



ZERTIFIKAT | CERTIFICATE | CERTIFICAT | CERTIFICADO | СЕРТИФИКАТ | شهادة | 证书 | 인증서

**Certificate no. TAI-FS-C-23-0031**

WE HEREBY CERTIFY THAT

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

**Models** BIFFI™ SERIES ALGAS, ALGAS-QA, ALGA  
BETTIS™ SERIES FHS, FHS-QA, FHD

**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**

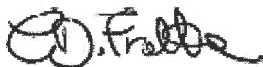
AS RESULT OF THE ASSESSMENT ACCORDING TO THE PROVISION SET OUT IN THE ABOVE-MENTIONED STANDARDS

**Summary Report no. TAI-FS-R-23-0063**

**Expiry date 01.05.2026**

**Issue date 02.05.2023**

TÜV AUSTRIA ITALIA - Blu Solutions s.r.l.  
02.05.2023, Monte Roberto (AN)

  
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Cod. Id. CEE IT02217380423 REA AN n. 170070  
A socio unico, soggetta a controllo e coordinamento di:  
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## Annex to certificate no. TAI-FS-C-23-0031

<b>Type</b>	A
<b>HFT</b>	0
<b>Safety functions</b>	<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
<b>Mode of operation</b>	Low Demand Mode

Random failure rates				
Configuration	Safety function	$\lambda_{DU}$ [1/h]	$\lambda_{DD}$ [1/h]	$\lambda_s$ [1/h]
Biffi™ series ALGAS, Bettis™ series FHS - No PST	1	1,12E-08	0,00E+00	0,00E+00
Biffi™ series ALGAS, Bettis™ series FHS - With PST	1	1,01E-09	1,02E-08	0,00E+00
Biffi™ series ALGAS-QA, Bettis™ series FHS-QA - No PST	1	1,22E-08	0,00E+00	0,00E+00
Biffi™ series ALGAS-QA, Bettis™ series FHS-QA - With PST	1	1,10E-09	1,11E-08	0,00E+00
Biffi™ series ALGA, Bettis™ series FHD - No PST	1	1,19E-08	0,00E+00	0,00E+00
Biffi™ series ALGA, Bettis™ series FHD - With PST	1	1,07E-09	1,09E-08	0,00E+00

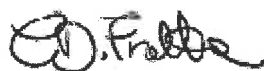
<b>Systematic capability</b>	3 (Route 1s applied)			
<b>Architectural constraints</b>	<b>Route 1<sub>H</sub>:</b>	Applied	<b>Route 2<sub>H</sub>:</b>	Applied
	The product can be used in: <ul style="list-style-type: none"> <li>• single channel configuration:                             <ul style="list-style-type: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

**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 Manuals SM 018, SM 018-FHS, SM 001, SM 001-FHD

END OF CERTIFICATE

TÜV AUSTRIA ITALIA - Blu Solutions s.r.l.  
02.05.2023, Monte Roberto (AN)



Ing. Crescenzo Di Fratta