



Certificate / Certificat Zertifikat / 合格証

FEC 2003005 C001

exida hereby confirms that the:

Pressure & Differential Pressure Transmitters FCX-AIV

FUJI ELECTRIC CO., LTD.
Hino, Tokyo, Japan

Has been assessed per the relevant requirements of:

IEC 61508 : 2010 Parts 1-7

and meets requirements providing a level of integrity to:

Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type B Element

SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 1_H

For models where SFF ≥ 90%

SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2_H

**PFH/PFD_{avg} and Architecture Constraints
must be verified for each application**

Safety Function:

The FCX-AIV Pressure and Differential Transmitters will measure Pressure and differential pressure and output a 4 -20 mA signal within the stated safety accuracy.

Application Restrictions:

The unit must be properly designed into a Safety Instrumented Function per the Safety Manual requirements.

The manufacturer
may use the mark:



Revision 2.2 July 24, 2023
Surveillance Audit Due
December 31, 2024



Kiyoshi Takai
Evaluating Assessor

[Signature]
Certifying Assessor

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Systematic Capability: SC 3 (SIL 3 Capable)**Random Capability: Type B Element****SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 1_H****For models where SFF ≥ 90%****SIL 2 @ HFT=0; SIL 3 @ HFT = 1; Route 2_H****PFD_{avg} and Architecture Constraints
must be verified for each application**Series Xyz Element
Transmitter**Systematic Capability:**

The product has met manufacturer design process requirements of Safety Integrity Level (SIL) 3. These are intended to achieve sufficient integrity against systematic errors of design by the manufacturer.

A Safety Instrumented Function (SIF) designed with this product must not be used at a SIL level higher than stated.

Random Capability:

The SIL limit imposed by the Architectural Constraints must be met for each element. This element meets *exida* criteria for Route 2_H.

IEC 61508 Failure Rates in FIT*

Device	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}	SFF
FCX-AIV	-	17	484	42	92.3%

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFH/PFD_{avg} considering redundant architectures, proof test interval, proof test effectiveness, any automatic diagnostics, average repair time and the specific failure rates of all products included in the SIF. Each element must be checked to assure compliance with minimum hardware fault tolerance (HFT) requirements.

The following documents are a mandatory part of certification:

Assessment Report: : FEC 20-03-005 R003 V2 R2 (or later)

Safety Manual: INF-TN5A5137a-E (or later)

¹FIT = 1 failure / 10⁹ hours

²SFF not required for devices certified using Route 2_H data. For information detailing the Route 2_H approach as defined by IEC 61508-2.

³Refer to the Remote Seal FMEDA report for the additional failure rates to use when using the transmitter with attached Remote Seal(s) or use exSILentia.: Model FKB, FKD and FKM
FMEDA Report No: FEC 20-02-219 R002 V1 R1



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