

CERTIFICATE



P+F 100397R1C P0006 C04.2

exida Certification S.A. hereby confirms that the

Relay Module KFD0-RSH-1.4S.PS2

Product Version: 05-6166

Pepperl+Fuchs GmbH

Mannheim, Germany

Has been assessed per the relevant requirements of

IEC 61508:2000

Parts 1 - 2, and meets requirements providing a level of integrity to

Systematic Integrity : SIL 3 Capable

Random Integrity : SIL 3 Capable

Safety function

The Relay Module KFD0-RSH-1.4S.PS2 shall provide the following two Type A safety functions for applications in low or high demand mode of operation:

1. DTS - De-energize To trip (Safe) the relay output when the input is de-energized..
2. ETS - Energize To activate (Safe) the relay output when the input is energized.

Application Restrictions

The unit must be properly designed and validated in a Safety Instrumented Function per the requirements in the Safety Manual.



Assessors



Certifying Assessor

Date: 3 May 2011

exida Certification SA, Nyon, Switzerland



Systematic Integrity: SIL 3 Capable

SIL 3 Capability

The product has met manufacturer design process requirements of Safety Integrity Level (SIL) 3. These are intended to achieve sufficient integrity against systematic errors of design by the manufacturer. A Safety Instrumented Function (SIF) designed with this product must not be used at a SIL level higher than the statement.

Random Integrity: SIL 3 Capable

Summary for KFD0-RSH-1.4S.PS2

Type A device,

IEC 61508 failure rates:

Failure category	DTS	ETS
Fail Safe (λ_{SAFE})	144.77	139.5
Fail Dangerous Detected (λ_{DD})	0	0
Fail Dangerous Undetected (λ_{DU})	1.83	7.1
Total failure rate (safety function)	146.6	146.6
SFF	98.7 %	95.2 %

All failure rates are given in FIT= 10^{-9} /h

SIL Verification:

The Safety Integrity Level (SIL) of an entire Safety Instrumented Function (SIF) must be verified via a calculation of PFD_{AVG} / PFH considering the architecture, proof test interval, proof test effectiveness, any automatic diagnostics, average repair time and the specific failure rates of all products included in the SIF. Each subsystem must be checked to assure compliance with minimum hardware fault tolerance (HFT) requirements.

The following documents are mandatory part of this certificate:

P+F 1003-97R1-C R017 V1R2 Assessment Report

Safety Manual Relay Module KFD0-RSH-1.4S.PS2 Ver: 225538 DOCT-2052C 04 2011

The holder of this certificate
may use this mark.

