



# C E R T I F I C A T E

**Certificate no. 17-SIL-0010009-22-TIC**

WE HEREBY CERTIFY THAT

**Product description** HYDRAULIC SCOTCH YOKE QUARTER TURN SPRING RETURN ACTUATORS

**Models** SERIES QTHS, QTHS-FA

**Manufacturer** DVG AUTOMATION S.p.A.  
Via G. Rossetti 2 - 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

**Summary Report no. RC-1118-SIL-TIC-PC-0010009-17-36**

**Expiry date 20.11.2021**

**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, 21.11.2018

  
Dipl. Ing. Feridoon Sergizzarea  
TÜV INTERCERT Certification Body



# C E R T I F I C A T E

## ANNEX to Certificate no. 17-SIL-0010009-22-TIC

Type	A
HFT	0
Safety functions	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
Mode of operation	Low Demand Mode

Random failure rates				
Configuration	Safety function	$\lambda_{DU}$ [1/h]	$\lambda_{DD}$ [1/h]	$\lambda_S$ [1/h]
QTHS - No PST	1	2,64E-08	0,00E+00	0,00E+00
QTHS - With PST	1	2,38E-09	2,40E-08	0,00E+00
QTHS-FA (with 1 QEV) - No PST	1	2,74E-08	0,00E+00	0,00E+00
QTHS-FA (with 1 QEV) - With PST	1	2,47E-09	2,49E-08	0,00E+00
QTHS-FA (with 2 QEVs in 2oo2) - No PST	1	2,84E-08	0,00E+00	0,00E+00
QTHS-FA (with 2 QEVs in 2oo2) - With PST	1	2,56E-09	2,58E-08	0,00E+00

Systematic capability	3 (Route 1 <sub>S</sub> applied)			
Architectural constraints	Route 1 <sub>H</sub> :	Applied	Route 2 <sub>H</sub> :	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 SCTD-SM-QTHS-01.

END OF CERTIFICATE

Reggio Emilia, 21.11.2018

  
Dipl. Ing. Ferdinando Sergizzarea  
TÜV INTERCERT Certification Body