MHA ZENTGRAF
FlowControl Technology

Manufacturer's Declaration - Functional Safety according to IEC 61508 / ISO 13849-1 / DIN EN 17955

We hereby confirm that all automatically actuated valves of the **HFKH** series are suitable for use in safety-related protection functions in accordance with **IEC 61508**, provided they are used with safety-certified valve actuators and all associated safety instructions are observed.

The safety-related assessment is based on our internal risk and reliability analysis, extensive operational experience, and lifetime testing according to **ISO 23826**.

The following values can be used to determine the probability of failure on demand:

Suitable for use in safety instrumented systems with Safety Integrity Level (**SIL**)	**SIL 2**
B10d value (calculation of a failure rate depending on operating conditions according to ISO 13849-1, Annex C.4.2)	**50.000 cycles**
Hardware Fault Tolerance (**HFT**):	**0** (1oo1 configuration) **1** (1oo2 configuration)

It should be noted that external influencing factors such as switching frequency, temperature, pressure, vibrations, type and purity of the process media, and other operational loads can significantly affect the failure rate of components. Therefore, it is necessary to adhere to functional test intervals. In cases of heavy contamination or high wear, shorter intervals may be required. Reference is also made to the operating manual and further documentation, which contain additional restrictions and instructions.

For floating ball valves, an assumed failure rate of approximately **200 FIT** (failures per 10^9 operating hours) is typically used in accordance with **DIN EN 17955**.

If the result of the failure rate calculation according to **ISO 13849-1** is in the range of **< 500 FIT**, then the individual (single-channel) component is suitable for use in a **SIL 2** system.

In the case of different operating conditions or other valve series, the manufacturer must be contacted for a new safety evaluation.

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