



# Certificate / Certificat Zertifikat / 合格証

DEL 1804039 C004

exida hereby confirms that the:

## High Performance Butterfly Valves

**DeVal Flow Controls Private Ltd.  
Pune - India**

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<sub>H</sub> Device**

**PFH/PFD<sub>avg</sub> and Architecture Constraints  
must be verified for each application**

### Safety Function:

The Butterfly Valve will move to the designed safe position per the actuator design 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 3.0 July 18, 2022  
Surveillance Audit Due  
August 01, 2025



Evaluating Assessor

Certifying Assessor

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**Systematic Capability: SC 3 (SIL 3 Capable)**

**Random Capability: Type A, Route 2<sub>H</sub> Device**

**PFH/PFD<sub>avg</sub> and Architecture Constraints must be verified for each application**

**Triple Offset &  
Double Offset High  
Performance  
Butterfly 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<sub>H</sub>.

**Versions:**

Valve Type	Bore Sizes	Pressure Class
<b>Triple Offset Butterfly Valve:</b>		
Series 4A (Wafer), 4B (Lug) & 4C (Flange)	3" to 48"	150#
Series 4D (Wafer), 4E (Lug) & 4F (Flange)	3" to 24"	300#
Series 4G (Wafer), 4H (Lug) & 4J (Flange)	6" to 24"	600#
<b>Double Offset Butterfly Valve:</b>		
Series 44 (Wafer), 45 (Lug) & 46 (Flange)	2" to 36"	150#
Series 47 (Wafer), 48 (Lug) & 49 (Flange)	2" to 24"	300#

**IEC 61508 Failure Rates in FIT\***

Static Application – Clean Service	$\lambda_{SD}$	$\lambda_{SU}$	$\lambda_{DD}$	$\lambda_{DU}$
Full Stroke	0	0	0	469
Tight Shut-Off	0	0	0	1075
Open on Trip	0	107	0	362

\* FIT = 1 failure / 10<sup>9</sup> hours

**SIL Verification:**

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFH/PFD<sub>avg</sub> 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:** DEL 18/04-039 R010 V2R1 (or later)

**Safety Manual:** DEL-SM:18/04-039 R004A & R004B (or later)



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