



Certificate no. TAI-FS-C-24-0086

WE HEREBY CERTIFY THAT

Product description

Hydraulic bar yoke quarter turn spring return and double acting actuator

Models

Series BYHS, BYHS-FA, BYH

Manufacturer

**DVG Automation S.p.A.
Via Gabriele Rossetti 2
I-29016 Cortemaggiore (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

Assessment report no. TAI-FS-R-24-0157

Expiry date 02.12.2027

Issue date 03.12.2024

TUV AUSTRIA ITALIA
03.12.2024, Monte Roberto (AN)

Ing. Crescenzo Di Fratta

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TÜV AUSTRIA HOLDING AG Deutschstrasse 10, A-1230, Vienna, Austria
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Annex to certificate no. TAI-FS-C-24-0086

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]
Series BYHS - No PST	1	1,14E-08	0,00E+00	0,00E+00
Series BYHS - With PST	1	1,03E-09	1,04E-08	0,00E+00
Series BYHS-FA (with 1 QEV) - No PST	1	1,24E-08	0,00E+00	0,00E+00
Series BYHS-FA (with 1 QEV) - With PST	1	1,12E-09	1,13E-08	0,00E+00
Series BYHS-FA (with 2 QEVs in 2oo2) - No PST	1	1,34E-08	0,00E+00	0,00E+00
Series BYHS-FA (with 2 QEVs in 2oo2) - With PST	1	1,21E-09	1,22E-08	0,00E+00
Series BYH - No PST	1	2,75E-08	0,00E+00	0,00E+00
Series BYH - With PST	1	2,47E-09	2,50E-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: - single channel configuration: - 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 SCTD-SM-BYHS-01, SCTD-SM-BYH-01

END OF CERTIFICATE

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