In compliance with:

**CEN ISO 13849-1:2015**

Safety of machinery, safety related parts of control systems Part 1: general principles of design

**MTTFd MLMT Series**

**B10d** rating based on the calculated assumptions below is:

\[ = 26,400 \text{ cycles} \]

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

- **Performance Level b** (CEN ISO 13849-1. Table 2)
- **Safety Integrity Level 1** (CEN ISO 13849-1. Table 3)
- **MTTFd denotation HIGH** (CEN ISO 13849-1. Table 4)

\[ \text{tcycle, mean time between two successive cycles} = 3600 \text{ seconds (1 cycle per hour)} \]

\[ \text{hop, mean operation in hours per day} = 1 \text{ shift x 8 hours.} \]

\[ \text{dop, mean operation in days per year} = 220 \text{ days.} \]

\[ \text{nop} = \frac{\text{dop x hop x 3600}}{\text{tcycle}} = 1760 \text{ mean annual operations} \]

\[ \text{B10d no. cycles until 10% of components fail dangerously} = 26,400 \text{ cycles} \]

\[ \text{MTTFd} = \frac{\text{B10d}}{0.1 \times \text{nop}} = 150 \text{ years} \]

\[ \text{ld} = \frac{0.1 \times \text{nop}}{(\text{B10d x 220 x 8})} = 3.79 \text{ E-06 per operating hour} \]

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