

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Peripheral Equipment**

with type designation(s)

Managed Ethernet-Switches IE-5000-12S12P-10G and IE-5000-16S12P

Issued to

**Cisco Systems Inc.
San Jose CA, United States**

is found to comply with

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

Temperature	A
Humidity	B
Vibration	A
EMC	A
Enclosure	Required protection according to DNVGL Rules

This Certificate is valid until **2021-06-01**.Issued at **Hamburg** on **2016-06-02**for **DNV GL**DNV GL local station: **Long Beach**Approval Engineer: **Andrea Grün**

Duy Nam Le
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

IE-5000-12S12P-10G

- 28 Ports
- 4 SFP/SFP+ (1G/10G) 1 Uplinks
- 12 (FE/GE) SFP Fiber Ports (S)
- Copper 10/100/1000 PoE/PoE+ Ports: 12 (10/100/1000M)

IE-5000-16S12P

- 28 Ports
- 4 SFP/SFP+ (1G) Uplinks
- 12 (FE/GE) SFP Fiber Ports (S)
- Copper 10/100/1000 PoE/PoE+ Ports: 12 (10/100/1000M)

Approval conditions

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

Application/Limitation

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 Excertificate issued by a notified/recognized Certification Body.

Type Approval documentation

Test Reports:

- R100569 Environmental Test Report dated 2016-01-29
- R100463 EMC Test Report dated 2016-02-23

Technical Data Sheet: C78-734967-02 dated 01/2016

Product Documentation and Compliance / Information for the Cisco IE 5000 78-100604-01
Cisco IE 5000 Hardened Aggregator / Hardware Installation Guide Last dated: 01/2016
Power Supply Specification 95-104721-01 dated 2015-03-24 (1783-IMXAC 150W AC/DC Input)
Drawings: 62-102586-01 DO dated 2015-07-16
62-26580-01 CO dated 2013-20-29

Tests carried out

Applicable tests according to Class Guidance DNVGL-CG-0339, November 2015.

Marking of product

The products to be marked with:

- model name
- manufacturer 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

Job Id: **262.1-022140-1**
Certificate No: **TAA00000EZ**

- 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 2.5 year and at renewal of this certificate.

END OF CERTIFICATE