



C E R T I F I C A T E

Certificate no. 17-SIL-0010008-33-TIC

Product description WE HEREBY CERTIFY THAT
**HYDRAULIC COMPACT HELICAL SPLINE SPRING RETURN
AND DOUBLE ACTING ACTUATORS**

Models Series THS, THS-QA, THD

Manufacturer BIFFI ITALIA S.r.l.
Strada Biffi 165 – 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. RC-1219-SIL-TIC-PC-0010008-17-27

Expiry date 18.12.2022

Note

This certificate is issued upon the request of the manufacturer as voluntary certification; it does not include the production surveillance.
This certificate does not allow the manufacturer to use the safety mark of TÜV INTERCERT.



Reggio Emilia, 19.12.2019

Dipl. Ing. Feridoon Sergizzarea
TÜV INTERCERT Certification Body



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ANNEX to Certificate no. 17-SIL-0010008-33-TIC

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]
THS - No PST	1	5,54E-08	0,00E+00	0,00E+00
THS - With PST	1	4,98E-09	5,04E-08	0,00E+00
THS-QA - No PST	1	6,04E-08	0,00E+00	0,00E+00
THS-QA - With PST	1	5,43E-09	5,50E-08	0,00E+00
THD - No PST	1	6,75E-08	0,00E+00	0,00E+00
THD - With PST	1	6,08E-09	6,14E-08	0,00E+00

Systematic capability	3 (Route 1 _S 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 029, SM 030.

END OF CERTIFICATE

Reggio Emilia, 19.12.2019


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