SIL Level PFD and RRF Table (IEC 61508)

Basis: IEC 61508 1 Tables 2 and 3, and IEC 61511 1 (2016) Table 6 minimum hardware fault tolerance for safety instrumented functions.

instrumentationblog.in/downloads/engineering-reference-tables/sil-level-pfd-table/

SIL targets

SIL	PFDavg (low demand)	Risk reduction factor	PFH per hour (high demand)
SIL 4	≥ 10^{-5} to < 10^{-4}	> 10,000 to ≤ 100,000	≥ 10^{-9} to < 10^{-8}
SIL 3	≥ 10^{-4} to < 10^{-3}	> 1,000 to ≤ 10,000	≥ 10^{-8} to < 10^{-7}
SIL 2	≥ 10^{-3} to < 10^{-2}	> 100 to ≤ 1,000	≥ 10^{-7} to < 10^{-6}
SIL 1	≥ 10^{-2} to < 10^{-1}	> 10 to ≤ 100	≥ 10^{-6} to < 10^{-5}

Minimum hardware fault tolerance (IEC 61511 1:2016)

SIL	Low demand HFT	High or continuous demand HFT
SIL 1	0	0
SIL 2	0	1
SIL 3	1	2
SIL 4	2	Not allowed

Notes

- Low demand means a demand less than once per year.
- IEC 61511 SIL 4 is rarely used in the process industry.

Free download from instrumentationblog.in. Check values against the current edition of the standard for design work.