Certificate No:
TAE00004EH

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Low Voltage Switchgear and Control Gear Assemblies

with type designation(s)
Busbar System VX25 Ri4Power

Issued to
Rittal GmbH & Co. KG
Herborn, Hessen, Germany

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Rated voltage	**690 V AC, 1500 V DC**
Rated current	**up to 3840 A**
Rated frequency	**50-60 Hz**
Degree of protection	**IP2X / IP54**

Issued at **Hamburg** on **2022-02-02**
This Certificate is valid until **2027-02-01**.
DNV local station: **Essen**

Approval Engineer: **Harald Amberger**

for **DNV**

Arne Schaarmann
Head of Section

Product description

VX25 Ri4Power low voltage power switchboard for Circuit breaker/Contactor/Motor starter/Control circuit device.

Hardware Busbar System VX25 Ri4Power:

Rated voltage U_e:	690 V AC, 1500 V DC
Rated frequency f_n:	50-60 Hz
Rated insulation voltage U_i:	1000V
Rated impulse withstands voltage U_{imp}:	up to 12 kV
Rated current I_n:	3840 A (IP2X / IP54 ventilated) 3010 A (IP2X) 2860 A (IP54)
Short circuit current main busbar:	
Rated peak withstands current I_{pk}:	220kA
Rated short-time withstands current I_{cw}:	100kA/ 1sec.
Short circuit current distribution busbar:	
Rated peak withstands current I_{pk}:	up to 220kA
Rated short-time withstands current I_{cw}:	up to 100kA/ 1sec.
Rated conditional short-circuit current I_{cc}:	up to 100kA
Rated degree of protection:	IP2X / IP54
Dimensions:	Height: up to 2200 mm Width: up to 1200 mm Depth: up to 800 mm

Busbar supports:

SV 9649.010	End supports for Maxi-PLS busbars
SV 9659.010	End supports for Maxi-PLS busbars
SV 9686.000	Busbar support for busbar baying (roof section)
SV 9686.010	Busbar support for busbar entry (roof section)
SV 9686.030	Busbar support for busbar baying (roof section)
SV 9686.040	Busbar support for busbar entry (roof section)
SV 9660.205	Support set (stabiliser) for connector kit
SV 9686.495	Angle bracket for support set (stabiliser)
SV 9686.912	Connector kit for air circuit-breakers
SV 9683.200	Retaining plate for cable connection space
SV 9683.210	Retaining plate for cable connection space

Busbars:

SV 9640.207	Maxi-PLS busbar, E-Cu for Maxi-PLS 45-S system
SV 9640.237	Maxi-PLS busbar, E-Cu for Maxi-PLS 45-S system
SV 9640.202	Maxi-PLS busbar, E-Cu for Maxi-PLS 45 system
SV 9640.232	Maxi-PLS busbar, E-Cu for Maxi-PLS 45 system
SV 9650.202	Maxi-PLS busbar, E-Cu for Maxi-PLS 60 system
SV 9650.232	Maxi-PLS busbar, E-Cu for Maxi-PLS 60 system
SV 9684.004	Busbar E-Cu, slotted
SV 9684.006	Busbar E-Cu, slotted
SV 9684.008	Busbar E-Cu, slotted
SV 9686.200	Longitudinal connector E-Cu for busbar baying
SV 9686.210	Longitudinal connector E-Cu for busbar baying
SV 9686.250	Longitudinal connector E-Cu for busbar baying
SV 9686.260	Longitudinal connector E-Cu for busbar baying

Modular front design:

SV 9682.324	Front trim panel, top
SV 9682.326	Front trim panel, top
SV 9682.328	Front trim panel, top
SV 9682.334	Front trim panel, bottom
SV 9682.336	Front trim panel, bottom
SV 9682.338	Front trim panel, bottom
SV 9682.141	Partial door for VX
SV 9682.142	Partial door for VX
SV 9682.143	Partial door for VX
SV 9682.144	Partial door for VX
SV 9682.146	Partial door for VX
SV 9682.161	Partial door for VX
SV 9682.162	Partial door for VX
SV 9682.163	Partial door for VX
SV 9682.164	Partial door for VX
SV 9682.166	Partial door for VX
SV 9682.181	Partial door for VX
SV 9682.182	Partial door for VX
SV 9682.183	Partial door for VX
SV 9682.184	Partial door for VX
SV 9682.186	Partial door for VX

Application/Limitation

Vibration class A

The type approval covers system design principle in accordance with IEC 61439-1 and 2

Equipment's such as circuit breakers etc. are not covered by this type approval.

A DNV product certificate for the specific switchboard is required in each case.

The ingress protection to be selected in accordance with the location as stated in the Rules.

Documents and drawings for the actual application as stated in the Rules Pt.4, Ch.8, Sec. 1, Table 2 except E150, shall be submitted for approval in each case by the end manufacturer.

Ventilated busbar must be monitored.

Operating instruction of the manufacturer to be observed.

Type Approval documentation

Tests carried out

IEC 61439-1 Edition 3.0 2020-05 / EN 61439-1:2011
IEC 61439-2 Edition 3.0 2020-07 / EN 61439-2:2011
IEC 60092-302-2 Edition 1.0 2019-09
IEC 60529 Edition 2.2 2013-08 / DIN EN 60529:2014-09
Class Guideline: DNV-CG-0339

Marking of product

Rittal trademark, article number

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