



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

**Certificate no.** 17-SIL-0010052-01-TIC

WE HEREBY CERTIFY THAT

**Product description** BOLTED SIDE ENTRY TRUNNION MOUNTED BALL VALVES  
SERIES B4, B5, B7  
**Models** (including models B4+, B5+, B4B, B4C, B4D, B71, D1, B4L, B71L, B4P, B4S, B71S, B4SL, B5, B5R, B5UM, B7B, D2, B5L, B7BL, B5P, B5S, B7BS, B5SL)  
**Manufacturer** CAMERON ITALY S.r.l.  
Grove Facility  
Via Italo Betto 11 - 27058 Voghera PV



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-0917-SIL-TIC-PC-0010052-17-02

**Expiry date** 16.10.2020

**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, 17.10.2017

Eng. Andrea Vivi

TÜV INTERCERT Certification Body

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

ANNEX to Certificate no. 17-SIL-0010052-01-TIC

Type	A
HFT	0
Safety functions	<ol style="list-style-type: none"> <li>1. Close / Open upon the demand of the actuation system</li> <li>2. Close upon the demand of the actuation system, with inline tightness when in closed position</li> </ol>
Mode of operation	Low Demand Mode

Random failure rates				
Configuration	Safety function	$\lambda_{DU}$ [1/h]	$\lambda_{DD}$ [1/h]	$\lambda_S$ [1/h]
Self-relieving - No PST	1	6,59E-08	0,00E+00	0,00E+00
Self-relieving - With PST	1	6,53E-09	5,94E-08	0,00E+00
Self-relieving - No PST	2	8,53E-08	0,00E+00	0,00E+00
Self-relieving - With PST	2	2,59E-08	5,94E-08	0,00E+00
Double piston effect - No PST	1	6,59E-08	0,00E+00	0,00E+00
Double piston effect - With PST	1	6,53E-09	5,94E-08	0,00E+00
Double piston effect - No PST	2	7,71E-08	0,00E+00	0,00E+00
Double piston effect - With PST	2	1,77E-08	5,94E-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:**

- Self-relieving configuration: both upstream and downstream seats shall be of self-relieving type (i.e. single barrier in the flow direction)
- Double piston effect configuration: at least downstream seat shall be of double piston effect type (i.e. double barrier in the flow direction)
- 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 201106/226.

END OF CERTIFICATE

Reggio Emilia, 17.10.2017

Eng. Andrea Vivi

TÜV INTERCERT Certification Body

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