

# CERTIFICATE

This certifies that the company

**Actuatech S.p.A.**  
**Via San Lorenzo, 70**  
**25069 Villa Carcina (BS)**  
**Italy**

Is authorized to provide the product mentioned below

Description of product: **Pneumatic scotch-yoke spring return and double acting actuator series GS, GD**

In accordance with: **EN 61508:2010 Parts 1, 2, 3, 4, 5, 6, 7**

Registration No 20 20294 01  
Test Report No PS-20294-20-L  
File reference 20294-01

A handwritten signature in black ink, appearing to read "Marco Cenci".

TÜV NORD Italia S.r.l. (TÜV NORD Group)  
Via Turati, 70 - 20023 Cerro Maggiore (MI)



[www.tuev-nord.it](http://www.tuev-nord.it)

Validity  
from 2020-07-04  
until 2023-07-04

Cerro Maggiore, 2020-07-04  
[prodotto@tuev-nord.it](mailto:prodotto@tuev-nord.it)

*Please also pay attention to the information stated overleaf*

# ANNEX

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To Certificate-Nr. 20 20294 01

<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]
GS - No PST	1	3,84E-08	0,00E+00	0,00E+00
GS - With PST	1	3,46E-09	3,50E-08	0,00E+00
GD - No PST	1	6,17E-08	0,00E+00	0,00E+00
GD - With PST	1	5,55E-09	5,61E-08	0,00E+00

<b>Systematic capability</b>	3 (Route 1 <sub>s</sub> 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 SMA201701.