Certificate / Certificat
Zertifikat / 合格証

BIF 1307019 C001

exida hereby confirms that the:

BXS Pilot & Mechanical Valve

Bifold Fluidpower Ltd.
Chadderton, Greater Manchester- UK

Has 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 BXS Pilot & Mechanical Valve will move to the normal position 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 4.4 December 29, 2025
Surveillance Audit Due
November 1, 2028

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

exida Certification

Evaluating Assessor

Certifying Assessor

Certificate / Certificat / Zertifikat / 合格証

BIF 1307019 C001

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

BXS Pilot & Mechanical Valve

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 device meets *exida* criteria for Route 2_H.

IEC 61508 Failure Rates in FIT (1 failure / 10^9 hours)

Position 1 = Valve Body; Position 2 = Primary Operator; Position 3 = Secondary Operator

The failure rate must be determined for a combination of devices listed below.

Device Description	Position	λ_{SD}	λ_{SU}	λ_{DD}	λ_{DU}
IPV Integrated Pilot Valve	--	0	49	0	42
3/2 Valve	1	0	30	0	133
5/2 Valve	1	0	60	0	175
E1 Internal Pilot Inline	2	0	40	0	26
E2 Internal Pilot Inline	2	0	54	0	26
P1 Standard Air Pilot	2	0	36	0	26
P2 Side Air Pilot	2	0	54	0	26
P9 Air Latch Pilot Operator	2	0	106	0	26
M7 Plunger	2	0	3	0	13
M13 Roller Cam Ball	2	0	3	0	13
00 Spring Return	3	0	0	0	4
02 Spring Return	3	0	0	0	4
E1 Internal Pilot Inline	3	0	0	0	66
E2 Internal Pilot Inline	3	0	0	0	81
P1 Standard Air Pilot	3	0	0	0	62
P2 Side Air Pilot	3	0	0	0	81
M7 Plunger	3	0	0	0	16
M13 Roller Cam Ball	3	0	0	0	16
M3 Push / Pull Button	3	0	0	0	17
M15 Pull Button Spring Return	3	0	0	0	36
M16 Pull Button Spring Return with Latch	3	0	0	0	36
M17 Pull Button Spring Return Padlockable	3	0	0	0	36

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 subsystem 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 13/07-019 R002 V4R4 (and later)

Safety Manual: SIL-SM.0005 Rev 3 BXS Spool Valves

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