



Certificate no. TAI-FS-C-23-0023 Rev. 01

WE HEREBY CERTIFY THAT

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

Models BETTIS™ SERIES G
BIFFI™ SERIES FG/FGC/FGH/FGHC

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-23-0048 Rev. 01

Expiry date 16.04.2026

Issue date 08.05.2024

TUV AUSTRIA ITALIA
08.05.2024, Monte Roberto (AN)

Ing. Crescenzo Di Fratta

TUV AUSTRIA ITALIA S.p.A.
Via del Commercio, 6/A 60030 Monte Roberto (AN)
+39 0731 22781 - info@tuvaustraliaitalia.com - tuvaustraliaitalia@pec.it
C.F./P. IVA IT01055750333 - Cap. Soc. i.v. € 400.000,00 - REA AN n. 211030
Società a socio unico, soggetta a controllo e coordinamento di:
TÜV AUSTRIA HOLDING AG Deutschstrasse 10, A-1230, Vienna, Austria
www.tuvaustraliaitalia.com

Annex to certificate no. TAI-FS-C-23-0023 Rev. 01

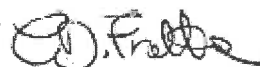
Type	A
HFT	0
Safety functions	<u>Spring return actuators:</u> 1. Delivery of a full stroke ($90^\circ \pm$ tolerance) driven by the spring, with power fluid exhausted from the cylinder through the control system <u>Double acting actuators:</u> 1. Delivery of a full stroke ($90^\circ \pm$ tolerance) driven 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 G spring return, Biffi™ series FG/FGC/FGH/FGHC spring return - No PST	1	3,64E-08	0,00E+00	0,00E+00
Bettis™ series G spring return, Biffi™ series FG/FGC/FGH/FGHC spring return - With PST	1	3,28E-09	3,32E-08	0,00E+00
Bettis™ series G spring return "tandem", Biffi™ series FG/FGC/FGH/FGHC spring return "tandem" - No PST	1	3,65E-08	0,00E+00	0,00E+00
Bettis™ series G spring return "tandem", Biffi™ series FG/FGC/FGH/FGHC spring return "tandem" - With PST	1	3,28E-09	3,32E-08	0,00E+00
Bettis™ series G double acting, Biffi™ series FG/FGC/FGH/FGHC double acting - No PST	1	4,17E-08	0,00E+00	0,00E+00
Bettis™ series G double acting, Biffi™ series FG/FGC/FGH/FGHC double acting - With PST	1	3,75E-09	3,79E-08	0,00E+00
Bettis™ series G double acting "tandem", Biffi™ series FG/FGC/FGH/FGHC double acting "tandem" - No PST	1	4,19E-08	0,00E+00	0,00E+00
Bettis™ series G double acting "tandem", Biffi™ series FG/FGC/FGH/FGHC double acting "tandem" - With PST	1	3,77E-09	3,81E-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 ES 47_G, SM 035

END OF CERTIFICATE



TUV AUSTRIA ITALIA
08.05.2024, Monte Roberto (AN)

Ing. Crescenzo Di Fratta

TUV AUSTRIA ITALIA S.p.A.
 Via del Commercio, 6/A 60030 Monte Roberto (AN)
 +39 0731 22781 - info@tuvaustraiitalia.com - tuvaustraiitalia@pec.it
 C.F./P. IVA IT01055750333 - Cap. Soc. i.v. € 400.000,00 - REA AN n. 211030
 Società a socio unico, soggetta a controllo e coordinamento di:
 TÜV AUSTRIA HOLDING AG Deutschstrasse 10, A-1230, Vienna, Austria
 www.tuvaustraiitalia.com