

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Peripheral Equipment**

with type designation(s)

SDW-550-T5G and SDW-541-F1G-T4G

Issued to

Westermo Teleindustri AB**STORA SUNDBY, Sweden**

is found to comply with

DNV GL rules for classification – Ships and offshore units**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Location classes:**

Temperature	D
Humidity	B
Vibration	B
EMC	B
Enclosure	A / IP21

This Certificate is valid until **2021-05-03**.Issued at **Høvik** on **2016-05-04**DNV GL local station: **Stockholm**Approval Engineer: **Ståle Sneen**for **DNV GL**

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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.

Job Id: **262.1-021527-1**
Certificate No: **TAA00000DY**

Product description

Westermo Industrial Ethernet 5-port Unmanaged Gigabit Switches, comprising the following units:

Article No.	Type Designation	Description
3644-2001	SDW-550-T5G	5 x RJ-45, 10/100/1000 Mbit/s Ethernet TX
3644-2020	SDW-541-F1G-T4G	4 x RJ-45, 10/100/1000 Mbit/s Ethernet TX, 1 x SFP (LC connector), 100/1000 Mbit/s Ethernet FX.

Version information at date of issue of this certificate: HW Rev. 01.

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

Westermo SFP transceivers are covered by type approval certificate TAA000006B.

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, 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 GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

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

Shielded Ethernet TX cable is required to fulfil class requirements for EMC.

Tested and approved for direct connection to 12 to 48 VDC distribution boards (test voltage 9.0 - 62.5 VDC).

Type Approval documentation

User Guide: SDW-500 Series: 6644-2240 Rev. B, dated 2016-02
Data sheets: SDW-541-F1G-T4G Rev.A,
SDW-550-T5G Rev.A.
Test reports: DELTA REC-E704292, dated 2015-12-16

Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006.

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

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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