



1. **TYPE EXAMINATION CERTIFICATE**

2. **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres**

3. Type Examination Certificate Number: ETL10ATEX41129X

4. Equipment or Protective System: Compact GuardLogix Controller 1768-L45S & 1768-L43S
Compact Logix Ethernet/IP Bridge Module 1768-ENBT
Compact Logix Ethernet/IP Bridge Module 1768-EWEB

5. Manufacturer: Rockwell Automation

6. Address: 1 Allen Bradley Drive, Mayfield Heights,
OH 44124-6118 USA

7. This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8. Intertek declares that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive 94/9/EC of 23 March 1994



The examination and test results are recorded in confidential Report: 100014190DAL-001 dated 2010/07/13. The investigation was began 2010/01/27 and concluded 13 July 2010. A type sample was made available and tested at Intertek Dallas.

9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with standards BS EN 60079-15:2005 & BS EN 60079-0:2006 except in respect of those requirements referred to at item 16 of the Schedule.

10. If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11. This Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12. The marking of the equipment or protective system shall include the following:-

 II 3 G Ex nA nL IIC T4 (1768-L45S & 1768-L43S)
 II 3 G Ex nA IIC T4 (1768-ENBT & 1768-EWEB)
(Tamb: 0°C to +60°C)

Ryan Parks
Hazardous Locations Team Leader
Date: 13 July 2010

Intertek
1809 10th St, Suite 400,
Plano, TX 75074, USA
Tel: (972) 202-8800 Fax: (972) 202-8801
<http://www.Intertek.com>

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SCHEDULE

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13. Description of Equipment:

The L45S GuardLogix equipment is a modular plug-in component of the Allen-Bradley CompactLogix industrial control system. It is utilized along with the embedded Safety Partner module as the system processor in control systems that are designed to provide "SIL 3" level of functional safety. The L43S communicates with various I/O and communications modules across the system backplane, executing control programming, storing and retrieving data and monitoring system status. The CompactLogix -L45S safety controller module utilizes a dual bus design; 1769-Bus for I/O communications and the X-Bus for inter-module communication which supports four 1768 modules. The processor is provided with one isolated 9 pin shielded DIN type RS-232 serial port interface for temporary connection to various programming and monitoring hardware. This processor contains 4 Mbytes of User Available memory for program and data storage and is provided with a Compact Flash port in the front panel for use with a removable Compact Flash memory card. The operating program may be stored into the on-board SDRAM or into a removable Compact Flash memory card.

Operating power is supplied from the 1768 CompactLogix system power supply 24V dc.

The only difference between the 1768-L45S and the 1768-L43S is user available memory. The L45S has 4 MB of user memory and the L43S has 2 MB of user memory. All hardware is the same.

The 1768-ENBT is an Ethernet bridge module, which can be connected to the network using CAT5 UTP cable via RJ45 connector. This interface operates using industry standard 10 Mbit or 100 Mbit TCP/IP Ethernet protocol.

The 1768-ENBT module can be connected in any Slot from 1 to 4. It cannot be connected as Slot 0 module as it will not have Slot 0 module functionalities as specified in X-Logix System Specifications. Main input power is converted to 24V DC by the main power supply and provided to Slot 0 (1768-L4X) where DC-DC converters generate 5V and GTL power for the 1768 modules. The Slot 0 module contains an I/O interface board, which is unique with respect to the particular local I/O system used, and also controls power for the I/O modules (24V and 5V in the case of 1769 I/O). This module is designed to be mounted directly on an industrial control panel or on an industry standard EN 50022 35 x 7.5mm and 35 x 15mm DIN rail which is mounted to an industrial control panel within a grounded enclosure. The module is provided with an Ethernet port connector to enable high speed digital communications via Ethernet network using CAT 5 UTP (4 pair) cable, with molded or crimped on RJ-45 plugs. Shielded and unshielded cables are both accommodated by the connector on this equipment. Wire selection, preparation, crimping, and routing are detailed in the "Ethernet/IP Media Planning and Installation Manual", publication ENETIN001, which is referenced in the installation manual for this equipment. The ENBT is comprised of multiple circuit board components: A Main board, a Faceplate board, and Legacy Slot N wing board. The Main module contains the Mid-Range ASIC, Processor, SDRAM, Flash and the Ethernet physical layer. The Faceplate board contains three bi-color red/green LEDs (one Module Status "Health" LED and two Ethernet Channel Status Led's), and a 4-character Module Status Alphanumeric display. The alphanumeric display will provide the Ethernet IP address, general module status, redundancy states and diagnostic status. The wing board for a Mid-Range-based Slot N module connects the main board.

The 1768-ENBT and 1768-EWEB are differentiated by firmware – the hardware is exactly the same for both modules.

14. Report NUMBER

Intertek Report 100014190DAL-001, dated 13 July 2010.



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15. Conditions for use:

a. Special Conditions for safe use;

The apparatus must be installed in an ATEX certified IP54 enclosure, providing protection against impact, accessibility, and ingress of foreign objects and water.

The non-metallic enclosure of the apparatus does not provide adequate protection and was not evaluated for impact, thermal endurance to heat, or endurance to cold.

The electrical apparatus is designed for use in a different range of ambient temperatures, considered to be special, and is stated by the manufacturer in the installation instructions.

The special ambient range is $0^{\circ}\text{C} \leq T_{\text{amb}} \leq 60^{\circ}\text{C}$.

Appropriate end terminals shall be used to secure the equipment on din rail.

The apparatus must be used in conjunction with a suitable power supply. Provisions shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 40%.

b. Conditions for use (Routine Tests)

There are no routine tests.

16. Essential Health and Safety Requirements (EHSR's)

The relevant EHSR's that have not been addressed by the standards listed in this certificate have been identified and assessed and are maintained in the project file, Intertek G100014190DAL.



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17. DRAWINGS

Number	Rev	Date	Pages	Description
10000081965	00	2009-10	1-2 inc.	1768-L45S/B: Module assembly
10000081948	00	2009-10	1 of 1	1768-L43S/B: Module assembly
96441254	02	2005-10	1- 2 inc.	1768-L43S/ L45S /B: Face plate schematic
10000016673	00	2008-04	1-11 inc.	1768-L43S/ L45S /B: Controller
96441454	C01	2006-02	1-5 inc.	1768-L43S/ L45S /B: I/O Interface Schematic
10000057596	01	2009-12	1 of 1	1768-L45S/B: Typing Instructions
10000057598	01	2010-01	1 of 1	1768-L43S/B: Typing Instructions
1768-L45S_BOM.xls	-	-	-	1768-L45S/B: BOM
1768-L43S_BOM.xls	-	-	-	1768-L43S/B: BOM
10000031913	00	2008-12	1 of 1	1768-ENBT/A: Module Assembly
96448052	A01	2005-08	1-2 inc.	1768-ENBT/EWEB/A: Face Plate Schematic
10000006965	01	2008-05	1-15 inc.	1768-ENBT/EWEB/A: ENBT Schematic
96441855	A01	2005-08	1-2 inc.	1768-ENBT/EWEB/A: Slot N Wing Schematic
95794062	05	2009-08	1 of 1	1768-ENBT/A: Typing Instructions
95300151	05	2009-08	1 of 1	1768-EWEB/A: Typing Instructions
98653203	03	2009-04	1 of 1	1768-ENBT/EWEB/A: Label Artfile
1768-ENBT_BOM.xls	-	-	-	1768-ENBT/A: BOM
1768-EWEB_BOM.xls	-	-	-	1768-EWEB/A: BOM

On the basis of the referenced test report(s), the type sample(s) of the product has(have) been found to comply with the relevant harmonized standard(s) listed on this certificate at the time the tests were carried out.

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test/inspection results referenced in this Certificate are relevant only to the type sample tested/inspected. This Certificate by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program

Intertek
1809 10th St, Suite 400, Plano, TX 75074, USA
Tel: (972) 202-8800 Fax: (972) 202-8801
<http://www.intertek.com>