



# Certificate / Certificat Zertifikat / 合格証

YEC 1512066 C001

*exida* hereby confirms that the:

## YTA710 & YTA610 Temperature Transmitter

**Yokogawa Electric Corporation  
Musashino, 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<sub>H</sub>**

**PFD<sub>AVG</sub> and Architecture Constraints  
must be verified for each application**

### Safety Function:

The YTA710 & YTA610 Temperature Transmitter is a 4-20 mA output smart device. It contains self-diagnostics and is programmed to send its output to a specified failure state upon internal detection of a failure.

### Application Restrictions:

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



Evaluating Assessor

Certifying Assessor

The manufacturer  
may use the mark:



Revision 9.4 June 23, 2026  
Surveillance Audit Due  
June 30, 2027



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**Random Capability: Type B Element**

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**PFD<sub>AVG</sub> and Architecture Constraints must be verified for each application**

**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.

**IEC 61508 Failure Rates in FIT\***

Device/Configuration	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$	SFF
YTA710 & YTA610 Temperature Transmitter, single TC configuration	-	40	790	60	93.3%
YTA710 & YTA610 Temperature Transmitter, single RTD configuration	-	36	755	50	94.1%

\* FIT = 1 failure / 10<sup>9</sup> hours

**SIL Verification:**

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFD<sub>avg</sub> 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 subsystem must be checked to assure compliance with minimum hardware fault tolerance (HFT) requirements.

The following documents are a mandatory part of certification:

**Assessment Report:** YEC 15-12-066 R001 V9R4 or above

**Safety Manual:** IM 01C50T01-02EN Appendix A 7th edition or later



80 N Main St  
Sellersville, PA 18960

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Temperature Transmitter