

Certificate

Nr. V 153 2008 C 2

Manufacturer: **Eugen Seitz AG**
Spitalstrasse 204
Wetzikon / Switzerland

Product: **3/2 Way Valves**
Type: **CP 0632.... oH, CP 0632... oHi**

Intended Use: **Automatic Solenoid Valve**
with safety function

Test results: **The valves of the above mentioned type series are suitable for use in safety related systems including SIL 4 according to IEC 61508**
Detailed test results can be drawn from reports No. V 11 2003 S 2 dated 08.05.2003 and No. V 153 2008 T1 dated 26.09.2008 and from the second page of this certificate.

The suitability for certain fields of an application can only be assessed by additional evaluation of further components of the subsystem. This statement is depending on the use of a safety related Quality Management System from the manufacturer.

This certificate remains valid until September 2013

Cologne, 2008-09-26

test laboratory for energy
appliances
head of laboratory



Dipl.-Ing. F. Rick

TÜV Rheinland Immissionsschutz und Energiesysteme GmbH, Am Grauen Stein, D-51105 Köln

Second page of certificate V 153 2008 C2

Probability of Failure on Demand	PFD	2,00E-07		
Confidence level	1- α	95		
Safe failure fraction	SFF	99	%	
Hardware fault tolerance	HFT	0		
Diagnostic coverage	DC	0	%	
Type of sub system acc. IEC 61508-2, 7.4.3.1.2		type B		
Derived values:				
Assumed demands per year		10		
Demand/hour	Fnp	1,14E-03		
Dangerous failure rate	λ_D	2,28E-10	1/h	0,23 FIT
MTBF dangerous failures	MTBF D	4,38E+09	h	500000 y
Safe failure rate	λ_S	2,26E-08		22,60 FIT
Total failure rate	$\lambda_S + \lambda_D$	2,28E-08		22,83 FIT
MTBF total		43800000	h	5000 y
Dangerous undetected	λ_{DU}	2,28E-10		
Safe undetected	λ_{SU}	2,26E-08		

Remarks:

These figures apply for such applications with a demand rate of an average of 1 to 10/year. The suitability for high demand mode applications can be calculated according to annex 2 based on the particular demand rate. The definitions low and/or high demand mode in IEC 61508 are deployed here accordingly, as the demand rate (frequency of operation) and the number of operating hours during the period of application have, as a result of the design, a negligible influence on the probability of failure within the normal field of application.

The statement is valid for a period of operation of 5 years plus a maximum of 1.5 years storage time before being used for the first time.

Only the valves stated above are deemed to be the subject of this investigation. As a rule in safety related systems (E/E/PE safety related systems in accordance with IEC 61508) these represent an actuator.

After expiry of the above mentioned periods of time the valves may not be used in safety related applications.

These statements are bound to the proven and verified deployment of a safety-related quality management of the manufacturer.

The validity of the test report is limited to a period of 5 years until 09/2013.