

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Electric Bus Bar**with type designation(s)
BD 2A

Issued to

**Siemens AG Energy Management
Köln Nordrhein-Westfalen, Germany**

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Bus bar trunking system for installation outside of switchboards/enclosures onboard ships and offshore units.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Hamburg** on **2018-02-14**This Certificate is valid until **2023-02-13**.for **DNV GL**DNV GL local station: **Essen**Approval Engineer: **Carsten Hunsalz**

**Arne Schaarmann
Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-000195-13**
Certificate No: **TAE00002HB**

Name and place of manufacturer

Siemens Nizkonapetova spinaci technika s.r.o.
Plant Siemens Busbar Trunking Systems Mohelnice
Nadrazni 1351/30, CZ 78985 Mohelnice
Czech Republic

Product description

Electrical bus trunk system.

Type name	Current edgewise IP54 (A)	Current flat, vertical IP54 (A)	Rated short- time withstand current (kA)		Rated short- circuit peak (kA)
			1 sec	0,1 sec	
BD2A-160	152	160	5,5	10	17
BD2A-250	237	250	10	16	32
BD2A-315	299	315	14	18	36
BD2A-400	380	400	16	20	38
BD2A-500	475	500	21	28	54
BD2A-630	598	630	26	32	60
BD2A-800	760	800	32	40	78
BD2A-1000	950	1000	34	43	90

- Bus-bar material: Sea atmosphere resistant Aluminium.
- Nominal ambient temperature of max. 45°C.
- Frequency (Hz): 50 or 60
- Rated voltage (V): 690
- Degree of protection (IP): 54, 55
- Min. clearance distances: 8 mm, min creepage distances: 14 mm

Application/Limitation

Installation/fixing to the structure to be done in accordance with the manufacturer's instructions. The distances of the support for the busbar system must not exceed 1600 mm.

Not to be used in hazardous zones and on open deck and in wet spaces such as cargo holds and below floor plates in engine rooms.

Type Approval documentation

Job Id: **262.1-000195-13**
Certificate No: **TAE00002HB**

Tests carried out

Type tests according to IEC 60439-1 & 2 / 61439-1 & 6 and 60092-302. Vibration, Dry heat, Humidity, Low temperature, High voltage.

Marking of product

Siemens – BD2 – Main data

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE