



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 SEV 14.0002 issue No.: 1

Status: **Current**

Certificate history:
Issue No. 1 (2015-6-19)
Issue No. 0 (2014-7-2)

Date of Issue: **2015-06-19** Page 1 of 5

Applicant: **Rotronic AG**
Grindelstrasse 6
8303 Bassersdorf
Switzerland

Electrical Apparatus: **Rotronic HygroFlex-EX**
Optional accessory:

Type of Protection: **Increased safety "e", Intrinsic safety "i", Encapsulation "m", Protection by enclosure "t"**

Marking: **Ex eb ia mb IIC T5 T4 Ga/Gb**
Ex ia tb IIIC T 80 °C T 110 °C Da/Db

Approved for issue on behalf of the IECEx
Certification Body: **Martin Plüss**

Position: **Manager Product Certification**

Signature:
(for printed version)

Date:


2015-06-19

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](http://www.iecex.com).

Certificate issued by:

Electrosuisse div. Testing and Certification
Luppenstrasse 1
CH-8320 FEHRALTORF
Switzerland





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Manufacturer: **Rotronic AG**
Grindelstrasse 6
8303 Bassersdorf
Switzerland

Additional Manufacturing location
(s):

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 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-18 : 2009 Edition: 3	Explosive atmospheres Part 18: Equipment protection by encapsulation "m"
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
IEC 60079-31 : 2008 Edition: 1	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2006-07 Edition: 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*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:
[CH/SEV/ExTR14.0003/01](#)

Quality Assessment Report:
[CH/SEV/QAR14.0002/00](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Rotronic HygroFlex Ex device is a dual-channel meter for precise humidity and temperature measurement in an explosive atmosphere, where an ex classification is required. It consists of a measuring sensor and signal converter. The connected sensor is encapsulated in a stainless steel sensor tube and is designed for use in Zone 0/20. The transmitter itself is only designed for use in Zone 1/21 or Zone 2/22. The transmission signal is composed of two two-channel current loop interfaces, where the signal is formed in an accurate flow of each 4 to 20 mA. Between the measurement circuit on the secondary side and the primary side is a galvanic separation.

Ratings and types see page 5

CONDITIONS OF CERTIFICATION: NO





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

The rated ambient temperature for the sensor part of the Rotronic HygroFlex-EX Sensors:
HC2-IMxxx-EX / HC2-IExxx-EX / HC2-SM-EX / HC2-LDPxxx-EX was extended to
 $T_{amb} = -40\text{ °C} \dots +85\text{ °C}$.

Therefore the temperature class of sensor is changed too.

This certificate replaces certificate no: IECEx SEV 14.0002 issue No.:0





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Additional information:

Ratings: 20 ... 28 V DC resp.. 24 V DC +/- 15 %, I_{max}: 50 mA

Classification of installation and use: stationary

Ingress protection: IP66

Rated ambient temperature range (°C):

T_{amb} = [-10 °C...+60 °C] with LCD

T_{amb} = [-40 °C...+60 °C] without LCD

T_{amb} = [-40 °C...+60 °C] for sensor part (T5) resp. T80 °C

T_{amb} = [-40 °C...+85 °C] for sensor part (T4) resp. T110 °C

Types:

HygroFlex Transmitter:

HF520-EX-WxxxDxxx

HF520-EX-WxxxXxxx

HF520-EX-DxxxDxxx

HF520-EX-DxxxXxxx

Sensors:

HC2-IMxxx-EX

HC2-IExxx-EX

HC2-SM-EX

HC2-LDPxxx-EX





(1) EC-Type Examination Certificate

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

(3) Examination certificate number: **SEV 14 ATEX 0107**

(4) Equipment: Rotronic HygroFlex-EX
Types see page 2

(5) Manufacturer: Rotronic AG

(6) Address: Grindelstrasse 6, 8303 Bassersdorf, SWITZERLAND

(7) The equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) Electrosuisse SEV, notified body No. 1258 in accordance with article 9 of the Council Directive of the European Communities of 23 March 1994 (94/9/EC), certifies that this equipment has been found to comply with the essential health and safety requirements relating to the design and construction of equipment or protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The results of the examination are recorded in confidential report no. 13-Ex-0052.01 incl. extension 1.

(9) Compliance with the essential health and safety requirements has been assured by compliance with:

EN 60079-0:12 + A11:13

EN 60079-11:12

EN 60079-18:09

EN 60079-26:07

EN 60079-31:09

EN 60079-7:07

(10) If the sign «X» is placed after the certificate number, it indicates that the equipment or protective system is subjected to special conditions for safe use specified in the schedule to this certificate.

(11) This examination certificate relates only to design and construction of the specified equipment in accordance with the directive 94/9/EC. Further requirements of this directive apply to the manufacturing process and the placing on the market of the equipment.

(12) The marking of the equipment shall include the following:



II 1/2G Ex eb ia mb IIC T5 ... T4 Ga/Gb



II 1/2D Ex ia tb IIIC T80 °C ... T110 °C Da/Db

**Electrosuisse
Notified Body ATEX**

Martin Plüss
Product Certification



(13)

Appendix

(14)

EC-Type Examination Certificate

(15) Description of the equipment

The Rotronic HygroFlex Ex device is a dual-channel meter for precise humidity and temperature measurement in an explosive atmosphere, where an ex classification is required. It consists of a measuring sensor and signal converter. The connected sensor is encapsulated in a stainless steel sensor tube and is designed for use in Zone 0/20. The transmitter itself is only designed for use in Zone 1/21 or Zone 2/22. The transmission signal is composed of two two-channel current loop interfaces, where the signal is formed in an accurate flow of each 4 to 20 mA. Between the measurement circuit on the secondary side and the primary side is a galvanic separation.

Ratings: 20 ... 28 V DC resp.. 24 V DC +/- 15 %
I_{max}: 50 mA

Classification of installation and use: stationary
Ingress protection: IP66
Rated ambient temperature range (°C): T_{amb} = [-10 °C...+60 °C] with LCD
T_{amb} = [-40 °C...+60 °C] without LCD
T_{amb} = [-40 °C...+60 °C] for sensor part (T5) resp. T80 °C
T_{amb} = [-40 °C...+85 °C] for sensor part (T4) resp. T110 °C

Types:

HygroFlex Transmitter:

HF520-EX-WxxxDxxx
HF520-EX-WxxxXxxx
HF520-EX-DxxxDxxx
HF520-EX-DxxxXxxx

Sensors:

HC2-IMxxx-EX
HC2-IExxx-EX
HC2-SM-EX
HC2-LDPxxx-EX

(16) Test Report

13-Ex-0052.01 incl. extension 1

(17) Special conditions for safe use

None

(18) Fundamental essential health and safety requirements

Fulfilled by the standards applied.



(1) EG-Baumusterprüfbescheinigung

(2) Geräte und Schutzsysteme zur bestimmungsgemässen Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 94/9/EG**

(3) Prüfbescheinigungsnummer: **SEV 14 ATEX 0107**

(4) Gerät: Rotronic HygroFlex-EX
Typen siehe Seite 2

(5) Hersteller: Rotronic AG

(6) Anschrift: Grindelstrasse 6, 8303 Bassersdorf, SCHWEIZ

(7) Die Bauart dieses Gerätes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser Prüfbescheinigung festgelegt.

(8) Electrosuisse SEV, benannte Stelle Nr. 1258 nach Artikel 9 der Richtlinie des Rates der Europäischen Gemeinschaften vom 23. März 1994 (94/9/EG), bescheinigt die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemässen Verwendung in explosionsgefährdeten Bereichen gemäss Anhang II der Richtlinien.

Die Ergebnisse der Prüfung sind im vertraulichen Prüfbericht 13-Ex-0052.01 inkl. Erweiterung 1 festgehalten.

(9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit:

EN 60079-0:12 + A11:13
EN 60079-26:07

EN 60079-11:12
EN 60079-31:09

EN 60079-18:09
EN 60079-7:07

(10) Falls das Zeichen «X» hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Gerätes in der Anlage zu dieser Bescheinigung hingewiesen.

(11) Diese Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Bau des festgelegten Gerätes gemäss Richtlinie 94/9/EG. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Inverkehrbringen des Gerätes.

(12) Die Kennzeichnung des Gerätes muss die folgenden Angaben enthalten:



II 1/2G Ex eb ia mb IIC T5 ... T4 Ga/Gb



II 1/2D Ex ia tb IIIC T80 °C ... T110 °C Da/Db

Electrosuisse
Notified Body ATEX

Martin Plüss
Product Certification

(13)

Anlage

(14)

EG-Baumusterprüfbescheinigung

(15) Beschreibung des Gerätes

Das Rotronic HF-ATEX Gerät ist ein zweikanaliges Messgerät für eine exakte Feuchte- und Temperaturmessung in explosiver Atmosphäre. Es besteht aus Messfühler und Messumformer. Der angeschlossene Messfühler Hygroclip ist in einem Edelstahlsensorrohr vergossen und ist für den Betrieb in Zone 0/20 vorgesehen. Der Messumformer selber ist nur für Zone 1/21 oder Zone 2/22 vorgesehen. Die Schnittstelle für die Signalübertragung besteht aus zwei zweikanaligen Stromschleifenschnittstellen (Current Loop), bei denen das Signal in Form eines exakten Stromes von je 4...20mA übertragen wird. Zwischen der Messschaltung auf der Sekundärseite und der Primärseite mit den zwei „Current Loop“ Schnittstellen gibt es eine galvanische Trennung.

Nennspannung: 20 ... 28 V DC resp. 24 V DC +/- 15 %
I_{max}: 50 mA

Installations- und Gebrauchsart: stationary
Schutzart: IP66
Umgebungstemperatur (°C):
T_{amb} = [-10 °C...+60 °C] mit LCD
T_{amb} = [-40 °C...+60 °C] ohne LCD
T_{amb} = [-40 °C...+60 °C] für Sensor (T5) resp. T80 °C
T_{amb} = [-40 °C...+85 °C] für Sensor (T4) resp. T110 °C

Typen:

HygroFlex Transmitter:

HF520-EX-WxxxDxxx
HF520-EX-WxxxXxxx
HF520-EX-DxxxDxxx
HF520-EX-DxxxXxxx

Fühler:

HC2-IMxxx-EX
HC2-IExxx-EX
HC2-SM-EX
HC2-LDPxxx-EX

(16) Prüfbericht

13-Ex-0052.01 inkl. Erweiterung 1

(17) Besondere Bedingungen

Keine

(18) Grundlegende Sicherheits- und Gesundheitsanforderungen

Durch die angewandten Normen erfüllt.