



Project name: 100416

File date: 19.05.2026 12:32:57 Report date: 19.05.2026 Checksum: 7895994e5a531edea271dfc49430dade

PR Project name: 100416

Project file name:	C:\Users\jkh\OneDrive - Festo\Dokumente\Know-how\SPN\20220130-002 PUS Cat1 PLc 5-2 way bl\100416 Sistema Project - Ver 3-0-1 - EN.ssm
Creation date:	11.12.2021 03:50:33
Project status:	
Project number:	
Project version:	
Authors:	
Project managers:	
Inspectors:	
Dangerous point/machine:	
Documentation:	
Document:	
Version of software:	3.0.4 build 3
Version of standard:	ISO 13849-1:2023, ISO 13849-2:2012
Checksum:	7895994e5a531edea271dfc49430dade
Options:	☒ Use DC intermediate levels for calculation of PFH (more precise) ☐ MTTFD capping for category 4 lower from 2500 to 100 years.
Status:	✓ green
Note:	There are no warnings listed for this project (or it's subordinate basic elements).

Print options

- | | |
|--|---|
| ☒ Show device details | ☒ Show requirements on PL and Category |
| ☒ Show documentations on SF, SB, BL and EL | ☒ Show parameter documentations on PLr, PL, Category, CCF, MTTFD and DC |
| ☐ Show CCF and DC measures in detail | ☒ Show messages |

Contained safety functions

SF Name: PUS - Prevention of Unexpected Startup for bistable valves

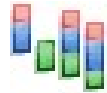
Required: PLr c	Reached: PL c	PFH [1/h]: 1,15E-6	Status: green
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List of documented messages:

- No messages known -

List of devices with a permissible operation time (T10D) of less than 20 years:

- No devices known -



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SF Safety function: PUS - Prevention of Unexpected Startup for bistable valves

Identifier of the Safety function:

Safety function type:

Triggering event:

Reaction and
Behaviour on power failure:

Safe state:

Operation mode:

Interfaces:

Demand rate:

Running-on time:

Priority:

Documentation:

Document:

Required Performance Level Safety function

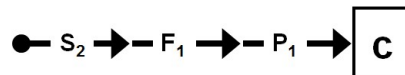
PLr (by risk graph): c

Severity of injury (S): Serious (normally irreversible) injury or death

Frequency / exposure times to hazard (F): Seldom to less often / exposure time is short

Possibility of avoiding (P): Possible under specific conditions

Risk graph:



Documentation:

Document:

Performance Level Safety function

Reached PL: c

PFH [1/h]: 1,15E-6

Electromagnetic immunity, EMI (Annex L) Safety function

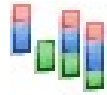
Route for fulfilment
of EMI measures: n/a

Documentation:

Document:

List of devices with a permissible operation time (T10D) of less than 20 years:

Device list:



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SF Safety function: PUS - Prevention of Unexpected Startup for bistable valves

Status / Messages Safety function

Status: green

Subsystems (1 / 1)

SB Name: Output

Reference designator:

Inventory number:

Device details Subsystem

Device Manufacturer:

Device Identifier:

Device group:

Part number:

Revision:

Function: ☐ Input ☐ Logic ☒ Output ☐ unknown

Use case:

Description of the use case:

Documentation Subsystem

Documentation:

Document:

Performance Level Subsystem

PL determination: Determine PL/PFH from Category, MTTFD and DCavg

Qualitative aspects (e.g. software, see sections 7, 10.3) Subsystem

Qualitative aspects suitable up to PL: n/a

Documentation:

Document:

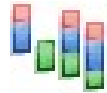
Electromagnetic immunity, EMI (Annex L) Subsystem

Route for fulfilment of EMI measures: The fulfilment of the measures for electromagnetic immunity (EMI) was documented in the associated safety function.

PL requirements: fulfilled

The PL shall be determined by the estimation of the following aspects (section 6.1.1):

- Behaviour of the safety function under fault conditions [fulfilled]
- Safety-related software according to clause 7 and Annex J or no software included [fulfilled]
- Systematic failure (see clause 6.1.7 and Annex G) [fulfilled]
- Ability to perform a safety function under expected environmental conditions [fulfilled]



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Safety function: PUS - Prevention of Unexpected Startup for bistable valves

Reached PL:	c	PFH [1/h]:	1,15E-6
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Documentation:

Category Subsystem

Cat.:	1
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Category requirements:	fulfilled
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Requirements for the category:

- Accordance with relevant standards to withstand the expected influences. [fulfilled]
- Basic safety principles are being used. [fulfilled]
- Well-tried components (clause 6.1.11) are being used. [fulfilled]
- Well-tried safety principles are being used. [fulfilled]
- MTTFD is at least High. [fulfilled]

Documentation:

Source (e.g. standard) Category:

File:

MTTFD and Mission time Subsystem

MTTFD [a]:	100 (High)
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Mission time [a]:	20	Shortest mission time [a]:	20
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Status / Messages Subsystem

Status:	green
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Channels / Test channels (1 / 1)

 Name: Channel 1

MTTFD [a]: 100

Blocks (1 / 1)

 Name: 5/2 Directional control valve

Reference designator:	Q1
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Inventory number:

Device details Block

Device Manufacturer:

Device Identifier:

Device group:

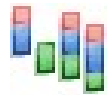
Part number:

Revision:

Function:

☐ Input
☒ Output

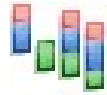
☐ Logic
☐ unknown



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SF Safety function: PUS - Prevention of Unexpected Startup for bistable valves**Technology:** unknown**Category:** -**Use case:****Description of the use case:***Documentation Block***Documentation:****Document:***MTTFD and Mission time Block***MTTFD [a]:** 380,5 (High)**Mission time [a]:** 20**Shortest mission time [a]:** 20**B10 [cycles]:** 10000000**RDF [%]:** 50**B10D [cycles]:** 20000000**nop [cycles/a]:** 525600**Documentation:****Document:***Status / Messages Block***Status:** green



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EXCLUSION OF LIABILITY

Care has been taken in production of the software SISTEMA, which corresponds to the state of the art. It is made available to users free of charge.

Die Haftung des Institut für Arbeitsschutz der DGUV (IFA) ist damit auf Vorsatz und grobe Fahrlässigkeit (§ 521 BGB) bzw. bei Sach- und Rechtsmängel auf arglistig verschwiegene Fehler beschränkt (523, 524 BGB).

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D-10117 Berlin

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Internet: www.dguv.de

NOTE

This document is not a complete technical documentation according to EN ISO 13849-1:2023, clause 12.

CONTACT

Company contact details unknown

Name in block letters

Date, signature

Authors

Authors

Inspectors

Inspectors
