

# CERTIFICATE



ABB 070742 P0007 C01.01

exida Certification S.A. hereby confirms that the

## Pressure Transmitter 2600T Model 261

Product Version: Hardware version V1.05, V1.06; Software version V1.03.0, V1.04.03

### ABB Automation Products GmbH

Minden, Germany

Has been assessed per the relevant requirements of

### IEC 61508

Parts 1 - 7, and meets requirements providing a level of integrity to

**Systematic Integrity : SIL 2 Capable**

**Random Integrity : SIL 2 Capable**

#### **Safety Function**

The Pressure Transmitter 2600T Model 261 will measure pressure within the stated safety accuracy and provide the measurement on a 4..20 mA current output.

#### **Application Restrictions**

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



Assessor



Certifying Assessor

Date: 16 February 2010

exida Certification SA, Nyon, Switzerland



## Systematic Integrity: SIL 2 Capable

### SIL 2 Capability

The product has met manufacturer design process requirements of Safety Integrity Level (SIL) 2. 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 the statement without "prior use" justification by end user or diverse technology redundancy in the design.

## Random Integrity: SIL 2 Capable

### Summary for Pressure Transmitter 2600T Model 261:

T1 - Pressure Transmitter 2600T Model 261 – p-Piezo  
 T2 - Pressure Transmitter 2600T Model 261 – p-Piezo with remote seals  
 T3 - Pressure Transmitter 2600T Model 261 – p-Cap  
 T4 - Pressure Transmitter 2600T Model 261 – p-Cap with remote seals

### IEC 61508 failure rates:

Failure category	T1	T2	T3	T4
Fail Safe ( $\lambda_{SAFE}$ )	108	108	143	143
Fail Dangerous Detected ( $\lambda_{DD}$ )	402	410	464	472
Fail Dangerous Undetected ( $\lambda_{DU}$ )	23	53	36	66
Total failure rate (safety function)	533	571	643	681
SFF	95%	90%	94%	90%
DC <sub>D</sub>	94%	88%	92%	87%
MTBF	182 years	171 years	154 years	147 years

All failure rates are given in FIT=10<sup>-9</sup>/h

### 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 mandatory parts this certificate:

ABB 0707-42-C R017 Assessment report 261 V1R5  
 Safety Manual, SM/261/SIL-EN Rev. 04

The holder of this certificate may use this mark.

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