SIEMENS
RC-AT EM DG PRO D

Typprüfung - Type Test

Prüfurkunde - Test Certificate

DI-8110 Digitale Eingabe 2x8, 24VDC — 6MF28110AA00/BB
DI-8110 Digital Input 2x8, 24VDC — 6MF28110AA00/BB

Elektrische Sicherheit / Isolation - Electrical safety / Isolation

Prüfung - Test:	Sicherheitsbestim. - Safety requirements	Datum - Date:	19.11.15
Norm - Standard:	IEC 61010-1:2010	Protokoll - Protocol:	GC8_TÜV_IT15-124
Prüfung - Test:	Isol. Wechselspg. - Dielectric test	Datum - Date:	13.02.15
Norm - Standard:	IEC 61010-1:2010	Protokoll - Protocol:	6MF28_IO_TUEV15-121
Prüfung - Test:	Isol. Stoßspg. - Impulse voltage test	Datum - Date:	13.02.15
Norm - Standard:	IEC 61010-1:2010	Protokoll - Protocol:	6MF28_IO_TUEV15-121

Elektromagnetische Verträglichkeit - Electromagnetic compatibility

Prüfung - Test:	Imm. ged.Sinus Schw. - Imm. Ring waves	Datum - Date:	13.02.15
Norm - Standard:	IEC 61000-4-12:2006	Protokoll - Protocol:	6MF28_IO_TUEV15-121
Prüfung - Test:	Störfeldstärke - Emission	Datum - Date:	13.02.15
Norm - Standard:	CISPR 22:2008	Protokoll - Protocol:	6MF28_IO_TUEV15-121
Prüfung - Test:	Imm. ESD - ESD immunity	Datum - Date:	13.02.15
Norm - Standard:	ÎEC 61000-4-2:2008	Protokoll - Protocol:	6MF28_IO_TUEV15-121
Prüfung - Test:	Imm. HF-Feld - EM field immunity	Datum - Date:	13.02.15
Norm - Standard:	IEC 61000-4-3:2006	Protokoll - Protocol:	6MF28_IO_TUEV15-121
Prüfung - Test:	Imm. Burst - Burst immunity	Datum - Date:	13.02.15
Norm - Standard:	IEEE C 37.90.1:2012	Protokoll - Protocol:	6MF28_IO_TUEV15-121
Prüfung - Test:	Imm. Burst - Burst immunity	Datum - Date:	13.02.15
Norm - Standard:	IEC 61000-4-4:2012	Protokoll - Protocol:	6MF28_IO_TUEV15-121
Prüfung - Test:	Imm. Surge 1,2/50 - Surge imm. 1,2/50µs	Datum - Date:	13.02.15
Norm - Standard:	IEC 61000-4-5:2005	Protokoll - Protocol:	6MF28_IO_TUEV15-121
Prüfung - Test:	Imm. HF induziert - Cond. dist. immunity	Datum - Date:	13.02.15
Norm - Standard:	IEC 61000-4-6:2013	Protokoll - Protocol:	6MF28_IO_TUEV15-121
Prüfung - Test:	Imm. Magnetfeld 50Hz - HF 50Hz immunity	Datum - Date:	13.02.15
Norm - Standard:	IEC 61000-4-8:2009	Protokoll - Protocol:	6MF28_IO_TUEV15-121
Prüfung - Test:	Imm. Magnetfeld Puls - Magn. pulse immunity	Datum - Date:	13.02.15
Norm - Standard:	IEC 61000-4-9:1993	Protokoll - Protocol:	6MF28_IO_TUEV15-121
Prüfung - Test:	Imm. 1MHz gedämpft - Oscillatory waves	Datum - Date:	13.02.15
Norm - Standard:	IEC 61000-4-18:2006	Protokoll - Protocol:	6MF28_IO_TUEV15-121
Prüfung - Test:	Imm. comm mode dist - Imm. comm mode dist	Datum - Date:	13.02.15
Norm - Standard:	IEC 61000-4-16:1998	Protokoll - Protocol:	6MF28_IO_TUEV15-121

Umweltprüfungen - Environmental testing

Prüfung - Test:	Environm. conditions - Environm. conditions	Datum - Date:	19.01.15
Norm - Standard:	IEC 60870-2-2:1996	Protokoll - Protocol:	6MF28_IO_AIT_0515VIB

SIEMENS

RC-AT EM DG PRO D

Typprüfung - Type Test

Prüfurkunde - Test Certificate

DI-8110 Digitale Eingabe 2x8, 24VDC **6MF28110AA00/BB**

DI-8110 Digital Input 2x8, 24VDC **6MF28110AA00/BB**

Prüfung - Test:	Klima - Climatic test	Datum - Date:	02.03.15
Norm - Standard:	IEC 60068-2-x:	Protokoll - Protocol:	6MF28_IO_AIT_782_US
Prüfung - Test:	Fc: Schwingen - Vibrations	Datum - Date:	19.01.15
Norm - Standard:	IEC 60068-2-6:2007	Protokoll - Protocol:	6MF28_IO_AIT_0515VIB
Prüfung - Test:	Fc: Schwingen - Vibrations	Datum - Date:	19.01.15
Norm - Standard:	IEC 60068-3-3:1991	Protokoll - Protocol:	6MF28_IO_AIT_0515VIB
Prüfung - Test:	Ea: Schock - Shock	Datum - Date:	19.01.15
Norm - Standard:	IEC 60068-2-27:2008	Protokoll - Protocol:	6MF28_IO_AIT_0515VIB
Prüfung - Test:	Eb: Dauerschock - Bump	Datum - Date:	19.01.15
Norm - Standard:	IEC 60068-2-27:2008	Protokoll - Protocol:	6MF28_IO_AIT_0515VIB

Der Prüfgegenstand hat die Prüfungen bestanden. Nach Abschluss der Prüfungen waren die Eigenschaften unverändert und der Prüfgegenstand voll funktionsfähig.
The equipment has successfully passed the type test. The equipment did not show any changes and was fully in order subsequent to these tests.

Siemens AG Österreich

RC-AT EM Digital Grid Products Development

Wien - Vienna, 30.11.2015

Geprüft - Tested by:

Schachinger Michael

Digitally signed by Schachinger Michael
DN: serialNumber=Z001V63N, givenName=Michael, sn=Schachinger, o=Siemens, cn=Schachinger Michael
Date: 2015.11.30 14:07:22 +01'00'

Name / Unterschrift - Signature

Geprüft - Reviewed by:

i.A. Stern Peter

Digitally signed by Stern Peter
DN: serialNumber=Z001MUXE, givenName=Peter, sn=Stern, o=Siemens, cn=Stern Peter
Date: 2015.12.01 14:21:21 +01'00'

Name / Unterschrift - Signature

TEST REPORT

M/IT-15/124

about the following
IT - test-/ research

Applicant: Siemens AG Österreich
Ruthnergasse 3
Austria; 1210 Wien

Product: SICAM I/Os:
DO-8212, DI-8110, DI-8111, DI-8112, DI-8113, AI-8320, AI-8510, AI-8511, CM-8820

Serial Number: ---

File: GC8_TÜV_IT15-124.pdf

Standard: IEC 61010-1:2010; EN 61010-1:2010

TÜV AUSTRIA SERVICES GMBH
Test laboratory for Telecommunication

Checked by

Ing. Stefan Matzner

Rundsiegel

19.11.2015

Co - Supervisor of EMC Laboratory

Ing. Andreas Malek

Copy Nr.: 01

The results of this test report only refer to the provided equipment.

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TÜV ®

Akkreditierung Austria 0274 ISO/IEC 17025 T

Accredited as:
Testing Laboratory, Inspection Body, Certification Body, Calibration Laboratory, Gauge laboratory, First and Boiler test laboratory

Notified Body 0408

Non-executive Board of Directors:
KR Dipl.-Ing. Johann MARIHART

Management:
Dipl.-Ing. Dr. Stefan HAAS
Mag. Christoph WENNINGER

Registered Office:
Krugerstrasse 16
1015 Vienna/Austria

Branch Offices:
Dornbirn, Graz, Innsbruck, Klagenfurt, Linz, Salzburg, St. Pölten, Wels, Vienna, Brixen (I) and Filderstadt (D)

Company Register Court / - Number:
Vienna / FN 288476 f

Bank Details:
UC BA
IBAN
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BIC BKAUATWW
RZB
IBAN
AT153100000104093282
BIC RZBAATWW

VAT ATU63240488
DVR 3002476

TÜV AUSTRIA

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1. Applicant

Company:	Siemens AG Österreich
Department	Energy Automation Development
Address	Austria; 1210 Wien; Ruthnergasse 3
Contact Person	Mr. Michael SCHACHINGER

EUT received on	16.09.2015
Date of test	16.09.2015 – 18.11.2015

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2. Description of EUT

EUT	DO-8212, DI-8110, DI-8111, DI-8112, DI-8113, AI-8320, AI-8510, AI-8511, CM-8820
Serial Number	---
Manufacturer:	Siemens AG Österreich
Description	Siemens AG Österreich provided the following configuration for the measurements:

Dell Laptop;

SICAM CMIC with DO-8212, DI-8112, AI-8320, AI-8510, AI-8511, CM-8820

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3. Standards / Final Result

Name	Title	Deviations	Result
IEC 61010-1:2010 EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control, and laboratory use Part 1: General requirements	Canada / US	PASS.
PASS EUT passed FAIL EUT failed			

TEST REPORT
IEC 61010-1
Safety requirements for electrical equipment for measurement, control, and laboratory use
Part 1: General requirements

Report Number. ..... :	M/IT-15/124
Date of issue ..... :	19.11.2015
Total number of pages ..... :	80
Applicant's name ..... :	Siemens AG Österreich
Address ..... :	Austria; 1210 Wien; Ruthnergasse 3
Test specification:	
Standard ..... :	IEC 61010-1:2010 (Third Edition)
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	---
Test Report Form No. ..... :	IEC61010_1J
Test Report Form(s) Originator .... :	VDE Testing and Certification Institute
Master TRF ..... :	2013-11

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	SICAM I/Os
Trade Mark ..... :	SIEMENS
Manufacturer ..... :	Siemens AG Österreich
Model/Type reference ..... :	DO-8212, DI-8110, DI-8111, DI-8112, DI-8113, AI-8320, AI-8510, AI-8511, CM-8820
Ratings ..... :	DO-8212: 5VDC±5%, 800mW; DI-8110, DI-8111, DI-8112, DI-8113: 5VDC±5%, 130mW; AI-8320: 5VDC±5%, 180mW; AI-8510, AI-8511: 5VDC±5%, 800mW; CM-8820: max. 450mV; 5A

Testing procedure and testing location:		
☒ **CB Testing Laboratory:**	TÜV AUSTRIA SERVICES GMBH	
Testing location/ address .....:	Deutschstrasse 10 Austria; 1230 Wien	
☐ **Associated CB Laboratory:**		
Testing location/ address .....:		
Tested by (name + signature).....:	Ing. Stefan Matzner	
Approved by (name + signature) .....:	Ing. Andreas Malek	
☐ **Testing procedure: TMP**		
Testing location/ address .....:		
Tested by (name + signature).....:		
Approved by (name + signature) .....:		
☐ **Testing procedure: WMT**		
Testing location/ address .....:		
Tested by (name + signature).....:		
Witnessed by (name + signature) .....:		
Approved by (name + signature) .....:		
☐ **Testing procedure: SMT**		
Testing location/ address .....:		
Tested by (name + signature).....:		
Approved by (name + signature) .....:		
Supervised by (name + signature).....:		
☐ **Testing procedure: RMT**		
Testing location/ address .....:		
Tested by (name + signature).....:		
Approved by (name + signature) .....:		
Supervised by (name + signature).....:		

TEST REPORT

of the accredited test laboratory

TÜV Nr.:M/EMV-15/121

about

the following EMC - test/- research

Applicant:	Siemens AG Österreich Ruthnergasse 3 A-1210 Vienna
Product:	DI-8110 6MF2811-0AA00 DI-8111 6MF2811-1AA00 DI-8112 6MF2811-2AA00 DI-8113 6MF2811-3AA00 DO-8212 6MF2821-2AA00 AI-8320 6MF2832-0AA00
Serial Numbers:	DI-8110 → GF1411005344, GF1411005343 (Isolation) DI-8112 → 600000530409 DO-8212 → 600000530419, GF1412004300 (Isolation) AI-8320 → 600000530490, 600000530490 (Isolation)
Standard:	Manufacturer Specifications: TTS_CMIC_IOs_V1_3.doc

File: 6MF28_IO_TUEV15-121.pdf

TÜV AUSTRIA SERVICES GMBH

Test laboratory for EMC

Deputy
Supervisor of EMC-laboratory

Ing. Andreas Malek

Official seal

13.02.2015

Checked by

Ing. Michael Emminger

Copy Nbr.: 01

TÜV AUSTRIA SERVICES GMBH

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Division:
Medical Technology/ Communication Technology/ EMC

Department:
Testing Body for Communication Technology/ EMC

TÜV ®

Summary

Clause	Test	Severities	Result
4.1	Radiated Emissions	CISPR 22: 30 MHz –2 GHz; Class A	OK
4.2	Electrostatic discharge requirements (ESD)	IEC 61000-4-2: 6kV contact, 8 kV air 10 discharges pos/neg	OK
4.3	Radiated electromagnetic field requirements	IEC 61000-4-3: 80MHz – 3GHz; 10V/m 80% AM	OK
4.4	Induced RF-field requirements	IEC 61000-4-6: 150kHz – 80MHz; 10Vrms 80% AM	OK
4.5	Electrical fast transients/burst requirements	IEC 61000-4-4: 4 kV Test level 5/50 ns t_r/t_n 5kHz Burst frequency 15 ms Burst time 3 Hz Repetition frequency Polarity: positive/negative	OK
4.6	Surge requirements	IEC 61000-4-5: 4 kV Test level 1,2/50 µs t_r/t_n Polarity: positive/negative	OK
4.7	Oscillatory wave requirements	IEC 61000-4-18: 2,5 kV Test level Frequency: 1 MHz Repetition: 400/s Burst duration: 2 seconds Polarity: positive/negative	OK
4.8	Ring wave requirements	IEC 61000-4-12: 2 kV Test level common 2 kV Test level normal Frequency: 100 kHz Repetition: 1/s Polarity: 5 positive / 5 negative	OK
4.9	Magnetic field strength at power frequency	IEC 61000-4-8: 100 A/m; 50 Hz for 3 second	OK
4.10	Magnetic field strength – pulsed	IEC 61000-4-9: 1000 A/m; 8/20µs	OK
4.11	Induced common mode requirements	IEC 61000-4-16: 15Hz – 150kHz; 30Vrms DC/16,67/50/60/150/180Hz 30Vrms for 1 minute / 300Vrms for 1 second	OK
4.12	Surge withstand capability (SWC) Fast Transient	IEEE C37.90.1 4 kV .) Burst filter direct (>100µH,33nF) .) line bal. Transformer coupling filter (>100µH, 66nF) .) coupling clamp	OK
4.13	Surge withstand capability (SWC) Oscillatory test 1 MHz damped oscill. wave	IEEE C37.90.1 2,5 kV .) coup. Dev. (1,5 mH, 0,5 µF)	OK
4.14	Insulation Test	IEC 61010-1: Steady State Test: 3,8/1,8kV 50Hz sinus for 1 minute Impulse Test: 5/2,5kV; 1,2µs/ 50µs; 500 Ω output impedance; 5 impulses pos/neg	OK
OK EUT passed NOK EUT failed			

EUT:	**DI-8110** **6MF2811-0AA00** DI-8110 BINARY INPUT 2X8,24VDC, 1ms **DI-8112** **6MF2811-2AA00** DI-8110 BINARY INPUT 2X8,110VDC, 1ms **DO-8212** **6MF2821-2AA00** DO-8212 BIN OUTPUT REL 8X24-220VDC/230VAC **AI-8320** **6MF2832-0AA00** AI-8320 ANALOG INPUT 2X2 +/-20MA/ +/-10V Other versions of DI-811x (not tested, but tests are representative for following versions with other series resistors): **DI-8111 6MF2811-1AA00** DI-8111 BINARY INPUT 2X8,48/60VDC, 1ms **DI-8113 6MF2811-3AA00** DI-8113 BINARY INPUT 2X8,220VDC, 1ms
Serial Number:	DI-8110 → GF1411005344, GF1411005343 (Isolation) DI-8112 → 600000530409 DO-8212 → 600000530419, GF1412004300 (Isolation) AI-8320 → 600000530490, 600000530490 (Isolation)
Manufacturer:	Siemens AG Österreich Ruthnergasse 3 A-1210 Wien
Operating mode:	The measurements were carried out at the following running states: continuous observation for checking the proper functioning of the EUT
Auxiliary equipment:	SICAM CMIC BF1408520989 6MF21011AB100AA0DD
Technical data EUT:	Power supply of CMIC: 2x 12V Accus 12Ah
Climatic conditions in the emc laboratory:	Relative humidity: 36 % Temperature: 24 °C
Applicant:	Siemens AG Österreich
Department:	Energy Automation Development
Address:	A-1210 WIEN, Ruthnergasse 3
Contact person:	Mr. Herbert STEFL
EUT received on:	10.02.2015
Tests were performed on:	10. until 11.02.2015