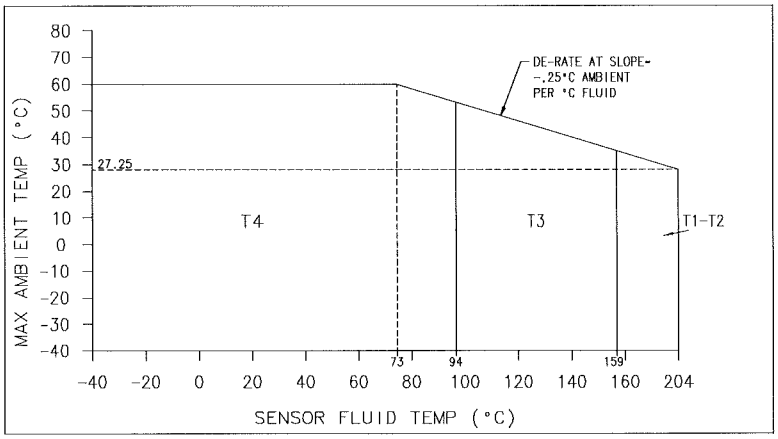



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.20 Excluding F***(A, B, C , E)*****(J,U)*3*****

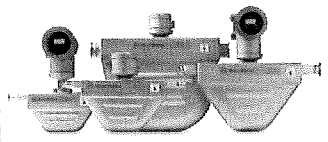
| Sensor type |  |
|---|---|
| With 2200S | F100******(J,U)*3*****<br>H100******(J,U)*3*****<br>R100******(J,U)*3***** |

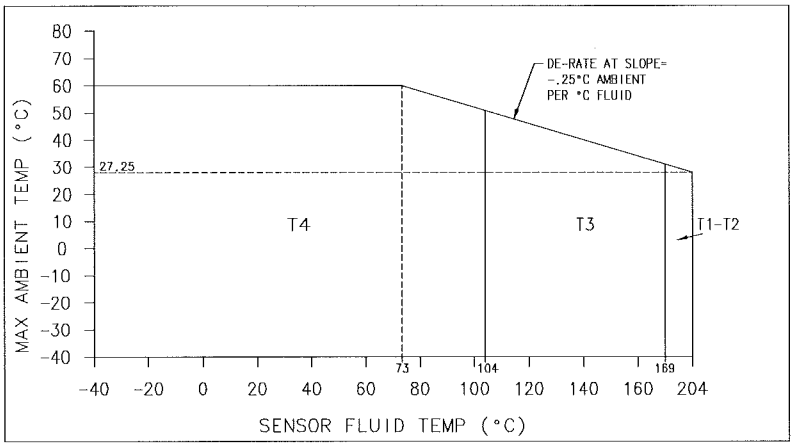



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.21 Excluding F***(A, B, C , E)*****(J,U)*3*****

| Sensor type |  |
|---|---|
| With 2200S | F200******(J,U)*3***** |
| | H200******(J,U)*3***** |
| | R200******(J,U)*3***** |

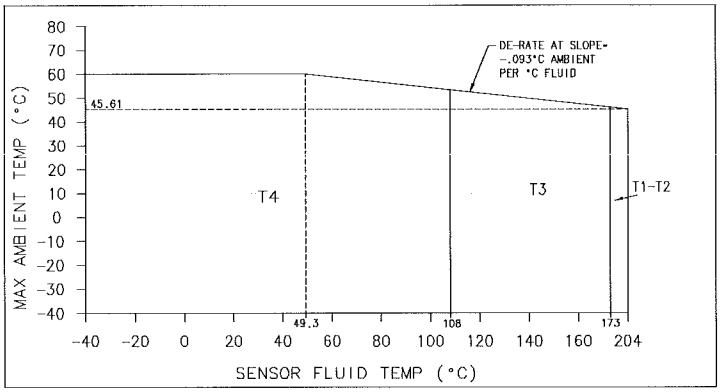



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.22 Excluding F***(A, B, C , E)*****(J,U)*3*****

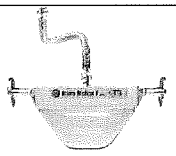
| Sensor type |  |
|---|---|
| With 2200S | F300******(J,U)*3*****<br>H300******(J,U)*3***** |

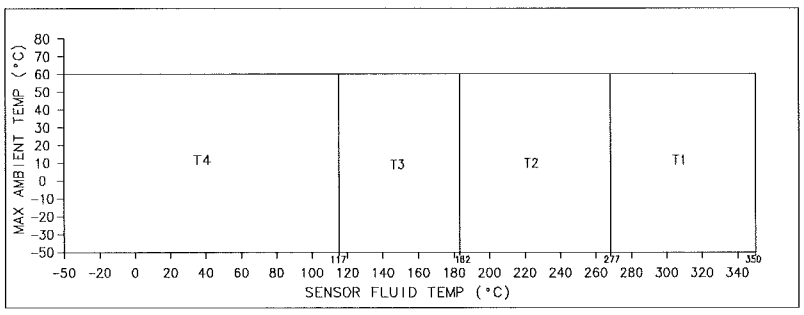



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.23 F***(A, B)*****(J,U)*3*****

| Sensor type |  |
|---|---|
| With 2200S | F025(A,B)*****(J,U)*3*****<br>F050(A,B)*****(J,U)*3*****<br>F100(A,B)*****(J,U)*3*****<br>F300(A,B)*****(J,U)*3***** |



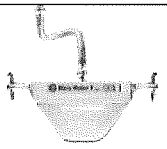
Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature. The maximum surface temperature for dust is as follows:T4:T 130°C, T3:T 195°C, T2:T 290°C and T1:T 363°C

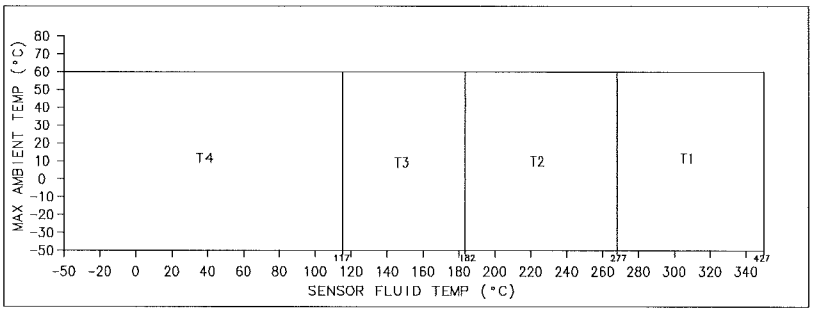
Ambient temperature range Ta -50 °C up to +60 °C

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 +60 °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.

4.24 F***(C , E)*****(J,U)*3*****

| Sensor type |  |
|---|---|
| With 2200S | F025(C,E)*****(J,U)*3***** |
| | F050(C,E)*****(J,U)*3***** |
| | F100(C,E)*****(J,U)*3***** |
| | F300(C,E)*****(J,U)*3***** |

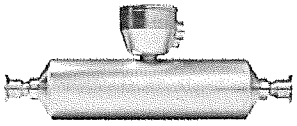


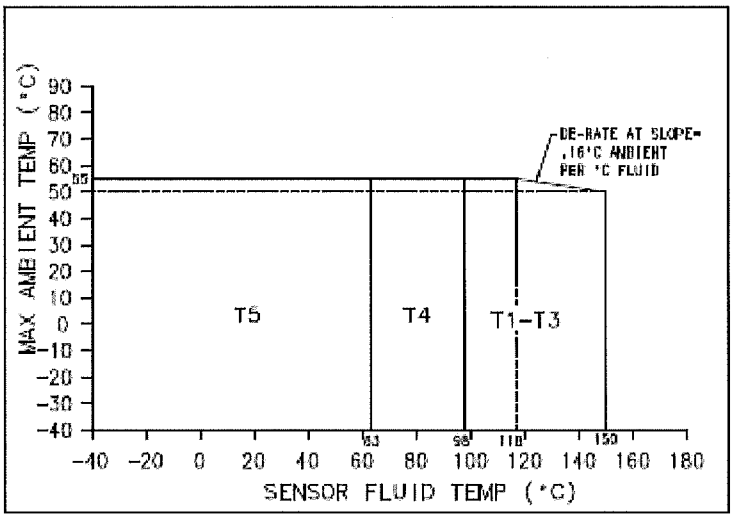

Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

Ambient temperature range Ta -50 °C up to +60 °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 +60 °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.

4.25 T*********(0,1,K,L,M,N)*3*****

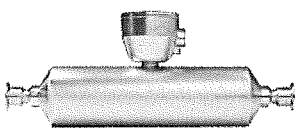
| Sensor type |  |
|---|---|
| With 2400S | T025******(0,1)*3***** |
| | T050******(0,1)*3***** |
| | T100******(0,1)*3***** |
| | T150******(0,1)*3***** |
| With FMT | T025******(K,L,M,N)*3***** |
| | T050******(K,L,M,N)*3***** |
| | T100******(K,L,M,N)*3***** |
| | T150******(K,L,M,N)*3***** |

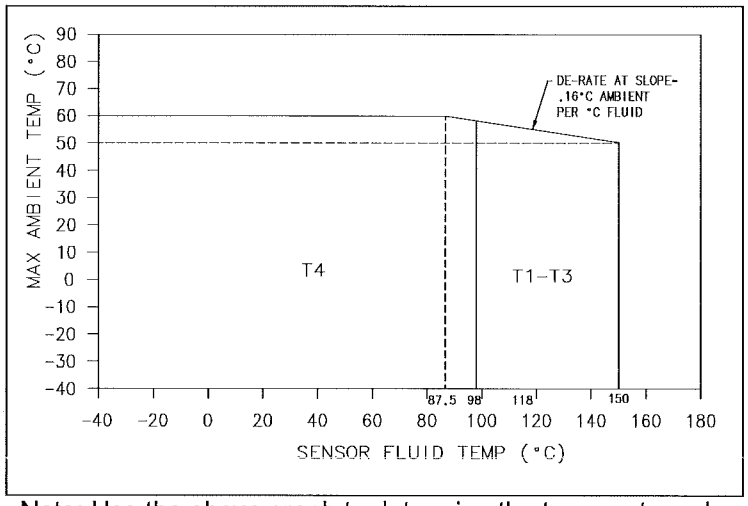



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature

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

4.26 T*********(J,U)*3*****

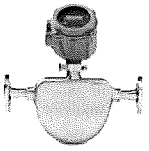
| Sensor type |  |
|---|---|
| With 2200S | T025******(J,U)*3***** |
| | T050******(J,U)*3***** |
| | T100******(J,U)*3***** |
| | T150******(J,U)*3***** |

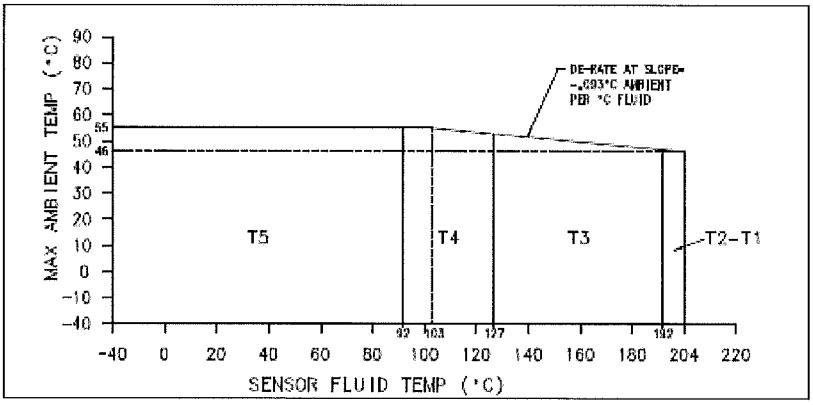



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.

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

4.27 CMFS********(0,1,K,L,M,N)*3****

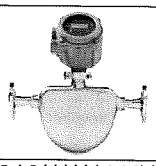
| | |
|---|---|
| Sensor type |  |
| With 2400S | CMFS010*****(0,1)*3**** |
| | CMFS015*****(0,1)*3**** |
| With FMT | CMFS010*****(K,L,M,N)*3**** |
| | CMFS015*****(K,L,M,N)*3**** |

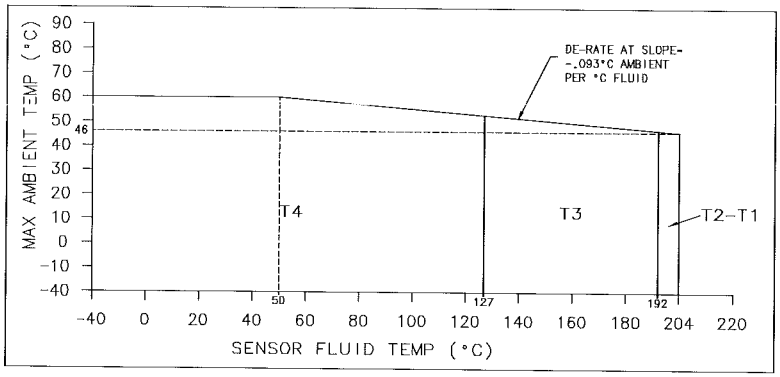



Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature

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

4.28 CMFS********(J,U)*3****

| | |
|---|---|
| Sensor type |  |
| With 2200S | CMFS010*****(J,U)*3****<br>CMFS015*****(J,U)*3**** |




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

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

# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx BVS 06.0011X issue No.:7

Status: **Current**

Date of Issue: **2013-01-09** Page 1 of 4

Applicant: **Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Certificate history:
Issue No. 7 (2013-1-9)
Issue No. 6 (2010-11-17)
Issue No. 5 (2009-8-12)
Issue No. 4 (2009-3-2)
Issue No. 3 (2008-11-19)
Issue No. 2 (2007-11-13)
Issue No. 1 (2007-6-21)
Issue No. 0 (2006-8-7)

Electrical Apparatus: **Sensor type CMF**********3****, CNG050*******3****, F**********3*****, H**********3*****, R**********3*****, T**********3*****, CMFS**********3****

*Optional accessory:*

Type of Protection: **Type of Protection "n" electrical apparatus**

Marking: Ex nA IIC T1-T4/T5 Gc

*Approved for issue on behalf of the IECEx Certification Body:* Dr.-Ing. Franz Eickhoff

*Position:* Deputy Head of Certification Body

*Signature: (for printed version)*

*Date:* 2013-01-09

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

DEKRA EXAM GmbH
Dinnendahlstrasse 9
44809 Bochum
Germany

DEKRA
DEKRA EXAM GmbH

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2013-01-09** Issue No.: **7**



Manufacturer:

**Micro Motion, Inc.**
7070 Winchester Circle
Boulder, CO 80301
**United States of America**

Additional Manufacturing location(s):

**Emerson Process Management Flow Technologies Co., Ltd.**
111, Xing Min South Road
Jiangning, Nanjing
Jiangsu Province
China

**Emerson Process Management Flow BV**
Neonstraat 1
6718 WX Ede
The Netherlands

**Micro Motion Inc.**
Ave. Miguel de Cervantes 111
Complejo Industrial
Chihuahua
Chihuahua 31109
Mexico

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

**STANDARDS:**
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

**IEC 60079-0 : 2011** Explosive atmospheres - Part 0: General requirements
Edition: 6.0

**IEC 60079-15 : 2010** Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition: 4

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

**TEST & ASSESSMENT REPORTS:**
*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:
DE/BVS/ExTR06.0040/06

Quality Assessment Report:

NO/DNV/QAR07.0002/02
NO/DNV/QAR08.0005/03
NO/DNV/QAR07.0003/02
NO/DNV/QAR07.0008/03

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2013-01-09** Issue No.: **7**



**Schedule**

**EQUIPMENT:**
*Equipment and systems covered by this certificate are as follows:*

Type designation and parameters

See Annex

**CONDITIONS OF CERTIFICATION: YES as shown below:**

Special conditions for safe use

The sensor is designed for use in connection with a suitable transmitter, e.g. 24*******3**** in accordance with IECEx BVS 05.0014 X resp. type 2200S*****3**** in accordance with
IECEx BVS 08.0042 X resp. type FMT*****3**** in accordance with IECEx BVS 10.0073 X; only the assembly of the sensor and the transmitter guarantees the necessary degrees of protection.

# IECEx Certificate of Conformity

Certificate No.: IECEx BVS 06.0011X

Date of Issue: **2013-01-09** Issue No.: **7**



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

General remarks:
New variations are available:
Type CMFS007**********, type CMFS025**********,
type CMFS040**********, type CMFS050**********,
type CMFS075**********, type CMFS100**********
and type CMFS150**********.
Update to the new standards IEC 60079-0:2011 aund IEC 60079-15:2010.
Correct temperature graphs for sensors with electronic interface option codes K,L,M and N (integral FMT transmitter).

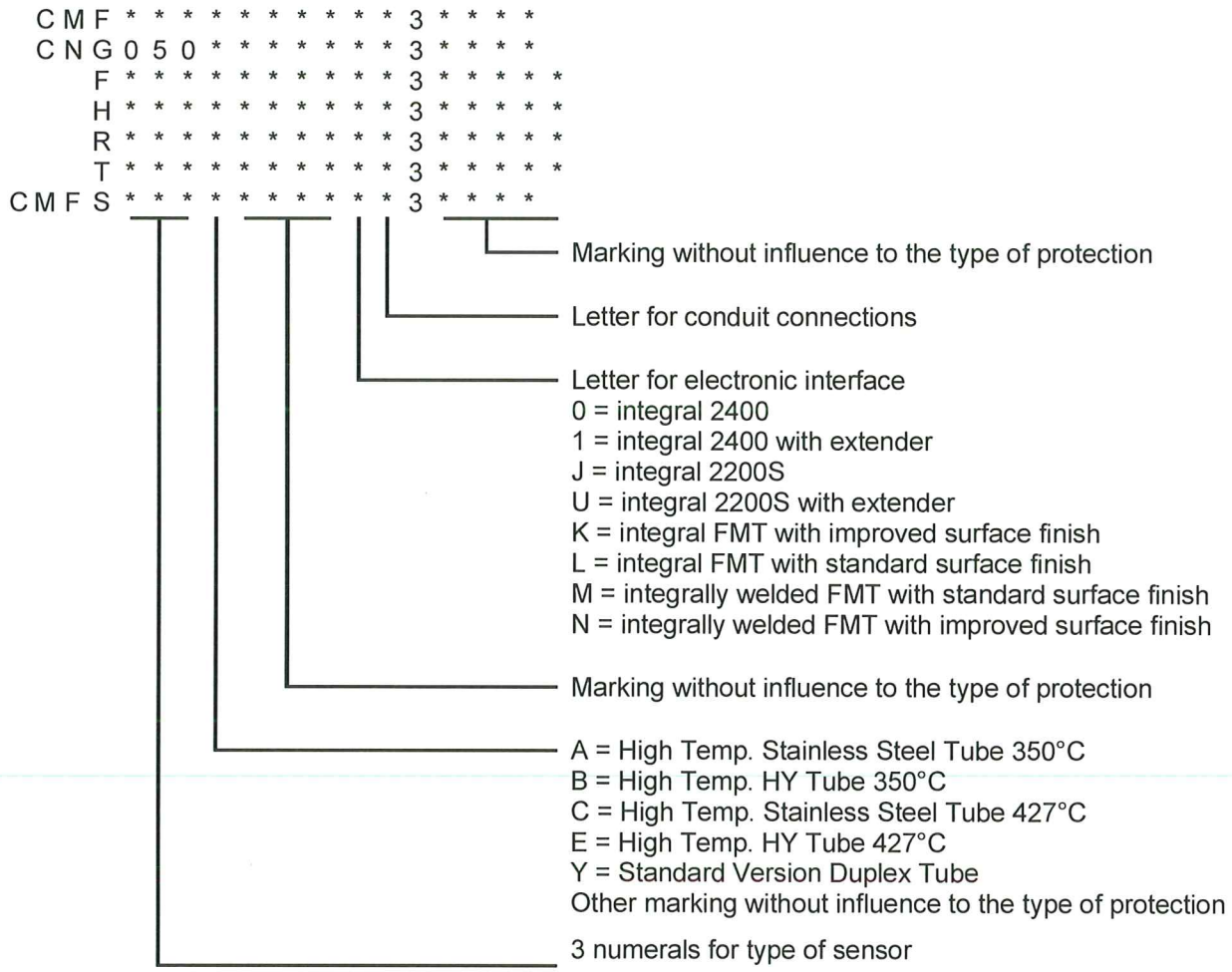
**Annexe:** BVS_06_0011X_Micro_Annex_issue7.pdf

# IECEx Certificate of Conformity

**Certificate No.:** **IECEx BVS 06.0011X issue 7**
**Annex**


**General product information:**

Instead of the *** in the complete denomination letters and numerals will be inserted which characterize modifications.



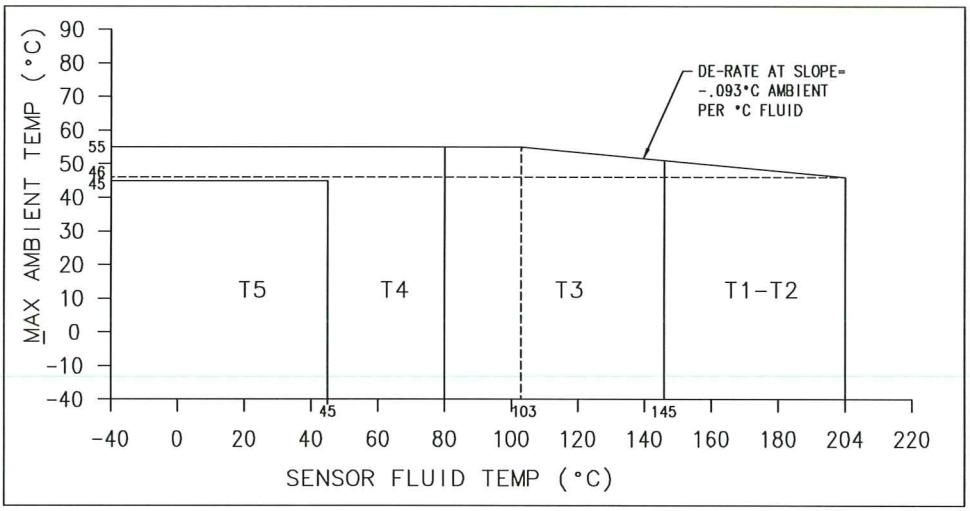

Parameters

| | | | | |
|---|---|---|---|---|
| 1) | Drive circuit (pin connections 7-8) | | | |
| | Voltage | DC | 30 | V |
| | Current | | 84 | mA |
| 2) | Pick-Off circuit (pin connections 3-4 and 5-6) | | | |
| | Voltage | DC | 30 | V |
| | Current | | 25 | mA |
| 3) | Temperature circuit (pin connections 1,2 and 9) | | | |
| | Voltage | DC | 30 | V |
| | Current | | 25 | mA |
| 4) | Thermal data type | | | |
| | 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:

4.1 Excluding CMF***(A, B, C or E)****(0,1)*3****:

| Sensor type |  |  |  |
|---|---|---|---|
| With 2400S | CMF010*****(0,1)*3**** | CMF025*****(0,1)*3**** | CMF200*****(0,1)*3**** |
| | | CMF050*****(0,1)*3**** | CMF300*****(0,1)*3**** |
| | | CMF100*****(0,1)*3**** | |

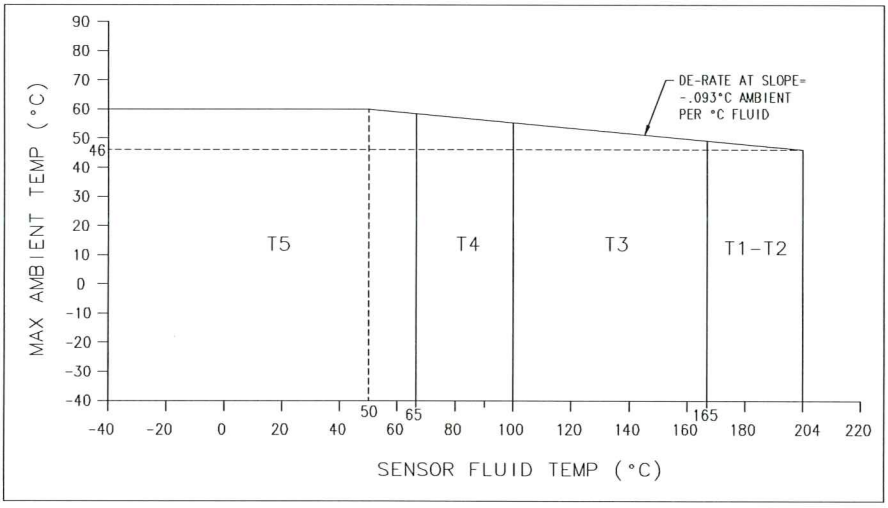



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +55 °C

4.2 Excluding CMF***(A, B, C or E)****(0,1)*3****:

| Sensor type |  |
|---|---|
| with 2400S | CMF400*****(0,1)*3**** |

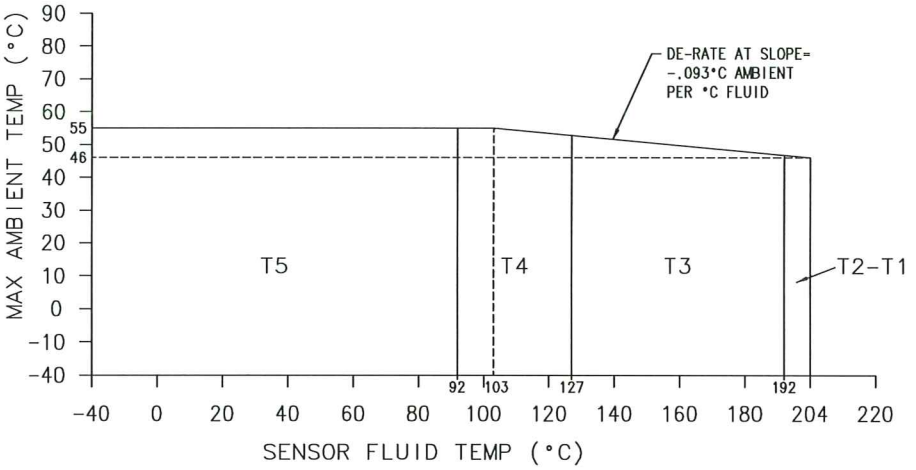



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +60 °C

4.3 Excluding CMF***(A, B, C or E)****(0,1)*3****:

| | |
|---|---|
| Sensor type |  |
| With 2400S | CMFHC2*****(0,1)*3**** |
| | CMFHC3*****(0,1)*3**** |
| | CMFHC4*****(0,1)*3**** |

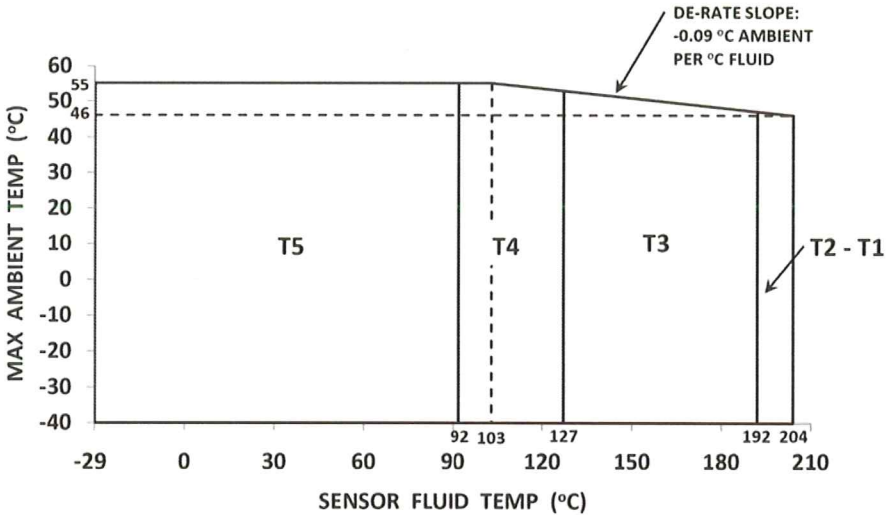



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +55 °C

4.4 Excluding CMF***(A, B, C or E)****(0,1)*3****:

| | |
|---|---|
| Sensor type |  |
| With 2400S | CMFHC*Y****(0,1)*3**** |

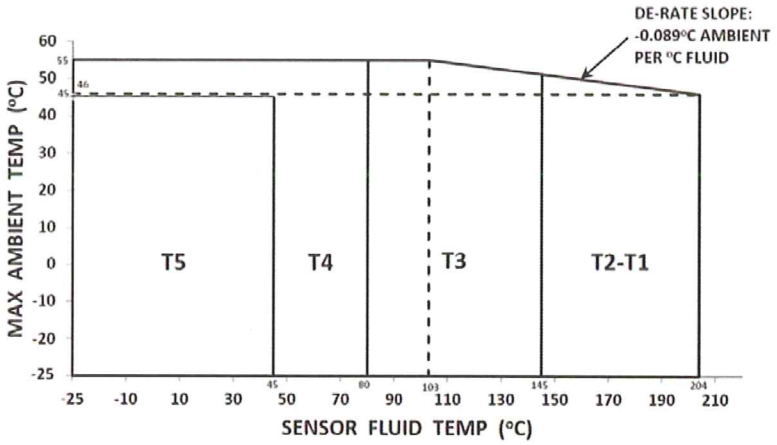



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +55 °C

4.5 Excluding CMF***(A, B, C or E)****(K,L,M or N)*3****:

| Sensor type |  |  |  |
|---|---|---|---|
| With FMT | CMF010*****(K,L,M,N)*3**** | CMF025*****(K,L,M,N)*3**** | CMF200*****(K,L,M,N)*3**** |
| | | CMF050*****(K,L,M,N)*3**** | CMF300*****(K,L,M,N)*3**** |
| | | CMF100*****(K,L,M,N)*3**** | |

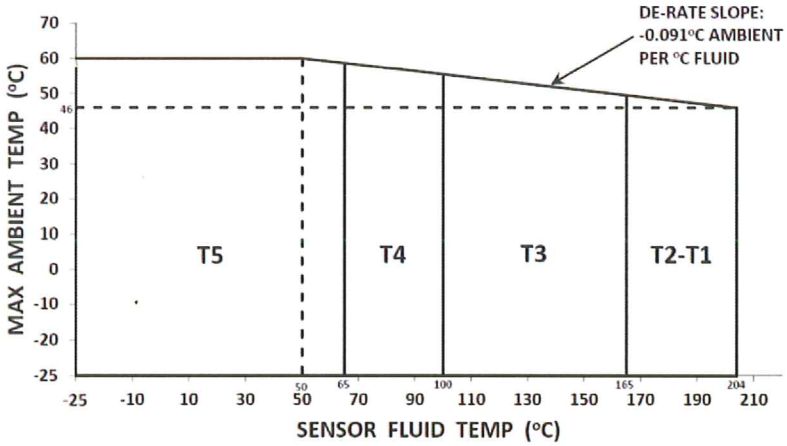



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +55 °C

4.6 Excluding CMF***(A, B, C or E)****(K,L,M or N)*3****:

| Sensor type |  |
|---|---|
| with FMT | CMF400*****(K,L,M,N)*3**** |

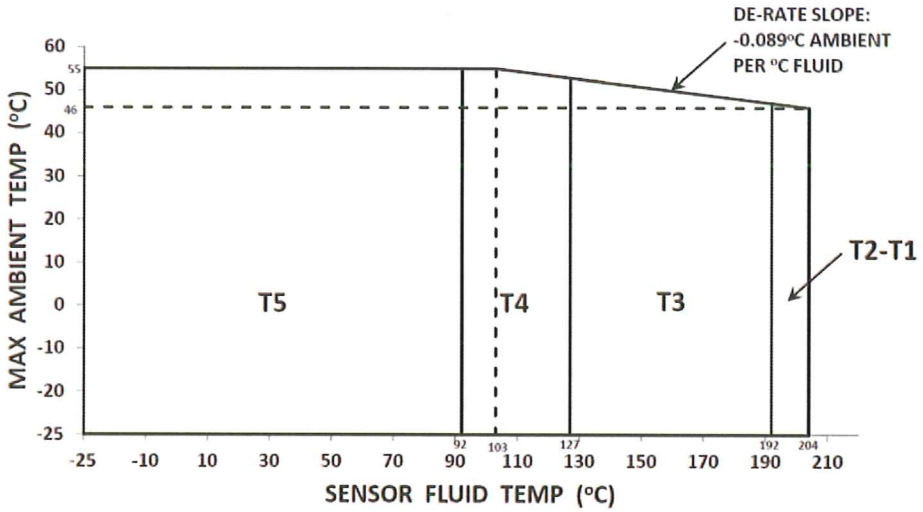



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +60 °C

4.7 Excluding CMF***(A, B, C or E)****(K,L,M,N)*3****:

| | |
|---|---|
| Sensor type |  |
| With FMT | CMFHC2*****(K,L,M,N)*3**** |
| | CMFHC3*****(K,L,M,N)*3**** |
| | CMFHC4*****(K,L,M,N)*3**** |

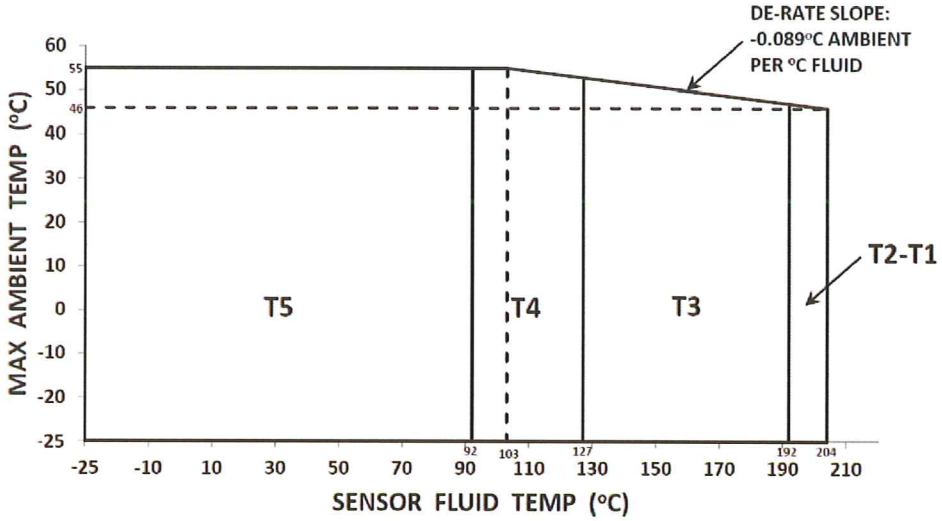



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +55 °C

4.8 Excluding CMF***(A, B, C or E)****(K,L,M,N)*3****:

| | |
|---|---|
| Sensor type |  |
| With FMT | CMFHC*Y****(K,L,M,N)*3**** |

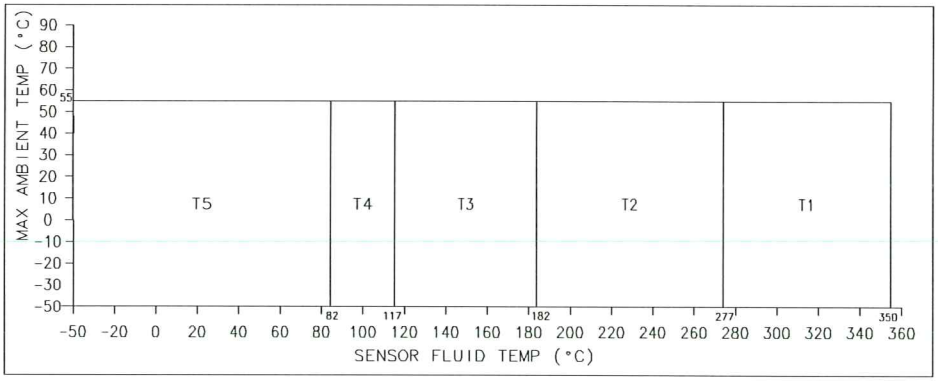



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +55 °C

4.9 CMF***(A,B)****(0,1,K,L,M,N)*3****

| Sensor type |  |
|---|---|
| With 2400S | CMF200(A,B)****(0,1)*3**** |
| | CMF300(A,B)****(0,1)*3**** |
| | CMF400(A,B)****(0,1)*3**** |
| | CMFHC2(A,B)****(0,1)*3**** |
| | CMFHC3(A,B)****(0,1)*3**** |
| | CMFHC4(A,B)****(0,1)*3**** |
| With FMT | CMF200(A,B)****(K,L,M,N)*3**** |
| | CMF300(A,B)****(K,L,M,N)*3**** |
| | CMF400(A,B)****(K,L,M,N)*3**** |
| | CMFHC2(A,B)****(K,L,M,N)*3**** |
| | CMFHC3(A,B)****(K,L,M,N)*3**** |
| | CMFHC4(A,B)****(K,L,M,N)*3**** |



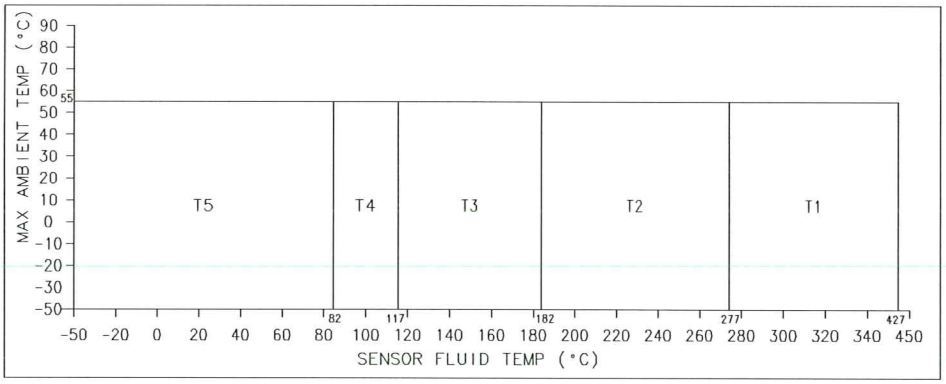

*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –50 °C to +55 °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.

4.10 CMF***(C,E)****(0,1,K,L,M,N)*3****

| Sensor type |  |
|---|---|
| with 2400S | CMF200(C,E)****(0,1)*3**** |
| | CMF300(C,E)****(0,1)*3**** |
| | CMF400(C,E)****(0,1)*3**** |
| | CMFHC2(C,E)****(0,1)*3**** |
| | CMFHC3(C,E)****(0,1)*3**** |
| | CMFHC4(C,E)****(0,1)*3**** |
| with FMT | CMF200(C,E)****(K,L,M,N)*3**** |
| | CMF300(C,E)****(K,L,M,N)*3**** |
| | CMF400(C,E)****(K,L,M,N)*3**** |
| | CMFHC2(C,E)****(K,L,M,N)*3**** |
| | CMFHC3(C,E)****(K,L,M,N)*3**** |
| | CMFHC4(C,E)****(K,L,M,N)*3**** |



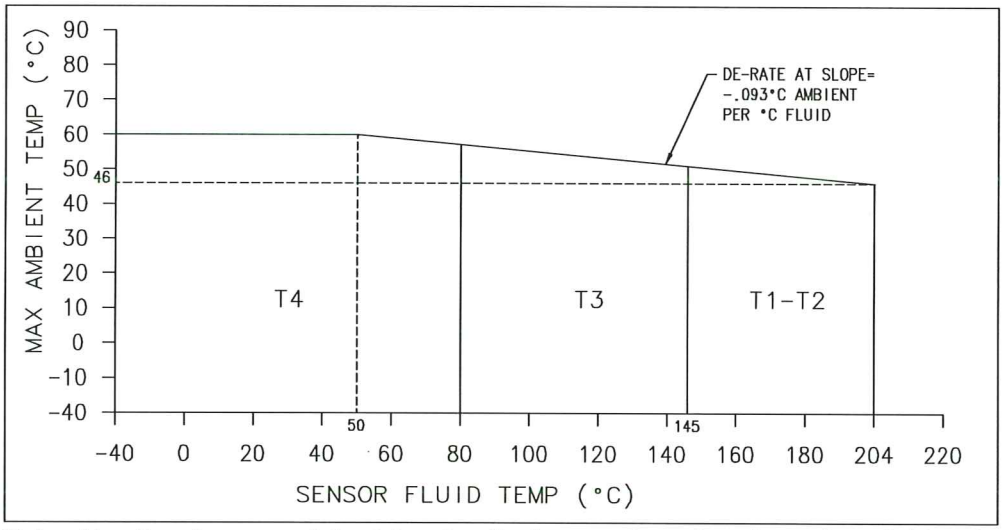

*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –50 °C to +55 °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.

4.11 Excluding CMF***(A, B, C or E)****(J or U)*3****:

| Sensor type |  |  |  |
|---|---|---|---|
| With 2200S | CMF010*****(J,U)*3**** | CMF025*****(J,U)*3**** | CMF200*****(J,U)*3**** |
| | | CMF050*****(J,U)*3**** | CMF300*****(J,U)*3**** |
| | | CMF100*****(J,U)*3**** | |

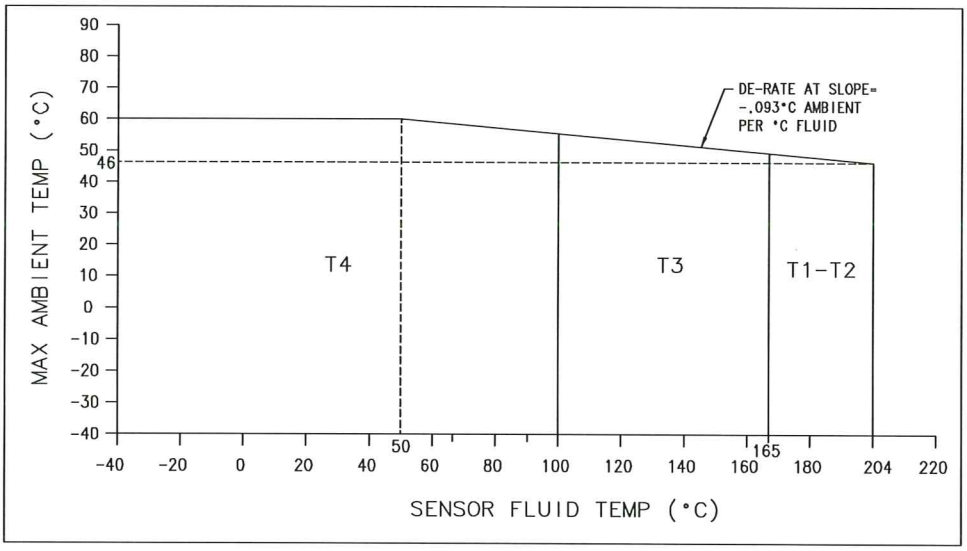



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +60 °C

4.12 Excluding CMF***(A, B, C or E)****(J or U)*3****:

| Sensor type |  |
|---|---|
| with 2200S | CMF400*****(J,U)*3**** |

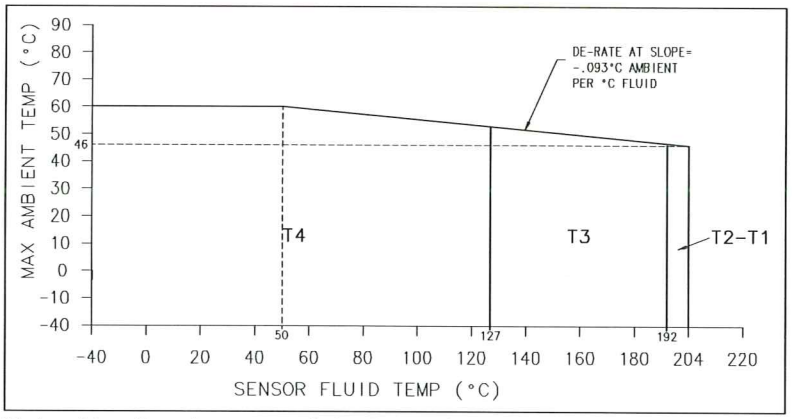



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +60 °C

4.13 Excluding CMF***(A, B, C or E)****(J or U)*3****:

| Sensor type |  |
|---|---|
| with 2200S | CMFHC2*****(J,U)*3**** |
| | CMFHC3*****(J,U)*3**** |
| | CMFHC4*****(J,U)*3**** |

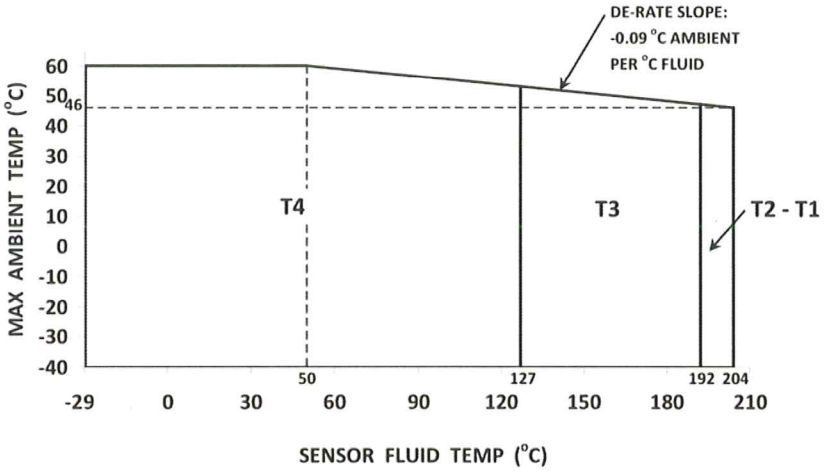



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +60 °C

4.14 Excluding CMF***(A, B, C or E)****(J or U)*3****:

| Sensor type |  |
|---|---|
| with 2200S | CMFHC*Y****(J,U)*3**** |

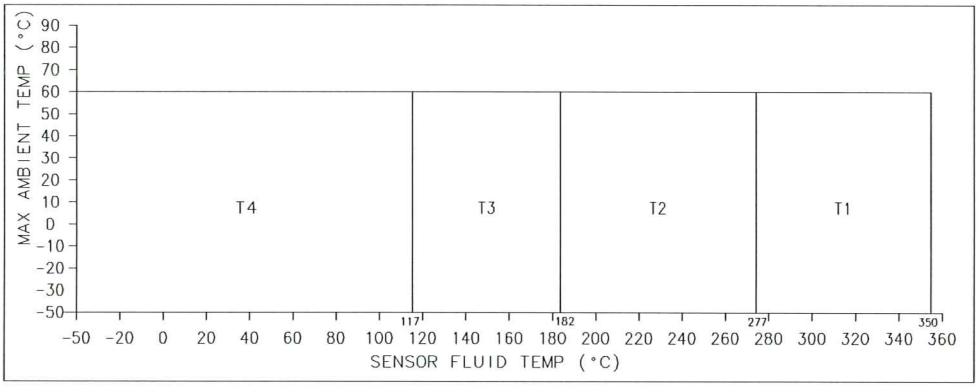



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta–40 °C to +60 °C

4.15 CMF***(A,B)****(J,U)*3****

| | |
|---|---|
| Sensor type |  |
| with 2200S | CMF200(A,B)****(J,U)*3**** |
| | CMF300(A,B)****(J,U)*3**** |
| | CMF400(A,B)****(J,U)*3**** |
| | CMFHC2(A,B)****(J,U)*3**** |
| | CMFHC3(A,B)****(J,U)*3**** |
| | CMFHC4(A,B)****(J,U)*3**** |



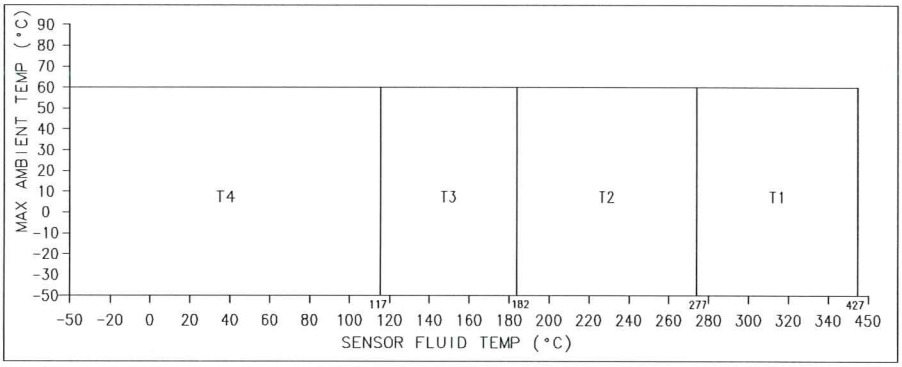

*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –50 °C to +60 °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 +60 °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.

4.16 CMF***(C,E)****(J,U)*3****

| Sensor type |  |
|---|---|
| with 2200S | CMF200(C,E)****(J,U)*3**** |
| | CMF300(C,E)****(J,U)*3**** |
| | CMF400(C,E)****(J,U)*3**** |
| | CMFHC2(C,E)****(J,U)*3**** |
| | CMFHC3(C,E)****(J,U)*3**** |
| | CMFHC4(C,E)****(J,U)*3**** |



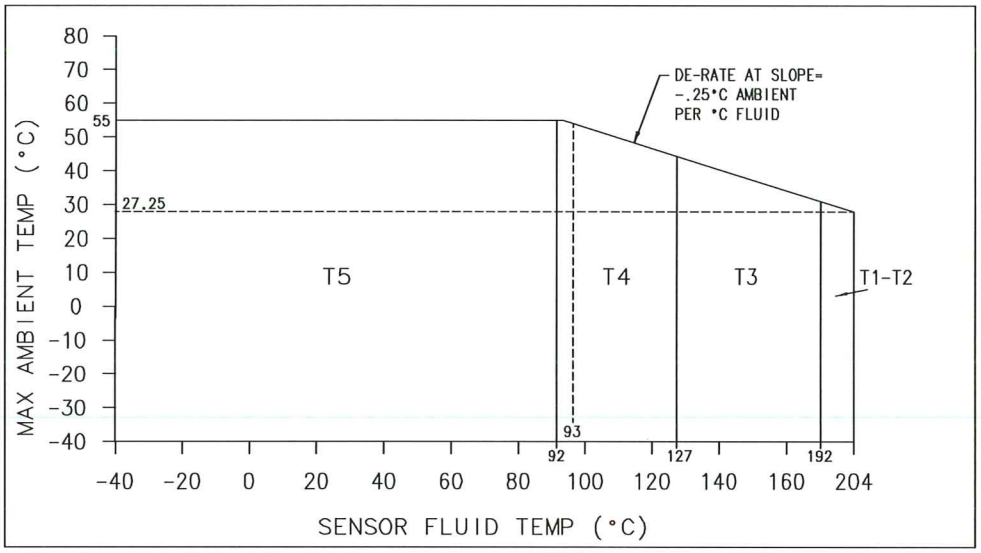

*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –50 °C to +60 °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 +60 °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.

4.17 Excluding F***(A, B, C or E)*****(0,1)*3*****:

| Sensor type |  |  |
|---|---|---|
| with 2400S | F025******(0,1)*3*****<br>F050******(0,1)*3*****<br>H025******(0,1)*3*****<br>H050******(0,1)*3*****<br>R025******(0,1)*3*****<br>R050******(0,1)*3***** | CNG050***(0,1)*3**** |

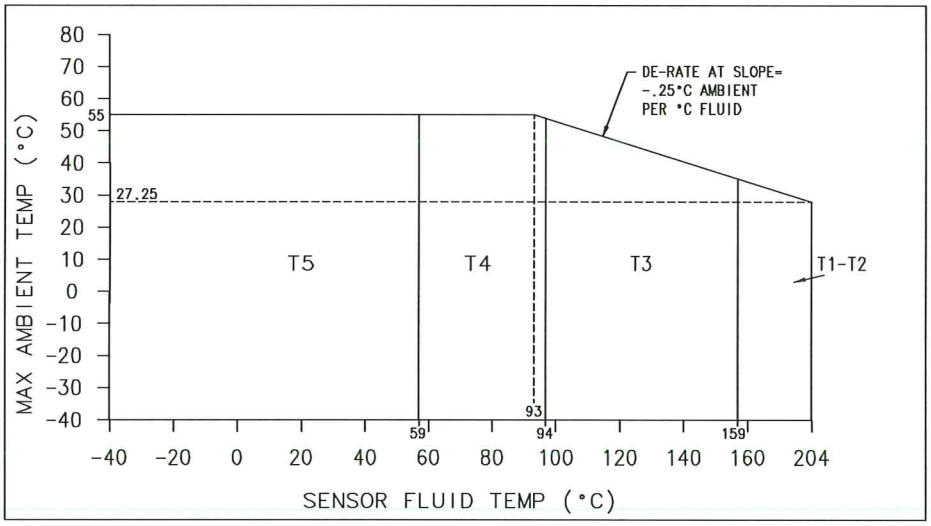



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

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

4.18 Excluding F***(A, B, C or E)*****(0,1)*3*****:

| | |
|---|---|
| Sensor type |  |
| with 2400S | F100******(0,1)*3***** |
| | H100******(0,1)*3***** |
| | R100******(0,1)*3***** |

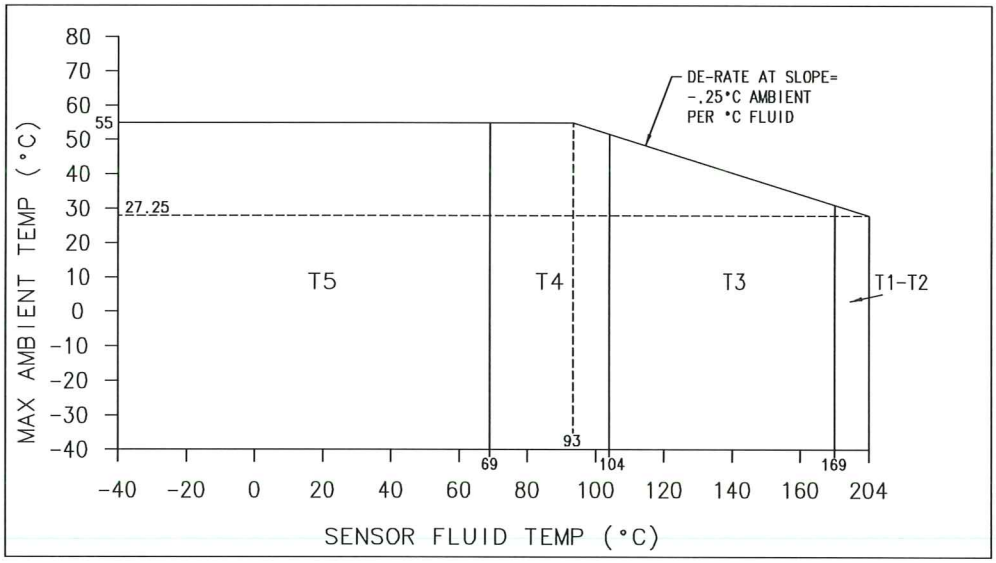



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

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

4.19 Excluding F***(A, B, C or E)*****(0,1)*3*****:

| | |
|---|---|
| Sensor type |  |
| with 2400S | F200******(0,1)*3***** |
| | H200******(0,1)*3***** |
| | R200******(0,1)*3***** |

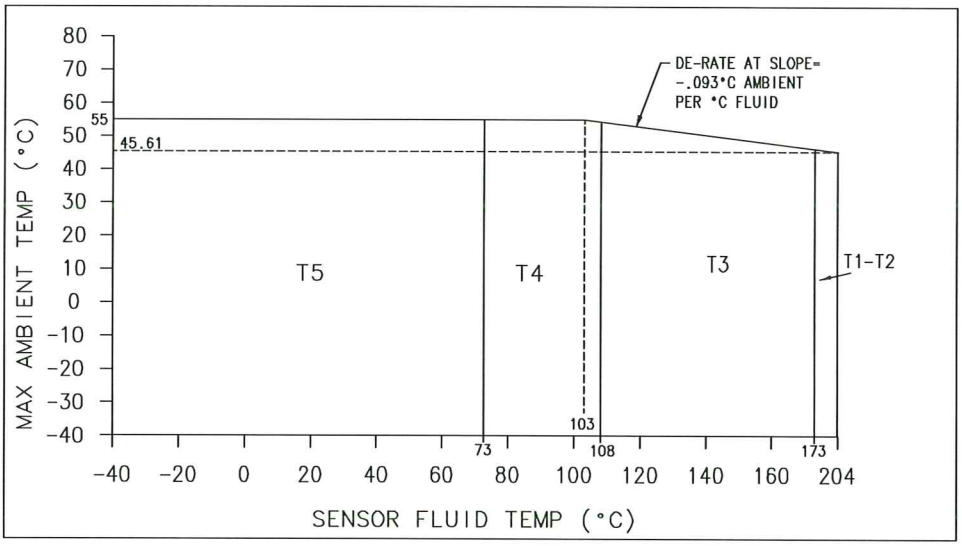



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

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

4.20 Excluding F***(A, B, C or E)*****(0,1)*3*****:

| Sensor type |  |
|---|---|
| with 2400S | F300******(0,1)*3*****<br>H300******(0,1)*3***** |

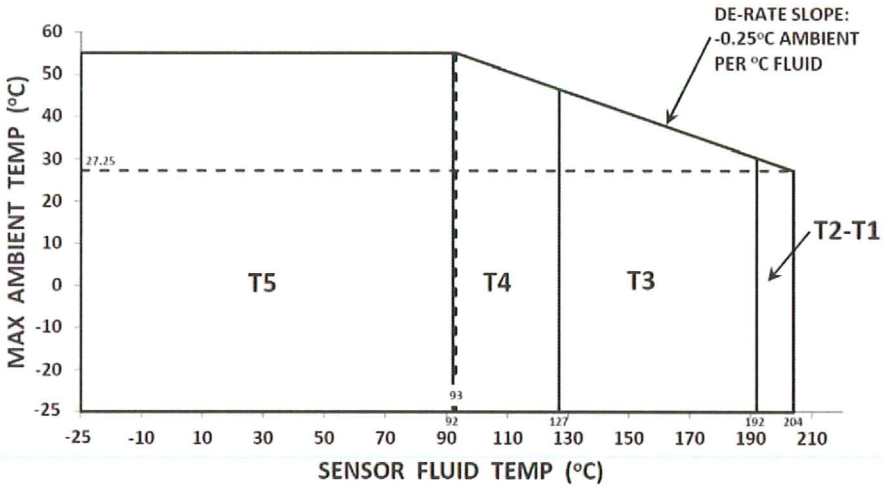



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

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

4.21 Excluding F***(A, B, C or E)*****(K,L,M or N)*3*****:

| Sensor type |  |  |
|---|---|---|
| with FMT | F025******(K,L,M,N)*3*****<br>F050******(K,L,M,N)*3*****<br>H025******(K,L,M,N)*3*****<br>H050******(K,L,M,N)*3*****<br>R025******(K,L,M,N)*3*****<br>R050******(K,L,M,N)*3***** | CNG050***(K,L,M,N)*3**** |

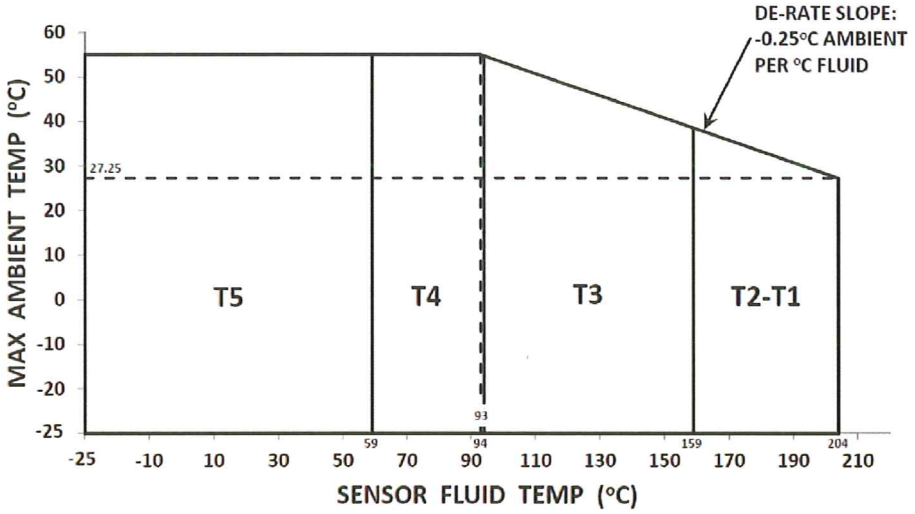



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta -25 °C up to +55 °C

4.22 Excluding F***(A, B, C or E)*****(K,L,M,N)*3*****:

| | |
|---|---|
| Sensor type |  |
| with FMT | F100******(K,L,M,N)*3*****<br>H100******(K,L,M,N)*3*****<br>R100******(K,L,M,N)*3***** |

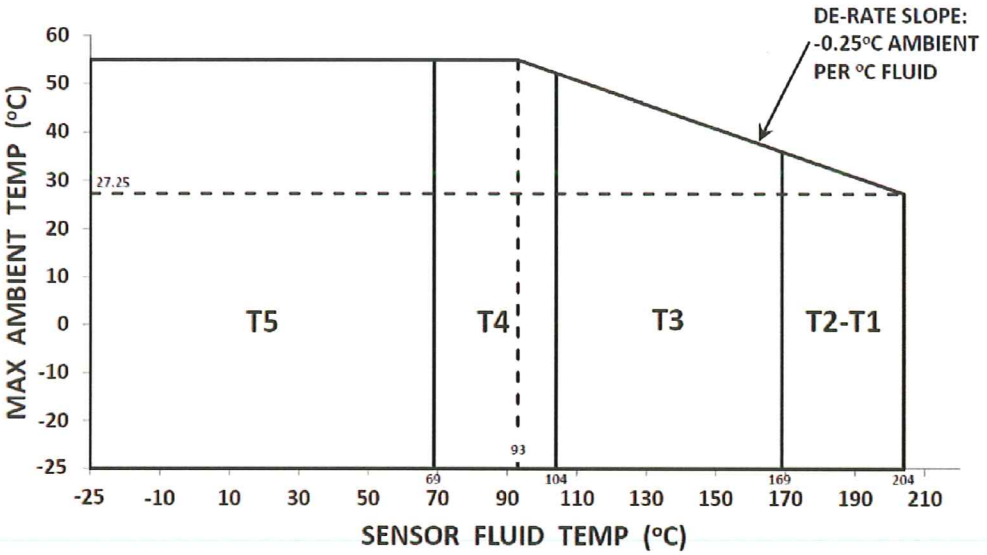



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta -25 °C up to +55 °C

4.23 Excluding F***(A, B, C or E)*****(K,L,M,N)*3*****:

| | |
|---|---|
| Sensor type |  |
| with FMT | F200******(K,L,M,N)*3***** |
| | H200******(K,L,M,N)*3***** |
| | R200******(K,L,M,N)*3***** |

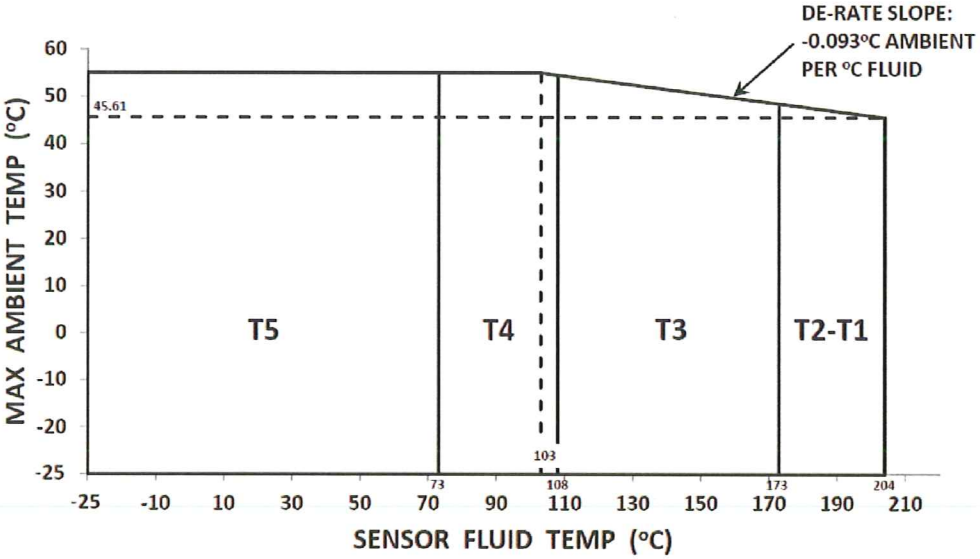



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta -25 °C up to +55 °C

4.24 Excluding F***(A, B, C or E)*****(K,L,M,N)*3*****:

| Sensor type |  |
|---|---|
| with 2400S | F300******(0,1)*3***** |
| | H300******(0,1)*3***** |
| with FMT | F300******(K,L,M,N)*3***** |
| | H300******(K,L,M,N)*3***** |

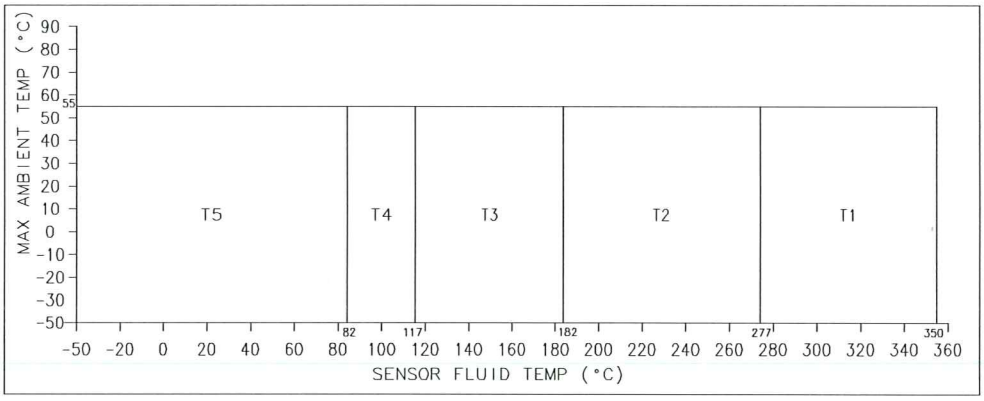



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta -25 °C up to +55 °C

4.25 F***(A,B)*****(0,1,K,L,M,N)*3*****

| Sensor type |  |
|---|---|
| with 2400S | F025(A,B)*****(0,1)*3***** |
| | F050(A,B)*****(0,1)*3***** |
| | F100(A,B)*****(0,1)*3***** |
| | F300(A,B)*****(0,1)*3***** |
| with FMT | F025(A,B)*****(K,L,M,N)*3***** |
| | F050(A,B)*****(K,L,M,N)*3***** |
| | F100(A,B)*****(K,L,M,N)*3***** |
| | F300(A,B)*****(K,L,M,N)*3***** |



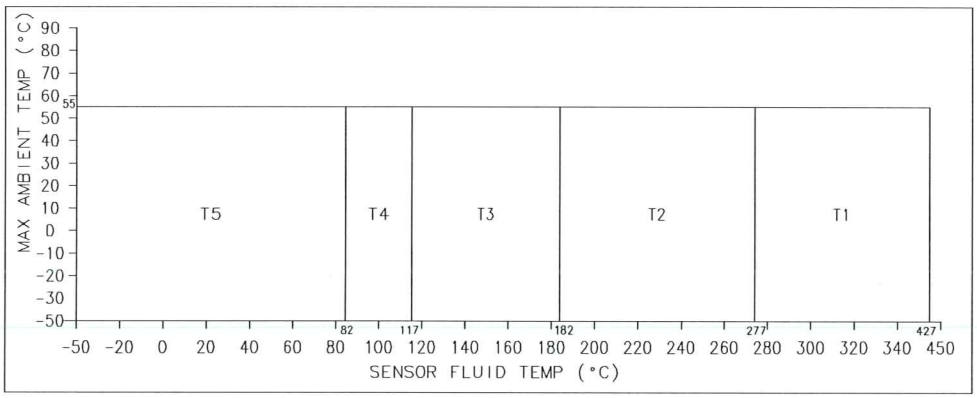

*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta -50 °C to +55 °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.

4.26 F***(C,E)*****(0,1,K,L,M,N)*3*****

| Sensor type |  |
|---|---|
| with 2400S | F025(C,E)*****(0,1)*3***** |
| | F050(C,E)*****(0,1)*3***** |
| | F100(C,E)*****(0,1)*3***** |
| | F300(C,E)*****(0,1)*3***** |
| with FMT | F025(C,E)*****(K,L,M,N)*3***** |
| | F050(C,E)*****(K,L,M,N)*3***** |
| | F100(C,E)*****(K,L,M,N)*3***** |
| | F300(C,E)*****(K,L,M,N)*3***** |



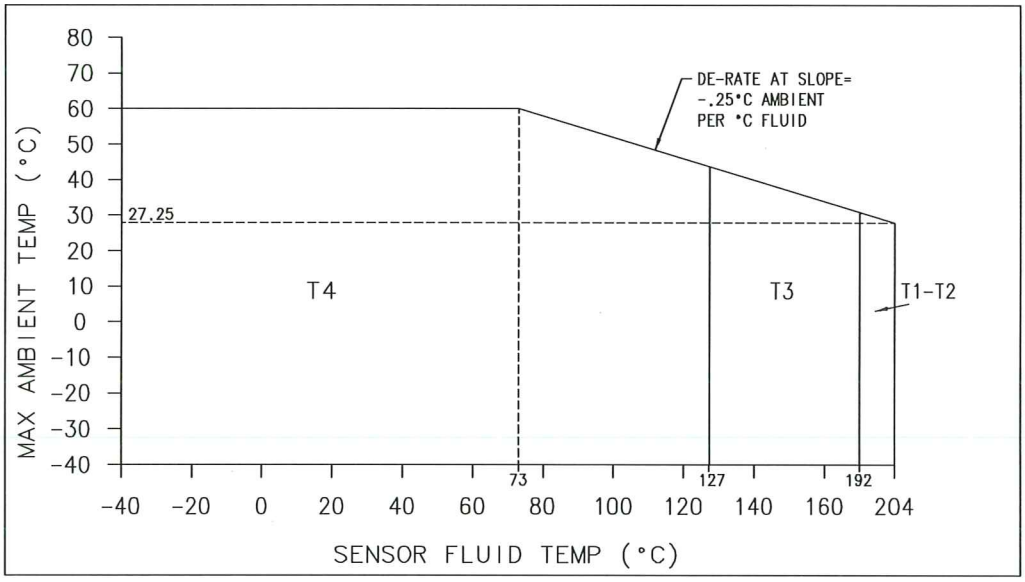

*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –50 °C to +55 °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.

4.27 Excluding F***(A, B, C or E)*****(J or U)*3*****:

| Sensor type |  |  |
|---|---|---|
| with 2200S | F025******(J,U)*3***** | CNG050***(J,U)*3**** |
| | F050******(J,U)*3***** | |
| | H025******(J,U)*3***** | |
| | H050******(J,U)*3***** | |
| | R025******(J,U)*3***** | |
| | R050******(J,U)*3***** | |

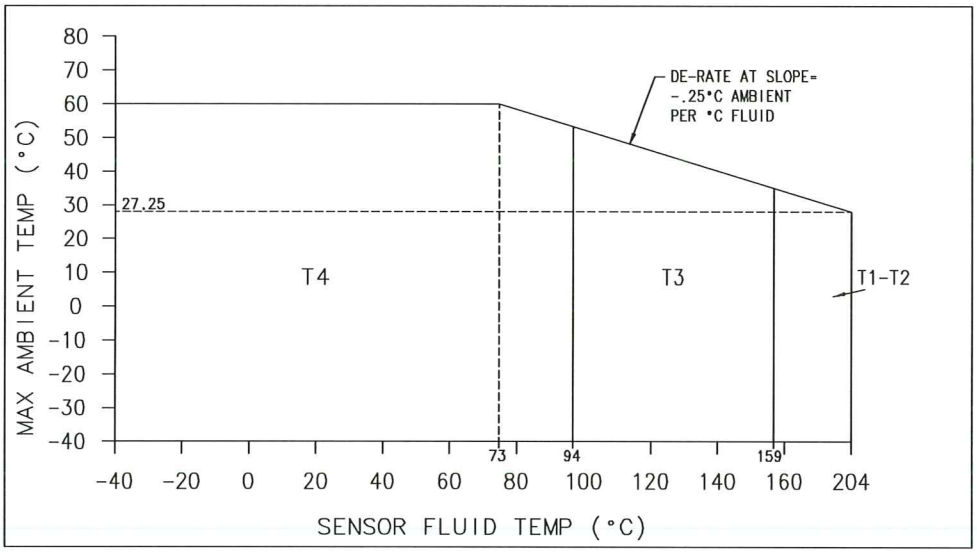



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +60 °C

4.28 Excluding F***(A, B, C or E)*****(J or U)*3*****:

| Sensor type |  |
|---|---|
| with 2200S | F100******(J,U)*3***** |
| | H100******(J,U)*3***** |
| | R100******(J,U)*3***** |

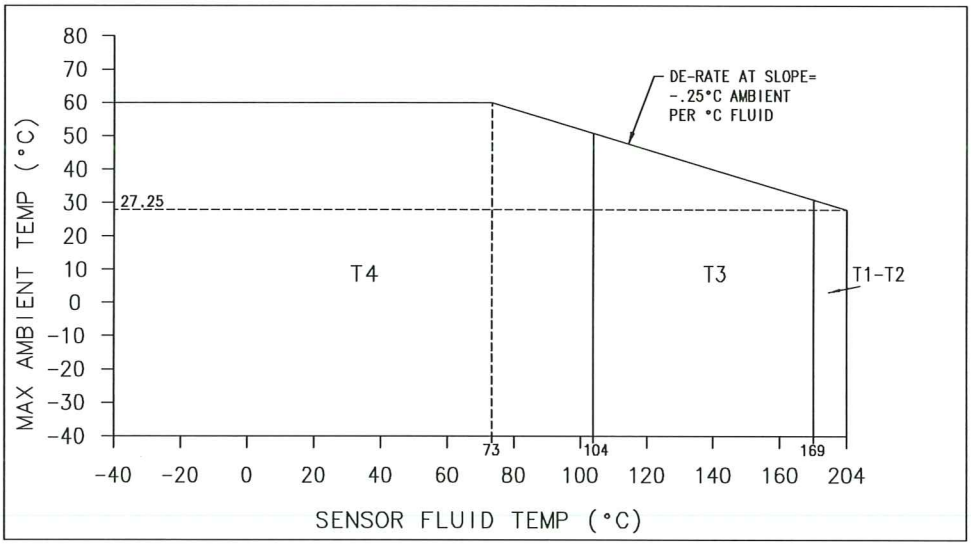



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +60 °C

4.29 Excluding F***(A, B, C or E)*****(J or U)*3*****:

| Sensor type |  |
|---|---|
| with 2200S | F200******(J,U)*3***** |
| | H200******(J,U)*3***** |
| | R200******(J,U)*3***** |

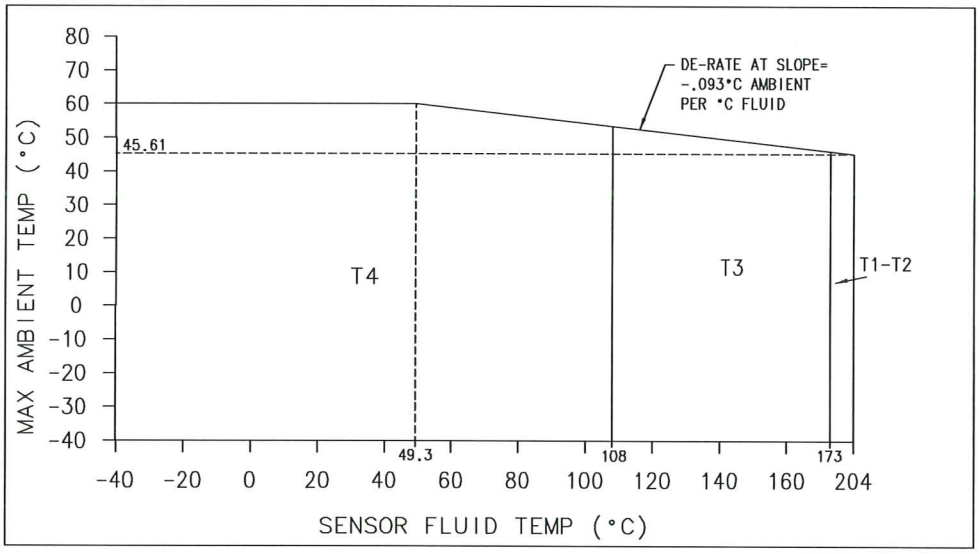



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +60 °C

4.30 Excluding F***(A, B, C or E)*****(J or U)*3*****:

| Sensor type |  |
|---|---|
| with 2200S | F300******(J,U)*3***** |
| | H300******(J,U)*3***** |

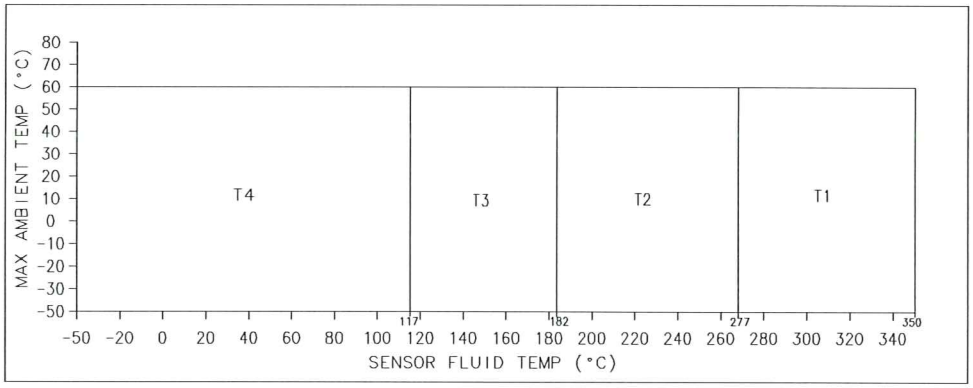



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta –40 °C to +60 °C

4.31 F***(A,B)*****(J,U)*3*****

| | |
|---|---|
| Sensor type |  |
| with 2200S | F025(A,B)*****(J,U)*3***** |
| | F050(A,B)*****(J,U)*3***** |
| | F100(A,B)*****(J,U)*3***** |
| | F300(A,B)*****(J,U)*3***** |



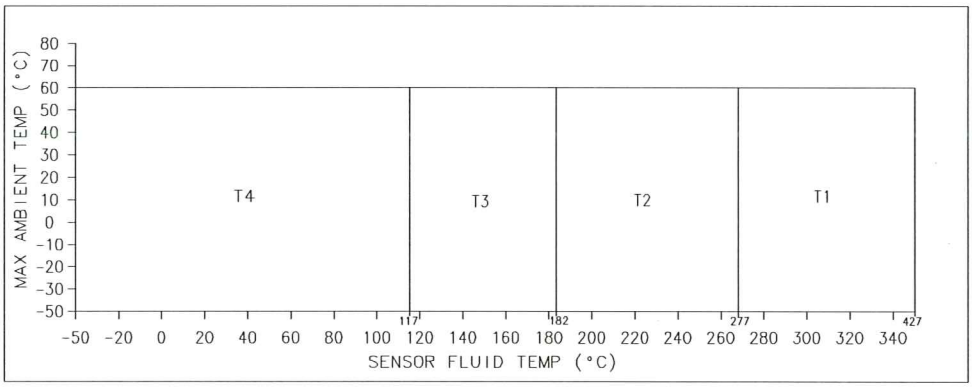

*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta -50 °C to +60 °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 +60 °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.

4.32 F***(C,E)*****(J,U)*3*****

| | |
|---|---|
| Sensor type |  |
| with 2200S | F025(C,E)*****(J,U)*3***** |
| | F050(C,E)*****(J,U)*3***** |
| | F100(C,E)*****(J,U)*3***** |
| | F300(C,E)*****(J,U)*3***** |



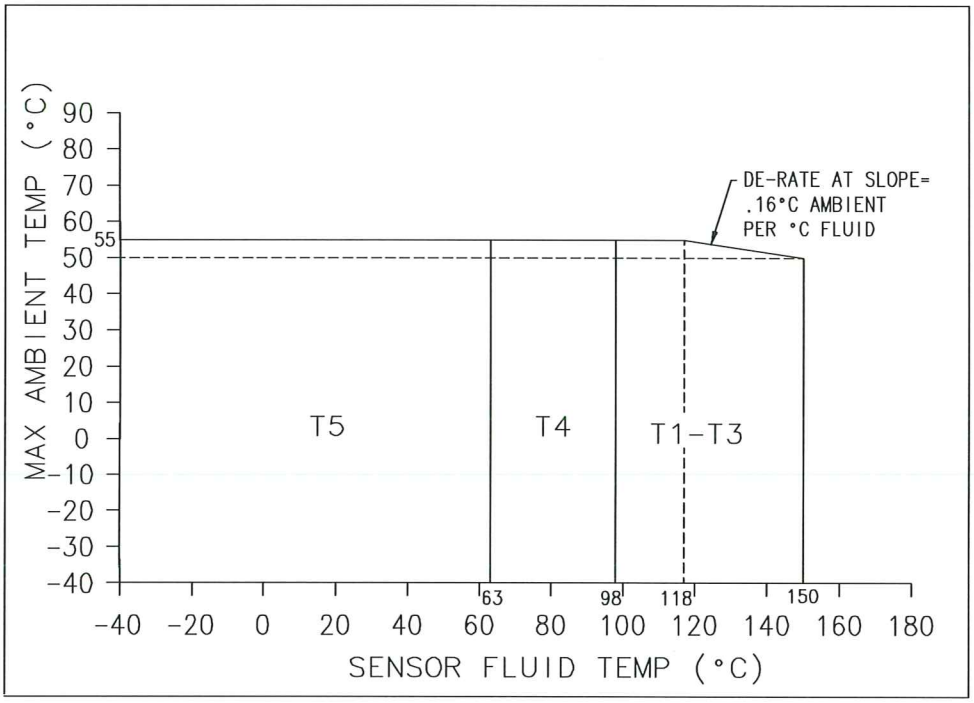

*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range: Ta -50 °C to +60 °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 +60 °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.

4.33

| | |
|---|---|
| Sensor type |  |
| with 2400S | T025******(0,1)*3***** |
| | T050******(0,1)*3***** |
| | T100******(0,1)*3***** |
| | T150******(0,1)*3***** |

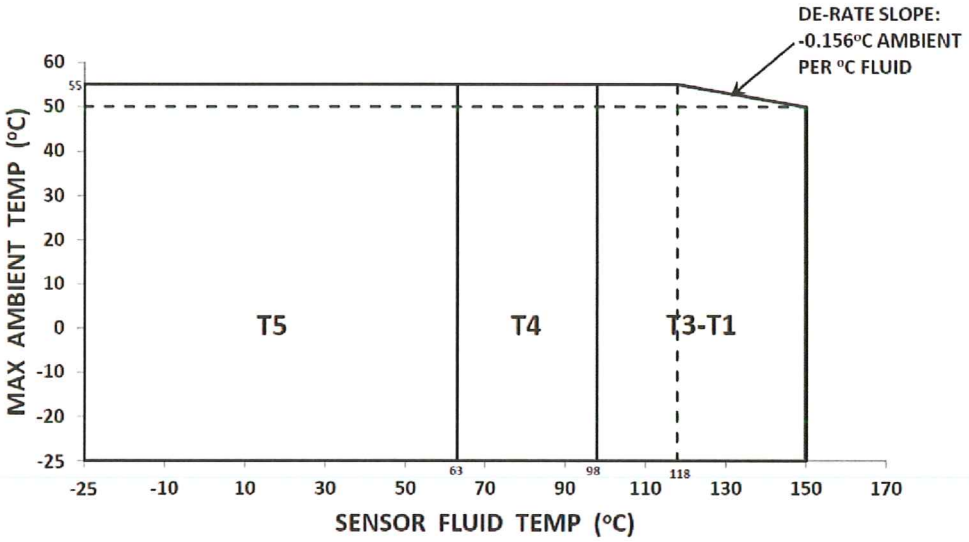



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

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

4.34

| | |
|---|---|
| Sensor type |  |
| with FMT | T025******(K,L,M,N)*3***** |
| | T050******(K,L,M,N)*3***** |
| | T100******(K,L,M,N)*3***** |
| | T150******(K,L,M,N)*3***** |

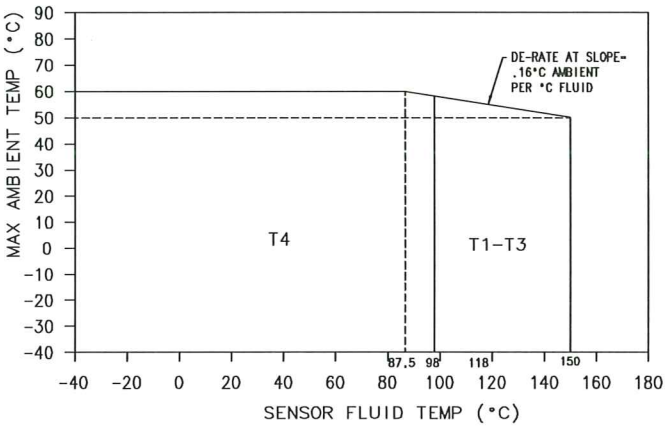



*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

Ambient temperature range Ta -25 °C up to +55 °C

4.35

| | |
|---|---|
| Sensor type |  |
| with 2200S | T025******(J,U)*3***** |
| | T050******(J,U)*3***** |
| | T100******(J,U)*3***** |
| | T150******(J,U)*3***** |



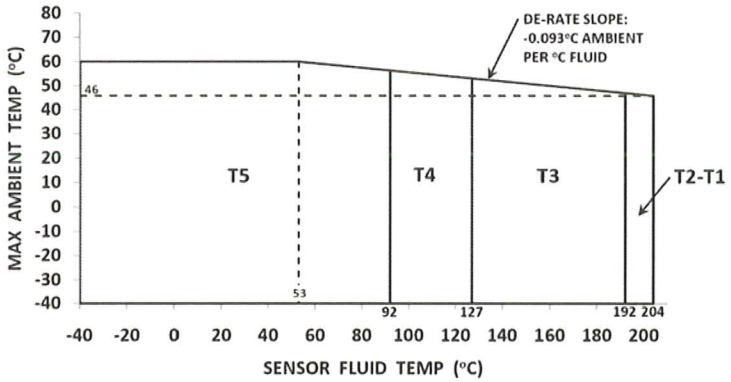

*Note: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

.

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

4.36

| Sensor type |  |
|---|---|
| With 2400S | CMFS007*****(0,1)*3**** |
| | CMFS010*****(0,1)*3**** |
| | CMFS015*****(0,1)*3**** |

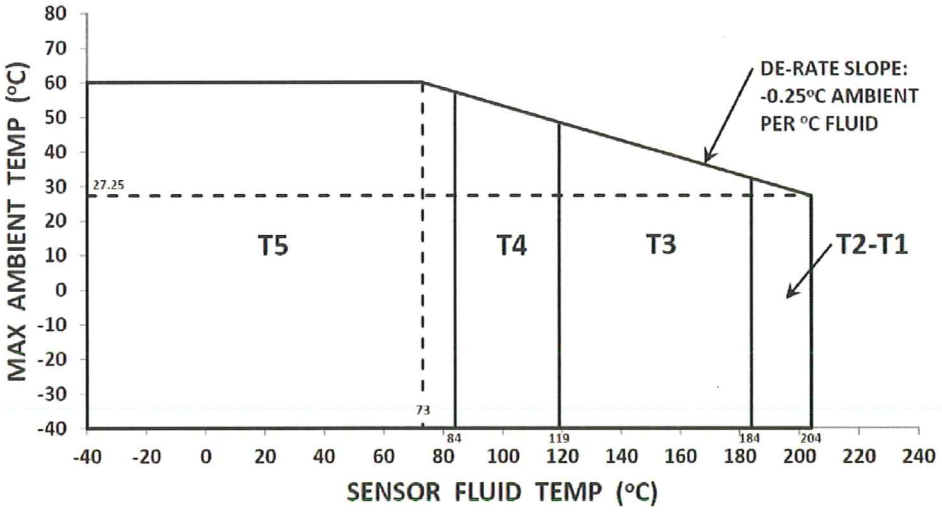



*Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

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

4.37

| Sensor type |  |
|---|---|
| with 2400S | CMFS025*****(0,1)*3**** |
| | CMFS040*****(0,1)*3**** |
| | CMFS050*****(0,1)*3**** |
| | CMFS075*****(0,1)*3**** |
| | CMFS100*****(0,1)*3**** |
| | CMFS150*****(0,1)*3**** |

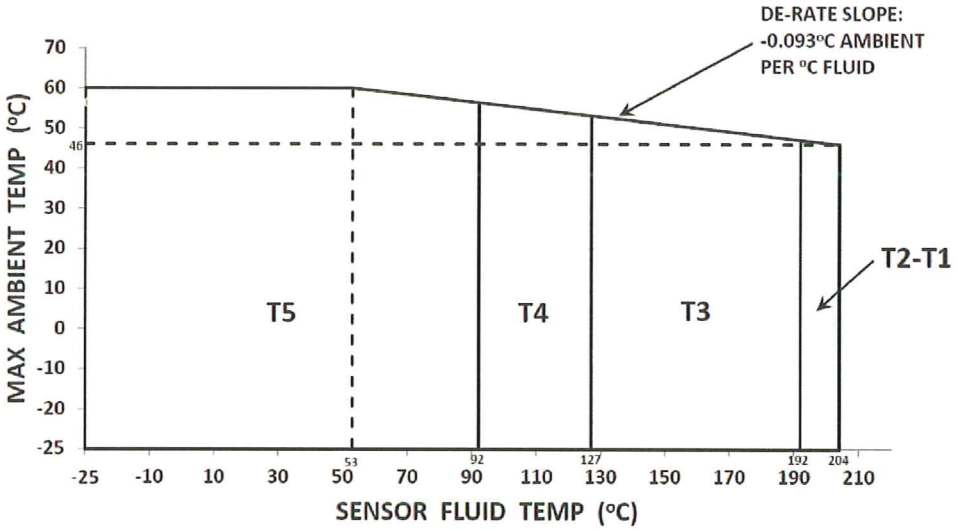



*Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

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

4.38

| | |
|---|---|
| Sensor type |  |
| With FMT | CMFS007*****(K,L,M,N)*3**** |
| | CMFS010*****(K,L,M,N)*3**** |
| | CMFS015*****(K,L,M,N)*3**** |

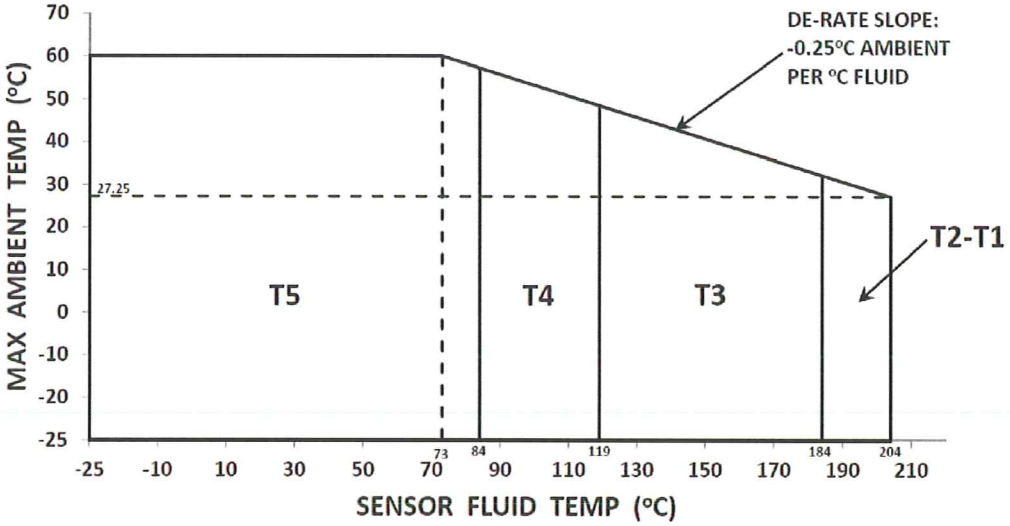



*Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

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

4.39

| | |
|---|---|
| Sensor type |  |
| with FMT | CMFS025*****(K,L,M,N)*3**** |
| | CMFS040*****(K,L,M,N)*3**** |
| | CMFS050*****(K,L,M,N)*3**** |
| | CMFS075*****(K,L,M,N)*3**** |
| | CMFS100*****(K,L,M,N)*3**** |
| | CMFS150*****(K,L,M,N)*3**** |

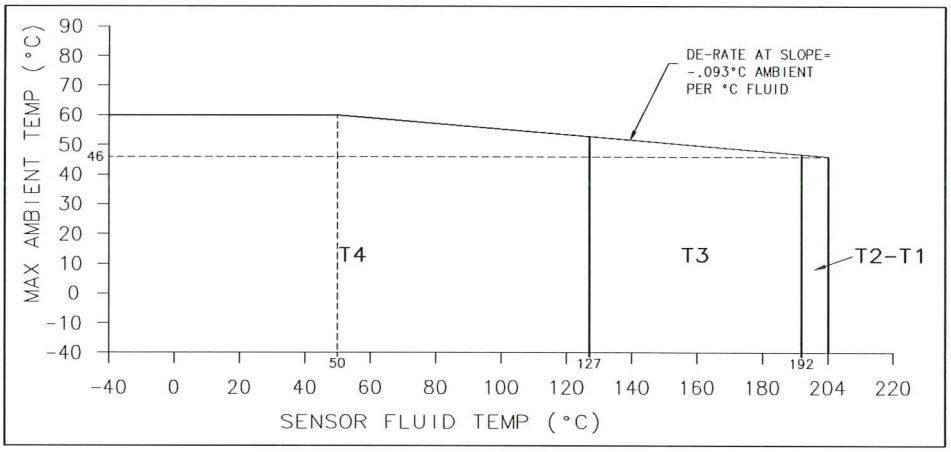



*Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

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

4.40

| | |
|---|---|
| Sensor type |  |
| With 2200S | CMFS007*****(J,U)*3**** |
| | CMFS010*****(J,U)*3**** |
| | CMFS015*****(J,U)*3**** |

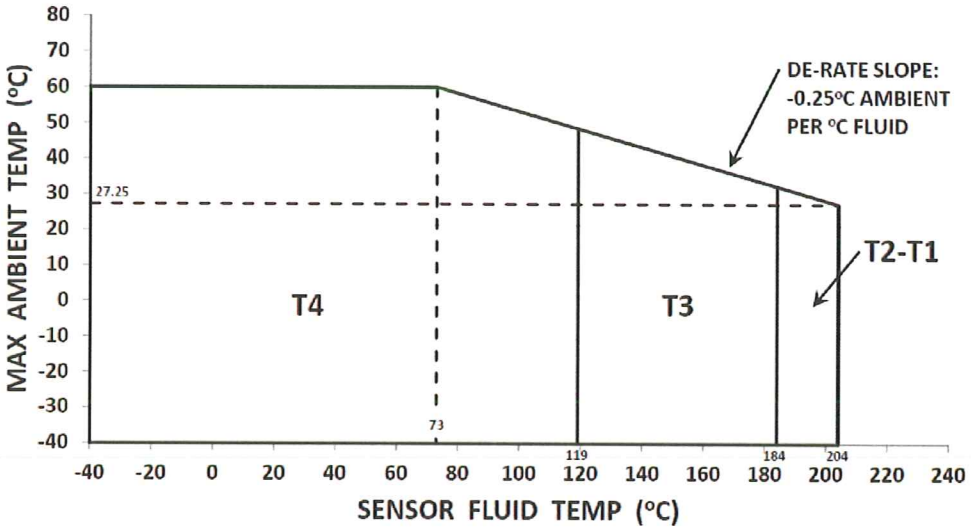



*Note 1: Use the above graph to determine the temperature class for a given fluid and ambient temperature.*

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

4.41

| Sensor type |  |
|---|---|
| with 2200S | CMFS025*****(J,U)*3**** |
| | CMFS040*****(J,U)*3**** |
| | CMFS050*****(J,U)*3**** |
| | CMFS075*****(J,U)*3**** |
| | CMFS100*****(J,U)*3**** |
| | CMFS150*****(J,U)*3**** |




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

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