



Certificate no. TAI-FS-C-23-0025

WE HEREBY CERTIFY THAT

Product description HYDRAULIC SCOTCH-YOKE SPRING RETURN AND
DOUBLE ACTING ACTUATOR

Models BETTIS™ SERIES E

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-23-0052

Expiry date 20.04.2026

Issue date 21.04.2023

TÜV AUSTRIA ITALIA - Blu Solutions s.r.l.
21.04.2023, Monte Roberto (AN)

Ing. Crescenzo Di Fratta

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Annex to certificate no. TAI-FS-C-23-0025

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]
Bettis™ series E spring return - No PST	1	3,22E-08	0,00E+00	0,00E+00
Bettis™ series E spring return - With PST	1	2,90E-09	2,93E-08	0,00E+00
Bettis™ series E double acting - No PST	1	7,16E-08	0,00E+00	0,00E+00
Bettis™ series E double acting - With PST	1	6,44E-09	6,52E-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 VA001-SMA-13E

END OF CERTIFICATE

TÜV AUSTRIA ITALIA - Blu Solutions s.r.l.
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