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Safety Control Gear

Simocode DM-F

Manufacturer:

Siemens AG
Werner-von-Siemens-Str. 48
92220 Amberg

Report No.: SA83728C
Revision 1.0 dated 2011-05-27

Certification Body

TÜV SÜD Product Service GmbH
Ridlerstraße 57
D-80339 Munich

Revision Log

Version	Name	Date	Changes/History
1.0	M. Ramold/ J. Blum	2011-05-27	Initial

Content

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1 Target of Evaluation (ToE)

On 08.07.2010 Siemens AG requested TÜV SÜD Rail GmbH to test and certify the Safety Control Gear Simocode DM-F from Siemens AG. The Project No. related to this Technical Report was as follows: 717503464.

The ToE is a Safety Control Gear with the Safety Function to open the contacts in the enabling circuits.

The report on the certificate is a set of the user-related results of all steps made during verification and validation of the Simocode DM-F. It's based on the standards and guidelines listed in chapter 3.3.

2 System Overview

2.1 General Description

The Safety device Simocode DM-F is used for safety-related shut down functions.

2.2 Identification

Device	MLFB	Product Version	Software revision	CRC
DM-F Local 110-240V AC/DC	3UF7320-1AU00-0	E01	BS52-Z01b	Flash: 0x2E
				EEPROM: 0xFE
DM-F Local 24V DC	3UF7320-1AB00-0	E01	BS52-Z01b	Flash: 0x2E
				EEPROM: 0xFE
DM-F PROFIsafe 110-240V AC/DC	3UF7330-1AU00-0	E01	BS54-Z04a	Flash: 0x4A
DM-F PROFIsafe 24V DC	3UF7330-1AB00-0	E01	BS54-Z04a	Flash: 0x4A

3 Certification

3.1 Certification Process

The certification of Simocode DM-F was done according to the regulations and standards listed in clause 3.3 of this documents. This includes successful completion of the following test segments:

I. Functional Safety
   a. Hardware analysis including estimation of safe failure fraction
   b. Software analysis for the safety-related software modules
   c. Descriptive safety as given by the Safety Manual

II. Basic Safety including electrical safety
   a. Environmental Stress Testing
   b. Climatic and temperature stress

III. Electromagnetic Compatibility
   a. Electromagnetic susceptibility
   b. Electromagnetic emission

IV. Product-related Quality Management in manufacturing and product care

3.2 Certification Documentation

- Technical Report, No. SA83728T Rev. 1.0
- Siemens, Systemhandbuch 05/2011 Motormanagement- und Steuergeräte Simocode pro

3.3 Standards and Guidelines

3.3.1 Functional Safety

IEC 61508-1:1998	Functional Safety of electrical/electronic/programmable electronic safety-related systems Part 1: General requirements
IEC 61508-2:2000	Functional Safety of electrical/electronic/programmable electronic safety-related systems Part 2: Requirements for electric-al/electronic/programmable electronic safety-related systems
IEC 61508-3:1998	Functional Safety of electrical/electronic/programmable electronic safety-related systems Part 3: Software requirements
IEC 61508-4:1998	Functional Safety of electrical/electronic/programmable electronic safety-related systems Part 4: Definitions and abbreviations
IEC 62061:2005	Safety of machinery - Functional safety of safety-related electrical, elec-tronic and programmable electronic control systems
EN ISO 13849-1:2008	Safety of machinery - Safety-related parts of control systems Part 1: General principles for design

4 Results

4.1 Functional Safety

The tests performed and quality assurance measures implemented by the manufacturer have shown that the Simocode DM-F complies with the testing criteria specified in clause 3.3 in applications for SIL 3 according IEC 61508 and Category 4, PL e according EN ISO 13849-1.

4.2 Basic Safety and Electromagnetic Compatibility

Tests executed by notified test laboratories environmental stress and electromagnetic compatibility shows that the requirements regarding functional safety are met.

4.3 Product-related quality management and product care

All hardware components developed and manufactured in course of the safety evaluation are governed by an ISO 9001 certified quality assurance and control system.

As part of the certification process TÜV SÜD Rail also performed a procedure that is tailored to the assessed product in order to assess the consistency of product quality while accounting for product modifications and their identifiably (follow-up service).

5 General conditions and restrictions

The Simocode DM-F shall be used according the manual listed in chapter 3.2 and shall regard the following restrictions and conditions, if the application is safety-related.

- For use in circuits for category 4 according to ISO 13849-1:2006 the cables for the sensor inputs have to be installed short circuit protected.
- It is highly recommended to install the devices in an IP 54 enclosure or equivalent.
- Conducted common mode voltage has to be avoided.

In addition to the mentioned restrictions it is obligatory to regard all restrictions of the safety related.

6 Overall result and certificate number

This report identifies the product and specifies implementation conditions required for the application of the Simocode DM-F by Siemens AG on the certificate:

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Munich, 2011-05-27

Jürgen Blum
Technical Certifier