

Certificate of Conformity No.: 28713328

Manufacturer: Emerson Process Management Valve Automation, Inc.
 2500 Park Avenue West
 Mansfield, Ohio 44906
 USA

Specifications: IEC 61508-1+7:2010

Product: Double Three-Way Control Valve

Type: Poppet Block

RESULT:

As per the TÜV Rheinland Italia Report No. FS 28713328 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 | λ_D [1/h] | $\lambda_{DD(PS)}$ [1/h] | SFF [%] (no PS) | SFF [%] (with PS) | Systematic Capability |
|---------------|-------------------|--------------------------|--------------------|----------------------|--------------------------|
| Close / Open | 2,95E-08 | 2,92E-08 | >90% | >99% | 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: 2017-01-31

Location: Milan

Date: 2014-01-22

TÜV Rheinland Italia S.r.l.
 Via Enrico Mattei, 3
 I - 20010 Pogliano Milanese

Giovanni De Felippis
 Operational Manager



**Attachment 1 to
Certificate of Conformity No.: 28713328**



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| | | Test Interval Frequency (months) | | | | |
|---|----|----------------------------------|----------|----------|----------|----------|
| | | 6 | 12 | 24 | 36 | 48 |
| Partial Stroke frequency (months) | 1 | 1,20E-05 | 1,27E-05 | 1,40E-05 | 1,53E-05 | 1,66E-05 |
| | 2 | 2,27E-05 | 2,34E-05 | 2,46E-05 | 2,59E-05 | 2,72E-05 |
| | 3 | 3,34E-05 | 3,40E-05 | 3,53E-05 | 3,66E-05 | 3,79E-05 |
| | 6 | | 6,60E-05 | 6,73E-05 | 6,86E-05 | 6,99E-05 |
| | 9 | | | | 1,01E-04 | |
| | 12 | | | 1,31E-04 | 1,33E-04 | 1,34E-04 |

PFD_{AVG} values according to IEC 61508 for different values of TI and TI_{PS}

| Test Interval Frequency (months) | | | | |
|----------------------------------|----------|----------|----------|----------|
| 6 | 12 | 24 | 36 | 48 |
| 6,54E-05 | 1,30E-04 | 2,59E-04 | 3,89E-04 | 5,18E-04 |

PFD_{AVG} values according to IEC 61508 for different values of TI (no Partial Stroke Test)

Location: Milan

Date: 2014-01-22

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Via Enrico Mattei, 3
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