

Typprüfbescheinigung / Type Test Certificate

Erzeugnis / Product: **Circuit Breaker and Accessories**

Typ: **3RV2.1, 3RV2.2, 3RV2.3** Tech. Daten: **$U_e = 690V / I_e = 0.11 - 100A$** Hersteller: **Siemens AG**
Type: **3RV2.4, 3RV19, 3RV29** Specification: Manufacturer: **DF CP**

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

Prüfer / **Mr. Pilhöfer**
Tested by:

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

Angewandte Prüfbestimmungen / Test specifications applied:
KWU ASV ZEN000 DD/7080.9/1: 1987-07
IEC 60068-2-6: 2007-12
IEC 60068-2-47: 2005-04

Durchgeführte Prüfungen / Tests conducted:

Vibration: $f = 5 \dots 35\text{Hz}$; $d = \pm 14\text{mm}$; $a_{\text{max}} = 21\text{m/s}^2$ (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; $a_{\text{max}} = 84\text{m/s}^2$ (increase factor 1,4)

Prüfergebnis / Test results:

All requirements of the test specification are met.

Bemerkungen / Remarks: **Issued: 2010-07-27**

Index a, dated 2011-05-16: Test-report 09001TMv02 replaced by 09001TMv02a.
Standard IEC 60068-2-27 removed.

Index b, dated 2015-07-29: 3RV2.3 added. Test-report 09001TMv02a replaced by Product description
and test summary 3019b.

Index c, dated 2017-02-13: 3RV2.4 added. Product description and test summary 3019b replaced by
Product description and test summary 3019c.

i.V.


DF CP R&D VC Mr. Hartinger

i.V.


DF CP R&D PMM Mr. Royer

SIEMENS AG

Digital Factory

Dr. Jan Mrosik, CEO

Siemens Aktiengesellschaft: Chairman of the Supervisory Board: Gerhard Cromme;
Managing Board: Joe Kaeser, Chairman, President and Chief Executive Officer; Roland Busch, Lisa Davis, Klaus Helmrich, Janina Kugel, Siegfried Russwurm,
Ralf P. Thomas;

Registered offices: Berlin and Munich, Germany; Commercial registries: Berlin Charlottenburg, HRB 12300, Munich, HRB 6684; WEEE-Reg.-No. DE 23691322
Formular: Juni, 2016

SIEMENS

Product description

Certificate No.: 3019c

Type designation: 3RV2.

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

Siemens, s.r.o.
Nízkonapěťová spínací technika Works
541 01 Trutnov, Volanovska 516
Czech Republic

Series: 3RV2...

3RV20 41 -4A A 1 8 ..
 I II III IV V VI VII

I. Basic Type

- 3RV20 – Circuit Breaker for motor protection
- 3RV21 - Circuit Breaker for motor protection with overload function
- 3RV23 - Circuit Breaker for starter combination
- 3RV24 - Circuit Breaker for transformer protection

II. Size of terminal for main circuit

- 11 – Up to 16 A, Size S00
- 21 – up to 40 A, Size S0
- 23 - only for setting ranges 12.5 up to 25 A, Size S0
- 31 – from 14 A up to 80 A, standard short circuit breaking capacity, 65kA / 400V, Size S2
- 32 – from 14 A up to 80 A, higher short circuit breaking capacity, 100kA / 400V, Size S2
- 41- from 40 A up to 100 A, standard short circuit breaking capacity, 65kA / 400V, Size S3
- 42- from 40 A up to 100 A, higher short circuit breaking capacity, 100kA / 400V, Size S3

III. Setting Ranges

Suffix	from	to (A)	Size
-0A	0.11	0.16	S00, S0
-0B	0.14	0.2	S00, S0
-0C	0.18	0.25	S00, S0
-0D	0.22	0.32	S00, S0
-0E	0.28	0.4	S00, S0
-0F	0.35	0.5	S00, S0
-0G	0.45	0.63	S00, S0
-0H	0.55	0.8	S00, S0
-0J	0.7	1	S00, S0
-0K	0.9	1.25	S00, S0
-1A	1.1	1.6	S00, S0
-1B	1.4	2	S00, S0
-1C	1.8	2.5	S00, S0
-1D	2.2	3.2	S00, S0
-1E	2.8	4	S00, S0
-1F	3.5	5	S00, S0
-1G	4.5	6.3	S00, S0
-1H	5.5	8	S00, S0
-1J	7	10	S00, S0
-1K	9	12.5	S00, S0
-4S	9.5	14	S2
-4A	10	16	S00, S0
-4T	12	17	S2
-4B	13	20	S0
-4B	14	20	S2
-4C	16	22	S0
-4D	18	25	S0, S2
-4N	23	28	S0

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Nomenclature breakdown

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-4E	27	32	S0
-4E	22	32	S2
-4P	30	36	S0
-4P	28	36	S2
-4U	32	40	S2
-4F	34	40	S0
-4F	28	40	S3
-4V	35	45	S2
-4W	42	52	S2
-4X	49	59	S2
-4J	54	65	S2
-4K	62	73	S2
-4R	70	80	S2
-4H	36	50	S3
-4J	45	63	S3
-4K	57	75	S3
-4R	65	84	S3
-4Y	75	93	S3
-4M	80	100	S3

IV. Tripping Class

- A - setting ranges with instantaneous tripping and overload tripping Class 10
- B - setting ranges with instantaneous tripping and overload tripping Class 20
- C - with instantaneous tripping and without overload tripping

V. Type of Terminals

- 1 - Screw Terminal
- 2 - spring terminals (only up to 32A)
- 4 - Ring lug terminals (only up to 32A)

VI. Auxiliary Switches

(Combinations with certified accessories Type 3RV29...)

- 0 - without
- 1 - 1NO + 1NC, side mounted
- 2 - 2NO, side mounted
- 3 - 2NC, side mounted
- 4 - 1NO/NC Changeover, top mounted
- 5 - 1NO + 1NC, top mounted
- 6 - 2NO, top mounted

VII. Others

- .. - Manufacturer's identification

3RV2721 - 0A D 1 0
I II III IV V

- I. Basic type
3RV2711 - circuit Breaker acc. UL489, adjusted to 13 times rated current up to 15 A
3RV2811 - circuit Breaker acc. UL489, adjusted to 20 times rated current up to 15 A
3RV2721 - circuit Breaker acc. UL489, adjusted to 13 times rated current from 20 A up to 22 A
3RV2821 - circuit Breaker acc. UL489, adjusted to 20 times rated current from 20 A up to 22 A
3RV2742 - circuit Breaker acc. UL489, adjusted to 13 times rated current from 10 A up to 70 A
- II. Rated Current
-0A - 0.16 A
-0B - 0.2 A
-0C - 0.25 A
-0D - 0.32 A
-0E - 0.4 A
-0F - 0.5 A
-0G - 0.63 A
-0H - 0.8 A
-0J - 1.0 A
-0K - 1.25 A
-1A - 1.6 A
-1B - 2.0 A
-1C - 2.5 A
-1D - 3.2 A
-1E - 4.0 A
-1F - 5.0 A
-1G - 6.3 A
-1H - 8.0 A
-1J - 10 A
-5A - 10 A
-5R - 10 A
-1K - 12.5 A
-5B - 15 A
-5S - 15 A
-4A - 15 A
-4B - 20 A
-5C - 20 A
-4C - 22 A
-5D - 25 A
-5E - 30 A
-5F - 35 A
-5G - 40 A
-5H - 45 A
-5J - 50 A
-5L - 60 A
-5Q - 70 A
- III. Tripping Class
D - with instantaneous tripping and fixed current overload tripping
- IV. Type of Terminal
1 - Screw Terminals

- V. Auxiliary Switches
0 - without

Accessories:

Auxiliary contacts:

3RV2901	-1	A
I	II	III

I - Basic type

3RV2901 -	Auxiliary contact blocks for 3RV2
3RV2921 -	Alarm switch for 3RV2

II - Type of terminals

-1 -	Screw Terminal
-2 -	Spring terminals
-4 -	Ring lug terminals

III - Contact arrangements

A -	1NO + 1NC, side-mounting
B -	2NO, side-mounting
C -	2NC, side-mounting
D -	1NO + 1NC changeover, top-mounting
E -	1NO + 1NC, top-mounting
F -	2NO, top-mounting
G -	1NO + 1NC changeover, top-mounting, micro switch
J -	2NO + 2NC, side-mounting
M -	2NO + 2NC, side-mounting, alarm switch

Undervoltage trip units, Shunt releases:

3RV2902	-1	A	B4
I	II	III	IV

I - Basic type

3RV2902 -	Undervoltage trip units, Shunt releases for 3RV2
3RV2922 -	Undervoltage trip unit with leading auxiliary contacts for 3RV2

II - Type of terminals

-1 -	Screw Terminal
-2 -	Spring terminals
-4 -	Ring lug terminals

III – Type of Accessory

A -	Undervoltage trip unit
C -	Undervoltage trip unit with leading auxiliary contacts
D -	Shunt trip unit

IV – Rated voltage for Undervoltage trip unit

B4 -	24V, dc
B0 -	24V, 50/60Hz
F0 -	110V, 50Hz; 120V, 60Hz
M1 -	208V, 60Hz
P0 -	230V, 50Hz; 240V, 60Hz
V0 -	400V, 50Hz; 440V, 60Hz
V1 -	415V, 50Hz; 480V, 60Hz
S0 -	500V, 50Hz; 600V, 60Hz
G6 -	100V, 50 Hz; 110V, 60Hz
N0 -	220V, 50Hz
N6 -	200V, 50Hz; 220V, 60Hz
Q0 -	380V, 50Hz
U0 -	240V, 50Hz

IV – Rated voltage for Shunt trip unit

B0 -	20-24V, 50/60Hz
F0 -	90-110V, 50/60Hz
P0 -	210-240V, 50/60Hz
V0 -	350-415V, 50/60Hz
S0 -	500V, 50/60Hz

Further accessories

3RV2928-1A	Isolator Module, Size S00, S0
3RV2938-1A	Isolator Module, Size S2
3RV2928-1K	Type E Adapter for screw terminal, Size S00, S0
3RV2938-1K	Type E Adapter for screw terminal, Size S2
3RV2948-1K	Terminal Block with phase barriers
3RT2946-4GA07	Type E Adapter for screw terminal, Size S3
3RT2946-4EA2	Terminal cover for box terminals
3RT1946-4EA1	Terminal cover for cable lug and bar connection
3RT2946-4F	Aux. conductor terminal
3RA2943-3L	1-Phase supply terminal, Size S3
3RV2908-0P	Sealing Cap
3RV2901-0H	Cover
3RV2928-4AA00	Cover for ring-lug-terminals (main terminals)
3RV2908-4AA10	Cover for ring-lug-terminals (auxiliary switch, top mounting)
3RV2928-0B	Plug-in lugs for screw mounting
8US1251-5DS10	Adapter for SIRIUS Circuit breaker, Size S00, screw terminals, 200mm
8US1251-5DT10	Adapter for SIRIUS Circuit breaker, Size S00, screw terminals, 260mm
8US1251-5NT10	Adapter for SIRIUS Circuit breaker, Size S0, screw terminals, 260mm
8US1251-5DT11	Adapter for SIRIUS Circuit breaker Size S00, spring terminals, 260mm
8US1251-5NT11	Adapter for SIRIUS Circuit breaker Size S0, spring terminals, 260mm
8US1251-5DS11	Adapter for SIRIUS Circuit breaker Size S00, spring terminals, 200mm
8US1261-5MS13	Adapter for SIRIUS Circuit breaker, Size S2, screw terminals, 200mm
8US1261-6MT10	Adapter for SIRIUS Circuit breaker, Size S2, screw terminals, 260mm
8US1211-6MT10	Adapter for SIRIUS Circuit breaker, Reversing Adapter Size S2, screw terminals, 260mm
8US1211-4TR00	Adapter for SIRIUS Circuit breaker, Size S3, screw terminals, 215mm
3RV2928-1H	Terminal Block, Size S00, S0
3RV2925-5AB	3-phase Line-Side Terminal, Size S00, S0
3RV2925-5EB	3-phase Line-Side Terminal for Self-protected Motor Starter, Size S00, S0
3RV1915-1AB	3-phase busbar for 2 devices 45mm distance, Size S00, S0
3RV1915-1BB	3-phase busbar for 3 devices 45mm distance, Size S00, S0
3RV1915-1CB	3-phase busbar for 4 devices 45mm distance, Size S00, S0
3RV1915-1DB	3-phase busbar for 5 devices 45mm distance, Size S00, S0
3RV1915-2AB	3-phase busbar for 2 devices 55 mm distance, Size S00, S0
3RV1915 2BB	3-phase busbar for 3 devices 55 mm distance, Size S00, S0
3RV1915-2CB	3-phase busbar for 4 devices 55 mm distance, Size S00, S0
3RV1915-2DB	3-phase busbar for 5 devices 55 mm distance, Size S00, S0
3RV1915-3AB	3-phase busbar for 2 devices 63 mm distance, Size S00, S0
3RV1915-3CB	3-phase busbar for 4 devices 63 mm distance, Size S00, S0
3RV2915-5B	3-phase Line-Side Terminal, connection from below, Size S00, S0
3RV1915-6AB	Cover for tags, Size S00, S0
3RV2935-5A	3-phase Line-Side Terminal, Size S2
3RV2935-5E	3-phase Line-Side Terminal for Self-protected Motor Starter, Size S2
3RV1935-1A	3-phase busbar for 2 devices 55mm distance, Size S2
3RV1935-1B	3-phase busbar for 3 devices 55mm distance, Size S2
3RV1935-1C	3-phase busbar for 4 devices 55mm distance, Size S2
3RV1935-3A	3-phase busbar for 2 devices 75 mm distance, Size S2
3RV1935-3B	3-phase busbar for 3 devices 75 mm distance, Size S2
3RV1935-3C	3-phase busbar for 4 devices 75 mm distance, Size S2
3RV1935-6A	Cover for tags, Size S2

see type test certificate according to product standard

Test summary

Certificate No.: 3019c

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

Manufacturer: *Siemens AG, DF CP
Werner-von-Siemens-Str. 29, 93413 Cham*

*Siemens, s.r.o.
Nízkonapěťová spínací technika Works
541 01 Trutnov, Volanovska 516
Czech Republic*

Test object: *Motor starter protectors and accessories*

Type designation: *3RV2*

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

Test report No.: *09001TMV02b, 13082ENV01, 13021ENV02, 13022ENV02,
15044ENV02*

The Test summary consists of 35 pages and is only valid combined with the product description

Test report No.: 09001TEV02

Test samples:

Sample no. 09001TM	Device no	Tested device	Order-No.	Date code	mounting	monitoring
001	-001	motor protection S00	3RV2011-1KA10	E01; G/081209	snap mounted	all contacts
	-002	lateral auxiliary switch	3RV2901-1J	E01; NQ/080923		
	-003	undervoltage trip unit	3RV2902-1AB4	E01; NQ/081120		
002	-004	motor protection S00	3RV2011-1KA10	E01; G/081209	snap mounted	all contacts
	-005	signaling switch	3RV2921-1M	E03; NQ/070411		
	-006	shunt trip unit	3RV2902-1DB0	E03; NQ/070508		
	-007	solid-state transverse auxiliary switch	3RV2901-1G	E00; NQ/090306		
	-008	isolator module	3RV2928-1A	E01; NQ/071015		
003	-009	motor protection with overload relay function S00	3RV2111-1KA10	E01; G/081215	snap mounted	all contacts
	-010	lateral auxiliary switch	3RV2901-1J	E01; NQ/080923		
004	-011	motor protection with overload relay function S00	3RV2111-1KA10	E01; G/081215	snap mounted	all contacts
	-012	signaling switch	3RV2921-1M	E03; NQ/070411		
	-013	solid-state transverse auxiliary switch	3RV2901-1G	E00; NQ/090306		
	-014	isolator module	3RV2928-1A	E01; NQ/071015		
005	-015	motor protection S0	3RV2021-4CA10	E00; G/090107	snap mounted	all contacts
	-016	lateral auxiliary switch	3RV2901-1J	E01; NQ/080923		
	-017	undervoltage trip unit	3RV2902-1AB4	E00; G/081120		

Test summary

Certificate No.: 3019c

Sample no. 09001TM	Device no	Tested device	Order-No.	Date code	mounting	monitoring
006	-018	motor protection S0	3RV2021-4CA10	E00; G/090107	snap mounted	all contacts
	-019	signaling switch	3RV2921-1M	E03; NQ/070411		
	-020	solid-state transverse auxiliary switch	3RV2901-1G	E00; NQ/090306		
	-021	undervoltage trip unit with leading auxiliary contacts	3RV2922-1CP0	E03; NQ/070411		
007	-022	motor protection S0	3RV2021-4CA10	E00; G/090107	snap mounted	all contacts
	-023	shunt trip unit	3RV2902-1DB0	E01; NQ/080923		
	-024	isolator module	3RV2928-1A	E01; NQ/071015		
008	-025	motor protection S0	3RV2021-4EA10	E00; G/081218	snap mounted	all contacts
	-026	lateral auxiliary switch	3RV2901-1A	E01; NQ/081120		
	-027	signaling switch	3RV2921-1M	E03; NQ/070411		
009	-028	motor protection S0	3RV2021-4EA10	E00; G/081218	snap mounted	all contacts
	-029	transverse auxiliary switch	3RV2901-1D	E00; NQ/090306		
	-030	signaling switch	3RV2921-1M	E03; NQ/070411		
010	-031	motor protection S00	3RV2011-1KA10	E01; G/081209	screw mounted	all contacts
	-032	lateral auxiliary switch	3RV2901-1J	E01; NQ/080923		
	-033	isolator module	3RV1928-1A	E01; NQ/071015		connection
011	-034	motor protection S00	3RV2011-1KA10	E01; G/081209	screw mounted	all contacts
	-035	signaling switch	3RV2921-1M	E03; NQ/070411		
	-036	shunt trip unit	3RV2902-1DB0	E01; NQ/081120		
	-037	solid-state transverse auxiliary switch	3RV2901-1G	E03; NQ/070409		
	-038	isolator module	3RV2928-1A	E01; NQ/071015		connection
012	-039	motor protection with overload relay function S00	3RV2111-1KA10	E01; G/081215	screw mounted	all contacts
	-040	lateral auxiliary switch	3RV2901-1J	E01; NQ/080923		
013	-041	motor protection with overload relay function S00	3RV2111-1KA10	E01; G/081215	screw mounted	all contacts
	-042	signaling switch	3RV2921-1M	E03; NQ/070411		
	-043	solid-state transverse auxiliary switch	3RV2901-1G	E00; NQ/090306		
	-044	isolator module	3RV2928-1A	E01; NQ/071015		connection
014	-045	motor protection S0	3RV2021-4CA10	E00; G/090107	screw mounted	all contacts
	-046	lateral auxiliary switch	3RV2901-1J	E01; NQ/080923		
015	-047	motor protection S0	3RV2021-4CA10	E00; G/090107	screw mounted	all contacts
	-048	signaling switch	3RV2921-1M	E03; NQ/070411		
	-049	solid-state transverse auxiliary switch	3RV2901-1G	E00; NQ/090306		
	-050	undervoltage trip unit with leading auxiliary contacts	3RV2922-1CP0	E03; NQ/070411		
016	-051	motor protection S0	3RV2021-4CA10	E00; G/090107	screw mounted	all contacts
	-052	shunt trip unit	3RV2902-1DB0	E01; NQ/081120		
	-053	isolator module	3RV2928-1A	E01; NQ/071015		connection
017	-054	motor protection S0	3RV2021-4EA10	E00; G/090109	screw mounted	all contacts
	-055	lateral auxiliary switch	3RV2901-1A	E01; NQ/081120		
	-056	signaling switch	3RV2921-1M	E03; NQ/070411		
018	-057	motor protection S0	3RV2021-4EA10	E00; G/090113	screw	all contacts

Test summary

Certificate No.: 3019c

Sample no. 09001TM	Device no	Tested device	Order-No.	Date code	mounting	monitoring
	-058	transverse auxiliary switch	3RV2901-1D	E00; NQ/090306	mounted	
	-059	signaling switch	3RV2921-1M	E01; NQ/080923		
019	-060	motor protection	3RV2011-1KA10	E01; G/081209	snap mounted with 3-phase busbar	all contacts
	-061	connection from below	3RV2915-5B	E01; EYA/081219		connection
	-062	3-phase busbar	3RV1915-1AB	E01; FGO/080912		
	-063	3-phase busbar	3RV1915-1AB	E01; FGO/080912		
	-064	motor protection	3RV2011-1KA10	E01; G/081209		all contacts
	-065	solid-state transverse auxiliary switch	3RV2901-1G	E00; NQ/090306		connection
	-066	3-phase busbar	3RV1915-3AB	E01; FGO/081023		
	-067	motor protection	3RV2011-1KA10	E01; G/081209		all contacts
	-068	lateral auxiliary switch	3RV2901-1J	E01; NQ/081220		
	-069	undervoltage trip unit with leading auxiliary contacts	3RV2922-1CP0	E01; NQ/081220		all contacts
	-070	3-phase busbar	3RV1915-3AB	E01; FGO/081023		connection
	-071	motor protection	3RV2011-1KA10	E01; G/081209		
	-072	shunt trip unit	3RV2902-1DP0	E01; NQ/081220		all contacts
	-073	transverse auxiliary switch	3RV2901-1E	E00; NQ/090306		
	-074	connection from top	3RV2925-5EB	E01; EYA		connection
020	-075	motor protection	3RV2021-4CA10	E00; G/09010	snap mounted with 3-phase busbar	all contacts
	-076	connection from below	3RV2915-5B	E01; EYA/081219		connection
	-077	3-phase busbar	3RV1915-1AB	E01; FGO/080912		
	-078	3-phase busbar	3RV1915-1AB	E01; FGO/080912		
	-079	motor protection	3RV2021-4CA10	E00; G/090107		all contacts
	-080	solid-state transverse auxiliary switch	3RV2901-1G	E00; NQ/090306		connection
	-081	3-phase busbar	3RV1915-3AB	E01; FGO/081023		
	-082	motor protection	3RV2021-4CA10	E00; G/090107		all contacts
	-083	lateral auxiliary switch	3RV2901-1J	E01; NQ/081120		
	-084	undervoltage trip unit with leading auxiliary contacts	3RV2922-1CP0	E01; NQ/080923		all contacts
	-085	3-phase busbar	3RV1915-3AB	E01; FGO/081023		connection
	-086	motor protection	3RV2021-4CA10	E00; G/090107		
	-087	shunt trip unit	3RV2902-1DP0	E01; NQ/081120		all contacts
	-088	transverse auxiliary switch	3RV2901-1E	E00; NQ/090306		
	-089	connection from top	3RV2925-5EB	E01; EYA		connection

Test summary

Certificate No.: 3019c

Sample no. 09001TM	Device no	Tested device	Order-No.	Date code	mounting	monitoring	
021	-090	motor protection	3RV2011-1KA10	E01; G/081209	busbar adapters motor starter protector tested with an endstop for mounting rail on the left side and one on the right side of the mounting rail on the adapter	all contacts	
	-091	lateral auxiliary switch	3RV2901-1A	E01; NQ/081120			
	-092	signaling switch	3RV2921-1M	E01; NQ/080923			
	-093	busbar adapter	8US1251-5DS10	⁰⁴ NET037982000000		connection	
	-094	terminal block	3RV2928-1H	E02; EYA/081209		all contacts	
	-095	motor protection	3RV2011-1KA10	E01; G/081209			
	-096	solid-state transverse auxiliary switch	3RV2901-1G	E00; NQ/090306			
	-097	undervoltage trip unit with leading auxiliary contacts	3RV2922-1CP0	E01; NQ/080923			
	-098	busbar adapter	8US1251-5DS10	⁰⁴ NET037982000000			connection
	-099	phase separator	3RV2928-1K	E01; LO/090417			
	-100	motor protection	3RV2021-4EA10	E00; G/090225			all contacts
	-101	lateral auxiliary switch	3RV2901-1J	E01; NQ/080923			
	-102	undervoltage trip unit	3RV2902-1AB4	E01; NQ/080923			
	-103	busbar adapter	8US1251-5NT10	⁰⁴ NET037982000000			
-104	terminal block	3RV2928-1H	E02; EYA/081219				
22	-105	motor protection	3RV2021-4EA10	E00; G/090225	busbar adapters motor starter protector tested with an endstop for mounting rail on the left side and one on the right side of the mounting rail on the adapter	all contacts	
	-106	solid-state transverse auxiliary switch	3RV2901-1G	E00; NQ/090306			
	-107	lateral auxiliary switch	3RV2901-1A	E01; NQ/081120			
	-108	undervoltage trip unit	3RV2902-1AB4	E01; NQ/081120		connection	
	-109	busbar adapter	8US1251-5NT10	⁰⁴ NET037982000000			
	-110	phase separator	3RV2928-1K	E01; LO/090417			all contacts
	-111	motor protection with overload relay function	3RV2121-4EA10	E01; G/090108			
	-112	transverse auxiliary switch	3RV2901-1A	E01; G/081120			all contacts
	-113	signaling switch	3RV2921-1M	E01; G/080923			
	-114	busbar adapter	8US1251-5NT10	⁰⁴ NET037982000000			
	-115	motor protection	3RV2011-1KA20	E01; G/081215			all contacts
	-116	lateral auxiliary switch	3RV2901-2A	E01; NQ/080923			
	-117	transverse auxiliary switch	3RV2901-2E	E00; NQ/090306			
	-118	undervoltage trip unit	3RV2902-2AP0	E01; NQ/081120		connection	
	-119	busbar adapter	8US1251-5DT11	⁰⁴ NET037982000000			

Test summary

Certificate No.: 3019c

Sample no. 09001TM	Device no	Tested device	Order-No.	Date code	mounting	monitoring
23	-120	motor protection	3RV2011-1KA20	E01; G/081215	busbar adapters motor starter protector tested with an endstop for mounting rail on the left side and one on the right side of the mounting rail on the adapter	all contacts
	-121	signaling switch	3RV2921-2M	E01; NQ/080923		connection
	-122	busbar adapter	8US1251-5DT11	04 NET037982000000		all contacts
	-123	motor protection	3RV2021-4EA20	E00; G/090202		connection
	-124	lateral auxiliary switch	3RV2901-2A	E01; NQ/080923		all contacts
	-125	transverse auxiliary switch	3RV2901-2E	E00; NQ/090306		connection
	-126	undervoltage trip unit	3RV2902-2AP0	E01; NQ/081120		all contacts
	-127	busbar adapter	8US1251-5NT11	04 NET037982000000		connection
	-128	motor protection	3RV2021-4EA20	E00; G/090202		all contacts
	-129	signaling switch	3RV2921-2M	E01; NQ/080923		connection
24	-130	busbar adapter	8US1251-5NT11	04 NET037982000000	screw mounted 3RV29 infeed system	connection
	-131	3-phase busbars with infeed from left	3RV2917-1A	E03; NQ/081231		all contacts
	-132	motor protection	3RV2011-4AA10	E00; G/090206		connection
	-133	plug-in connector	3RV2917-5CA00	E01; KHX/08491		all contacts
	-134	motor protection	3RV2021-4FA10	E00; G/090107		connection
	-135	plug-in connector	3RV1927-5AA00	E01; KHX		all contacts
	-136	3-phase busbars for system expansion	3RV2917-4A	E03; NQ		connection
	-137	motor protection	3RV2011-4AA10	E00; G/090206		all contacts
	-138	contactor	3RT2018-1AP01	E01; G/090217		connection
	-139	plug-in connector	3RV2917-5CA00	E01; KHX/08491		connection
	-140	link module	3RA1921-1DA00	E02; BIA/081022		all contacts
	-141	motor protection	3RV2021-4FA10	E00; G/090107		connection
	-142	contactor	3RT2028-1AP00	E01; G/090514		all contacts
	-143	auxiliary switch block front mounted	3RH2911-1GA22	E00; HQZ090127		connection
	-144	plug-in connector	3RV1927-5AA00	E01; KHX		all contacts
-145	link module	3RA2921-1AA00	E01; BIA/090113	connection		

Test summary

Certificate No.: 3019c

Sample no. 09001TM	Device no	Tested device	Order-No.	Date code	mounting	monitoring
25	-164	distance module	3RA2911-1CA00	E01; UTL/011208	snap mounted 3RV29 infeed system	view control
	-165	3-phase busbars with infeed from left	3RV2917-1A	E03; NQ/081231		connection
	-166	motor protection	3RV2011-4AA20	E00; G/090108		all contacts
	-167	plug-in connector	3RV2917-5AA00	E01; NQ/090914		connection
	-168	motor protection	3RV2011-4CA20	E00; G/090317		all contacts
	-169	plug-in connector	3RV2927-5AA00	E01; NQ		connection
	-170	3-phase busbar	3RV2917-4B	E03; NQ/081231		connection
	-171	motor protection	3RV2011-4AA20	E00; G/090108		all contacts
	-172	contactor	3RT2018-2AP01	E01; G/090218		view control
	-173	contactor base	3RV2927-7AA00	E01; NQ/090105		connection
	-174	plug-in connector	3RV2917-5AA00	E01; NQ/090914		all contacts
	-175	link module	3RA2911-2AA00	E01; BIA/090302		view control
	-176	motor protection	3RV2021-4CA20	E00; G/090317		connection
	-177	contactor	3RT2028-2AP00	E01; G/090401		all contacts
	-178	auxiliary switch block front mounted	3RH2911-2GA22	E00; HOZ090205		view control
	-179	contactor base	3RV2927-7AA00	E01; NQ/090105		connection
	-180	plug-in connector	3RV2927-5AA00	E01; NQ		all contacts
	-181	link module	3RA2921-2AA00	E01; BIA/090303		connection
	-182	motor protection	3RV2011-4AA20	E00; G/090108		all contacts
	-183	contactor	3RT2018-2BB42	E01; G/090305		connection
	-184	contactor base	3RV2927-7AA00	E01; NQ/090105		all contacts
	-185	plug-in connector	3RV2917-5AA00	E01; NQ/090914		view control
	-186	link module	3RA2911-2AA00	E01; BIA/090302		all contacts
	-187	wiring kit reversing starting	3RA2913-2AA2	E01; G/090319		view control
	-188	3-phase busbars for system expansion	3RV2917-4B	E03; NQ/081231		all contacts
-189	contactor	3RT2018-2BB42	E01; G/090305	view control		
-190	contactor base	3RV2927-7AA00	E01; NQ/090105	all contacts		
-191	motor protection	3RV2021-4CA20	E00; G/090408	view control		
-192	contactor	3RT2028-2BB40	E01; G/090327	all contacts		
-193	auxiliary switch block front mounted	3RV2911-2GA22	E00; HOZ090205	view control		
-194	contactor base	3RV2927-7AA00	E01; NQ/090105	connection		
-195	plug-in connector	3RV2927-5AA00	E01; NQ/090914	all contacts		
-196	link module	3RA2921-2AA00	E01, BIA/090302	view control		
-197	wiring kit reversing starting	3RA2923-2AA2	E01; G/090319	all contacts		
-198	contactor	3RT2028-2BB40	E01; G/090327	view control		
-199	auxiliary switch block front mounted	3RV2911-2GA22	E00; HOZ090205	all contacts		
-200	contactor base	3RV2927-7AA00	E01; NQ/090105	view control		

Test summary

Certificate No.: 3019c

Sample no. 09001TM	Device no	Tested device	Order-No.	Date code	mounting	monitoring
26	-201	contactor	3RV2011-1KA20	E01; G/081215	snap mounted	all contacts
	-202	lateral auxiliary switch	3RV2901-2A	E01; NQ/081120		
	-203	transverse auxiliary switch	3RV2901-2E	E00; NQ/090218		
	-204	signaling switch	3RV-2921-2M	E01; NQ/080923		
	-205	undervoltage trip unit with leading auxiliary contacts	3RV2922-2CP0	E01; NQ/081120		
27	-206	motor protection	3RV2021-4EA20	E00; G/090202	snap mounted	all contacts
	-207	lateral auxiliary switch	3RV2901-2A	E01; NQ/081120		
	-208	transverse auxiliary switch	3RV2901-2E	E00; NQ/090306		
	-209	signaling switch	3RV2921-2M	E01; NQ/080923		
	-210	shunt trip unit	3RV2902-2DF0	E01; NQ/081120		
28	-211	motor protection	3RV2011-1KA20	E01; G/081215	screw mounted	all contacts
	-212	lateral auxiliary switch	3RV2901-2A	E01; NQ/080923		
	-213	transverse auxiliary switch	3RV2901-2E	E00; NQ/090306		
	-214	signaling switch	3RV2921-2M	E01; NQ/080923		
	-215	undervoltage trip unit with leading auxiliary contacts	3RV2922-2CP0	E01; NQ/081120		
29	-216	motor protection	3RV2021-4EA20	E00; G/090202	screw mounted	all contacts
	-217	lateral auxiliary switch	3RV2901-2A	E01; NQ/080923		
	-218	transverse auxiliary switch	3RV2901-2E	E00; NQ/090306		
	-219	signaling switch	3RV2921-2M	E01; NQ/080923		
	-220	shunt trip unit	3RV2902-2DF0	E01; NQ/081120		
30	-221	motor protection	3RV2021-4EA40	E01; G/090514	snap mounted	all contacts
	-222	lateral auxiliary switch	3RV2901-4A	E01; NQ/081120		
	-223	transverse auxiliary switch	3RV2901-4E	E01; NQ/080918		
	-224	signaling switch	3RV2921-4M	E01; NQ/080923		
	-225	undervoltage trip unit	3RV2902-4AP0	E01; NQ080923		
31	-226	motor protection	3RV2021-4EA40	E01; G/090514	screw mounted	all contacts
	-227	lateral auxiliary switch	3RV2901-4A	E01; NQ/081120		
	-228	transverse auxiliary switch	3RV2901-4E	E01; NQ/080918		
	-229	signaling switch	3RV2921-4M	E01; NQ/080923		
	-230	undervoltage trip unit	3RV2902-4AP0	E01; NQ080923		
32	-231	transformer protection	3RV2811-4AD10	E00; G/090429	snap mounted	all contacts

Test summary

Certificate No.: 3019c

Sample no. 09001TM	Device no	Tested device	Order-No.	Date code	mounting	monitoring
33	-253	distance module	3RA2911-1CA00	E01; UTL/011208	snap mounted 3RV29 infeed system	view control
	-232	3-phase busbars with infeed from left	3RV2917-1A	E03; NQ/081231		connection
	-166	motor protection	3RV2011-4AA20	E00; G/090108		all contacts
	-233	plug-in connector	3RV2917-5AA00	E01; NQ/090914		connection
	-168	motor protection	3RV2011-4CA20	E00; G/090317		all contacts
	-234	plug-in connector	3RV2927-5AA00	E01; NQ/090914		connection
	-235	3-phase busbar	3RV2917-4B	E03; NQ/081231		all contacts
	-171	motor protection	3RV2011-4AA20	E00; G/090108		
	-172	contactor	3RT2018-2AP01	E01; G/090218		view control
	-236	contactor base	3RV2927-7AA00	E01; NQ/090105		connection
	-237	plug-in connector	3RV2917-5AA00	E01; NQ/090914		all contacts
	-175	link module	3RA2911-2AA00	E01; BIA/090302		
	-176	motor protection	3RV2021-4CA20	E00; G/090317		view control
	-177	contactor	3RT2028-2AP00	E01; G/090401		connection
	-178	auxiliary switch block front mounted	3RH2911-2GA22	E00; HOZ090205		all contacts
	-239	contactor base	3RV2927-7AA00	E01; NQ/090105		
	-240	plug-in connector	3RV2927-5AA00	E01; NQ/090914		view control
	-181	link module	3RA2921-2AA00	E01; BIA/090302		connection
	-182	motor protection	3RV2011-4AA20	E00; G/090108		all contacts
	-183	contactor	3RT2018-2BB42	E01; G/090305		
	-242	contactor base	3RV2927-7AA00	E01; NQ/090105		connection
	-243	plug-in connector	3RV2917-5AA00	E01; NQ/090914		
	-186	link module	3RA2911-2AA00	E01, BIA/090302		all contacts
	-187	wiring kit reversing starting	3RA2913-2AA2	G/090319		
	-246	3-phase busbars for system expansion	3RV2917-4B	E03; NQ/081231		view control
	-189	contactor	3RT2018-2BB42	E01; G/090305		all contacts
	-247	contactor base	3RV2927-7AA00	E01; NQ/090105		
	-191	motor protection	3RV2021-4CA20	E00; G/090408		view control
	-192	contactor	3RT2028-2BB40	E01; G/090327		
	-193	auxiliary switch block front mounted	3RV2911-2GA22	E00; HOZ090205		connection
	-248	contactor base	3RV2927-7AA00	E01; NQ/090105		
	-249	plug-in connector	3RV2927-5AA00	E01; NQ/090914		all contacts
	-196	link module	3RA2921-2AA00	E01, BIA/090302		
-197	wiring kit reversing starting	3RA2923-2AA2	E01; G/090319	all contacts		
-198	contactor	3RT2028-2BB40	E01; G/090327			
-254	auxiliary switch block front mounted	3RV2911-2GA22	E00; HOZ090205			
-252	contactor base	3RV2927-7AA00	E01; NQ/090105	snap mounted		
34	-252	circuit breaker	3RV2711-4AD10		E00; G/090512	all contacts

Test summary

Certificate No.: 3019c

Sample no. 09001TM	Device no	Tested device	Order-No.	Date code	mounting	monitoring
51	-801	motor protection	3RV2011-1KA20	E01; G/091020	snap mounted	all contacts
	-402	lateral auxiliary switch	3RV2901-2A	E00; NQ/090304		
	-403	transverse auxiliary switch	3RV2901-2E	E00; NQ/090218		
	-404	signaling switch	3RV-2921-2M	E01; NQ/090304		
	-405	undervoltage trip unit with leading auxiliary contacts	3RV2922-2CP0	E01; NQ/090309		

Test summary

Certificate No.: 3019c

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/s ² (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/s ² (15m/s ² 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/s ² (tested with 3) If there is only one tested device, the test has to be conducted with an excitation level of 84m/s ² (60m/s ² x1,4) Other values also accepted.

Test summary

Certificate No.: 3019c

Routine test:

Visual inspection

No mechanical damage of the housing.

Function test of motor starter protector, contactors and accessories

Test according to NEA requirements

Test summary

Certificate No.: 3019c

Test results:

Sample no. 09001TM	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 1) verified acceleration values [m/s ²]			
test voltages	hold voltage	switch on voltage	X	Y	Z	according to: KWU ASV ZEN000 DD/7080.9/1 part 10
001	19,2	19,2	60	42	60	passed
002	19,2	19,2	60	60	60	passed
003	not conducted		60	42	60	passed
004	not conducted		60	60	60	passed
005	19,2	19,2	60	42	60	passed
006	138	172,5	60	60	60	passed
007	19,2	19,2	60	60	60	passed
008	not conducted		60	42	60	passed
009	not conducted		60	60	60	passed
010	not conducted		60	42	60	passed
011	19,2	19,2	60	60	60	passed
012	not conducted		60	42	60	passed
013	not conducted		60	60	60	passed
014	not conducted		60	42	60	passed
015	138	172,5	60	60	60	passed
016	19,2	19,2	60	60	60	passed

Test summary

Certificate No.: 3019c

Sample no. 09001TM	Tests					routine test according to: KWU ASV ZEN000 DD/7080.9/1 part 10
	vibration load test according to: KWU ASV ZEN000 DD/7080.9/1 part 9.1 test voltages		determination excitation level with the additional load (a0) according to: KWU ASV ZEN000 DD/7080.9/1 part 9.2 1) verified acceleration values [m/s ²]			
	hold voltage	switch on voltage	X	Y	Z	
017	not conducted		60	60	60	passed
Sample no. 09001TM	Tests					routine test according to: KWU ASV ZEN000 DD/7080.9/1 part 10
	vibration load test according to: KWU ASV ZEN000 DD/7080.9/1 part 9.1 test voltages		determination excitation level with the additional load (a0) according to: KWU ASV ZEN000 DD/7080.9/1 part 9.2 1) verified acceleration values [m/s ²]			
	hold voltage	switch on voltage	X	Y	Z	
018	not conducted		60	60	60	passed
019	138	172,5	60	42	60	passed
	19,2	19,2				
020	138	172,5	60	35	60	passed
	19,2	19,2				
021	138	172,5	28	42	42	passed
	19,2	19,2				
022	138	172,5	60	60	60	passed

Test summary

Certificate No.: 3019c

Sample no. 09001TM	Tests					routine test according to: KWU ASV ZEN000 DD/7080.9/1 part 10
	vibration load test according to: KWU ASV ZEN000 DD/7080.9/1 part 9.1 test voltages		determination excitation level with the additional load (a0) according to: KWU ASV ZEN000 DD/7080.9/1 part 9.2 1) verified acceleration values [m/s ²]			
	hold voltage	switch on voltage	X	Y	Z	
	19,2	19,2				
023	138	172,5	42	28	42	passed
024	150	172,5	7	14	60	passed
025	138	172,5	60	60	60	passed
	19,2	19,2				
026	138	172,5	7	14	60	passed
027	not conducted		60	60	60	passed
028	138	172,5	60	60	60	passed
029	not conducted		60	60	60	passed
030	138	172,5	60	60	60	passed
031	138	172,5	60	60	60	passed
032	not conducted		60	60	60	passed
033	not conducted		28	21	14	passed
034	not conducted		60	60	60	passed
051	138	172,5	42	42	42	passed

Test summary

Certificate No.: 3019c

Test report No.: 13082ENV01

Test samples:

Sample no 13082EN	Device no	Tested device	Type designation	Date code	mounting	monitoring
001	-001	infeed, left side with 2 sockets	3RV2917-1A	E03; NQ/130917	snap mounted	connection
	-002	plug for 3RV2	3RV2917-5AA00	E01; NQ/131003		connection
	-003	motor starter protector	3RV2011-4AA20	E01; G/130712		all contacts
	-004	connector	3RA2911-2A	E01		all contacts / circuits
	-005	contactor Base	3RV2917-7AA00	E01; NQ/130716		mechanical function
	-006	contactor Base	3RV2917-7AA00	E01; NQ/130716		mechanical function
	-007	contactor	3RT2018-2AP02	E01; G/090924		all contacts / circuits
	-008	contactor	3RT2018-2AP02	E01; G/090924		all contacts / circuits
	-009	auxiliary contact block	3RH2911-2FA22	E02; LO130824		all contacts
	-010	auxiliary contact block	3RH2911-2FA22	E02; LO130824		all contacts
	-011	wiring connectors	3RA2913-2AA2	E01		connection
	-012	expansion module with 2 sockets	3RV2917-4A	E03; NQ/130822		connection
	-013	plug for 3RV2	3RV2917-5CA00	E01; KHX13241		connection
	-014	motor starter protector	3RV2011-4AA10	E01; G/130903		all contacts
	-015	connector	3RA1921-1D	E01		connection
	-016	contactor Base	3RV2917-7AA00	E01; NQ/130716		mechanical function
	-017	contactor Base	3RV2917-7AA00	E01; NQ/130716		mechanical function
	-018	contactor	3RT2018-1AP02	E04; G/130726		all contacts / circuits
	-019	contactor	3RT2018-1AP02	E04; G/130726		all contacts / circuits
	-020	auxiliary contact block	3RH2911-1FA22	E02; LO130802		all contacts
	-021	auxiliary contact block	3RH2911-1FA22	E02; LO130802		all contacts
	-022	wiring connectors	3RA2923-2AA2	E01		connection

Test summary

Certificate No.: 3019c

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/s ² (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/s ² (15m/s ² 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/s ² (tested with 3) If there is only one tested device, the test has to be conducted with an excitation level of 84m/s ² (60m/s ² x 1,4) Other values also accepted.

Routine test:

Test 1: High voltage test

- Test voltage between each off the electrical circuits according to IEC 60947-1
Test voltage: 1,0kV; 1,89kV duration: 5s

Test summary

Certificate No.: 3019c

Test results:

sample no. 13082EN	Tests					routine test according to: KWU ASV ZEN000 DD/7080.9/1 part 10
	vibration load test according to: KWU ASV ZEN000 DD/7080.9/1 part 9.1 test voltages		determination excitation level with the additional load (a0) according to: KWU ASV ZEN000 DD/7080.9/1 part 9.2 1) verified acceleration values [m/s ²]			
	hold voltage	switch on voltage	X	Y	Z	
001	165V	132 V	21	21	42	passed

1) shock passed by this test sample, shock duration: 30ms

Test summary

Certificate No.: 3019c

Test report No.: 13021ENV02

Test samples:

Sample No 13021EN	Device No	Tested device	Date code	Type designation	mounting	monitoring
011	-080	motor starter protector	E01; G/131126	3RV2032-4EA10	snap mounted	22-32A
	-081	lateral auxiliary switch	E01; NQ/121122	3RV2901-2A		33-34; 41-42
	-082	transverse auxiliary switch	E01; NQ/100126	3RV2901-4E		13-14; 21-22
	-083	signaling switch	E01; NQ/121121	3RV2921-2M		57-58; 65-66; 77-78; 85-86
	-084	shunt trip unit	E01; NQ/121129	3RV2902-1DB0		---
	-085	connection from top	E01; EYA140110	3RV2935-5A		---
012	-086	Motor starter protector	E01; G/131126	3RV2032-4EA10	8US – Busbar Adapter	L1-T3
	-087	Lateral auxiliary switch	E01; NQ/121122	3RV2901-2A		33-34; 41-42
	-088	Transverse auxiliary switch	E01; NQ/100202	3RV2901-4E		13-14; 21-22
	-089	Signaling switch	E01; NQ/121121	3RV2921-2M		57-58; 65-66; 77-78; 85-86
	-091	connection from top	EYA140110	3RV2935-5A		---
013	-150	motor starter protector	E01; G/140612	3RV2032-4RA10	snap mounted	L1-T3
	-093	lateral auxiliary switch	E01; NQ/121123	3RV2901-1A		33-34; 41-42
	-094	transverse auxiliary switch	E01; NQ/121231	3RV2901-1E		13-14; 21-22
	-095	signaling switch	E01; NQ/121210	3RV2921-1M		57-58; 65-66; 77-78; 85-86
	-096	Undervoltage trip unit with leading auxiliary contacts	E01; NQ/130311	3RV2922-4CV1		07-08
	-097	3-phase feed-in terminal	E01; EYA140109	3RV2935-5E		---
	-098	Sealabel covers	---	3RV2908-0P		---
014	-099	Motor starter protector	E01; G/140113	3RV2032-4HB10	screw mounted	L1-T3
	-100	Lateral auxiliary switch	E01; NQ/121123	3RV2901-1A		33-34; 41-42
	-101	Transverse auxiliary switch	E01; NQ/130115	3RV2901-1D		11-12-14
	-102	Signaling switch	E01; NQ/121210	3RV2921-1M		57-58; 65-66; 77-78; 85-86
	-103	Undervoltage trip unit with leading auxiliary contacts	E01; NQ/130116	3RV2922-1CP0		07-08
	-104	isolator module	E01; NQ131210	3RV2938-1A		---
	-105	Current scale cover	---	3RV2908-0P		---

Test summary

Certificate No.: 3019c

Sample No 13021EN	Device No	Tested device	Date code	Type designation	mounting	monitoring
015	-106	motor starter protector	E01; G/140310	3RV2131-4EA10	screw mounted	22 – 32A; NO; NC
	-107	lateral auxiliary switch	E01; NQ/121122	3RV2901-2A		33-34; 41-42
	-108	transverse auxiliary switch	E01; NQ/100202	3RV2901-4E		13-14; 21-22
	-109	signaling switch	E01; NQ/121121	3RV2921-2M		57-58; 65-66; 77-78; 85-86
	-110	3-phase infeed terminal	EYA140110	3RV2935-5A		---
016	-111	Motor starter protector	E01; G/140306	3RV2131-4HA10	snap mounted	40 – 50A; NO; NC
	-112	Lateral auxiliary switch	E01; NQ/121123	3RV2901-1A		33-34; 41-42
	-113	Transverse auxiliary switch	E01; NQ/130115	3RV2901-1D		11-12; 11-14
	-114	Signaling switch	E01; NQ/121210	3RV2921-1M		57-58; 65-66; 77-78; 85-86
	-115	phase separator	E01; EYA 13/12/10	3RV2938-1K		---
	-116	Current scale cover	---	3RV2908-0P		---
017	-117	Motor starter protector	E01; G/140228	3RV2131-4HA10	8US – Busbar Adapter	L1-T3; NC; NO
	-119	Transverse auxiliary switch	E01; NQ/130115	3RV2901-1D		11-12-14
	-121	phase separator	E01; EYA 13/12/10	3RV2938-1K		---
	-122	Current scale cover	---	3RV2908-0P		---
018	-151	Motor starter protector	E01; G/140618	3RV2131-4RA10	screw mounted	L1-T3
	-124	Lateral auxiliary switch	E01; NQ/121123	3RV2901-1A		33-34; 41-42
	-125	Transverse auxiliary switch	E01; NQ/121221	3RV2901-1E		13-14; 21-22
	-126	Signaling switch	E01; NQ/121210	3RV2921-1M		57-58; 65-66; 77-78; 85-86
	-127	3phase feed-in terminal	EYA140109	3RV2935-5E		---
	-128	Current scale cover	---	3RV2908-0P		---
019	-129	Motor starter protector	E01; G/140415	3RV2031-4WB10	8US – Busbar Adapter	L1-T3
	-131	Transverse auxiliary switch	E01; NQ/121221	3RV2901-1E		13-14; 21-22
	-133	3phase feed-in terminal	EYA140110	3RV2935-5E		---
	-134	Current scale cover	---	3RV2908-0P		---

Test summary

Certificate No.: 3019c

Sample No 13021EN	Device No	Tested device	Date code	Type designation	mounting	monitoring
020	-135	Motor starter protector	E01; G/131126	3RV2032-4FA10	snap mounted	L1-T1; L2-T2; L3-T3
	-136	Signaling switch	E01; NQ/121210	3RV2921-1M		57-58; 65-66; 77-78; 85-86
	-137	Transverse auxiliary switch	E01; NQ/130115	3RV2901-1D		11-12; 11-14
	-138	Shunt trip unit	E01; NQ/121129	3RV2902-1DB0		---
	-139	Motor starter protector	E01; G/131126	3RV2032-4FA10		L1-T1; L2-T2; L3-T3
	-140	Transverse auxiliary switch	E01; NQ/121122	3RV2901-1G		11-12; 11-14
	-141	Motor starter protector	E01; G/131126	3RV2032-4FA10		L1-T1; L2-T2; L3-T3
	-142	Lateral auxiliary switch	E01; NQ/121220	3RV2901-1J		13-14; 21-22; 31-32; 43-44
	-143	Undervoltage trip unit with leading auxiliary contacts	E01; NQ/130116	3RV2922-1CP0		07-08
	-144	Motor starter protector	E01; G/140225	3RV2131-4FA10		L1-T1; L2-T2; L3-T3; NO; NC
	-145	Transverse auxiliary switch	E01; NQ/130115	3RV2901-1D		11-12; 11-14
	-146	busbar	E01; G/131206	3RV1935-3C		---
	-147	3phase feed-in terminal	E01; EYA140110	3RV2935-5E		---

Test summary

Certificate No.: 3019c

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/s ² (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/s ² (15m/s ² 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/s ² (tested with 3) If there is only one tested device, the test has to be conducted with an excitation level of 84m/s ² (60m/s ² x 1,4) Other values also accepted.

Test summary

Certificate No.: 3019c

Routine test:

- Test 1: Limit current testing (overload release)
Release between 1,05 to 1,2 set current within 2h

- Test 2: Function- test (short circuit release)
The function test is carried out using the single-pole values for single-pole response
The response must be between 12.5 and 16 times the upper limit set value at a current flow time of 40ms

- Test 3: Insulation resistance
Test values: 3000V; 1s
Test in on /off

Test summary

Certificate No.: 3019c

Test results:

Sample No. 13021EN	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	hold voltage	switch on voltage	1) verified acceleration values [m/s ²]			according to: KWU ASV ZEN000 DD/7080.9/1 part 10
			X	Y	Z	
011	19,2V	19,2 V	60	28	60	passed
012	---V	---V	42	42	42	passed
013	415V	415V	60	28	60	passed
014	190V	132V	60	21	60	passed
015	---V	---V	60	42	60	passed
016	---V	---V	28	42	42	passed
017	---V	---V	60	42	60	passed
018	---V	---V	60	21	60	passed
019	---V	---V	60	42	60	passed
020	19,2V	19,2V	42	42	42	passed
	190V	132V	60	21	14	passed

Test summary

Certificate No.: 3019c

Test report No.: 13022ENV02

Test samples:

Sample No 13022EN	Device no	Tested device	Type designation	Date code	mounting	monitoring
005	-013	Motor starter protector	3RV2031-4AA10	E01; G/131029	screw mounted	all contacts
	-014	Lateral auxiliary switch	3RV2901-1J	E01; NQ/121220		all contacts
	-015	undervoltage trip unit with leading auxiliary contact	3RV2922-1CP0	E01; NQ/130116		all contacts
006	-016	Motor starter protector	3RV2031-4GA10	E01; G/131028	snap mounted	all contacts
	-017	Lateral auxiliary switch	3RV2901-1J	E01; NQ/121220		all contacts
	-018	undervoltage trip unit with leading auxiliary contact	3RV2922-1CP0	E01; NQ/140102		all contacts
007	-019	Motor starter protector	3RV2031-4AB10	E01; G/131029	screw mounted	all contacts
	-020	Lateral auxiliary switch	3RV2901-1J	E01; NQ/121220		all contacts
	-021	undervoltage trip unit with leading auxiliary contact	3RV2922-1CP0	E01; NQ/130116		all contacts
030	-101	Motor starter protector	3RV2031-4GB10	E01; G/131029	snap mounted	all contacts
	-102	Lateral auxiliary switch	3RV2901-1J	E01 NQ/140107		all contacts
	-103	undervoltage trip unit with leading auxiliary contact	3RV2922-1CP0	E01 NQ/140102		all contacts

Test summary

Certificate No.: 3019c

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/s ² (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/s ² (15m/s ² 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/s ² (tested with 3) If there is only one tested device, the test has to be conducted with an excitation level of 84m/s ² (60m/s ² x 1,4) Other values also accepted. The reached values are documented in 3.3.3 Test results.

Test summary

Certificate No.: 3019c

Routine test:

- Test 1: Limit current testing (overload release)
Release between 1,05 to 1,2 set current within 2h

- Test 2: Function- test (short circuit release)
The function test is carried out using the single-pole values for single-pole response
The response must be between 12.5 and 16 times the upper limit set value at a current flow time of 40ms

- Test 3: Insulation resistance
Test values: 3000V; 1s
Test in on /off

Test summary

Certificate No.: 3019c

Test results:

Sample No. 13022EN	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	hold voltage	switch on voltage	1) verified acceleration values [m/s ²]			according to: KWU ASV ZEN000 DD/7080.9/1 part 10	
				X	Y	Z	
005	-013	---	---	60	60	60	passed
	-014	---	---	42	21	42	passed
	-015	132V	180V	42	42	42	passed
006	-016	---	---	60	60	60	passed
	-017	---	---	42	21	42	passed
	-018	132V	180V	42	42	42	passed
007	-019	---	---	60	60	60	passed
	-020	---	---	42	14	42	passed
	-021	132V	180V	42	42	42	passed
030	-101	---	---	60	60	60	passed
	-102	---	---	60	28	60	passed
	-103	132V	180V	60	60	60	passed

Test summary

Certificate No.: 3019c

Test report No.: 15044ENV02

Sample No. 15044EN	Device no	Tested device	Date code	Type designation	mounting	monitoring
201	-001	Motor starter protector	G/160414 *E01*	3RV2042-4FB10	snap mounted	L1-T3
	-002	Lateral Aux. Switch	NQ/101201 *E01*	3RV2901-4A		33-34; 41-42
	-003	Transv. Aux. Switch	G/160729 *E01*	3RV2901-4E		13-14; 21-22
	-004	Undervoltage release	LO/160308 *E01*	3RV2902-1AB4		---
	-005	Terminal cover	G/160819 *E01*	3RT2946-4EA2		---
202	-001	Motor starter protector	G/160504 *E01*	3RV2142-4FA10	screw mounted	L1-T3; 95-96; 97-98
	-002	Lateral Aux. Switch	LO/160606 *E01*	3RV2901-2A		33-34; 41-42
	-003	Transv. Aux. Switch	LO/160720 *E01*	3RV2901-2E		13-14; 21-22
	-004	Signalling Switch	LO/160629 *E01*	3RV2921-2M		57-58; 65-66; 77-78; 85-86
	-005	aux. conductor terminal	---	3RT2946-4F		---
203	-001	Motor starter protector	G/160420 *E01*	3RV2042-4MB10	screw mounted	L1-T3
	-002	Lateral Aux. Switch	LO/160613 *E01*	3RV2901-1J		13-14; 21-22; 31-32; 43-44
	-003	Transv. Aux. Switch	LO/160516 *E01*	3RV2901-1D		11-12-14
	-004	Voltage release	NQ/150326 *E01*	3RV2902-1DB0		---
	-005	Terminal cover	G/160127 *E01*	3RT1946-4EA1		---
	-006	Scale cover	---	3RV2908-0P		---
204	-001	Motor starter protector	G/160429 *E01*	3RV2142-4MA10	snap mounted	L1-T3; 95-96; 97-98
	-002	Lateral Aux. Switch	LO/160606 *E01*	3RV2901-1A		33-34; 41-42
	-003	Signalling Switch	LO/160612 *E01*	3RV2921-1M		57-58; 65-66; 77-78; 85-86
	-004	Terminal block	G/160125 *E02*	3RV1948-1K		---
	-005	Terminal block	G/160204 *E01*	3RT1946-4GA07		---
	-006	Scale cover	---	3RV2908-0P		---

Test summary

Certificate No.: 3019c

Sample No. 15044EN	Device no	Tested device	Date code	Type designation	mounting	monitoring
205	-001	Motor starter protector	G/160401 *E01*	3RV2042-4JA10	Busbar adapter	L1-T3
	-002	Lateral Aux. Switch	LO/160606 *E01*	3RV2901-1A		33-34; 41-42
	-003	Transv. Aux. Switch	LO/160719 *E01*	3RV2901-1E		13-14; 21-22
	-004	Signalling Switch	LO/160613 *E01*	3RV2921-1M		57-58; 65-66; 77-78; 85-86
	-005	Terminal cover	G/160127 *E01*	3RT1946-4EA1		---
	-006	Busbar adapter	---	8US1211-4TR00		---
206	-001	Motor starter protector	G/160426 *E01*	3RV2042-4YB10	Busbar adapter	L1-T3
	-002	Terminal block	G/160204 *E01*	3RT1946-4GA07		---
	-003	Scale cover	---	3RV2908-0P		
	-004	Busbar adapter	---	8US1211-4TR00		
207	-001	Motor starter protector	G/160429 *E01*	3RV2142-4MA10	Busbar adapter	L1-T3; 95-96; 97-98
	-002	Terminal block	G/160125 *E02*	3RV1948-1K		---
	-003	Scale cover	---	3RV2908-0P		
	-004	Busbar adapter	---	8US1211-4TR00		
208	-001	Motor starter protector	G/160808 *E01*	3RV2041-4JA10	Busbar adapter	L1-T3
	-002	Lateral Aux. Switch	LO/160909 *E01*	3RV2901-1A		33-34; 41-42
	-003	Transv. Aux. Switch	LO/161004 *E01*	3RV2901-1E		13-14; 21-22
	-004	Signalling Switch	LO/161012 *E01*	3RV2921-1M		57-58; 65-66; 77-78; 85-86
	-005	Terminal cover	G/160829 *E01*	3RT1946-4EA1		---
	-006	Busbar adapter	---	8US1211-4TR00		---
209	-001	Motor starter protector	G/160901 *E01*	3RV2042-4YB10	Busbar adapter	L1-T3
	-003	Terminal block	G/160204 *E01*	3RT1946-4GA07		---
	-004	Scale cover	---	3RV2908-0P		
	-005	Busbar adapter	WNR/041016 *E01*	8US1211-4TR00		

Test summary

Certificate No.: 3019c

Sample No. 15044EN	Device no	Tested device	Date code	Type designation	mounting	monitoring
210	-001	Motor starter protector	G/160902 *E01*	3RV2142-4MA10	Busbar adapter	L1-T3; 95-96; 97-98
	-002	Terminal block	G/160513 *E02*	3RV1948-1K		---
	-003	Scale cover	---	3RV2908-0P		
	-004	Busbar adapter		8US1211-4TR00		
211	001	Motor starter protector	G/160808 *E01*	3RV2041-4JA10	Busbar adapter	L1-T3
	002	Lateral Aux. Switch	LO/160606 *E01*	3RV2901-1A		33-34; 41-42
	003	Transv. Aux. Switch	G/161010 *E01*	3RV2901-1E		13-14; 21-22
	004	Signalling Switch	LO/161012 *E01*	3RV2921-1M		57-58; 65-66; 77-78; 85-86
	005	Terminal cover	G/160829 *E01*	3RT1946-4EA1		---
	006	Busbar adapter	WNR/401016 *E01*	8US1211-4TR00		
212	001	Motor starter protector	G/160901 *E01*	3RV20 42-4YB10	Busbar adapter	L1-T3
	003	Terminal block	G/160919 *E01*	3RT1946-4GA07		---
	004	Scale cover	---	3RV2908-0P		
	005	Busbar adapter	WNR/401016 *E01*	8US1211-4TR00		
213	001	Motor starter protector	G/160902 *E01*	3RV2142-4MA10	Busbar adapter	L1-T3; 95-96; 97-98
	002	Terminal block	G/160513 *E02*	3RV1948-1K		---
	003	Scale cover	---	3RV2908-0P		
	004	Busbar adapter	WNR/401016 *E01*	8US1211-4TR00		

Test summary

Certificate No.: 3019c

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/s ² (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/s ² (15m/s ² 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/s ² (tested with 3) If there is only one tested device, the test has to be conducted with an excitation level of 84m/s ² (60m/s ² x 1,4) Other values also accepted. The reached values are documented in 4.3.3 Test results.

Test summary

Certificate No.: 3019c

Routine test:

- Test 1: Test of limit current (a-tripping device)
Tripping time between $1,05 - 1,2 \times I_e$ within 2 hours.
- Test 2: Functional test of the n-tripping device.
The function test must be done unipolar with the values for single-pole response.
The response must be between 12.5 and 16 times at the upper limit range with a current flow time of 40 ms.
- Test 3: Insulation strength
Test values: 3000V; 1s
Test in on and off condition

Test summary

Certificate No.: 3019c

Sample No. 15044EN	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 1)			
test voltages	hold voltage	switch on voltage	verified acceleration values [m/s ²]			according to: KWU ASV ZEN000 DD/7080.9/1 part 10
			X	Y	Z	
201	19,2V	19,2V	42	28	42	passed
202	---	---	28	28	28	passed
203	19,2V	19,2V	60	42	60	passed
204	---	---	35	21	42	passed
205	---	---	not conducted			passed
206	---	---	not conducted			passed
207	---	---	not conducted			passed
208	---	---	28	14	28	passed
209	---	---	28	28	28	passed
210	---	---	28	28	28	passed
211	---	---	not conducted			passed
212	---	---	not conducted			passed
213	---	---	not conducted			passed

Test summary

Certificate No.: 3019c

The tests were carried out on devices, representative for the whole series, fixed on page 2 up to 8 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.: 3019c

09001TMv02: Test of motor starter protectors 3RV2.1... size S00 and 3RV2.2... size S0 with accessories 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.

13082ENV02: Test of contactor base 3RV2917-7AA00 size S0 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.

According to the client:

A contactor has to be screw mounted on the contactor base to use under increased shock and vibration load.

13022ENV02: Test of motor starter protectors 3RV2.3... size S2 65kA up to 45A 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.

13021ENV02: Test of motor starter protectors 3RV2.3... size S2 100kA and 65kA over 45A 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.

15044ENV02: Test of motor starter protectors 3RV2.4... size S3 according to KWU ASV ZEN000 DD/7080.9/1 (1987-07), IEC 60068-2-6 (2008-10) and IEC 60068-2-47 (2006-03). The test results are in accordance with the test specification.

Amberg, 2017-02-02

Location, Date

Signature
(Authorized representative)
Pilhöfer

Reviewed
(Laboratory manager)
Bogner