



COMPLIANCE

with IEC EN 61508

Certificate No.: C-IS-722200015-01

CERTIFICATE OWNER: Jiangsu Flutech Control System Co., LTD
No. 15, Xihong Road,
Meicun Town,
Xinwu District,
Wuxi City,
Jiangsu Province
P.R. China

**WE HEREWITH CONFIRM THAT
THE AT SERIES PNEUMATIC ACTUATORS
MEET THE SIL REQUIREMENTS DETAILED IN THE ANNEXED TABLE
FOR THE SAFETY FUNCTION:**

“correct switching on demand (open to closed and closed to open), in low demand mode of operation”

Examination result: The above reported AT Series Pneumatic Actuators were found to meet the standard defined requirements of the safety levels detailed in the following table (T-IS-722200015-01) according to IEC EN 61508, under fulfillment of the conditions listed in the Report R-IS-722191632 Rev.1 dated May, 27th 2019 in its currently valid version, on which this Certificate is based

Examination parameters: Construction/Functional characteristics and reliability and availability parameters of the above mentioned AT Series Pneumatic Actuators

Official Report No.: R-IS-722191632 Rev.1

Expiry Date June, 24th 2022

Reference Standard IEC EN 61508:2010 Part 2, 4, 6, 7

Sesto San Giovanni, June, 25th 2019

TÜV ITALIA Srl



TÜV ITALIA Srl
Industry Service Division
Technical Manager

Paolo Marcone

SUMMARY TABLE
T – IS – 722200015-01

<i>E/EE/EP safety-related system (final element)</i>	AT Series Pneumatic Actuators Jiangsu Fluitech Control System Co., LTD
System type	Type A
Systematic Capability	SC3
Safety Function Definition	<i>Correct switching on demand (open to closed and closed to open), in low demand mode of operation</i>
Max SIL⁽¹⁾	SIL3
λ_{TOT}	8,497E-08
λ_{SD}	2,605E-08
λ_{SU}	2,876E-08
$\lambda_{DD,FST}^{(2)}$	1,864E-08
$\lambda_{DU,FPT}$	1,151E-08
β and β_D factor	10%
MRT	24 h
Hardware Safety Integrity	Route 2H
Systematic Safety Integrity	Route 2s
Remarks	
<i>(1) The Safety Integrity Level (SIL) of the entire Safety Instrumented Function (SIF) must be verified via a calculation of PFD_{AVG} considering the 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 the minimum hardware fault tolerance (HFT) requirements.</i>	
<i>(2) Considering an automatic Partial Stroke Testing</i>	

SIL classification according to Standard IEC EN 61508:2010 for AT Series Pneumatic Actuators produced by Jiangsu Fluitech Control System Co., LTD

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NOTE: The present table is integral part of the Document C-IS-722200015

Date: June, 24th 2019