



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 KEM 07.0003X	Issue No: 5	Certificate history:
Status:	Current	Page 1 of 5	Issue No. 5 (2014-01-31)
Date of Issue:	2014-01-31		Issue No. 4 (2013-08-22)
Applicant:	Enraf B.V. Delftechpark 39 2628 XJ Delft The Netherlands		Issue No. 3 (2013-02-12)
Electrical Apparatus:	Radar Level Gauge Type SmartRadar FlexLine		Issue No. 2 (2009-11-07)
Optional accessory:			Issue No. 1 (2009-08-03)
Type of Protection:	Ex d [ia]		Issue No. 0 (2007-07-03)
Marking:	Zone 0/1 Ex d [ia] IIB T6 IECEX KEM 07.0003 X Ta: -40 °C to +65 °C IP66 / IP67		

Approved for issue on behalf of the IECEx
Certification Body:

R. Schuller

Position:

Certification Manager

Signature:
(for printed version)

Date:

2014-01-31

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:

DEKRA Certification B.V.
Meander 1051
6825 MJ Arnhem
The Netherlands





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Manufacturer: **Enraf B.V.**
Delftechpark 39
2628 XJ Delft
The Netherlands

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 : 2004 Edition:4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-1 : 2003 Edition: 5	Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosure 'd'
IEC 60079-11 : 2008 Edition:5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2004 Edition:1	Electrical apparatus for explosive gas atmospheres - Part 26: Construction, test and marking of Group II Zone 0 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:

NL/DEK/ExTR13.0008/00	NL/KEM/ExTR07.0003/00	NL/KEM/ExTR07.0003/01
NL/KEM/ExTR07.0003/02	NL/KEM/ExTR07.0003/03	NL/KEM/ExTR07.0003/04
NL/KEM/ExTR07.0005/01	NL/KEM/ExTR07.0006/00	NL/KEM/ExTR07.0007/00
NL/KEM/ExTR09.0032/00		

Quality Assessment Report:

NL/DEK/QAR12.0025/00



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Description

The SmartRadar FlexLine is a radar-based level gauge to use in inventory measurement systems or other level measurement applications and can be used to interface with other systems and sensors such as temperature and pressure gauges. It consists of a control unit with an integrally mounted measuring antenna.

The control unit is of type of protection flameproof enclosure "d" and contains all electronic components from which a number of intrinsic safe circuits are supplied. The measuring antenna can be mounted in an area for which the requirements for zone 0 are applicable.

Optionally can the SmartRadar FlexLine be equipped with a direct or remote (via a coax cable) mounted antenna providing a wireless control connection.

Ambient temperature range -40 °C to +65 °C.

Maximum process temperature 250 °C and maximum process pressure 40 bar.

The enclosure provides a degree of protection IP66 / IP67 in accordance with IEC 60529.

CONDITIONS OF CERTIFICATION: YES as shown below:

Special precautions shall be taken to prevent the front surface of the antennas of type S10, S12, W06, T06, F06, F08 and D04 from being electrostatically charged.

The maximum constructional gap of the flange between the lid and the box shall not exceed 0.1 mm and the maximum constructional gap towards the sensor shall not exceed 0.05 mm.



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EQUIPMENT (continued):

Electrical data

Power supply (terminals 00, 01, 02):
65-240 Vac, 50/60 Hz or 24-65 Vdc, 23 W maximum

SmartView interface circuit (terminals 26, 27, 28, 29 or display connector):
in type of protection intrinsic safety Ex ia IIB, with the following maximum values:
 $U_o = 14.2 \text{ V}$; $I_o = 522 \text{ mA}$; $P_o = 1.7 \text{ W}$; $C_o = 4.37 \mu\text{F}$; $L_o = 0.5 \text{ mH}$
In addition, the following values are allowed for circuits with concentrated capacitances
and concentrated inductances in combination:
 $C_o = 4.37 \mu\text{F}$ and $L_o = 0.15 \text{ mH}$;
 $C_o = 3.78 \mu\text{F}$ and $L_o = 0.25 \text{ mH}$;
 $C_o = 2.68 \mu\text{F}$ and $L_o = 0.5 \text{ mH}$.

HART interface circuit (terminals 22, 23 or 24, 25):
in type of protection intrinsic safety Ex ia IIB, with the following maximum values:
 $U_o = 23.1 \text{ V}$; $I_o = 124 \text{ mA}$; $P_o = 0.6 \text{ W}$; $C_o = 1 \mu\text{F}$; $L_o = 9 \text{ mH}$

RTD interface circuit (terminals 30 to 45):
in type of protection intrinsic safety Ex ia IIB, with the following maximum values:
 $U_o = 8.61 \text{ V}$; $I_o = 58 \text{ mA}$; $P_o = 0.13 \text{ W}$; $C_o = 1 \mu\text{F}$; $L_o = 10.5 \text{ mH}$

HART output interface circuit (terminals 50 and 51):
in type of protection intrinsic safety Ex ia IIB, with the following maximum values:
 $U_o = 25.2 \text{ V}$; $I_o = 98 \text{ mA}$; $P_o = 619 \text{ mW}$; $C_o = 0.82 \mu\text{F}$; $L_o = 14.7 \text{ mH}$
 $U_i = 25.2 \text{ V}$; $I_i = 100 \text{ mA}$; $P_i = 750 \text{ mW}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$

Installation instructions

The manual provided with the equipment shall be followed in detail.
For temperatures under rated conditions higher than $70 \text{ }^\circ\text{C}$ at the cable entry point, suitable heat resistant cables and cable glands shall be used.



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

Update with modified parameters for SmartView interface circuit in accordance with the output parameters specified for the Intrinsically Safe Option Module FII-SMV and extended with concentrated Co and Lo combined values determined by simulation.