Certificate

SIL/PL Capability

www.tuv.com
ID 0600000000

No.: 968/FSP 2935.00/25

Product tested	Pneumatic rack and pinion actuators for valves with safety function	**Certificate holder**	Air Torque S.p.A. Via dei Livelli di Sopra, 11 24060 Costa di Mezzate (BG) Italy
Type designation	AT - R&P aluminium series PT - R&P aluminium series SB/SC AT - R&P Stainless Steel series different variants see revision list		
Codes and standards	IEC 61508 parts 1-2:2010		EN 17955:2024 (non accred.)
Intended application	Safety function: Move attached valve to safe position The actuators are suitable for use in a safety instrumented system up to SIL 2 (low demand mode). Under consideration of the minimum required hardware fault tolerance HFT = 1 for the complete final element the actuator may be used up to SIL 3.		
Specific requirements	The instructions of the associated Installation, Operating and Safety Manual shall be considered.		

Summary of test results see back side of this certificate.

The issue of this certificate is based upon an evaluation in accordance with the Certification Program CERT FSP1 V3.0:2020 in its actual version, whose results are documented in Report No. 968/FSP 2935.00/25 dated 2025-07-17. This certificate is valid only for products, which are identical with the product tested. Issued by the certification body accredited by DAkkS according to DIN EN ISO/IEC 17065. The accreditation is only valid for the scope listed in the annex to the accreditation certificate D-ZE-11052-02-00.

TÜV Rheinland Industrie Service GmbH
Bereich Automation
Funktionale Sicherheit
Am Grauen Stein, 51105 Köln

Köln, 2025-08-18

Certification Body Safety & Security for Automation & Grid

Dipl.-Ing. (FH) Wolf Rückwart

TÜV Rheinland Industrie Service GmbH, Am Grauen Stein, 51105 Köln / Germany
Tel.: +49 221 806-1790, Fax: +49 221 806-1539, E-Mail: industrie-service@de.tuv.com

10/222 12. 12 E A4 ® TÜV, TUEV and TUV are registered trademarks. Utilisation and application requires prior approval.

www.fs-products.com
www.tuv.com

DAkkS Deutsche Akkreditierungsstelle D-ZE-11052-02-01

TÜVRheinland®
Precisely Right.

TÜVRheinland®
Precisely Right.

Holder: Air Torque SpA
Via dei Livelli di Sopra, 11
I – 24060 – Costa di Mezzate (BG)
Italy

Product tested: Pneumatic Rack & Pinion actuators series:
- AT/PT {Aluminium}
- SB/SC {Stainless Steel}

types:
Spring return {S} and Double acting {D}

Results of Assessment

Route of Assessment	2_H / 1_S
Type of Sub-system	Type A
Mode of Operation	Low Demand Mode High Demand Mode (up to 50 demands/year)
Utilization Rate	Low and High Utilization Rate
Hardware Fault Tolerance	HFT = 0
Systematic Capability	SC 3
Safety Function	Move attached valve to safe position

Type of Actuator	**λ_D**		**$PFD_{avg,1oo1}(T_1)$**	**$PFD_{avg,1oo2}(T_1)$**
Standard version S [A,S] *	2.70 E-08 / h	**27 FIT**	1.20 E-04	1.20 E-05
Standard version D [A,S] *	2.10 E-08 / h	**21 FIT**	9.35 E-05	9.35 E-06
Fast acting S [A,S] *	2.70 E-08 / h	**27 FIT**	1.20 E-04	1.20 E-05
Fast acting D [A,S] *	2.10 E-08 / h	**21 FIT**	9.35 E-05	9.35 E-06
R50/R100* S [A,S]	2.70 E-08 / h	**27 FIT**	1.20 E-04	1.20 E-05
R50/R100* D [A,S]	2.10 E-08 / h	**21 FIT**	9.35 E-05	9.35 E-06
FM fail mid [A]	3.30 E-08 / h	**33 FIT**	1.47 E-04	1.47 E-05
HCD S [A] *	3.20 E-08 / h	**32 FIT**	1.42 E-04	1.42 E-05
HCD D [A] *	2.80 E-08 / h	**28 FIT**	1.25 E-04	1.25 E-05
3P-3PD S [A] *	3.40 E-08 / h	**34 FIT**	1.51 E-04	1.51 E-05
3P-3PD D [A] *	3.20 E-08 / h	**32 FIT**	1.42 E-04	1.42 E-05
RC100 S [A]	3.40 E-08 / h	**34 FIT**	1.51 E-04	1.51 E-05
RC100 D [A]	3.00 E-08 / h	**30 FIT**	1.34 E-04	1.34 E-05

[A]: available in aluminium series; [S]: available in stainless steel series; *: also available in greater 90° variant
Assumptions for the calculations above: DC = 0 %, T_1 = 1 year, MRT = 72 h, β_{1oo2} = 10 %

Origin of failure rates
The stated failure rates are the result of an FMEDA acc. EN 17955, Annex C.
The stated failure rates do not release the end-user from collecting and evaluating application-specific reliability data.

Periodic Tests and Maintenance
The given values require periodic tests and maintenance as described in the Safety Manual.
The operator is responsible for the consideration of specific external conditions (e.g. ensuring of required quality of media, max. temperature, time of impact), and adequate test cycles.