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## Certificate of Conformity to IEC 61508 Safety Integrity Level (SIL) 1/2

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### **Functional Safety of Safety-Related Programmable Electronic Systems**

The **SPX Flow Copes-Vulcan, DSCV-SA / SR** has been assessed and is considered capable for use in a low demand Safety Function up to SIL 1 or SIL 2 (depending on the Proof Test Interval (PTI) implemented), with regard to random failure rate and architectural constraint, for failsafe closing on loss of electrical supply (SF-1) and failsafe closing on loss of pneumatic supply (SF-2).

The assessment was carried out to determine compliance with IEC 61508 with regards to:

- Random Hardware Failure (Predicted failure rate per year);
- Architectural Constraint (Type A, SFF 60%-90%).

The assessment was based on the assumptions, data provided, and recommendations given in:

- **ESC Ltd Report: J013\_SV001 rev.2;**
- **ESC Ltd Report: J013\_SM001 rev.1.**

The product was assessed against the following failure modes:

- Failure to close on electrical de-energisation;
- Failure to close on loss of pneumatic supply.

The system assessed comprises the following modules/sub-elements:

- Loss of Electrical Supply (SF-1);
- Loss of Pneumatic Supply (SF-2).

The assessment results are as follows:

Module	Failure mode	Random Hardware Failure (/hr)	Architectural Constraint	SIL Capability
Loss of Electrical Supply (SF-1) (Case 1 – 12 month PTI)	Failure to close	7.27E-04	82%	2
Loss of Electrical Supply (SF-1) (Case 2 – 36 month PTI)	Failure to close	2.18E-03	82%	2
Loss of Pneumatic Supply (SF-2) (Case 1 – 12 month PTI)	Failure to close	2.99E-03	79%	2
Loss of Pneumatic Supply (SF-2) (Case 2 – 36 month PTI)	Failure to close	8.97E-03	79%	1

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Assessment Date: June 2019, valid to June 2021

Certificate: J013\_CT001 rev. 3

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