

# Safety module CAMC-G-S1

Part number: 1501330



 [General operating condition](#)

## Datasheet product reliability

The information in this "Product reliability data sheet" is based on products being used as intended. This includes complying with all specifications in data sheets, catalogues, user documentation and the general operating conditions. The user alone is responsible for determining whether a product is suitable for a particular application.

Feature	Value
Safety Integrity Level (SIL) <sup>1)</sup>	Safe torque off (STO) / Safety Integrity Level 3 / SILCL3
Certified for safety functions to ISO 13849 (PL) <sup>2)</sup>	Product can be used in SRP/CS up to category 4, PL e
Certified for safety function to ISO 13849 and IEC 61508 (SIL) <sup>3)</sup>	Up to Safety Integrity Level 3 high demand mode
Certificate issuing authority	TÜV Rheinland 01/205/5165.03/24
Probability of Failure per Hour (PFH) <sup>4)</sup>	$1.27 \cdot 10^{-10}$
Probability of Failure on Demand (PFD) <sup>5)</sup>	$2.3 \cdot 10^{-5}$
Common Cause Failure (CCF) measures <sup>6)</sup>	Safety switching device with short-circuit detection
Mean time to dangerous failure (MTTF <sub>d</sub> ) <sup>7)</sup>	STO, 100 years (limited, mathematically 1370 years)
SFF Safe Failure Fraction	99,2 %
Hardware fault tolerance	1
Diagnostic coverage <sup>8)</sup>	97 %
Proof test interval	20 Year
Max. positive test pulse with 0 signal	300 µs
Max. negative test pulse with 1 signal	2000 µs
CE mark (see declaration of conformity)	To EU EMC Directive To EU RoHS Directive To EU Machinery Directive
Safety function <sup>9)</sup>	Safe torque off (STO)
Performance Level (PL) <sup>10)</sup>	Safe torque off (STO) / Category 4, Performance Level e

- 1) Further measures can be necessary to fulfil the stated Safety Integrity Level (SIL). For these measures refer to the relevant documentation.
- 2) Further measures can be necessary to fulfil the stated Performance Level (PL). For these measures refer to the relevant documentation.
- 3) Further measures can be necessary to fulfil the stated Safety Integrity Level (SIL). For these measures refer to the relevant documentation.
- 4) For components affected by wear this value will be reached, if for the precise application the mean number of annual operations (nop) is equal or lower than the assumed annual operations of this product. The assumed mean number of annual operations is stated in this datasheet.
- 5) For components affected by wear this value will be reached, if for the precise application the mean number of annual operations (nop) is equal or lower than the assumed annual operations of this product. The assumed mean number of annual operations is stated in this datasheet.
- 6) CCF measures have to be verified for the precise application. Therefore, the list with measures is not meant to be exhaustive.
- 7) The ascertainment of the MTTF<sub>d</sub> value is based on the IEC 61709 "Electric components - Reliability - Reference conditions for failure rates and stress models for conversion" respectively on the SN 29500.
- 8) In compliance with the diagnosis measures which are specified in the relevant documentation the mentioned diagnostic coverage can be achieved.
- 9) Further measures can be necessary for realization of the mentioned safety function. For these measures refer to the relevant documentation.
- 10) Further measures can be necessary to fulfil the stated Performance Level (PL). For these measures refer to the relevant documentation.