Certificate / Certificat
Zertifikat / 合格証

BIF 1705128 C003

exida hereby confirms that the:

FP15 & FP15E Low- and High-Pressure Pilot Interface Valves

Bifold Fluidpower Ltd.
Chadderton, Manchester – UK

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, Route 2_H Device

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

Safety Function:
The Pilot Valve will release/vent the service port pressure when de-energized 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 2.3 December 11, 2023
Surveillance Audit Due
October 1, 2026

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

Evaluating Assessor

Certifying Assessor

Certificate / Certificat / Zertifikat / 合格証

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Systematic Capability: SC 3 (SIL 3 Capable)

Random Capability: Type A, Route 2_H Device

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

FP15 & FP15E Series Interface Valves

Systematic Capability :

These 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. This device meets *exida* criteria for Route 2_H.

Versions:

Valve Types	Description and Application
FP15 and FP15E	3 Port, 2 Position Normally Closed/Open, Low- and High-Pressure Pilot Interface Valve, Hydraulic or Gas Service, De-energized To Trip (DTT)

IEC 61508 Failure Rates in FIT[1]

DEVICE/APPLICATION/CONFIGURATION	Λ_{SD}	Λ_{SU}	Λ_{DD}	Λ_{DU}
FP15 & FP15E NC, DTT	0	129	0	141
FP15 & FP15E NC, ETT	0	27	0	242
FP15 & FP15E NO, ETT	0	56	0	209

[1] 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: BIF 17/05-128 R002 V2 R3 (or later)

Safety Manual: SM.018 Rev 2 or later

80 N Main St
Sellersville, PA 18960