
Certificate of Conformity to IEC 61508 Safety Integrity Level (SIL) 2

Functional Safety of Safety-Related Programmable Electronic Systems

The **Fabrication Application Réalisation Electronique (FARE), LYNX Range** has been assessed and is considered capable for use in a low demand Safety Function up to SIL 2.

The assessment was based on the assumptions, data provided, and recommendations given in:

- **Engineering Safety Consultants (ESC) Ltd Report: G025_FM001 rev. 3.**

The products were assessed against the following failure modes:

- LYNX-DM: Failure to provide an indication of a fire alarm;
- LYNX-ETC: Failure to provide digital protocol to communicate between analogue and digital interfaces and transmit a valid alarm indication when required;
- LYNX-T2OI: Failure to detect smoke / heat and initiate a digital alarm signal;
- LYNX-2O: Failure to detect smoke and initiate a digital alarm signal;
- LYNX-S2H: Failure to detect smoke and initiate a digital alarm signal.

It should be noted that LYNX-DM, LYNX-ETC, LYNX-T2OI, LYNX-2O and LYNX-S2H are development references for the devices and will be sold under the following commercial references:

- LYNX-DM will be sold under the device references of LDMA-SIL2 and LDMA-NUC (In France) and PT-CPAR-SIL2 and PT-CPAR-NUC (Outside France);
- LYNX-ETC will be sold under the device reference of ETCL-B-SIL2, ETCL-SIL2, ETCL-B-NUC and ETCL-NUC (In France) and PT-IOM-B-SIL2, PT-IOM-SIL2, PT-IOM-B-NUC and PT-IOM-NUC (Outside France);
- LYNX-T2OI will be sold under the device reference of LOTAI-SIL2 and LOTAI-NUC (In France) and PT-OTAI-SIL2 and PT-OTAI-NUC (Outside France);
- LYNX-2O will be sold under the device reference of LOA-NUC (In France) and PT-OA-NUC (Outside France);
- LYNX-S2H will be sold under the device reference of LS2H-NUC (In France) and PT-T2AD-NUC (Outside France).

The assessment was carried out to determine compliance with IEC 61508 (2010 Edition) with regards to:

- Random Hardware Failure (Predicted PFD as per table below, assuming a Mean Down Time (MDT) of 168 hours, a Proof Test Interval (PTI) of 1 year, a Proof Test Coverage of 95% or 90% and a Mission Time of 10 years);
- Architectural Constraint (Type B, SFF >90% <99%);
- Functional Safety Management and hardware systematic requirements.

Page 1 of 2

The assessment results are as follows:

Device	Proof Test Coverage (PTC)	Estimated PFD Achieved	SFF	Type	Estimated Achieved SIL (Architecture, HFT = 0)	Overall Achieved SIL Capability
LYNX-DM	95%	1.6E-04	93%	B	2	2
	90%	2.0E-04			2	2
LYNX-ETC	95%	5.4E-04	92%	B	2	2
	90%	6.8E-04			2	2
LYNX-T2OI	95%	3.5E-04	95%	B	2	2
	90%	4.4E-04			2	2
LYNX-2O	95%	3.5E-04	95%	B	2	2
	90%	4.3E-04			2	2
LYNX-S2H	95%	3.5E-04	95%	B	2	2
	90%	4.4E-04			2	2

IMPORTANT: It should be noted that this assessment does not include confirmation of the response time of the device. For response times (along with any relevant assumptions) reference should be made to the Safety Manual of each device and the total SIF response time **MUST** be compared against the process safety time for the specific application.



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Page 2 of 2