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 1-3

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.

Kiyoshi Takai
Evaluating Assessor

Certifying Assessor

The manufacturer may use the mark:

Revision 2.5 December 19, 2024
Surveillance Audit Due
December 31, 2027

ANSI National Accreditation Board
ACCREDITED
ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#1004

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Pressure & Differential Pressure Transmitters

FCX-AIV

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 R5 (or later)

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

[1]FIT = 1 failure / 10^9 hours

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

[3]Refer 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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