



**Certificate no. TAI-FS-C-21-0037**

WE HEREBY CERTIFY THAT

**Product description** PNEUMATIC RACK AND PINION SPRING RETURN ACTUATOR  
**Models** SERIES RAM  
**Manufacturer** SERVOVALVE S.p.A.  
Via Giotto 29  
I-20145 Milano (MI)

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-21-0073**

**Expiry date 14.04.2024**

**Issue date 15.04.2021**

TÜV AUSTRIA ITALIA - Blu Solutions s.r.l.  
15.04.2021, Monte Roberto (AN)

Page 1 of 2

Ing. Crescenzo Di Fratta

## Annex to certificate no. TAI-FS-C-21-0037

<b>Type</b>	A
<b>HFT</b>	0
<b>Safety functions</b>	1. Delivery of a full stroke (90° ± tolerance) driven by the spring, with power fluid exhausted from the cylinder through the control system
<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]
RAM - No PST	1	4,09E-08	0,00E+00	0,00E+00
RAM - With PST	1	3,68E-09	3,72E-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 Manual SM-03.

*END OF CERTIFICATE*

TÜV AUSTRIA ITALIA - Blu Solutions s.r.l.  
15.04.2021, Monte Roberto (AN)

Page 2 of 2



*Ing. Crescenzo Di Fratta*

**TÜV AUSTRIA ITALIA - Blu Solutions s.r.l.**  
 Sede operativa: Via dell'Industria, 14 – 25030 Erbusco - Brescia, Italy  
 Phone +39 030 9821049 Fax +39 030 9822253 [info.bs@tuvaustraitalia.com](mailto:info.bs@tuvaustraitalia.com)  
 Sede legale: Via del Commercio, 6/A - 60030 Monte Roberto - Ancona, Italy  
 Cap. Soc. i.v. EUR 10.000,00; R.I. Ancona – C.F. – P. IVA 02217380423  
 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  
[www.tuvaustraitalia.com](http://www.tuvaustraitalia.com) [www.tuv.at](http://www.tuv.at)