



## SIL Declaration of Conformity

### Functional safety according to IEC 61508 and IEC 61511

Fuji Electric Systems Co.,Ltd.  
Automation & Solution Business Headquarters  
Instrumentation Division

Product: FCX-AIII[FCX-A II ...5] series transmitter (4-20 mA/Fuji+HART communication)  
Model Code: FKA...5, FKB...5, FKC...5, FKD...5, FKE...5, FKG...5, FKM...5, FKW...5, FKX...5, FKY...5  
FKH...5, FKP...5 (for FCX-AIII[FCX-A II ...5] series transmitter)

We the manufacturers declare that the Pressure/Differential Pressure FCX-AIII[FCX-A II ...5] series transmitters are suitable for use in safety instrumented systems according to IEC61508/61511. The relevant safety precautions must be observed and adhered to.

The failure rates were analyzed by FMEA (Failure Mode and Effect Analysis) according to IEC61508. The calculation for the electronics was verified by TÜV Súd.

#### Safety Critical Data for the FCX-AIII[FCX-A II ...5] series transmitter

SIL (Safety Integrity Level), Single mode 2  
Type A elements as per IEC61508 and IEC61511, verified as proven-in-use by TÜV Súd based on the field data. Changes will be made according to IEC61508 if there are anything.

HFT' (Hardware Fault Tolerance) 0

	Without option	With digital indicator	With local configurator
Architectures	1001	1001	1001
$\lambda_s$	640.9 Fit	643.1 Fit	651.1 Fit
$\lambda_{DD}$	1438.5 Fit	1438.5 Fit	1438.5 Fit
$\lambda_{DU}$	408.3 Fit	478.3 Fit	486.1 Fit
Proof Test Interval $T_1$	1a (1 Year)	1a (1 Year)	1a (1 Year)
MTTR	8h	8h	8h
$PFD_{AVG}(1a)$	$1.78 \cdot 10^{-3}$	$2.09 \cdot 10^{-3}$	$2.12 \cdot 10^{-3}$
PFH /hour	$4.08 \cdot 10^{-7}$	$4.78 \cdot 10^{-7}$	$4.86 \cdot 10^{-7}$
SFF	83.5%	81.3%	81.3%

$$PFD_{AVG}(T_1) \cong PFH * (T_1 / 2)$$

$$SFF = (\lambda_s + \lambda_{DD}) / (\lambda_s + (\lambda_{DD} + \lambda_{DU}))$$

Values in the above table depend on "Report-No. TT 82478T revision 1.1 (6<sup>th</sup> March 2009)" issued by TÜV Súd.

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Fuji Electric Systems Co.,Ltd.

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1)In accordance with IEC61511-1, Paragraph 11.4.4 HFT has been reduced by one.