



Marine & Offshore

Certificate number: 25357/B0 BV

File number: ACE2/124/3

Product code: 2633H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

Siemens AG - GWA

Amberg - GERMANY

for the type of product

CIRCUIT BREAKERS (LOW VOLTAGE)

SIRIUS 3RV2.1, 3RV2.2, 3RV2.3
and Accessories

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

IEC 60947-2:2013, IEC 60947-4-1:2012, IEC 60947-5-1:2009

EC Code: 31

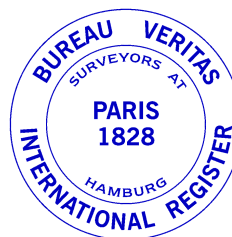
This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 04 Dec 2022

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 04 Dec 2017,

Dirk Hoepfner



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

SIRIUS 3RV20, 3RV21, 3RV23, 3RV24, 3RV27 and 3RV28 series are circuit breakers and 3RV19, 3RV29 and 8US are accessories.

1.1 - Main characteristics of 3RV20/21/23/24/27/28:

Rated voltage: 690V AC- 50/60Hz
 Rated current: up to 80A (40°C)
 Degree of protection: IP20 (Terminal compartment: IP00 for (S2))

1.2 - Variants: 3RV2a bb - cc d e f

a = Function

- 0 circuit breaker for motor protection
- 1 circuit breaker for motor protection with overload function
- 3 circuit breaker for starter combination
- 4 circuit breaker for transformer protection
- 7 circuit breaker adjusted to 13 times rated current
- 8 circuit breaker adjusted to 20 times rated current

bb = Size of terminal for main circuit

- 11 Up to 16A (S00)
- 21 Up to 40A (not for 3RV27, 3RV28) (S0)
- 21 20A ... 22A (for 3RV27, 3RV28) (S0)
- 23 12.5 ... 25A (S0)
- 31/32 14A ... 80A (S2)

cc = Setting Ranges

		3RV2x11						3RV2x21						3RV2x23			
		240VAC		440VAC		690VAC		240VAC		440VAC		690VAC		690VAC			
		ICU [kA]	ICS [kA]	ICU [kA]	ICS [kA]	ICU [kA]	ICS [kA]	ICU [kA]	ICS [kA]	ICU [kA]	ICS [kA]	ICU [kA]	ICS [kA]	ICU [kA]	ICS [kA]		
0A	0.11 ... 0.16 A	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	
0B	0.14 ... 0.2A	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	
0C	0.18 ... 0.25A	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	
0D	0.22 ... 0.32A	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	
0E	0.28 ... 0.4A	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	
0F	0.35 ... 0.5A	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	
0G	0.45 ... 0.63A	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	
0H	0.55 ... 0.8A	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	
0J	0.7 ... 1A	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	
0K	0.9 ... 1.25A	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	
1A	1.1 ... 1.6A	100	100	100	100	100	100	100	100	100	100	100	100	100	-	-	
1B	1.4 ... 2A	100	100	100	100	10	10	100	100	100	100	10	10	10	-	-	
1C	1.8 ... 2.5A	100	100	100	100	10	10	100	100	100	100	10	10	10	-	-	
1D	2.2 ... 3.2A	100	100	100	100	10	10	100	100	100	100	10	10	10	-	-	
1E	2.8 ... 4A	100	100	100	100	6	4	100	100	100	100	6	4	6	4	-	-
1F	3.5 ... 5A	100	100	100	100	6	4	100	100	100	100	6	4	6	4	-	-
1G	4.5 ... 6.3A	100	100	100	100	6	4	100	100	100	100	6	4	6	4	-	-
1H	5.5 ... 8A	100	100	50	50	6	4	100	100	50	50	6	4	6	4	-	-
1J	7 ... 10A	100	100	50	50	6	4	100	100	50	50	6	4	6	4	-	-
1K	9 ... 12.5A	100	100	50	50	6	4	100	100	50	50	6	4	6	4	6	4
4A	11 ... 15A *	100	100	50	10	4	4	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4A	10 ... 16A	100	100	50	10	4	4	100	100	50	10	4	2	4	2	4	2
4B	13 ... 20A							100	100	50	10	4	2	4	2	4	2
4C	16 ... 22A							100	100	50	10	4	2	4	2	4	2
4D	18 ... 25A							100	100	50	10	4	2	4	2	4	2
4N	23 ... 28A							100	100	30	10	4	2				
4E	27 ... 32A							100	100	30	10	4	2				
4P	30 ... 36A							100	100	12	8	3	2				
4F	34 ... 40A							100	100	12	8	3	2				

For Type: 3RV2x31

3RV2x32

		240VAC		440VAC		690VAC				240VAC		440VAC		690VAC	
		ICU	ICS	ICU	ICS	ICU	ICS			ICU	ICS	ICU	ICS	ICU	ICS
		[kA]	[kA]	[kA]	[kA]	[kA]	[kA]			[kA]	[kA]	[kA]	[kA]	[kA]	[kA]
4S	9.5 ... 14A	100	100	50	25	5	3			100	100	65	30	8	5
4T	12 ... 17A	100	100	50	25	5	3			100	100	65	30	8	5
4B	13 ... 20A	100	100	50	25	5	3			100	100	65	30	8	5
4D	18 ... 25A	100	100	50	15	5	3			100	100	65	30	8	5
4E	22 ... 32A	100	100	50	15	4	2			100	100	65	30	6	4
4P	28 ... 36A	100	100	50	15	4	2			100	100	65	30	6	4
4U	32 ... 40A	100	100	50	15	4	2			100	100	65	30	6	4
4V	35 ... 45A	100	100	50	15	4	2			100	100	65	30	6	4
4W	42 ... 52A	100	100	50	15	4	2			100	100	65	30	6	4
4X	49 ... 59A	100	100	50	15	4	2			100	100	50	15	6	4
4J	54 ... 65A	100	100	50	15	4	2			100	100	50	15	6	4
4K	62 ... 73A	100	100	50	15	4	2			100	100	50	15	6	4
4R	70 ... 80A	100	100	50	15	4	2			100	100	50	15	6	4

d = Tripping Class

- A Setting ranges with instantaneous tripping and overload tripping Class 10
- B Setting ranges with instantaneous tripping and overload tripping Class 20 (up to 65A)
- C With instantaneous tripping and without overload tripping
- D With instantaneous tripping and fixed current overload tripping *

e = Type of Terminals

- 1 Screw terminal
- 2 Spring terminals (up to 32A)
- 4 Ring lug terminals (up to 32A)

f = Auxiliary Switches: 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

* for 3RV27, 3RV28

1.3 - Accessories:**3RV29...** : Auxiliary switches, undervoltage trip units, shunt releases, infeed system, ...**3RV19...** : 3-phase bus bar equipment**8US12...** : Bus bar adapter for 60mm systems**2. DOCUMENTS AND DRAWINGS:**

- Catalogue: IC 10 dated 2015

- Drawings: NEZ461200100000 Rev. 04 dated 2010-06-15, NEZ461200600000 Rev. 04 dated 2009-12-17

- 4NEB4612582-20DS01 dated 08 June 2010, 4NEB4612580-10DS02 dated 10 March 2010

- NEB461258010000/RS-AA/004 dated 01 August 2012; NEB461258230000/RS-AA/002 dated 30 July 2012

For B0 version:

- A5E3151034000A rev. 2 dated 2015-07-24, NEZ462000100000 rev. 10 dated 2014-08-26

3. TEST REPORTS:**SIEMENS AG:** - 09052TMs dated 2010-07-27; 13012ENS dated 2013-02-27; Test certificate: 3003c dated 2012-11-21**For B0 version:**

- 12sr12 version 3.0 dated April 2016, Test certificate: 3291 dated 2015-06-17, 14031PMV06 dated 2016-03-08

4. APPLICATION / LIMITATION:

4.1 - According to Bureau Veritas Rules for the Classification of Steel Ships.

4.2 - Bureau Veritas Environmental Category, **EC Code: 31**

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be supplied by **SIEMENS AG - GWA** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **SIEMENS AG - GWA** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

For 3RV2 and 3RV29:

SIEMENS AG - GWA
Werner-von-Siemens-Str. 48
92220 AMBERG
GERMANY

For 3RV1917, 3RV2917, 3RV29 aux. cont; UVR; STR:

SIEMENS SAN. VE TIC. A S
Yakacik Cad. No: 111
34870 Kartal-Istanbul
TURKEY

SIEMENS, s.r.o.
Volanovska 516
541 01 Trutnov
CZECH REPUBLIC

5.4 - Each equipment is to be supplied with manual(s) for installation, use and maintenance.

6. MARKING OF PRODUCT:

According to IEC 60947 specifications.

7. OTHERS:

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time, and that **SIEMENS AG - GWA** will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

7.2 - This certificate cancels and replaces the previous one issued by the Society on 12 Aug 2013 under ref. N° 25357/A1 BV.

***** END OF CERTIFICATE *****