

CERTIFICATE ■ CERTIFICATO ■ ZERTIFIKAT ■ SERTIFIKA ■ CERTIFICADO ■ گواهینامه ■ ΠΙΣΤΟΠΟΙΗΤΙΚΟ ■ 証明書 ■ 証明書 ■ 인증서



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

**Certificate no.** 16-SIL-0010018-34-TIC

WE HEREBY CERTIFY THAT

**Product description** ELECTRO-HYDRAULIC DOUBLE ACTING ACTUATORS

**Models** SERIES EH/D

**Manufacturer** Rotork Controls, Inc.  
675 Mile Crossing Blvd.  
Rochester, NY 14624, United States of America

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

**Report no.** RC-0619-514-SIL-TIC-PC-0010018-16-30

**Expiry date** 11.06.2022

**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, 12.06.2019

Dipl. Ing. Ferdinando Sergizzarea  
TÜV INTERCERT Certification Body



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

## ANNEX to Certificate no. 16-SIL-0010018-34-TIC

Type	A				
HFT	0				
Safety functions	1. Delivery of a full stroke driven by the piston of cylinder, powered by the specified medium working pressure				
Mode of operation	Low Demand Mode				
<b>Random failure rates</b>					
Circuit diagram	$\lambda_D$ [1/h]	$\lambda_{DD(PS)}$ [1/h]	PFD <sub>AVG</sub> (TI=12 m, MRT=24 h)	PFD <sub>AVG</sub> (TI=12 m, TI <sub>b</sub> =1 m, MRT=24 h)	PFD <sub>AVG</sub> (TI=12 m, TI <sub>b</sub> =3 m, MRT=24 h)
85692	1,75E-06	1,67E-06	3,39E-03	6,48E-04	1,15E-03
85693	1,10E-06	1,08E-06	4,89E-04	1,27E-04	1,93E-04
85694	1,10E-06	1,08E-06	4,89E-04	1,27E-04	1,93E-04
85695 (with Sigma Valves QEV)	1,13E-06	1,12E-06	6,48E-04	1,42E-04	2,34E-04
85695 (with Bifold Fluidpower QEV15 or QEV50)	1,15E-06	1,13E-06	7,21E-04	3,58E-04	4,24E-04
HS24259-02	1,75E-06	1,67E-06	3,39E-03	6,48E-04	1,15E-03
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:	<ul style="list-style-type: none"> <li>Modifications of the schemes, which do not involve the safety function, do not impair the validity of the present certificate.</li> <li>The above values of PFD<sub>AVG</sub> are calculated for MRT=24 h and Proof Test Coverage=100%. For other values of MRT, TI, TI<sub>PS</sub> and/or non-perfect Proof Test, the PFD<sub>AVG</sub> values must be re-calculated.</li> <li>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-EH-B-02-E.</li> </ul>				

END OF CERTIFICATE

Reggio Emilia, 12.06.2019

  
 Dipl. Ing. Feridoon Sergizzarea  
 TÜV INTERCERT Certification Body