Low Demand Mode

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1 Use of Valves in Low Demand Mode according to IEC 61508

Low demand systems are operated at the most once a year. The challenge is to ensure that the valves which perform a safety function still work as intended. For high demand systems, diagnostics are carried out by regularly changing the state of the valves, thus checking their function. This frequent change of state is not ensured in low demand systems which are operated for years.

All valves from Festo which were not specifically designed for low demand mode according to IEC 61508 must be operated in the high demand mode. This means that the state of these valves needs to be changed more than once a year for diagnostic purposes.

Additionally, Festo provides a recommendation for forced dynamization for valves in the “Data Sheet Product Reliability”. More information can be found in the Technical Report V “Forced Dynamization”.

Definitions

- Low Demand Mode
  Where the safety function is only performed on demand, in order to transfer the EUC[1] into a specified safe state, and where the frequency of demands is no greater than one per year. [1, 3.5.16]
- High Demand Mode
  Where the safety function in only performed on demand, in order to transfer the EUC[1] into a specified safe state, and where the frequency of demands is greater than one per year. [1, 3.5.16]

Literature

[1] IEC 61508-4:2010-04 – Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 4: Definitions and abbreviations

[1] EUC (equipment under control) is a equipment, machinery, apparatus or plant used for manufacturing, process, transportation, medical or other activities. [1, 3.2.1]

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