

Certificate

The Certification Body RWTÜV Italia S.r.l. hereby certifies

PIBIVIESSE S.p.A.

Via Bergamina, 24
I-20014 Nerviano (MI)

That the product

**Top Entry Ball Valves
Series T1, T3**

Meets the below mentioned requirements:

IEC 61508: 2000, part 1 to 7

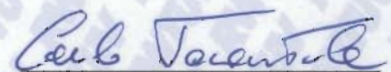
Functional Safety of electrical/electronic/programmable electronic safety related systems; Type A, Low Demand Mode

λ_s [1/h]	λ_{du} [1/h]	$\lambda_{dd(ps)}$ [1/h]	SFF (Partial Stroke Test)	SFF (No Partial Stroke Test)
$4,66 \cdot 10^{-7}$	$1,37 \cdot 10^{-8}$	$3,44 \cdot 10^{-9}$	99,2 %	96,4 %

PFD_{AVG} values for different values of TI and TI_{ps}: see Annex 1

As per these values, based on RWTÜV Assessment Report No. 233J04001/B in the valid version, the Pibiviesse Top Entry Ball Valves can be used up to SIL 3 as a single device.

Date 2006-07-31


Carlo Tarantola

Certificate No. 233J04001/B
Expiry date: 2009-06-30



Annex 1 to Certificate

PIBIVIESSE S.p.A.

Via Bergamina, 24
I-20014 Nerviano (MI)

Top Entry Ball Valves
Series T1, T3

		Proof Test Interval Frequency (months)					
		6	12	24	36	48	60
Partial Stroke frequency (months)	1	1,30E-05	2,05E-05	3,56E-05	5,06E-05	6,57E-05	8,08E-05
	2	1,80E-05	2,55E-05	4,06E-05	5,57E-05	7,07E-05	8,58E-05
	3	2,30E-05	3,05E-05	4,56E-05	6,07E-05	7,57E-05	9,08E-05
	6	3,81E-05	4,56E-05	6,07E-05	7,57E-05	9,08E-05	1,06E-04
	9		6,07E-05	7,57E-05	9,08E-05	1,06E-04	1,21E-04
	12			9,08E-05	1,06E-04	1,21E-04	1,36E-04

PFD_{AVG} values (with Partial Stroke Test)

Proof Test Interval Frequency (months)					
6	12	24	36	48	60
3,81E-05	7,57E-05	1,51E-04	2,26E-04	3,02E-04	3,77E-04

PFD_{AVG} values (without Partial Stroke Test)

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