



SAFETY DEVICES

Certificate of compliance In accordance with IEC 61508

SIL-INERIS 150132-C / 2015

The National Institute for Industrial Environment & Risks (INERIS - Institut National de l'Environnement Industriel et des Risques), a public organization, established by decree No.90-1089 of 7 December 1990, and accredited by COFRAC under number 5-0045 for certification of products and services (scope of accreditation available on the website www.cofrac.fr)

issues the present certificate for the following model:

Trade Mark : **INVENSYS FOXBORO ECKARDT**

Denomination: **LR01**

Manufacturer: **FOXBORO ECKARDT GmbH
Pragstr.82
D-70333 STUTTGART**

Type: **LR01xxx1... or LR01xxx5...**

Applicant:
of the certificate: **FOXBORO ECKARDT GmbH**

Description : **FMCW radar level meter**

The rules of certification are available on the website www.ineris.fr.

1. Functional safety

The safety function « **level meter** » has obtained the following classification
Safety Integrity Level : SIL 2

	Configuration without Ex d barriers 1 FIT = 10 ⁻⁹ /h
Architecture	1oo1D
PFH (Probability of failure per hour)	65.2 FITS
Common cause failures for present PFH Calculation	0%
λ_{SD}	11 FITS
λ_{SU}	558 FITS
λ_{DD}	530 FITS
λ_{DU}	65.2 FITS
SFF	94%
DC _D	89%
PFD _{avg} with $T_{\text{proof test}} = 5 \text{ years}$	1.42 10 ⁻³
Maximum on line Functional test periodicity	23 seconds

2. Configuration version

	BACK-END (converter) Board	FRONT-END (Sensor) Board	Exd Barrier (for ATEX application)
Hardware reference	4000342401 O	4001025501 M 4000766101 F	4000512701 H
Software reference	V1.00.10	V1.00.15	/

3. Assessment

The assessment of the safety functions in accordance with IEC 61508 standard is consigned in the report INERIS / DSC-15-150132-12650B.

4. Safety for use

- A periodic maintenance test shall be performed at least once per five year in order to verify the accuracy of the level measured by the « FMCW radar level meter transmitter ». This verification has to be performed in order to reveal the dangerous failures not covered by self-diagnostic implemented in the device.
- Safety for use are described in the user guides ref AD EML3020 A-(en) - identification number on back page: 558 617 081 (Safety manual) and HB EML3020 A-(en) - identification number on back page: 558 616 025 (handbook).
- If the FMCW radar level meter are delivered without one of the authorized antennas, then the enduser must calibrate the device to make sure that the safety function operates correctly as defined in the safety manual.

Verneuil-en-Halatte, 2015.04.30



The Chief Executive Officer of INERIS,
By delegation
Dominique CHARPENTIER
Certification Division,
Manager

