

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Network and Communication Components**

with type designation(s)

SDW-500 series and MCW-211 series

Issued to

Westermo Teleindustri AB**STORA SUNDBY, Södermanlands län, Sweden**

is found to comply with

DNV GL 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 GL.****Location classes:**

Temperature	B
Humidity	B
Vibration	A
EMC	B
Enclosure	Required protection according to relevant rules shall be provided upon installation onboard.

Issued at **Høvik** on **2018-11-22**for **DNV GL**This Certificate is valid until **2023-12-31**.DNV GL local station: **Stockholm**Approval Engineer: **Ståle Sneen****Jan Tore Grimsrud**
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 SDW-500 series 5-port Industrial Ethernet Switches for DIN-rail mounting and MCW-211 series Industrial Ethernet FX/TX Media Converters for DIN-rail mounting, comprising the following models:

Art. No.	Type Designation	Description	
3644-0001	SDW-550	Industrial Ethernet Switch	10/100Base-T/TX: 5 ports
3644-0022	SDW-541-SM-LC15		10/100Base-T/TX: 4 ports 100Base-FX: 1 port
3644-0023	SDW-541-MM-LC2		10/100Base-T/TX: 4 ports 100Base-FX: 1 port
3644-0025	SDW-541-SM-LC40		10/100Base-T/TX: 4 ports 100Base-FX: 1 port
3644-0032	SDW-532-2-SM-LC15		10/100Base-T/TX: 3 ports 100Base-FX: 2 ports
3644-0033	SDW-532-2-MM-LC2		10/100Base-T/TX: 3 ports 100Base-FX: 2 ports
3644-0035	SDW-532-2-SM-LC40	10/100Base-T/TX: 3 ports 100Base-FX: 2 ports	
3645-0030	MCW-211-SM-LC15	Industrial Ethernet FX/TX Media Converter	10/100Base-T/TX: 1 port 100Base-FX: 1 port
3645-0040	MCW-211-SM-LC40		10/100Base-T/TX: 1 port 100Base-FX: 1 port
3645-0050	MCW-211-MM-LC2		10/100Base-T/TX: 1 port 100Base-FX: 1 port

MM = Multimode fibre
 SM = Singlemode fibre
 LC = Connector type LC

Power supply: Rated voltage 12-48 VDC

Approval conditions

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.

Application/Limitation

Compass safe distance	Standard	Steering
SDW-550	15 cm	10 cm
Other models	10 cm	5 cm

Type Approval documentation

SDW-500 series User Guide: 6644-2212 Rev. C, dated 2010.04
 SDW-550 User Guide: 6644-2230 Rev. B, dated 2010.04
 MCW-211 series User Guide: 6645-2202 Rev. B, dated 2010.09
 Datasheets: SDW-532datasheetSE, SDW-541datasheetSE, SDW-550datasheetSE, MCW-211datasheetSE.
 Test reports: DELTA REC-E702070_2 Rev.1, dated 2008-11-06, DELTA REC-E702070_1, dated 2010-07-16, DELTA REC-E702621, dated 2010-06-14.
 Type approval renewal assessment report for A-13784, DNV GL Stockholm 2018-11-21.

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.
 For the bridge mounted components the 'Compass safe distance' was measured according to section 11.2 of IEC 60945 4th edition (2002).

Job Id: **262.1-005815-4**
Certificate No: **TAA000023E**

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

END OF CERTIFICATE