DNV·GL

Certificate No:
A-14032
File No:
899.60
Job Id:
262.1-018457-1

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
RedFox Industrial Routing Switches RFI-series

Issued to

Westermo Teleindustri AB
STORA SUNDBY, **Sweden**

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application :
Location classes:

Temperature	D
Humidity	B
Vibration	A
EMC	B
Enclosure	A / IP40

This Certificate is valid until **2018-12-31**.

Issued at **Høvik** on **2014-12-11**

DNV GL local station: **Stockholm**

Approval Engineer: **Ståle Sneen**

for **DNV GL**

Odd Magne Nesvåg

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.

Product description

Westermo RedFox Industrial Routing Switches (RFI-series), comprising the following units:

Art. No.	Type Designation	Description
3641-4100	RFI-219-T3G	3 x 10/100/1000 Mbit/s, Ethernet TX, RJ-45 16 x 10/100 Mbit/s, Ethernet TX, RJ-45
3641-4110	RFI-211-T3G	3 x 10/100/1000 Mbit/s, Ethernet TX, RJ-45 8 x 10/100 Mbit/s, Ethernet TX, RJ-45
3641-4200	RFI-215-F4G-T3G	3 x 10/100 Mbit/s, Ethernet TX, RJ-45 8 x 10/100 Mbit/s, Ethernet TX, RJ-45
3641-4210	RFI-207-F4G	3 x 10/100/1000 Mbit/s, Ethernet TX, RJ-45. 4 x 100/1000 Mbit/s, pluggable connections transceivers supported, Ethernet FX or TX SFP.
3641-4300	RFI-219-F4G-T7G	8 x 10/100 Mbit/s, Ethernet TX, RJ-45 7 x 10/100/1000 Mbit/s, Gigabit Ethernet TX, RJ-45 4 x 100/1000 Mbit/s, pluggable connections transceivers supported, Ethernet FX or TX SFP.
3641-4310	RFI-211-F4G-T7G	7 x 10/100/1000 Mbit/s, Gigabit Ethernet TX, RJ-45 4 x 100/1000 Mbit/s, pluggable connections transceivers supported, Ethernet FX or TX SFP.
3641-4320	RFI-219-F4G-T7G-F8	7 x 10/100/1000 Mbit/s, Gigabit Ethernet TX, RJ-45 4 x 100/1000 Mbit/s, pluggable connections transceivers supported, Ethernet FX or TX SFP. 8 x 100 Mbit/s, pluggable connections transceivers supported, Ethernet FX or TX SFP.

Version information at date of issue of this certificate: HW Rev. 02 and WeOS SW/FW Rev. 4.15.0.

Dielectric strength – signal to other isolated ports: 1.5 kVAC
Dielectric strength – power to other isolated ports: 1.5 kVAC

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Compass safe distance for all units: Standard: 20 cm, Steering: 10 cm.

Tested and approved for direct connection to 24 to 48 VDC distribution boards
(test voltage 18.0 - 62.4 VDC).

Type Approval documentation

User Guide: RedFox Industrial Series: 6641-22310 Rev. B, dated 2014-11
                 Westermo OS Management Guide 6101-3201 Version 4.15.0-0
Data sheets: RFI-219-T3G, RFI-211-T3G, RFI-215-F4G-T3G, RFI-207-F4G, RFI-219-F4G-T7G, RFI-211-F4G-T7G, RFI-219-F4G-T7G-F8, WeOS Westermo Operating System.
Test reports: DELTA REC-E703959 Rev. -, dated 2014-09-30

Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006.
Radiated emission 1 – 6 GHz according to IEC 61000-6-4:2007+A1.
15 g, 11 ms shock test according to IEC 60068-2-27:2008.
For the bridge mounted components the 'Compass safe distance' was measured according to section 11.2 of IEC 60945 4th edition (2002).

Marking of product

Westermo
Art. No. and Type as listed under Product description
Unique serial number
Power supply voltage and current rating

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:
- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE