

Typprüfbescheinigung / Type Test Certificate

Erzeugnis / Product: **Contactors**

Typ: **3RT2.3**
Type:

Tech. Daten: **U_a = 690 V**
Specification: **AC-3: 400 V / 80 A**

Hersteller: **Siemens AG**
Manufacturer: **DF CP**

Art der Prüfung / Type of test: **Vibration and Shock**

Prüfer / **Mr. Koerner**
Tested by:

Labor / **LOVAG registered and DAkKS accredited**
Laboratory: **Testing Laboratory**
Siemens AG, Amberg

Angewandte Prüfbestimmungen / Test specifications applied:

SN 31205: 01.2008; 3M6
KWU ASV ZEN000 DD/7080.9/1: 07.1987; Earthquake
IEC 60068-2-6: 12.2007
IEC 60068-2-27: 02.2008
IEC 60068-2-47: 04.2005

Durchgeführte Prüfungen / Tests conducted:

3M6:

Vibration: 4 – 5.8 Hz / 15 mm; 5.8 – 500 Hz / 20 m/s² / 10 cycles

Shock: half-sine; 150 m/s² / 11 ms; 3 x positive shocks and 3 x negative shocks

KWU:

Vibration: f = 5... 35Hz; d = +/- 14mm; a_{max} = 21m/s² (increase factor 1,4); 1,5 cycles
additional test a0: Excitation frequency f_{e0} determined in accordance with ZEN000
DD/7080.9/Abs. 9.2.1; a_{max}=84m/s² (increase factor 1,4)

Prüfergebnis / Test results:

All requirements of the test specification are met.

Bemerkungen / Remarks: **Issued: 2015-12-04**

i.V.


DF CP R&D V Mr. Schweiger

i.V.


DF CP R&D Mr. Koppmann

SIEMENS AG

Digital Factory

Anton S. Huber, CEO

SIEMENS

Product description

Certificate No.: 3321

Type designation: 3RT2.3

Manufacturer: Siemens AG DF CP
Werner-von-Siemens-Str. 48, 92220 Amberg

Production site: Siemens AG DF CP
Werner-von-Siemens-Str. 29, 93413 Cham

Nomenclature breakdown:

3RT20	35	-1	A	B4	0	-....
I	II	III	IV	V	VI	VII

I. **Basic Type**

3RT20 - motor contactor, 3NO main contacts
3RT23 - AC1-contactor, 4NO main contacts
3RT24 - AC-1-contactor, 3NO main contacts
3RT25 - contactor, 2NO + 2NC main contacts

II. **Size S2**

35 - 18,5 kW
36 - 22 kW
37 - 30 kW
38 - 37 kW

III. **Type of Terminals**

1 - Screw Terminal for main and auxiliary contacts
3 - Screw Terminal for main and spring type terminals for auxiliary contacts

IV. **Operating system**

A - AC operating system
C - AC operating system with factory assembled EMC protective unit Varistor
D - DC operating system with integrated EMC protective unit varistor
E - AC operating system with factory assembled EMC protective unit RC combination
K - DC operating system
N - UC (AC and DC) operating system
P - AC operating system with factory assembled EMC protective unit Diode combination

V. **Operating voltage**

B0 - W8 24 Vac through 600 Vac
12 Vdc through 250 Vdc
20 Vac/Vdc through 280 Vac/Vdc

VI. **Auxiliary Contact Arrangements**

0 - 1 normally open and 1 normally closed (integrated)
4 - 2 normally open and 2 normally closed (with front mounted aux. block)
6 - 2 normally open and 2 normally closed (with one lateral mounted aux. contact)
8 - any other, individual auxiliary contact arrangements

VII. **Suffix letters and/or numbers specified commercial variations**

-0CC0 - Contactor with communication interface
-0LA2 - Contactor with UC operating system and integrated varistor
-4AA0 - 3RT2336 (4NO) with AC-3 ratings
-.... - any other commercial variation

See type test certificate according to product standard.

Test summary

Certificate No.: 3321

Test laboratory: *Type Test Center Siemens AG Amberg
Werner-von-Siemens-Str. 48, 92220 Amberg*

Manufacturer:

Test object: *Contactor S2*

Type designation: *3RT2.3*

Test specification: *IEC 60068-2-6 (2007-12) DIN EN 60068-2-6 (2008-10)
IEC 60068-2-27 (2008-02) DIN EN 60068-2-27 (2010-02)
IEC 60068-2-47 (2005-04) DIN EN 60068-2-47 (2006-03)
SN 31205 (2008-01)
KWU ASV ZEN000 DD/7080.9/1 (1987-07)*

Test report No.: *13079ENV01a, 13079ENV02*

The Test summary consists of 11 pages and is only valid combined with the product description

Test report No.: 13079ENV01a

Test samples:

Sample No. 13079EN	Device no	Tested device	Type designation	Date code	mounting	monitoring
001	-001	Contactor	3RT2035-1AP00	pilot series	snap	L1-T3; 13-14; 21-22
	-002	surge suppressor	3RT2936-1CD00	E01 MRE 131105		---
	-003	Terminal cover	3RT2936-4EA2	---		---
	-004	Terminal cover	3RT2936-4EA2	---		---
	-005	Sealable cover	3RT2916-4MA10	E01; RDW 03.Mai 2010		---
002	-006	Contactor	3RT2035-3AP00	pilot series	screw	L1-T3; 13-14; 21-22
	-007	3phase feed-in terminal	3RV2935-5A	E01; EYA140109		---
	-008	LED module	3RT2926-1QT00	ZZ130717		---
003	-009	Contactor	3RT2035-1NB30	pilot series	screw	L1-T3; 13-14; 21-22
	-010	surge suppressor	3RT2936-1CB00	E01 MRE131105		---
	-011	Terminal cover	3RT2936-4EA2	---		---
	-012	Terminal cover	3RT2936-4EA2	---		---
	-013	Sealable cover	3RT2916-4MA10	E01; RDW 03.Mai 2010		---
004	-014	Contactor	3RT2035-3NB30	pilot series	snap	L1-T3; 13-14; 21-22
	-015	3phase feed-in terminal	3RV2935-5A	E01; EYA140109		---
	-016	LED module	3RT2926-1QT00	ZZ130717		---

Test summary

Certificate No.: 3321

Sample No. 13079EN	Device no	Tested device	Type designation	Date code	mounting	monitoring
005	-017	AC-1 contactor	3RT2337-1AP00	pilot series	screw	L1-T4; 13-14; 21-22
	-018	Terminal cover	3RT2936-4EA4	---		---
	-019	Terminal cover	3RT2936-4EA4	---		---
006	-020	AC-1 contactor	3RT2337-3NB30	pilot series	snap	L1-T4; 13-14; 21-22
009	-025	Contactor	3RT2035-1AP00	pilot series	screw	L1-T3; 13-14; 21-22
	-026	Parallel connector	3RT1936-4BB31	E01 110530		---
	-027	auxiliary switch block side mounted	3RH2921-1DA11	E03 NQ140128		31-32; 43-44
	-028	auxiliary switch block side mounted	3RH2921-1DA11	E03 NQ140128		51-52; 63-64
010	-029	Contactor	3RT2035-3AP00	pilot series	snap	L1-T3; 13-14; 21-22;
	-030	Coil connection modul	3RT2926-4RB11	E02		---
	-031	auxiliary switch block front mounted	3RH2911-2HA22	E02 LO131212		11-12; 21-22; 33-34; 43-44
011	-032	Contactor	3RT2035-1NB30	pilot series	screw	L1-T3; 13-14; 21-22;
	-033	Coil connection modul	3RT2926-4RA11	E02		---
	-034	auxiliary switch block front mounted	3RH2911-1HA22	E02 LO131204		11-12; 21-22; 33-34; 43-44
012	-035	Contactor	3RT2035-3NB30	pilot series	snap	L1-T3; 13-14; 21-22;
	-036	Parallel connector	3RT1936-4BB31	E02 130710		---
	-037	auxiliary switch block side mounted	3RH2921-2DA11	E03 NQ 131128		51-52; 63-64;
	-038	auxiliary switch block side mounted	3RH2921-2DA11	E03 NQ 131128		31-32; 43-44
013	-039	Contactor	3RT2035-1AP00	pilot series	snap	L1-T3; 13-14; 21-22;
	-040	Coupling link	3RH2914-1GP11	E00 LO140319		---
014	-041	Contactor	3RT2038-1NB30	pilot series	screw	L1-T3; 13-14; 21-22
	-042	Logic module	3RA2815-1FW10	E04; LO131010		27-28; 35-36
016	-045	Communication contactor	3RT2038-1NB30- OCC0	pilot series	snap	L1-T3; 13-14; 21-22
	-046	IO-Link direct starter	3RA2711-1AA00	E04; LO131102		---
017	-047	Communication contactor	3RT2038-3NB30- OCC0	pilot series	screw	L1-T3; 13-14; 21-22
	-048	Function Module AS-i	3RA2712-2AA00	E04; LO131030		---
107	-121	Pole reverse contactor	3RT2536-1AP00	E01 G/141014	snap	1-2; R1-R2; R3-R4; 3-4; 13-14; 21-22

Test summary

Certificate No.: 3321

Sample No. 13079EN	Device no	Tested device	Type designation	Date code	mounting	monitoring
108	-122	Pole reverse contactor	3RT2536-3NB30	E01 G/141014	screw	1-2; R1-R2; R3-R4; 3-4; 13-14; 21-22
	-123	Terminal cover	3RT2936-4EA4	---		---
	-124	Terminal cover	3RT2936-4EA4	---		---

Required test values:

Vibration response investigation according to IEC 60068-2-6 part 8.2 and DIN EN 60068-2-6 part 8.2

test	frequency range [Hz]	cross-over frequency [Hz]	amplitude below the cross-over frequency [mm]	acceleration above the cross-over frequency [m/s ²]	Number of sweep cycles
vibration response investigation	4 - 500	-	-	7	0,5

Endurance by sweeping to IEC 60068-2-6 part 8.3.1 and DIN EN 60068-2-6 part 8.3.1

Test values according to SN31205

test	frequency range [Hz]	cross-over frequency [Hz]	amplitude below the cross-over frequency [mm]	acceleration above the cross-over frequency [m/s ²]	Number of sweep cycles
endurance by sweeping	4 - 500	5,8	15	20	10

Shock test according to IEC 60068-2-27 and DIN EN 60068-2-27

Test values according to SN31205

shock shape	number of shocks	acceleration m/s ²	shock duration ms
half-sine	3 positive 3 negative	150	11

Test summary

Certificate No.: 3321

Test results:

Sample No. 13079EN	Tests		
	vibration response investigation according to: IEC 60068-2-6 part 8.2	endurance by sweeping according to: IEC 60068-2-6 part 8.3.1	shock according to: IEC 60068-2-27
001	passed	passed	100m/s ²
002	passed	passed	100m/s ²
003	passed	passed	80m/s ²
004	passed	passed	80m/s ²
005	passed	passed	100m/s ²
006	passed	passed	60m/s ²
009	passed	passed	80m/s ²
010	passed	passed	80m/s ²
011	passed	passed	60m/s ²
012	passed	passed	40m/s ²
013	passed	passed	100m/s ²
014	passed	passed	80m/s ²
016	passed	passed	80m/s ²
017	passed	passed	80m/s ²
107	passed	passed	60m/s ²
108	passed	passed	60m/s ²

Test summary

Certificate No.: 3321

Test report No.: 13079ENV02

Test samples:

Sample No. 13079EN	Device no	Tested device	Type designation	Date code	mounting	monitoring
018	-049	Contactora	3RT2038-1AN00	X00 G/140416	snap mounted	L1-T3; 13-14; 21-22
	-050	surge suppressor	3RT2936-1JL00	E01 MRE/140710		---
	-051	Terminal cover	3RT2936-4EA2	---		---
	-052	Terminal cover	3RT2936-4EA2	---		---
	-053	Sealable cover	3RT2916-4MA10	E01; RDW 04.Mai 2011		---
019	-054	Contactora	3RT2038-3AN00	X00 G/140522	screw mounted	L1-T3; 13-14; 21-22
	-055	3-Phase infeed terminal	3RV2935-5A	E01; EYA140110		---
	-056	LED module	3RT2926-1QT00	ZZ140715		---
020	-057	Contactora	3RT2038-1NB30	X00 G/140411	screw mounted	L1-T3; 13-14; 21-22
	-058	surge suppressor	3RT2936-1CB00	E01 NRE/140710		---
	-059	Terminal cover	3RT2936-4EA2	---		---
	-060	Terminal cover	3RT2936-4EA2	---		---
	-061	Sealable cover	3RT2916-4MA10	E01; RDW 04.Mai 2011		---
021	-062	Contactora	3RT2038-3NB30	---	snap mounted	L1-T3; 13-14; 21-22
	-063	3-Phase infeed terminal	3RV2935-5A	E01; EYA140110		---
	-064	LED module	3RT2926-1QT00	ZZ140715		---
022	-065	AC-1 contactora	3RT2337-1AN00	E01 G/141017	screw mounted	L1-T4; 13-14; 21-22
	-066	Terminal cover	3RT2936-4EA4	---		---
	-067	Terminal cover	3RT2936-4EA4	---		---
023	-068	AC-1 contactora	3RT2337-3NB30	E01 G/141023	snap mounted	L1-T4; 13-14; 21-22
024	-069	Pole reverse contactora	3RT2536-1AN00	E01 G/141017	snap mounted	1-2; R1-R2; R3-R4; 3-4; 13-14; 21-22
025	-070	Pole reverse contactora	3RT2536-3NB30	E01 G/141014	screw mounted	1-2; R1-R2; R3-R4; 3-4; 13-14; 21-22
	-071	Terminal cover	3RT2936-4EA4	---		---
	-072	Terminal cover	3RT2936-4EA4	---		---

Test summary

Certificate No.: 3321

Sample No. 13079EN	Device no	Tested device	Type designation	Date code	mounting	monitoring
026	-073	Contactora	3RT2038-1AN00	X00 G/140519	screw mounted	L1-T3; 13-14; 21-22
	-074	Parallel connector	3RT2936-4BB31	E01 EYA 14/07/09		---
	-075	auxiliary switch block side mounted	3RH2921-1DA11	E03 NQ/140722		51-52; 63-64
	-076	auxiliary switch block side mounted	3RH2921-1DA11	E03 NQ/140722		31-32; 43-44
027	-077	Contactora	3RT2038-3AN00	X00 G/140522	snap mounted	L1-T3; 13-14; 21-22
	-078	Coil connection modul	3RT2926-4RB11	E01JFY 20.AUG.2014		---
	-079	auxiliary switch block front mounted	3RH2911-2HA22	E02 LO140907		31-32; 41-42; 53-54; 63-64
028	-080	Contactora	3RT2038-1NB30	---	screw mounted	L1-T3; 13-14; 21-22
	-081	Coil connection modul	3RT2926-4RA11	E01 JFY 17.FEB.2014		---
	-082	auxiliary switch block front mounted	3RH2911-1HA22	E02 LO140925		31-32; 41-42; 53-54; 63-64
029	-083	Contactora	3RT2038-3NB30	---	snap mounted	L1-T3; 13-14; 21-22
	-084	Parallel connector	3RT2936-4BB31	E02 EYA 14/07/09		---
	-085	auxiliary switch block side mounted	3RH2921-2DA11	E03 NQ/140917		51-52; 63-64
	-086	auxiliary switch block side mounted	3RH2921-2DA11	E03 NQ/140917		31-32; 43-44
030	-087	Contactora	3RT2038-1AN00	X00 G/140519	snap mounted	L1-T3; 13-14; 21-22
	-088	Coupling link	3RH2914-1GP11	E01 LO 140805		---
031	-089	Contactora	3RT2038-1NB30	X00 G/140411	screw mounted	L1-T3; 13-14; 21-22
	-090	Logic module	3RA2815-1FW10	E03 LO 140925		27-28; 35-36
032	-091	Contactora	3RT2038-3NB30	---	snap mounted	L1-T3; 13-14; 21-22
	-092	Logic module	3RA2813-2AW10	E03 LO 140923		15-16; 15-18
033	-093	Communication contactora	3RT2038-1NB30- 0CC0	X00 G/140415	snap mounted	L1-T3; 13-14; 21-22
	-094	IO-Link function module	3RA2711-1AA00	E04; LO131102		---
034	-095	Communication contactora	3RT2038-3NB30- 0CC0	---	screw mounted	L1-T3; 13-14; 21-22
	-096	AS-I Module	3RA2712-2AA00	E04; LO131030		---

Test summary

Certificate No.: 3321

Required test values:

Vibration response investigation according to DIN EN 60068-2-6 part 8.2

test	frequency range [Hz]	cross-over frequency [Hz]	amplitude below the cross-over frequency [mm]	acceleration above the cross-over frequency [m/s ²]	Number of sweep cycles
vibration response investigation	5 - 35	-	-	7	0,5

Vibration load test according to DIN EN 60068-2-6 part 8.3.1

Test values according to KWU ASV ZEN000 DD/7080.9/1

floating sine: 5 Hz – 35 Hz tested device not actuated
 35 Hz – 5 Hz tested device actuated
 5 Hz – 35 Hz tested device with switching operations

excitation level: 15 m/s² (tested with 3 devices)
 if there is only one tested device, the vibration load test has to be conducted with an excitation level of 21m/s² (15m/s² x 1,4)

frequency changing speed: 1 oct/min

Additional load test according to DIN EN 60068-2-6 part 8.3.1

Test values according to KWU ASV ZEN000 DD/7080.9/1

permanent sine 2 s tested device not actuated
 2 s tested device actuated

excitation frequency according to calculation, see below

excitation level preferred value 60m/s² (tested with 3)
 If there is only one tested device, the test has to be conducted with an excitation level of 84m/s² (60m/s² x 1,4)
 Other values also accepted.

Test summary

Certificate No.: 3321

Test results:

Sample No. 13079EN	Tested device	Tests					
		vibration load test		determination excitation level with the additional load (a0)			routine test
		according to: KWU ASV ZEN000 DD/7080.9/1 part 9.1		according to: KWU ASV ZEN000 DD/7080.9/1 part 9.2			
hold voltage	switch on voltage	X	Y	Z	according to: KWU ASV ZEN000 DD/7080.9/1 part 10		
018	-049	132V	165V	35	42	35	passed
019	-054	132V	165V	60	42	60	passed
020	-057	19,2V	19,2V	60	28	60	passed
021	-062	19,2V	19,2V	42	21	42	passed
022	-065	132V	165V	60	42	60	passed
023	-068	19,2V	19,2V	60	21	60	passed
024	-069	132V	165V	42	42	42	passed
025	-070	19,2V	19,2V	60	21	60	passed
026	-073	132V	165V	60	42	60	passed
	-075			60	35	60	passed
027	-077	132V	165V	60	42	60	passed
	-079			60	42	60	passed
028	-080	19,2V	19,2V	60	28	60	passed
	-082			60	21	60	passed
029	-083	19,2V	19,2V	60	21	42	passed
	-085			60	14	60	passed
	-086			60	21	60	passed

Test summary

Certificate No.: 3321

Sample No. 13079EN	Tested device	Tests					
		vibration load test		determination excitation level with the additional load (a0)			routine test
		according to: KWU ASV ZEN000 DD/7080.9/1 part 9.1		according to: KWU ASV ZEN000 DD/7080.9/1 part 9.2			
test voltages		verified acceleration values [m/s ²]			according to: KWU ASV ZEN000 DD/7080.9/1 part 10		
		hold voltage	switch on voltage	X	Y	Z	
030	-087	132V	165V	60	42	60	passed
		19,2V	19,2V	60	42	60	passed
031	-089	19,2V	19,2V	60	28	60	passed
032	-091	19,2V	19,2V	60	21	42	passed
033	-093	19,2V	19,2V	60	28	42	passed
034	-095	19,2V	19,2V	60	21	60	passed

Test summary

Certificate No.: 3321

The tests were carried out on devices, representative for the whole series, fixed on page 1 up to 9 of the product description

The tests were carried out in the

Type Test Center Siemens AG Amberg
Werner-von-Siemens-Str. 48, 92220 Amberg
Accredited-No.: **D-PL-11055-04-00**

The test results are in accordance with the test specification

Remarks

Certificate No.: 3321

13079ENV01a: Test of contactor base 3RT2.3 size S2 according to SN 31205 (2008-01) The test results are in accordance with the test specification.

13079ENV02: Test of contactor base 3RT2.3 size S2 according to KWU ASV ZEN000 DD/7080.9/1 (1987-07), DIN EN 60068-2-6 (2008-10) and DIN EN 60068-2-47 (2006-03). The test results are in accordance with the test specification.

Amberg, 26.11.2015

Location, Date

Signature
(Authorized representative)
Name Mr. Körner

Reviewed
(Laboratory manager)
Name Mr. Bogner