Certificate / Certificat
Zertifikat / 合格証

BUE 2006049 P0042 C005

exida hereby confirms that the:

Pneumatic controller:

8690-E*-*, 8690-D*-***, 8697-E*-***

Bürkert Werke GmbH & Co. KG
Ingelfingen, Germany

Have been assessed per the relevant requirements of:

IEC 61508 : 2010 Parts 1-2

and meets requirements providing a level of integrity to:

Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type A Element, Route 1_H

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

Safety Function:
The Valve will move to the designed safe position within the specified safety time.

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 2.0 April 19, 2024
Surveillance Audit Due
April 30, 2027

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

Evaluating Assessor

Certifying Assessor

Certificate / Certificat / Zertifikat / 合格証

BUE 2006049 P0042 C005

Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type A Element, Route 1_H

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

Pneumatic controller:

8690-E*-*, 8690-D*-***, 8697-E*-***

ABD 1000490853 EN Version: C Status: RL (released | freigegeben) printed: 21.06.2024

Systematic Capability:

The products have 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	λ_{Safe}	λ_{Dang}
8690-E*-***	324	241
8690-D*-***	376	482
8697-E*-***	249	25

* 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 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: BUE 20-06-049 R008 V2R0 Assessment Report Valves

Safety Manual: Safety Manual_00_00815378, Rev -

80 N Main St
Sellersville, PA 18960