



SIL Declaration of Conformity Functional safety according to IEC 61508

Hycontrol Limited
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HYC-TF IS Namur Vibrating Fork Level

Models T***C*A**

has demonstrated a proven reliability and is manufactured and supported in a manner suitable for application up to

SIL 2 of IEC 61508 as a Type B Safety Related Subsystem

This when configured as a high level alarm¹ in conjunction with a Namur Barrier¹

The following failure rates were determined by an FMEA (Failure Modes and Effects Analysis), drawing failure rates from a commercially available database in conjunction with type tests to ascertain failure modes

Failure Type	Value	Units
_{SD} Safe Detected	2.07	per million hours
_{SU} Safe Undetected	0.03	per million hours
_{DD} Dangerous Detected	0.63	per million hours
_{DU} Dangerous Undetected	0.26	per million hours
Total Failure Rate	2.99	per million hours
MTBF Mean Time Between Failures	38.2	years
MTTR Mean Time To Restoration	8	hours

The Safe Failure Fraction was assessed both by means of field data and type tests giving an SFF of >90% used in simplex mode without redundancy as a high level alarm¹ in conjunction with a Namur barrier¹

Failure Measures	Value	Units
SFF Safe Failure Fraction	91	%
PFH Probability of Dangerous Failure Continuous or high demand mode	0.26×10^{-6}	per hour
PFD _{AVG} Probability of Failure on Demand Low demand mode, T _{PROOF} = 1 year	1.14×10^{-3}	-
Hardware Fault Tolerance	0	Faults

¹ Refer to manual for IEC 61508 configuration details

N V Allen
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