



Certificate no. TAI-FS-C-23-0006

WE HEREBY CERTIFY THAT

Product description PNEUMATIC RACK AND PINION SPRING RETURN AND DOUBLE ACTING ACTUATOR

Models SERIES HYTORK XL

Manufacturer EMERSON AUTOMATION SOLUTIONS
Valve Automation, Inc.
19200 Northwest Freeway
Houston, Texas 77065
USA

IS IN COMPLIANCE WITH THE REQUIREMENTS OF THE STANDARDS

IEC 61508 Parts 1–7:2010

AS RESULT OF THE ASSESSMENT ACCORDING TO THE PROVISION SET OUT IN THE ABOVE-MENTIONED STANDARDS

Summary Report no. TAI-FS-R-23-0014

Expiry date 06.02.2026

Issue date 07.02.2023

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07.02.2023, Monte Roberto (AN)

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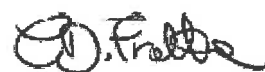
Ing. Crescenzo Di Fratta

Annex to certificate no. TAI-FS-C-23-0006

Type	A
HFT	0
Safety functions	<u>Spring return actuators:</u> 1. Delivery of a full stroke ($90^\circ \pm$ tolerance) driven by the spring, with power fluid exhausted from the cylinder through the control system <u>Double acting actuators:</u> 1. Delivery of a full stroke ($90^\circ \pm$ tolerance) driven by the piston of cylinder, powered by the specified medium working pressure
Mode of operation	Low Demand Mode

Random failure rates				
Configuration	Safety function	λ_{DU} [1/h]	λ_{DD} [1/h]	λ_s [1/h]
XL281, XL426, XL681, XL1127, XL1372 spring return - No PST	1	9,15E-08	0,00E+00	0,00E+00
XL281, XL426, XL681, XL1127, XL1372 spring return - With PST	1	8,23E-09	8,33E-08	0,00E+00
XL26, XL71, XL131, XL186, XL221 spring return - No PST	1	8,95E-08	0,00E+00	0,00E+00
XL26, XL71, XL131, XL186, XL221 spring return - With PST	1	8,05E-09	8,14E-08	0,00E+00
XL2586, XL4581 spring return - No PST	1	8,73E-08	0,00E+00	0,00E+00
XL2586, XL4581 spring return - With PST	1	7,86E-09	7,94E-08	0,00E+00
XL2586, XL4581 (with bottom stop option) spring return - No PST	1	9,39E-08	0,00E+00	0,00E+00
XL2586, XL4581 (with bottom stop option) spring return - With PST	1	8,45E-09	8,54E-08	0,00E+00
XL281, XL426, XL681, XL1127, XL1372 double acting - No PST	1	7,93E-08	0,00E+00	0,00E+00
XL281, XL426, XL681, XL1127, XL1372 double acting - With PST	1	7,13E-09	7,21E-08	0,00E+00
XL26, XL71, XL131, XL186, XL221 double acting - No PST	1	7,93E-08	0,00E+00	0,00E+00
XL26, XL71, XL131, XL186, XL221 double acting - With PST	1	7,13E-09	7,21E-08	0,00E+00

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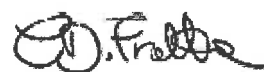
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Random failure rates				
Configuration	Safety function	λ_{DU} [1/h]	λ_{DD} [1/h]	λ_s [1/h]
XL2586, XL4581 double acting - No PST	1	7,51E-08	0,00E+00	0,00E+00
XL2586, XL4581 double acting - With PST	1	6,76E-09	6,83E-08	0,00E+00
XL2586, XL4581 (with bottom stop option) double acting - No PST	1	8,17E-08	0,00E+00	0,00E+00
XL2586, XL4581 (with bottom stop option) double acting - With PST	1	7,35E-09	7,43E-08	0,00E+00

Systematic capability	3 (Route 1s applied)			
Architectural constraints	Route 1_H:	Applied	Route 2_H:	Applied
	The product can be used in: <ul style="list-style-type: none"> • single channel configuration: <ul style="list-style-type: none"> ○ up to SIL 2 without external diagnostic tests ○ up to SIL 3 considering external diagnostic tests • double channel configuration: up to SIL 3 			

- Remarks:**
- For further details, including environmental conditions, limitations of use, lifetime, failure rates traceability, mean repair times, common cause factors and systematic capability constraints, make reference to Safety Manual DOC.SILM.HXL.EN

END OF CERTIFICATE



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