

**Certificate of Conformity No.: 28715150-1**

**Manufacturer:** Biffi Italia S.r.l.  
 Loc. Caselle S. Pietro  
 I-29017 Fiorenzuola d'Arda (PC)

**Specifications:** IEC 61508-1÷7:2010

**Product:** Spring Return Direct Gas Actuator

**Type:** Series GIGS

**RESULT:**

As per the TÜV Rheinland Italia Report No. FS 28715150-1 Rev. 0, we declare that the product meets the below requirements:

**IEC 61508: 2010, part 1 to 7**

**Functional Safety of electrical/electronic/programmable electronic safety related systems; Type A, Low Demand Mode, HFT=0**

Safety Action	$\lambda_D$ [1/h]	$\lambda_{DD(PS)}$ [1/h]	Systematic Capability
Close / Open	2,28E-08	2,07E-08	3

The above values are compatible with SIL 3.

For SFF values with external diagnostic tests, carried out according to definition 3.8.7 of IEC 61508-4, see what written in the Safety Manual.

The requirements of minimum hardware fault tolerance (HFT) according to table 6 of IEC 61511-1 have to be observed.

**Expiry date: 2018-07-31**

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Location **Milan**  
 Date **2015-07-31**



Attachment 1 to  
 Certificate of Conformity No.: 28715150-1



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		Test Interval Frequency (months)				
		6	12	24	36	48
Partial Stroke frequency (months)	1	1,30E-05	1,80E-05	2,80E-05	3,79E-05	4,79E-05
	2	2,05E-05	2,55E-05	3,54E-05	4,54E-05	5,54E-05
	3	2,80E-05	3,29E-05	4,29E-05	5,29E-05	6,29E-05
	6		5,54E-05	6,53E-05	7,53E-05	8,53E-05
	9				9,77E-05	
	12			1,10E-04	1,20E-04	1,30E-04

PFD<sub>AVG</sub> values according to IEC 61508 for different values of TI and TI<sub>PS</sub>

Test Interval Frequency (months)				
6	12	24	36	48
5,04E-05	1,00E-04	2,00E-04	3,00E-04	3,99E-04

PFD<sub>AVG</sub> values according to IEC 61508 for different values of TI (no Partial Stroke Test)

NOTES:

- 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.
- The PFD<sub>AVG</sub> values including Partial Stroke Test are calculated considering the use of a commercial automatic Partial Stroking Test System: for further details, see the Safety Manual.

-----End report

