FUNCTIONAL SAFETY PRODUCT CERTIFICATE

No.: CS2025PV17020108000097

NAME AND ADDRESS OF THE APPLICANT

Chongqing Chuanyi Control Valve Co.,Ltd.
Longfeng One Village, Beibei District, Chongqing

NAME AND ADDRESS OF THE MANUFACTURER

Chongqing Chuanyi Control Valve Co.,Ltd.
Longfeng One Village, Beibei District, Chongqing

NAME AND ADDRESS OF THE FACTORY

Chongqing Chuanyi Control Valve Co.,Ltd.
No.879 Caihe RD.,Caijiagang Town,Beibei District,Chongqing

PRODUCT TRADEMARK

NAME, MODEL AND SPECIFICATON

Fork Type Pneumatic Actuator AW Series

THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS

IEC 61508-1:2010、IEC 61508-2:2010

This is to certify that the products mentioned above have met the requirement of certification rules:

SITIIAS-RJ03-02 B/2: Implemented rules for certification of functional safety products
Product information detailed in the attachment.

CERTIFICATION MODE

Functional safety assessment + Initial industry inspection + Supervision after obtaining the certificate

Date of Issued: October. 22, 2025 **Date of expiry:** October. 21, 2030

Date of original certification: October. 22, 2025

Validity of this certificate is subject to positive result of the regular follow up inspection by issuing certification body until the expiry date.The specific information of this certificate can be inquired through the official website of the issuing authority.

FS Approved SITIIAS Functional Safety

CNAS 中国认可 产品 PRODUCT CNAS C214-P

Authorized by : _____ **Date :** October. 22, 2025

Shanghai Inspection and Testing Institute of Instrumentation and Automation Systems Co.,Ltd.

Address: 103 Caobao Road Shanghai, P.R. of China, 200233
Tel: 86 21 64 [illegible]84 Website: www.sitias.com.cn

FUNCTIONAL SAFETY PRODUCT CERTIFICATE ANNEX

No.: CS2025PV17020108000097

Product: Fork Type Pneumatic Actuator **Model:** AW Series

Description: AW Series Fork Type Pneumatic Actuator:

The scope of product is detailed in the table below:

AW Series Fork Type Pneumatic Actuator Model Coverage

AWabcde	Option
AW represents the series of Fork Type Pneumatic Actuator	/
a represents the size	06, 08, 10, 12, 16, 18, 22, 24, 27, 30, 32, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 100, 110, 120, 130, 140, 150
b represents the type, which can be Double Acting or Single Acting	D: Double Acting, S: Single Acting
c represents the air failure action, divided into Double Acting, Fail Closed, and Fail Open	0: Double Acting, R: Single acting with spring return for Fail-close, D: Single acting with spring return for Fail-open
d represents the spring specification	0: Double acting. 4: Single acting, spring for 400kP air supply pressure. 5: Single acting, spring for 500kP air supply pressure
e represents the housing type	F07, F10, F12, 1, 2, 3, 4, 5, 6, 7, 8

Safety function:

Safety function of Single Acting Fork Type Pneumatic Actuator: The spring force enables the valve to be closed or opened.

Safety function of Double Acting Fork Type Pneumatic Actuator: The pneumatic actuator enables the valve to be closed or opened.

Standards :

IEC 61508-1: 2010 Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 1: General Requirements

IEC 61508-2: 2010 Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 2: Requirements for electrical/electronic /programmable electronic safety-related systems

This attachment shall be used together with the certificate itself.

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FUNCTIONAL SAFETY PRODUCT CERTIFICATE ANNEX

No.: CS2025PV17020108000097

Product: Fork Type Pneumatic Actuator **Model:** AW Series

Safety Integrity Level (SIL): According to IEC 61508: 2010, the hardware safety integrity level is determined via route 1_H. AW Series Fork Type Pneumatic Actuator belongs to Type A safety related elements. In low demand operation mode, the safety integrity level reaches SIL 2 with its HFT (Hardware Fault Tolerance) = 0, and the safety integrity level reaches SIL 3 with its HFT = 1.

Model	AW Series(Single Acting)	AW Series(Double Acting)
λ_S	0.0	0.0
λ_{DU}	59.6	290.5
λ_{DD}	0.0	0.0
PFDavg(T_1=1Y)	2.61E-05	1.27E-03
SIL(HFT=0)	SIL2	SIL2
SIL(HFT=1)	SIL3	SIL3
Note: The failure rate unit is FIT, 1FIT=10^{-9}/h.		

Specification: Proof test and routine inspection should be performed according to Safety Manual.

Note:

1. Test Report Numbered 2025SPV16020114-000320 is the supporting document of this certificate. This certificate is valid only for products that are consistent with the certification documents and samples approved by SITIIAS. The documents are kept by SITIIAS.

This attachment shall be used together with the certificate itself.

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