In compliance with:

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

**MTTFd KS20 to KS63 Series**

$B_{10d}$ rating based on the calculated assumptions below is: -

$$= 2,500,000 \text{ cycles}$$

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)

- $t_{\text{cycle}}$, mean time between two successive cycles
- $h_{\text{op}}$, mean operation in hours per day
- $d_{\text{op}}$, mean operation in days per year
- $n_{\text{op}} = (d_{\text{op}} \times h_{\text{op}} \times 3600) / t_{\text{cycle}}$
- $B_{10d}$ no. cycles until 10% of components fail dangerously
- $\text{MTTFd} = B_{10d} / (0.1 \times n_{\text{op}})$
- $\lambda_d = (0.1 \times n_{\text{op}}) / (B_{10d} \times 220 \times 8)$

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