Certificate / Certificat
Zertifikat / 合格証

PFE 2001062 C001

exida hereby confirms that the:

PF2200-FD Burner Control System

Profire Energy, Inc.
Spruce Grove, AB - Canada

Has been assessed per the relevant requirements of:

IEC 61508 : 2010 Parts 1-7

and meets requirements providing a level of integrity to:

Systematic Capability: SC 2 (SIL 2 Capable)

Random Capability: Type B Element

SIL 2 @ HFT = 0; Route 1H

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

Safety Function:

The PF2200-FD monitors and controls a forced-draft burner using a pre-defined operating sequence. The PF2200-FD also monitors up to two independent pilot flame statuses and other interlock signals, and transitions to Safety Shutdown (Lockout) if conditions are judged to be unsafe.

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 1.0 March 31, 2020
Surveillance Audit Due
April 1, 2023

ISO/IEC 17065
PRODUCT CERTIFICATION BODY
#1004

Certificate / Certificat / Zertifikat / 合格証

PFE 20-01-062 C001

Systematic Capability: SC 2 (SIL 2 Capable)

Random Capability: Type B Element

SIL 2 @ HFT = 0; Route 1H

PFH/PFD$_{avg}$ and Architecture Constraints must be verified for each application

PF2200-FD Burner Control System

Systematic 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 stated.

Random Capability:

The SIL limit imposed by the Architectural Constraints must be met for each element.

IEC 61508 Failure Rates in FIT*

Application/Device/Configuration	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
Common	347	57	146	51
RTD input channel	0	0	7	0.01
TC input channel	0	0	7	0.1
4-20mA/digital input channel	31	0.3	11	0.15
dry input channel	0.14	5	0	1
Ionization input channel	13.4	0.24	0	0.24
Ignition coil output channel	0	1	55	2
Powered output channel	50	0.3	16	0.16
Fan output	94	0.3	0	0

* 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: PFE 20-01-062 R002 V1R0

Safety Manual: PF2200-FD MANUAL Rev. 1.0

80 N Main St
Sellersville, PA 18960