Certificate

SIL/PL Capability

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No.: 968/FSP 2939.00/25

Product tested	Pneumatic and Hydraulic Scotch Yoke Compact Actuators	**Certificate holder**	Air Torque S.p.A. Via dei Livelli di Sopra, 11 24060 Costa di Mezzate (BG) Italy
Type designation	Types: AT-HDC — SR and AT-HDC — DA Sizes: 035, 045, 055, 065		
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 actuators 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 2939.00/25 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
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Am Grauen Stein, 51105 Köln

Köln, 2025-08-18

Certification Body Safety & Security for Automation & Grid

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TÜVRheinland®
Precisely Right.

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

Product tested: Pneumatic and Hydraulic
Scotch Yoke Compact Actuators
Types: AT-HDC — SR (spring return)
and AT-HDC — DA (double acting)
Sizes: 035, 045, 055, 065

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 SR	4.30 E-08 / h	**43 FIT**	1.91 E-04	1.91 E-05
Standard version SR + Jack Screw	4.60 E-08 / h	**46 FIT**	2.05 E-04	2.05 E-05
Standard version SR + Jack Screw Declutch	4.60 E-08 / h	**46 FIT**	2.05 E-04	2.05 E-05
Standard version SR + Hydraulic Pump	4.60 E-08 / h	**46 FIT**	2.05 E-04	2.05 E-05
Standard version SR + Damper	4.90 E-08 / h	**49 FIT**	2.18 E-04	2.18 E-05
Standard version DA	3.00 E-08 / h	**30 FIT**	1.34 E-04	1.34 E-05
Standard version DA + Jack Screw	3.30 E-08 / h	**33 FIT**	1.47 E-04	1.47 E-05
Standard version DA + Jack Screw Declutch	3.30 E-08 / h	**33 FIT**	1.47 E-04	1.47 E-05
Standard version DA + Hydraulic Pump	3.30 E-08 / h	**33 FIT**	1.47 E-04	1.47 E-05
Standard version DA + Damper	3.60 E-08 / h	**36 FIT**	1.60 E-04	1.60 E-05

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.