

Certificate no. TAI-FS-C-22-0045

WE HEREBY CERTIFY THAT

Product description PNEUMATIC COMPACT HELICAL SLOT SPRING RETURN
AND DOUBLE ACTING ACTUATOR

Models SERIES TPS, TPS-QA, TPD

Manufacturer BIFFI ITALIA S.r.l.
Strada Biffi 165
I-29017 Fiorenzuola d'Arda (PC)

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-22-0091

Expiry date 25.09.2025

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TÜV AUSTRIA ITALIA - Blu Solutions s.r.l.
26.09.2022, Monte Roberto (AN)

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Cod. Id. CEE IT02217380423 REA AN n. 170070
A socio unico, soggetta a controllo e coordinamento di:
TÜV AUSTRIA HOLDING AG, Deutschstrasse 10, 1230, Vienna, Austria
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Annex to certificate no. TAI-FS-C-22-0045

Type	A
HFT	0
Safety functions	<u>Spring return actuators:</u> 1. Delivery of a full stroke (90° ± 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° ± tolerance) driven by the piston of cylinder, powered by the specified medium working pressure
Mode of operation	Low Demand Mode

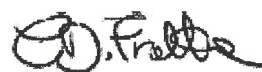
Random failure rates				
Configuration	Safety function	λ_{DU} [1/h]	λ_{DD} [1/h]	λ_s [1/h]
TPS - No PST	1	5,24E-08	0,00E+00	0,00E+00
TPS - With PST	1	4,72E-09	4,77E-08	0,00E+00
TPS-QA - No PST	1	5,34E-08	0,00E+00	0,00E+00
TPS-QA - With PST	1	4,81E-09	4,86E-08	0,00E+00
TPD - No PST	1	1,01E-07	0,00E+00	0,00E+00
TPD - With PST	1	9,13E-09	9,24E-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 SM 021, SM 022

END OF CERTIFICATE



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