



Work Order - WO0661259
Product Design Assessment (PDA)
Power Distribution BusBar System
BusBar System: Riline60, Maxi-PLS, Flat-PLS
PDA No. 26-0661259-PDA

Attention: RITTAL GMBH & CO. KG (WCN: 436844)

The documents shown in the attached list are reviewed in accordance with the applicable requirements indicated in the PDA along with the service restrictions and comments.

We recommend that you monitor the ABS Rules, Guides and other standards used in the Assessment. These Rules, Guides and standards often change on an annual basis, and you must comply with the new Rules, Guides and standards in order for the product to be used on an ABS classed vessel or facility contracted under the new Rules, Guides or specifications.

To obtain a PDA-DUP, the manufacturer is required to obtain a valid Manufacturing Assessment (MA) within 90 days from the issuance of the PDA-DUP for the respective production site.

Additionally, we acknowledge the PDA request form warranting that the materials used in the product(s) are free from asbestos.

For any clarifications, contact Dimitra Mangina at DMangina@eagle.org.

Very truly yours,

Pier Carazzai
Vice President of Engineering

Electronically Signed by: Dimitrios Nikolakis

Documents List

Drawing No.	Rev. No.	Title	Status
Declaration of Conformity ABS_signed MH	-	Declaration of Conformity ABS_signed MH	Returned without action
Online PDA Application	-	Online PDA Application	Returned without action

Electronic copies of the documents, appropriately stamped, are available in the ABS MyFreedom™ Client Portal.

Include: PDA Certificate



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

26-0661259-PDA
12-Aug-2026
11-Aug-2031
Hamburg Engineering Department

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

RITTAL GMBH & CO. KG

located at

AUF DEM STUETZELBERG, D-35745 HERBORN, Germany

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: Power Distribution BusBar System
Model: BusBar System: Riline60, Maxi-PLS, Flat-PLS
Endorsements:
Tier: 2 - PDA Issued

This Product Design Assessment (PDA) Certificate remains valid until 11/Aug/2031 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

Dimitrios Nikolakis, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

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Tier: 2 - PDA Issued

Product: Power Distribution BusBar System
Model: BusBar System: Riline60, Maxi-PLS, Flat-PLS
Endorsements:

Intended Service:
Electrical distribution suitable for Shipboard and Offshore Applications.

Description:
Modular copper busbar systems for low voltage switchgear and control gear assemblies.
Rated voltage: 690 V AC, 1500 DC

Rating:

Riline60:

60 mm bar center distance, 3- and 4-pole version
Rated voltage: 690 V AC, 1500 V DC
Rated current up to 800 A (Flat copper bar system)
Rated current up to 800 A/1600 A (PLS busbar system)
Insulation voltage: 1000 V
Impulse withstand voltage: 8 kV
Peak withstand current: up to 105 kA
Short-time withstand current: up to 50 kA for 1s/3s
Rated frequency: 50 Hz

Ri4Power Maxi-PLS

60 mm bar center distance, 3- and 4-pole version, special PLS profile
Rated voltage: 690 V AC, 1500 V DC
Rated current: up to 4000 A
Insulation voltage: 1000 V
Impulse withstand voltage: 8 kV
Peak withstand current: up to 154 kA
Short-time withstand current: up to 70 kA for 1s
Rated frequency: 50 Hz

Ri4Power Flat-PLS

Flat copper bars, 3- and 4-pole version
Rated voltage: 690 V AC, 1500 V DC
Rated current: up to 5500 A
Insulation voltage: 1000 V
Impulse withstand voltage: 12 kV
Peak withstand current: up to 220 kA
Short-time withstand current: up to 100 kA for 1s
Rated frequency: 50 Hz

Service Restriction:

1. Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
2. Derating is to be applied to the nominal current rating where the ambient temperature is other than 35° C. Each particular installation arrangement together with the relevant rating and protection details is to be specifically

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approved.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. Bus bars and circuit breakers are to be mounted, braced and located so as to withstand thermal effects and magnetic forces resulting from the maximum prospective short circuit current in acc. with 4-8-3/5.3.2(b) of the ABS Marine Vessel Rules.
3. Bolted bus bar connections are to be suitably treated (e.g., silver plating) to avoid deterioration of electrical conductivity over time. Nuts are to be fitted with means to prevent loosening in acc. with 4-8-3/5.3.2(c) of the ABS Marine Vessel Rules.
4. Cable connections are to be made by the use of crimp lugs or equivalent. Soldered connections are not to be used for connecting or terminating any cable of 2.5 mm² or greater. Soldered connections, where used, are to have a solder contact length at least 1.5 times the diameter of the conductor in acc. with 4-8-3/5.3.2(d) of the ABS Marine Vessel Rules.
5. Demonstration of proper alignment, fastening, connecting, and torque of the bus bar connections are to be witnessed by the attending surveyor onboard at the assembly of the complete system in acc. with 4-8-3/5.3.2(e) of the ABS Marine Vessel Rules.
6. Minimum clearances and creepage distances between live parts of different potential, i.e., between phases and between phase and the ground, are to be in accordance with table 4-8-3/5.3.29(f) of the ABS Marine Vessel Rules.

Notes/Drawing/Documentation:

Rittal-The System- Technical Details 2nd edition 2015

Rittal-The System- Technical System Catalogue Ri4Power

Rittal-The System- Technical System Catalogue RiLine

U145928E1, Vibration/Ins.Resistance/High Voltage Test Report, Flat-PLS/Maxi-PLS Busbar System, Phoenix Testlab, 02 Mar. 2015

U145928E2, Vibration/Ins.Resistance/High Voltage Test Report, Riline Busbar System, Phoenix Testlab, 02 Mar. 2015

2012-00139e, IEC 61439-2:2011 Test Report, RiLine9340050, Institute for International Product Safety, 04.05.2012
General Instruction rules for Power distribution solutions of Rittal

----- Revalidation 2021-----

Drawing No. 1579.2081382.1180, Ri4Power Form 1 (Maxi-PLS), Test Report acc. IEC 60934-1:2004, IPH Berlin, 28 Sep.2010

Drawing No. 1579.2081382.1180e, Ri4Power Form 1 (Maxi-PLS), Test Report acc. IEC 60934-1:2004, IPH Berlin, 29 Sep. 2010

Drawing No. 1579.1579.2080904.435e, Ri4Power Maxi PLS, Test Report acc. IEC 60439-1, IPH Berlin, 25 Jul.2008

Drawing No. 1579.0522.1.318e, Maxi-PLS 2000, Test Report according to IEC 60439-1, IPH Berlin, 22 May 2002

Drawing No. ASTA_16940, Ri4Power FLAT PLS 60, Test report acc. IEC 60439-1, IPH Berlin, 14 Sep. 2009

Drawing No. ASTA_17917, Ri4Power Form 2-4, Test report acc. IEC 61439-2, IPH Berlin, 03 Jun. 2011

Drawing No. ASTA_17918, Ri4Power Form 2-4, Test report acc. IEC 61439-2, IPH Berlin, 03 Jun. 2011

Drawing No. ASTA_20105, Ri4Power FLAT PLS 100, Test report acc. IEC 61439-2, IPH Berlin, 10 Apr. 2015

Drawing No. ASTA_19629, Ri4Power FLAT PLS 100, Test report acc. IEC 61439-2, IPH Berlin, 06 Oct. 2014

Technical Datasheets, 06.04.2021

Terms of Validity:

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STANDARDS

ABS Rules:

2026 Rules for Conditions of Classification: 1-1-4/7.7, 1-1-A3, 1-1-A4, which cover the following:

2026 Rules for Building and Classing Marine Vessels: 4-8-3/1.7, 4-8-3/5.3.2

2026 Rules for Conditions of Classification - Offshore Units 1B-1-4/9.7, 1B-1-A2, 1B-1-A3 which covers the following:

2026 Rules for Building and Classing Offshore Units: 4-3-1/11, 6-1-7/9.9, 6-1-7/19.23 Table 7.

National:

NA

International:

IEC 61439-1 Edition 3.0 2020-05 / EN 61439-1:2011 Low-voltage switchgear and controlgear assemblies Part 1: General rules

IEC 61439-2 Edition 3.0 2020-07 / EN 61439-2:2011 Low-voltage switchgear and controlgear assemblies Part 2: Power switchgear and controlgear assemblies

Government:

NA

EUMED:

NA

OTHERS:

NA