DNV·GL

Certificate No:
TAA00000N7

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
IE-1000 Series Industrial Ethernet Switch

Issued to
Cisco Systems, Inc.
San Jose, CA, United States

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	**A**
EMC	**A**
Enclosure	**Required protection according to relevant rules shall be provided upon installation on board**

This Certificate is valid until **2021-09-12**.

Issued at **Høvik** on **2016-09-13**

for **DNV GL**

DNV GL local station: **Long Beach**

Approval Engineer: **Nils Jarem**

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.

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Job Id: **262.1-020246-1**
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Product description

Cisco IE 1000 Series Switches Configurations

Product Number	Total Ports	Fast Ethernet Copper Uplink	GE SFP Uplink	Fast Ethernet Copper Downlink	PoE/PoE+	Input Power Voltage
IE-1000-4T1T-LM	5	1		4		12-24V
IE-1000-6T2T-LM	8	2		6		12-24V
IE-1000-4P2S-LM	6		2		4	48-54V
IE-1000-8P2S-LM	10		2		8	48-54V

Compass safe distance : Standard : 25 cm, Steering 15 cm.

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.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2015.
For the bridge mounted components the 'Acoustic noise and signals' and the 'Compass safe distance' were measured according to sections 11.1 and 11.2 of IEC 60945, 4th edition (2002).

Marking of product

The products to be marked with:
- manufacturer name
- model name
- serial number

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