Certificate / Certificat

Zertifikat / 合格証

HON 1511043 C001

exida hereby confirms that the:

SLATE™ Burner Control System
Honeywell Inc.
Honeywell Process Solutions
Houston, TX - 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 3 @ HFT = 0; Route 1_H

PFH, PFD_{AVG} and Architecture Constraints must be verified for each application

Safety Function:

The Burner Control module and Flame Amplifier modules ensure the events which make up a burner control operation cycle occur in the correct order and at the proper time. The Limit Control module continuously monitors an analog input signal to detect when an unsafe limit has been exceeded.

Application Restrictions:

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

The manufacturer may use the mark:

Revision 3.0 December 28, 2023
Surveillance Audit Due
December 1, 2026

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

exida Certification

Rudolf P. Chalupka
Evaluating Assessor

Certifying Assessor

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Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type B Element

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SLATE™ Burner Control System

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. The SLATE is configured to automatically enter a safe state when failures are detected, so Safe Detected (SD), Safe Undetected (SU) and Dangerous Detected (DD) failures can all be categorized as Safe (S) failures.

IEC 61508 Failure Rates in FIT*

Application/Device/Configuration	λ_S	λ_{DU}	#
Burner Control Module	2463	12.5	534
Limit Module	2001	10.0	475
UV Ampli-Check Module	1579	8.0	191
UV Shutter-Check	1610	8.0	189
IR Ampli-Check	1123	7.4	140
UV/Visible Ampli-Check	1165	15.3	133
Rectification Ampli-Check	1158	6.7	146
SSuV Sensor Ampli-Check Module	1365	9.7	193
Low Voltage Cell for mA Input or mA Output	162	22.1	81
Low Voltage Cell for RTD, TC or NTC input	100	24.7	45

* 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 or 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: HON 15-11-043 R002 V3R1 (or later)

Safety Manual: 32325298-001 R09 SLATE Safety Manual

80 N Main St
Sellersville, PA 18960