



## ***Confirmation of Product Type Approval***

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product. This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 29-OCT-2019. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

**Product Name: Switches, Ethernet**

**Model Name(s): NT24k Modular Series NT24k Compact Series NT24K-16M12  
IP67 Rated Series**

**Presented to:**

RED LION CONTROLS  
20 WILLOW SPRINGS CIRCLE  
PA 17406  
United States

**Intended Service:**

Marine & Offshore Applications - Industrial Ethernet and Fiber Switches for Network.

**Description:**

NT24k Modular Series: The rack-mount NT24k Managed Industrial Ethernet Switch features three slots to accommodate mix-and-match connectivity for 100-base, Gigabit, fiber and copper options with support of up to 24 Gigabit ports. The DIN rail comes in two versions, the DR16 (up to 16 ports) and the DR24 (up to 24 ports). The DIN rails support the same connectivity as the rack mount. All support expanded shock and vibration tolerances and operating temperature ranges.

NT24k Compact Series: NT24k managed Gigabit Ethernet industrial switch platform compact DIN-rail mountable switches. The new all-Gigabit and Power over Ethernet Plus (PoE+) IEEE802.3af/at switches deliver wire-speed performance in harsh environments where space may be limited. Compact NT24k hardened metal housing provides industry-leading shock and vibration tolerance coupled with an up to -40° to 85°C operating temperature range to ensure optimal network performance in the harshest industrial environments.

NT24K-16M12 IP67 Rated Series: NT24k-16M12 managed switches feature sixteen (16) all-Gigabit copper M12 X-code ports and is housed in a dust proof and water resistant IP67-rated enclosure. The NT24k-16M12 is designed to provide reliable operation in railway and other industrial applications subject to shock, vibration and other extreme conditions. Bypass relay ports enable data to continue to flow even in the event of

a power outage.

**Tier:**

3

**Ratings:**

NT24K Modular Series: Rack Mount/ DIN Rail: Low Voltage: 18-49 VDC High Voltage: 90-264 VAC or 90-300 VDC Input Current (max): 2.26A @ 24 VDC (Rackmount), 2.14A @ 24 VDC (DIN 24), 1.52A @ 24 VDC (DIN 16); Input Current (max): 790mA @ 120 VAC/450mA @ 124 VDC (Rackmount), 780mA @ 120 VAC/430mA @ 124 VDC (DIN 24), 580mA @ 120 VAC/430mA @ 124 VDC (DIN 16); Operating Temperature: -40°C to 85°C (Rack Mount), -40°C to 75°C (DIN) Suitable for Hazardous Areas Class 1, Division 2, Groups A, B, C and D. NT24K Compact Series: Voltage: 18-49 VDC, 22-49 VDC (POE) Input Current (max): 0.51 A @ 24 VDC (-8TX), 0.7 A @ 24 VDC (-16TX), 10.88 A @ 24 VDC (-8TX-POE), 11.2 A @ 24 VDC (-16TX-POE), 0.71 A @ 24 VDC (-FX) & 0.74 A @ 24 VDC (-GX), Operating Temperature: -40°C to 85°C, -40°C to 80°C (POE) Suitable for Hazardous Areas Class 1, Division 2, Groups A, B, C and D. NT24K-16M12 IP67 Rated Series: Voltage: 10-49 VDC, 22-49 VDC (POE) Input Current: 0.7 A @ 24 VDC, 11.5 A @ 24 VDC (-POE), 0.85 A @ 24 VDC (-R), 11.65 A @ 24 VDC (-POE-R), Operating Temperature: -40°C to 85°C, -40°C to 80°C (POE), Suitable for Hazardous Areas Class 1, Division 2, Groups A, B, C and D. Refer to attached "PDFs" for more details.

**Service Restrictions:**

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

**Comments:**

Duplicate reside with Red Lion Controls, Inc. - YORK The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

**Notes / Documentation:**

ACS Report 16-0520.C08.2A, Rev. A, EMC TECHNICAL REPORT, Date: 21 March 2017 ATS Report D261318, Rev.1, ENVIRONMENTAL QUALIFICATION TESTING, Date: 11 October 2016 NTS Report PR059720-01.2TR, Rev.2, VIBRATION TESTING OF TWO GIGABIT ETHERNET SWITCHES, Date: 3 April 2017 Drawing No. NT24k-16M12 Series\_RAM-6021M12, Rev.-, Complete Certifications Listing Drawing No. NT24k-16M12 Data Sheet, Rev.-, NT24k-16M12 Industrial Ethernet Switch 20180115-E214222, UL CERTIFICATE OF COMPLIANCE, Date: 15 January 2018 256047-2018-AQ-USA-ANAB, ISO 9001:2008 Certificate, Date: 29 January 2018 Drawing No. NT24k Compact Series Hardware Manual, Rev.-, Industrial Managed Gigabit Ethernet Switches EMI Test Report - ACS report no. 12-0418.C01.1A Rev. A dated April 11, 2013, models NT24K DR24 and NT24K DR16. CE EMC Technical Report - ACS report no. 12-0418.C08.2A Rev. A dated April 11, 2013, models NT24K DR24 and NT24K DR16. EMI Test Report - ACS report no. 12-0153.C01.1B Rev. B dated October 15, 2012, model covered NT24K Modular Switch. CE EMC Technical Report - ACS report no. 12-0153.C08.3B Rev. B dated October 15, 2012, model covered NT24K Modular Switch. EMI Test Report - ACS report no. 12-0153.C14.2B Rev. B dated October 15, 2012, model covered NT24K Modular Switch. EMC Test Report - ACS report no. 12-0418.C14.3A Rev. A dated April 11, 2013, models NT24K DR24 and NT24K DR16. UL Certification ENWS.E214222 Data Processing Equipment, Electronic for Use in Hazardous Locations UL Certification ENWS7.E214222 Data Processing Equipment, Electronic for Use in Hazardous Locations Certified for Canada. Russian Certificate of Conformity no. 1031316 for N-TRON Corporation model NT24K valid until 10-Feb-16. Brochure ADLD0331NT 021914 NT24k Modular Industrial Switch - N-Tron. Brochure ADLD0332NT 021914 NT24k-DR16 Modular Industrial Switch - N-Tron. Brochure ADLD0333NT 021914 NT24k-DR24 Modular Industrial Switch - N-Tron. Drawing No. 55011\_14-0344, EMI Test Report, Revision: -, Pages: 1 Drawing No. CE\_14-0344, EMC Test Report, Revision: -, Pages: 1 Drawing No. CE\_14-0379, EMC Test Report, Revision: -, Pages: 1 Drawing No. CE\_14-0380, EMC Test Report, Revision: -, Pages: 1 Drawing No. EN55011\_14-0379, EMI Test Report, Revision: -, Pages: 1 Drawing No. EN55011\_14-0380, EMI Test Report, Revision: -, Pages: 1 Drawing No. ENWS, UL Listing, Revision: -, Pages: 1 Drawing No. ENWS7, UL Listing, Revision: -, Pages: 1 Drawing No. FCC\_ICES\_14-0344, EMI Test Report, Revision: -, Pages: 1 Drawing No. FCC\_ICES\_14-0379, EMI Test Report, Revision: -, Pages: 1 Drawing No. FCC\_ICES\_14-0380, EMI Test Report, Revision: -, Pages: 1 Drawing No. N-TRON\_GOST\_Certificate\_Valid\_Until\_10feb16, Cert, Revision: -, Pages: 1 Drawing No. NT24k Series (Discrete) PDA Information, PDA Information, Revision:

**Term of Validity:**

-, Pages: 1 Drawing No. NT24k-16TX\_Datasheet, Datasheet, Revision: -, Pages: 1  
 Drawing No. NT24k-8TX-POE\_Datasheet, Datasheet, Revision: -, Pages: 1  
 Drawing No. NT24k-8TX\_Datasheet, Datasheet, Revision: -, Pages: 1

This Product Design Assessment (PDA) Certificate 14-HS1264121-2-PDA-DUP, dated 11/May/2018 remains valid until 29/Oct/2019 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

**ABS Rules:**

Rules for Conditions of Classification, Part 1 - 2015 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following: 2015 Steel Vessels: 4-8-2/11.5.4, 4-8-3/1.11 Table 2, 4-8-3/13, 4-8-4/27, 4-9-8/7, 4-9-8/13; 2015 Steel Vessels Under 90 Meters (295 feet) in Length: 4-6-2/15, 4-6-2/15, 4-6-3/11; 2015 Offshore Support Vessels (OSV Rules): 4-8-2/11.5.4, 4-8-3/1.11 Table 2, 4-8-3/1, 4-8-4/29; Rules for Conditions of Classification, 2015- Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following: 2015 Mobile Offshore Drilling Units: 4-3-2/15.9.1, 4-3-1/9, 4-3-3/9.12;& 3, 4-3-6; 2015 Offshore Installations: 3-6/5.1;

**National Standards:**

EN61000-6-2/4, EN55011:2009 + A1:2010, CAN/CSA-C22.2 No. 14, CAN/CSA-C22.22 No. 213-M1987 FCC Title 47 CFR, Part 15 Subpart B- Class A, UL 508

**International Standards:**

IEC61000-4-2/3/4/5/6/8/11

**Government Authority:**

**EUMED:**

**Others:**

**Model Certificate****Model Certificate No****Issue Date****Expiry Date**

PDA-DUP

14-HS1264121-2-PDA-DUP

11-MAY-2018

29-OCT-2019



ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.