# Certificate MTTF and MTTFD / B10d

30.04.2026

**Order code**
BHS001F

Part number
BES 516-300-S135-D-PU-05

| MTTF (40 °C) | $MTTF_D$ | B10d | Mission Time | Diagnostic Coverage |
|---|---|---|---|---|
| 720 a | 1440 a | - | 20 years | 0 % |

| Calculation formulas | |
|---|---|
| $MTTF = \frac{1}{\sum_1^n \frac{1}{MTTFn}}$ | $MTTF_D = MTTF \times 2$ |

**Standard**
EN ISO 13849-1:2015 and SN29500, T = 40 °C

**Sections of standards**
C.5: MTTF, $MTTF_D$ data of electrical components (typical case scenario)
D.1: Parts count process

**General explanations**
We calculate the MTTF value of our electronic products according to the parts count process as per EN ISO 13849-1 Appendix C.5.
The procedure specified in EN ISO 13849-1 Appendix C.5.1 is used to assess dangerous failures: $MTTF_D$ = MTTF x 2.
8760 operating hours per year are assumed here. For our electromechanical sensors, we specify the B10d value derived from the results of fatigue testing. We determine the degree of diagnostic coverage using FMEA. The mission time is the result of constant long-term testing and years of market observation.

The specification for the MTTF value, $MTTF_D$ value, B10d value, mission time and/or the degree of diagnostic coverage do not represent binding statements about quality and/or mission time. These are mathematical probability values.

The products listed here are not safety components according to Article 2.c) of the Machinery Directive 2006/42/EC.

We reserve the right to make changes.

Balluff GmbH
Zabergäustraße 8
73765 Neuhausen a.d.F.
Germany
Tel. +49 7158 173-0 Fax
+49 7158 5010
balluff@balluff.de