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Technical Report

for

NFPA79 Listing

of the

Koppelmodul AS-i Safe/Profisafe-F-Link

3RK3141

Manufacturer:

Siemens AG
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Germany

Report no. SA 70821 T

Revision 1.2 dated 2015-10-26

Test Laboratory:

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Revision history

Revision	Status	Date	Author	Changed chapters	Reason of change
1.0	Released	2007-10-18	Jürgen Blum / Peter Weiß	Initial	
1.1	Released	2015-07-31	Christian Nowak / Tomislav Paradzik	New Template; general update	New Template Update for NFPA 79:2015 Firmware v1.01.0003
1.2	Released	2015-10-26	Christian Nowak / Tomislav Paradzik	4.1, 4.2, 5.2, 5.3	Changed HW Revi- sion Identifier

Table 1: Revision history

1 Target of Evaluation (ToE)

Subject of the approval is the safety-related “Koppelmodul AS-i Safe/Profisafe-F-Link” 3RK3141 from Siemens AG according to NFPA 79:2015.

The project number related to this technical report is 717510535.

2 Purpose of the Document

This report represents the approval results related to an IEC 61508:2010 certified product. Therefore, the assessment is restricted to the auxiliary requirements demanded by NFPA 79:2015.

The underlying test documentation is listed in section 4; the regarded standard in section 3.

3 Basis of Evaluation

The regulations and guidelines which form the basis of the type testing are listed below.

No.	Standard	Title
[N1]	NFPA 79:2015	Electrical standard for Industrial Machinery

Table 2: Standards

4 Documents provided for Testing

4.1 Existing Certificate Documentation

The safety-related “Koppelmodul AS-i Safe/Profisafe-F-Link” 3RK3141 has been certified by TÜV NORD CERT GmbH to meet IEC 61508:2010, Safety Integrity Level (SIL) 3 and EN ISO 13849-1:2008, performance level (PL) e.

No.	Title	Document-No./ File identifier	Date
[D1]	TÜV NORD Certificate on Functional Safety	44 207 11 382076-001	2011-07-12
[D2]	TÜV NORD EC type-examination certificate and technical report	Certificate: 44 205 12 792202 Report: 13 205 122183-000	2013-06-07 2013-06-03
[D15]	TÜV NORD Approval	Freiga- be_TÜVNord_E01_2015.pdf	2015-09-07

Table 3: Certificate Documentation

4.2 Customer Documentation

The following documents were provided by Siemens AG to be checked and evaluated by the test house.

No.	Title	Document-No./ File identifier	Date
[D3]	DP / AS-I F-Link Original Operating Instructions	926253710000_RS_AA_005_201310221210160260.pdf	2013-08-07
[D4]	ASIsafe DP / AS-I F-Link Manual Edition 10/2006 & Supplement Edition 04/2011	DP_AS-i_F-Link_Manual_2006-10_X-2011-04_en.pdf	2011-04-xx
[D5]	Test Report No.: 06076W-u	breakdown_of_components.pdf dielectric_test.pdf temperature_rise.pdf	2006-10-06
[D6]	Test Report No.: E 3.924	Umweltprüfungen 3RK3141 englisch.pdf	2006-10-10
[D7]	Test Report EMC Measurements	EMV_Bericht_Profisafe_AsiSafe_Link.pdf	2006-08-29
[D8]	Change Notification (Änderungsmitteilung)	Änderungsmitteilung_F-Link_NFPA79.xls	2014-09-08
[D9]	System Test Release	FO 0968 00290 xml.pdf	2014-09-10
[D10]	Firmware Modification Test Report	Wärmeprüfung_F-Link_V1.01.0003.pdf	2014-07-10
[D11]	Change Request 851075	RQ 851075.pdf	2013-10-19
[D12]	Untersuchungsbericht Nr. E 4.543	UB_E4543_Umweltsim_DP_INT.pdf	2008-06-27
[D13]	Impact Analysis F-Link 3RK2141 *E01* and Firmware release V1.01.0003	Impact Analysis Questionnaire F-Link 3RK3141.pdf	2015-09-09

Table 4: Customer Documentation

5 Performance and result of tests

5.1 Test reports

The following test reports were issued by TÜV SÜD Rail GmbH (or other accredited test laboratories).

No.	Title	Document-No./ File identifier	Revision	Date
[R1]	NFPA 79:2015 Checklist	NFPA79_Checklist_Siemens_DP-ASi-F-Link_150731.docx	V1.0	2015-07-31

Table 5: Test Reports

5.2 Description of the assessment

Based on the checklist for NFPA 79 compliance [R1] and the existing certificate documentation [D1], [D2] and [D15], TÜV SÜD Rail GmbH has assessed the test documents provided by the customer [D3] to [D13] for the “Koppelmodul AS-i Safe/Profisafe-F-Link” 3RK3141.

Result:

The results and completeness of the tests performed and documented by the customer have been verified and compared with the relevant requirements of NFPA 79:2015 [N1]. The required tests for an approval in accordance with [N1] have been performed and documented adequately.

Detailed assessment results are available in the NFPA 79:2015 checklist [R1].

5.3 Identification

The device types listed in Table 6 by nomenclature, order number (MLFB), HW revision and FW revision were subject to testing.

Device	Order Number (MLFB)		HW Rev.	FW Rev.
DP/ASi F-Link (screw-type terminal)	3RK3141	1CD10	E01	V1.01.0003
DP/ASi F-Link (spring-type terminal)	3RK3141	2CD10	E01	V1.01.0003

Table 6: Type Identification



6 Summary

The “Koppelmodul AS-i Safe/Profisafe-F-Link” 3RK3141 complies with the relevant requirements of NFPA 79, if the conditions and restrictions of the related user manuals are met.

Application specific requirements of NFPA 79, which are not part of this assessment, shall be addressed during integration into the safety instrumented system on-site.

TÜV SÜD Rail GmbH
Embedded Systems

A handwritten signature in blue ink that reads 'Christian Nowak'.

Christian Nowak
Author

A handwritten signature in black ink that reads 'Tomislav Paradzik'.

Tomislav Paradzik
Reviewer