

Characteristic safety values for INTORQ products

Definitions

An INTORQ brake that is manufactured in accordance with the series-production standard and has been dimensioned to match the particular use in question is assumed.

B10, the average number of cycles until 10% of the components have failed (source DIN EN ISO 13849-1: 2008-12).

On the assumption of 50% hazardous failures, B10d is calculated as double B10 (source DIN EN ISO 13849-1: 2008-12)

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Brake type	B10*	B10d*	Version
BFK454 up to size 14	3,000,000	6,000,000	All catalogue versions
BFK454 from size 16 upwards	2,000,000	4,000,000	without toothed intermediate ring
BFK455	2,000,000	4,000,000	without toothed intermediate ring
BFK455	8,000,000	16,000,000	with toothed intermediate ring
BFK456	3,000,000	6,000,000	All catalogue versions
BFK457/458 up to size 14	3,000,000	6,000,000	All catalogue versions
BFK457/458 from size 16 upwards	2,000,000	4,000,000	without toothed intermediate ring
BFK457/458 from size 16 upwards	8,000,000	16,000,000	with toothed intermediate ring
BFK458L (longlife)	45,000,000	90,000,000	All catalogue versions
BFK459 up to size 14	3,000,000	6,000,000	All catalogue versions
BFK459 Size 16	3,000,000	6,000,000	without toothed intermediate ring
BFK459 Size 16	8,000,000	16,000,000	with toothed intermediate ring
BFK460 up to size 14	3,000,000	6,000,000	All catalogue versions
BFK460 from size 16 upwards	3,000,000	6,000,000	without toothed intermediate ring
BFK460 from size 16 upwards	8,000,000	16,000,000	with toothed intermediate ring
BFK461 up to size 14	7,500,000	15,000,000	All catalogue versions
BFK461 from size 16 upwards	3,000,000	6,000,000	without toothed intermediate ring
BFK461 from size 16 upwards	8,000,000	16,000,000	with toothed intermediate ring
BFK464 "Holding brakes"	10,000,000	20,000,000	Catalogue versions without microswitch
BFK464 "Holding brakes"	4,000,000	8,000,000	Catalogue versions with microswitch
BFK464 "Emergency-stop brakes"	200,000	400,000	All catalogue versions
BFK466	6,000,000	12,000,000	All catalogue versions
BFK468 "Holding brakes"	3,000,000	6,000,000	without toothed intermediate ring
BFK468 "Holding brakes"	12,000,000	24,000,000	with toothed intermediate ring
BFK468 "Operating brakes"	2,000,000	4,000,000	without toothed intermediate ring
BFK468 "Operating brakes"	8,000,000	16,000,000	with toothed intermediate ring

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Brake type	B10*	B10d*	Version
BFK470-14	7,500,000	15,000,000	All catalogue versions
BFK470-16/ -18	3,000,000	6,000,000	without toothed intermediate ring
BFK470-16/ -18	8,000,000	16,000,000	with toothed intermediate ring
BFK471-25	2,000,000	4,000,000	without toothed intermediate ring
KBK	3,000,000	6,000,000	All catalogue versions
14,105	3,000,000	6,000,000	All catalogue versions
14,115	3,000,000	6,000,000	All catalogue versions

* The given characteristic values do not consider the shaft-hub joint to be executed by the customer.

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Calculating formulas

Source: DIN EN ISO 13849-1

$$MTTF_d = \frac{B_{10d}}{0.1 \times n_{op}}$$

$$n_{op} = \frac{d_{op} \times h_{op} \times 3600 \frac{s}{h}}{t_{cycle}}$$

d_{op}....operating days per year [d/a]

h_{op}....daily operating period [h/d]

t_{cycle}... cycle time [s]

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