



Marine & Offshore

Certificate number: 48146/B1 BV

File number: AP4747

Product code: 4502H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

Phoenix Contact GmbH & Co. KG

Blomberg - GERMANY

for the type of product

NETWORK COMMUNICATION SYSTEMS

Ethernet Switches

FL SWITCH 2000 Series

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

EC Code: 31B

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 26 Apr 2029

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 27 May 2025,

Dirk Hoepfner

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

The **FL SWITCH 2000** series are standard DIN rail mountable managed ethernet switches and **FL SFP** series are media modules for fiber optic ports.

1.1 - Main Characteristics:

Power Supply: 24V DC
Degree of Protection: IP20
Firmware Version: 3.xx

1.2 - Types:

Article No.	Designation	Description
2702326	FL SWITCH 2205	5 Port RJ45 10/100 Mbps
2702327	FL SWITCH 2208	8 Port RJ45 10/100 Mbps
2702328	FL SWITCH 2207-FX	7 Port RJ45 10/100 Mbps, 1xFiber Optic port in SC format for multi-mode
2702329	FL SWITCH 2207-FX SM	7 Port RJ45 10/100 Mbps, 1x Fiber Optic port in SC format for single-mode
2702330	FL SWITCH 2206-2FX	6 Port RJ45 10/100 Mbps, 2x Fiber Optic ports in SC format for multi-mode
2702331	FL SWITCH 2206-2FX SM	6 Port RJ45 10/100 Mbps, 2x Fiber Optic ports in SC format for single-mode
2702332	FL SWITCH 2206-2FX ST	6 Port RJ45 10/100 Mbps, 2x Fiber Optic ports in ST format for multi-mode
2702333	FL SWITCH 2206-2FX SM ST	6 Port RJ45 10/100 Mbps, 2x Fiber Optic ports in ST format for single-mode
2702652	FL SWITCH 2308	8 Port RJ45 10/100/1000 Mbps
2702334	FL SWITCH 2204-2TC-2SFX	4 Port RJ45 10/100 Mbps, 2x Fast Ethernet Combo ports, 2x SFX ports
2702653	FL SWITCH 2304-2GC-2SFP	4 Port RJ45 10/100/1000 Mbps, 2x SFP ports, 2x Gigabit Combo ports
2702969	FL SWITCH 2206-2SFX	6 Port RJ45 10/100 Mbps, 2x SFX ports
2702970	FL SWITCH 2306-2SFP	6 Port RJ45 10/100/1000 Mbps, 2x SFP ports
2702904	FL SWITCH 2216	16 Port RJ45 10/100 Mbps
1044029	FL SWITCH 2216 PN	16 Port RJ45 10/100 Mbps, PROFINET mode
2702905	FL SWITCH 2214-2FX	14 Port RJ45 10/100 Mbps, 2x Fiber Optic ports in SC format for multi-mode
2702906	FL SWITCH 2214-2FX SM	14 Port RJ45 10/100 Mbps, 2x Fiber Optic ports in SC format for single-mode
1006188	FL SWITCH 2214-2SFX	14 Port RJ45 10/100 Mbps, 2x SFX ports
1044030	FL SWITCH 2214-2SFX PN	14 Port RJ45 10/100 Mbps, 2x SFX ports, PROFINET mode
2702907	FL SWITCH 2212-2TC-2SFX	12 Port RJ45 10/100 Mbps, 2x Fast Ethernet Combo ports, 2x SFX ports
2702909	FL SWITCH 2316	16 Port RJ45 10/100/1000 Mbps
1031673	FL SWITCH 2316 PN	16 Port RJ45 10/100/1000 Mbps, PROFINET mode
1006191	FL SWITCH 2314-2SFP	14 Port RJ45 10/100/1000 Mbps, 2x SFP ports
1031683	FL SWITCH 2314-2SFP PN	14 Port RJ45 10/100/1000 Mbps, 2x SFX ports, PROFINET mode
2702910	FL SWITCH 2312-2GC-2SFP	12 Port RJ45 10/100/1000 Mbps, 2x SFP ports, 2x Gigabit Combo ports
1044024	FL SWITCH 2208 PN	8 Port RJ45 10/100 Mbps, PROFINET mode
1044028	FL SWITCH 2206-2SFX PN	6 Port RJ45 10/100 Mbps, 2x SFX ports, PROFINET mode
1009220	FL SWITCH 2308 PN	8 Port RJ45 10/100/1000 Mbps, PROFINET mode
1009222	FL SWITCH 2306-2SFP PN	6 Port RJ45 10/100/1000 Mbps, 2x SFX ports, PROFINET mode
2702397	FL SFP SX2	Gigabit module with a wavelength of 1310nm MM
2702437	FL SFP FE WDM20-A	Fast Ethernet SFP WDM module with a wavelength of 1310/1550nm SM
2702438	FL SFP FE WDM20-B	Fast Ethernet SFP WDM module with a wavelength of 1550/1310nm SM
2702439	FL SFP FE WDM20-SET	Fast Ethernet SFP WDM set with a wavelength of 1310/1550nm SM
2702440	FL SFP WDM10-A	Gigabit SFP WDM module with a wavelength of 1310/1550nm SM
2702441	FL SFP WDM10-B	Gigabit SFP WDM module with a wavelength of 1550/1310nm SM
2702442	FL SFP WDM10-SET	Gigabit SFP WDM set with a wavelength of 1310/1550nm SM
2891081	FL SFP FX	Fast Ethernet module with a wavelength of 1310nm MM
2891082	FL SFP FX SM	Fast Ethernet module with a wavelength of 1310nm SM
2989912	FL SFP LH	Gigabit module with a wavelength of 1550nm SM
2891754	FL SFP SX	Gigabit module with a wavelength of 850nm MM
2891767	FL SFP LX	Gigabit module with a wavelength of 1310nm SM

Article No.	Designation	Description
1043412	FL SWITCH 2408	8 Port 10/100MBit
1043414	FL SWITCH 2406-2SFX	8 Port 10/100MBit incl. 2x SFX
1043484	FL SWITCH 2508	8 Port 10/100/1000MBit
1043491	FL SWITCH 2506-2SFP	8 Port 10/100/1000MBit incl. 2x SFP
1088853	FL SWITCH 2404-2TC-2SFX	8 Port 10/100MBit incl. 2/4x SFX
1089126	FL SWITCH 2406-2SFX PN	8 Port 10/100MBit incl. 2x SFX, PROFINET mode
1089133	FL SWITCH 2408 PN	8 Port 10/100MBit, PROFINET mode
1089134	FL SWITCH 2508 PN	8 Port 10/100/1000MBit, PROFINET mode
1215350	FL SWITCH 2508/K1	8 Port 10/100/1000MBit
1089135	FL SWITCH 2506-2SFP PN	8 Port 10/100/1000MBit incl. 2x SFP, PROFINET mode
1215329	FL SWITCH 2506-2SFP/K1	8 Port 10/100/1000MBit incl. 2x SFP
1088872	FL SWITCH 2504-2GC-2SFP	8 Port 10/100/1000MBit incl. 2/4x SFP
1043416	FL SWITCH 2416	16 Port 10/100MBit
1043423	FL SWITCH 2414-2SFX	16 Port 10/100MBit incl. 2x SFX
1043496	FL SWITCH 2516	16 Port 10/100/1000MBit
1043499	FL SWITCH 2514-2SFP	16 Port 10/100/1000MBit incl. 2x SFP
1088875	FL SWITCH 2412-2TC-2SFX	16 Port 10/100/MBit incl. 2/4x SFX
1089150	FL SWITCH 2416 PN	16 Port 10/100MBit, PROFINET mode
1089139	FL SWITCH 2414-2SFX PN	16 Port 10/100MBit incl. 2x SFX, PROFINET mode
1089154	FL SWITCH 2514-2SFP PN	16 Port 10/100/1000MBit incl. 2x SFP, PROFINET mode
1089205	FL SWITCH 2516 PN	16 Port 10/100/1000MBit, PROFINET mode
1088856	FL SWITCH 2512-2GC-2SFP	16 Port 10/100/1000MBit incl. 2/4x SFP
2702882	FL NAT 2208	8 Port 10/100MBit, Managed Switch/NAT router
2702981	FL NAT 2304-2GC-2SFP	8 Port 10/100/1000MBit incl. 2/4x SFP, Managed Switch/NAT router

Above listed devices may have an additional name suffix /K1 to /K9 or /KA to /KZ.

These devices are preconfigured with application-relevant settings like network, access and connection parameters.

2. DOCUMENTS AND DRAWINGS :

- Data sheet FL SFP: 7762_en_01 dated 11/2008,
- Data sheets: 2702439, 2891081, 2702397, 2702438, 2891082, 2702437, 2702440, 2702441, 2702442 dated 03/06/2017
- NDN170091 dated 2018/03/16; PI_A-3-0-00901 dated 09.02.2004

For A1 version:

- User manual 107065_en_03 dated 2018-05-14; NDN180031 Rev.01 dated 2018/06/20; MDN19005 Rev.01 dated 2019/02/12
- 1002731-05-bt dated 09.05.18; 1002794-03-bt dated 14.05.18; 1003003-02-bt dated 11.05.18
- 1003023-02-bt dated 09.05.18; 1039402-02-bt dated 09.05.18; 9077179-00-bt dated 06.01.17

For A2 version:

- User manual 108997_en_01 dated 2020-04-22
- FW delta documentation dated 08 Nov 2019, 15 May 2020 and 14 Jan 2021
- NDN182034 dated 2019/11/06; NDN190045 dated 2020/05/15; NDN200038 dated 2021/01/14
- 1079539rev.02, 1079542rev.03, 1093546rev.02 dated 26.08.19; 1079540rev.02 dated 25.01.19; 000001225415rev.00 dated 10.06.20
- 1092427rev.02, 1092451rev.02 dated 26.08.19; 1092453rev.02 dated 26.08.19; 1093022rev.01 dated 27.03.19

For B0 version:

- FW delta documentation dated 06 Mar 2023
- NDN210080 dated 2022/01/14

3. TEST REPORTS:

- Phoenix Testlab: U161521E1, 2nd dated 02.02.2017; E161521E1, 2nd dated 02.02.2017; E172067E1, 2nd dated 29.11.2017

For A1 version:

- Phoenix Testlab: U181461E1, 2nd dated 11.02.2019; E18146E1 dated 07.12.2018

For A2 version:

- Phoenix Testlab: E201452E1 dated 28.10.2020; E200055E1, 3rd dated 19.05.2020; E200055E2, 3rd dated 19.05.2020; U200055E1 dated 30.04.2020

4. APPLICATION / LIMITATION:

4.1 - Bureau Veritas Rules for the Classification of Steel Ships

4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-UMS.**

4.3 - Bureau Veritas Environmental Category: **EC Code: 31B**

4.4 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev8.

4.5 - In accordance with IACS UR E22 and as applicable to programmable devices for computer based systems of Category II or III, for each ship application:

- Ship specific documentation is to be submitted including software documentation and categorization of the computer based system.

- Inspection and testing before installation onboard is to be performed under the surveillance of the Society.

4.6 - Only Hardware and Firmware/Software successfully tested together in compliance with the Rules as referred to in page one, according to the declaration of the manufacturer is covered by this certificate.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above mentioned products are to be supplied by **Phoenix Contact GmbH & Co. KG** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **Phoenix Contact GmbH & Co. KG** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

5.4 - For information, **Phoenix Contact GmbH & Co. KG** in Blomberg has declared to Bureau Veritas the following production site.

**Phoenix Contact GmbH & Co. KG
Dringenauer Straße 30
31812 Bad Pyrmont
Germany**

6. MARKING OF PRODUCT:

- Maker's name or trademark
- Equipment type or model identification
- Date of manufacture and/or serial number

7. OTHERS :

7.1 - It is the responsibility of **Phoenix Contact GmbH & Co. KG** to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 48146/B0 BV issued on 26 Apr 2024 by the Society.

*** END OF CERTIFICATE ***