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 KIWA 15.0012X	Issue No: 0	Certificate history: Issue No. 0 (2015-10-27)
Status:	**Current**	Page 1 of 3	
Date of Issue:	**2015-10-27**		
Applicant:	**KROHNE S.A.S.** 2, allée des Ors 26100 Romans sur Isère **France**		
Electrical Apparatus:	**Radar Level Transmitter**		
Optional accessory:			
Type of Protection:	**Ex d, Ex i, Ex t**		
Marking:	Ex ia IIC T6 ... T3 Ga/Gb Ex db IIC T6 ... T4 Ga/Gb Ex tb IIIC T120 °C Db Ex ia IIIC T120 °C Db		

Approved for issue on behalf of the IECEx Certification Body: Pieter van Breugel

Position: Certification Officer

Signature:
(for printed version)

Date:

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:

Kiwa Nederland B.V. (Unit Kiwa ExVision)
Wilmersdorf 50
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The Netherlands

Partner for progress

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Manufacturer:	**KROHNE S.A.S.** 2, allée des Ors 26100 Romans sur Isère **France**	
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 60079-1 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2006 Edition:2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

*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:

NL/KIWA/ExTR15.0011/00

Quality Assessment Report:

NL/DEK/QAR12.0030/02

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Radar Level Transmitter OPTIWAVE 1010 Model *F01*abcd... is used to convert the level measurement signal of a radar sensor into an electrical signal. The two-wire converter is a loop powered device that provides a 4 - 20 mA output signal with HART communication.

For further details refer to Annex 1.

CONDITIONS OF CERTIFICATION: YES as shown below:

The intended maximum ambient and process temperatures are specified in section 15.4.

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

The property class of the special fasteners M6x35 6g, head to ISO4762, of the glass process seal is at least A2-70.

The flameproof joints are not intended to be repaired.

Build-up of electrostatic charge on the painted enclosure shall be avoided by suitable measures.

Annex:

Annex 1 to IECEx Certificate of Conformity KIWA 15.0012X-Issue 0.pdf

Description

Radar Level Transmitter OPTIWAVE 1010 Model *F01*abcd... is available in versions in type of protection flameproof enclosures "d" for explosive gas atmospheres, in versions in type of protection intrinsic safety "i" for explosive gas and explosive dust atmospheres and in versions in type of dust protection by enclosure "t" for explosive dust atmospheres.

The transmitters are provided with
- an aluminum enclosure, for transmitters in type of protection Ex i for explosive gas atmospheres (models *F01*16*1, *F01*16*2, *F01*16*3);
- a stainless steel enclosure, in types of protection Ex d and Ex t for explosive gas and explosive dust atmospheres (models *F01*27*A, *F01*27*B, *F01*27*C);
- a stainless steel enclosure, in type of protection Ex i for explosive gas and explosive dust atmospheres (models *F01*26*A, *F01*26*B, *F01*26*C).
- an aluminum enclosure with an extension for application at high process temperatures, in type of protection Ex i for explosive gas atmospheres (models *F01*16*5, *F01*16*6, *F01*16*7).

Type designation *F01* abcd…….

F01 = VF010 (standard options, short lead time) or VF014 (standard options) or SF019 (special)

a Converter/Version (Enclosure material)
- 1: OPTIWAVE 1010/Compact (Aluminium)
- 2: OPTIWAVE 1010/Compact (Stainless steel)

b Approval
- 6: IECEx Ex ia IIC Tx Ga/Gb + Ex ia IIIC T120 °C Db (dust approval only with stainless steel enclosure)
- 7: IECEx Ex db IIC T6…T4 Ga/Gb + Ex tb IIIC T120 °C Db (stainless steel enclosure only)

c Other approval (one digit, not safety related)

d Process seal (Temperature, Pressure, Sealing)
- 0: Without
- 1: -40°C...+100°C, -1…16 barg, FKM/FPM
- 2: -40°C...+100°C, -1…16 barg, EPDM
- 3: -20°C...+100°C, -1…16 barg, Kalrez 6375
- 5: -40°C...+150°C, -1...40 barg, FKM/FPM+Metaglas
- 6: -40°C...+150°C, -1...40 barg, EPDM+Metaglas
- 7: -20°C...+150°C, -1...40 barg, Kalrez 6375+Metaglas
- A: -40°C...+120°C, -1...40 barg, FKM/FPM+Metaglas
- B: -40°C...+120°C, -1...40 barg, EPDM+Metaglas
- C: -20°C...+120°C, -1...40 barg, Kalrez 6375+Metaglas

Electrical data

<u>Transmitters in type of protection Ex i Model OPTIWAVE 1010 *F01*a6*d...</u>

Supply/output circuit:
in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with following maximum values:
U_i = 30 V, I_i = 130 mA, P_i = 1.0 W, C_i = 10 nF, L_i is negligibly small.

Transmitters in type of protection Ex d and Ex t Model OPTIWAVE 1010 *F01*27*d...

Supply/output circuit:
U_N = 14.5 … 32 Vdc,
I_N = 4 … 20 mA.

Thermal data

For group II, the intended temperature class depends on the combination of maximum ambient temperature and maximum process and/or flange temperature as listed in the following table:

Temperature class	T6	T5	T4			T3
Max ambient temperature [ºC]	55	70	45	60	70	70
Version/model	Maximum process temperature [ºC]					
Ex i, aluminium: *F01*16*1, *F01*16*2, *F01*16*3	85	85	100	95	85	-
Ex i, aluminium HT: *F01*16*5, *F01*16*6, *F01*16*7	85	100	135	135	135	150
Ex d, stainless steel: *F01*27*A, *F01*27*B, *F01*27*C	85	90 *)	120	100 *)	90 *)	-
Ex i, stainless steel: *F01*26*1, *F01*26*2, *F01*26*3	85	90	120	100	90	-

Note *): A heat resistant cable and cable gland with an operating temperature of at least 90 ºC has to be prescribed.

For group III, the maximum surface temperature, determined without dust layer, is T120 ºC for a maximum ambient temperature of 70 ºC and a maximum process temperature of 120 ºC.
A heat resistant cable and cable gland with an operating temperature of at least 90 ºC has to be prescribed when the ambient temperature > 60°C.