In compliance with:

CEN ISO 13849-1:2015
Safety of machinery, safety related parts of control systems Part
1: general principles of design

MTTFd Salus 20 Series

B10d rating based on the calculated assumptions below is:-

= 2,500,000 cycles

Calculation data assumptions (CEN ISO 13849-1:2015, Annex C):

≡ Performance Level e (CEN ISO 13849-1, Table 2)
≡ Safety Integrity Level 3 (CEN ISO 13849-1, Table 3)
≡ MTTFd denotation HIGH (CEN ISO 13849-1, Table 4)

\[ \text{tcycle, mean time between two successive cycles} = 3600 \text{ seconds (1 cycle per hour)} \]
\[ \text{hop, mean operation in hours per day} = 1 \text{ shift x 8 hours.} \]
\[ \text{dop, mean operation in days per year} = 220 \text{ days.} \]
\[ \Piop = (\text{dop} \times \text{hop} \times 3600) / \text{tcycle} = 1760 \text{ mean annual operations} \]
\[ \text{B10d no. cycles until 10\% of components fail dangerously} = 2,500,000 \text{ cycles} \]
\[ \text{MTTFd} = \text{B10d} / (0.1 \times \Piop) = 14,204.55 \text{ years} \]
\[ \lambda d = (0.1 \times \Piop) / (\text{B10d x 220 x 8}) = 4.00 \text{E-08 per operating hour} \]

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