# Certificate / Certificat
# Zertifikat / 合格証

ROS 1612041 C001

*exida* hereby confirms that the:

## 248 4-20 mA HART Temperature Transmitter

## Emerson Rosemount
## Shakopee, MN - USA

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 $1_H$**

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

**Certified Models:**
Only the Model numbers listed in Section 3.1 of the Assessment Report are included.

**Safety Function:**

Emerson Rosemount's 248 Temperature Transmitter will transmit a 4-20 mA signal, proportional to a measured temperature, within the safety accuracy and other stated performance specifications, when operated within the environmental limits in the product manual.

**Application Restrictions:**

The unit must be properly designed into a Safety Instrumented Function per the Safety Manual requirements. Emerson Rosemount's 248 Temperature Transmitter will transmit a 4-20 mA signal, proportional to a measured temperature, within the safety accuracy and other stated performance specifications, when operated within the environmental limits in the product manual.

The manufacturer may use the mark:

Revision 3.1 May 20, 2025
Surveillance Audit Due
June 1, 2028

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

Rudolf P. Chaluska
Evaluating Assessor

Molly Lyon O'Brien
Certifying Assessor

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## ROS 1612041 C001

## Systematic Capability: SC 3 (SIL 3 Capable)

## Random Capability: Type B Element

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

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

**248 4-20 mA HART Temperature 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***

| Application/Device/Configuration | $\lambda_{SD}$ | $\lambda_{SU}$ | $\lambda_{DD}$ | $\lambda_{DU}$ |
|---|---|---|---|---|
| 248 RTD | 0 | 43 | 303 | 29 |
| 248 TC | 0 | 43 | 298 | 35 |

* FIT = 1 failure / $10^9$ hours

**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:** ROS 16-12-041R002 V3 R1 (or later)

**Safety Manual:** 00809-0100-4825

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