

2010-09-15

Automation, Software and Information Technology

**Assessment of the firmware update for
the Point Guard I/O Safety Module 1734-IB8S
of Rockwell Automation, USA**

**Report-No.: 968/EZ 342.01/10
Date: 2010-09-15**

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Pages: 6

Test object: Firmware update for the Point Guard I/O Safety Module 1734-IB8S

Customer/Manufacturer: Rockwell Automation
1 Allen-Bradley Drive
Mayfield Heights, OH 44124
United States of America

Order-No./Date: 5500003124 dated 2010-07-13

Test Institute: TÜV Rheinland Industrie Service GmbH
Automation, Software and Information Technology (ASI)
Am Grauen Stein
51105 Köln
Germany

TÜV-Offer-No./Date: RURI-86VHKK-0 dated 2010-06-29

TÜV-Order-No./Date: 713677 dated 2010-07-15

Inspectors: Dipl.-Ing. Matthias Haynl

Test location: see Test Institute

Test duration: August - September 2010

The test results are exclusively related to the test samples.

This report must not be copied **in an abridged version** without the written permission of the Test Institute.

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1. Scope

This test report is to provide traceable evidence, that the firmware changes in V1.002 for the Point Guard I/O Safety Module 1734-IB8S have no influence on the functional-safety of the product, specified in the product specification and the relevant standards.

2. Applicable standards

- /N 1/ IEC 61508, parts 1 - 7:1998-2000**
Part 1-7: Functional safety of E/E/PES safety-related system
- /N 2/ ISO 13849-1:2006**
Safety of machinery - Safety related parts of control systems
Part1: General principles design
- /N 3/ EN 62061-1:2005**
Functional safety of safety-related electrical, electronic and programmable electronic control systems
- /N 4/ IEC 61131-2:2004**
Programmable controllers
Part2: Equipment requirements and tests
- /N 5/ EN 60204-1:2006**
Safety of machinery - Electrical equipment of machines
Part 2: General requirements
- /N 6/ NFPA79:2007**
Electrical Standard for Industrial Machinery
- /N 7/ ANSI/RIA R15.06-1999**
American National Standard for Industrial Robots and Robot Systems - Safety Requirements
- /N 8/ ANSI B11.19-2003**
American National Standard for Machine Tools - Performance Criteria for Safeguarding

3. Test object description

The test object were the firmware changes from version V1.001 to V1.002 for the Point Guard I/O Safety Module 1734-IB8S documented under /U 3/ in reference to the approved firmware version documented under /U 6/.

3.1. Safety related aspects

See test report-no. 968/EZ 342.00/09 dated 2009-02-05

3.2. Test samples

The necessary tests of the 1734-IB8S were carried out at the Rockwell facilities in Milwaukee and Cleveland. Additionally Rockwell provided a test system to the Test Institute. It was used to verify partly the tests carried out at Rockwell and to incorporate additional tests.

Catalogue Number	Description	Series	FW - Revision
1734-IB8S	Point Guard I/O Safety Modules	A	1.002

Table 1: Point Guard I/O Safety Module

The test samples will be stored at the Test Institute.

3.3. Inspected documents

Testing was mainly based on the following documents:

- /U 1/ Requirements for Muting Output status in Safety Core, SAP DIR 10000101202, Rev. 03, dated 3/9/2010**
Rockwell Automation
- /U 2/ Rockwell Automation's Allen-Bradley DeviceNet Safety I/O Phase 2 and PointGuard Embedded Software Documentation, Generated on Mon Aug 2 16:14:05 2010**
Rockwell Automation
- /U 3/ Source Code Differences between POINT_SAFE_IO_01_01_36_REL_A and POINT_SAFE_IO_01_02_38_REL (compiled html help file)**
Rockwell Automation
- /U 4/ QTP for Point Guard I/O Testing 1734-IB8S / 1738-IB8SM12, Rev. 2.0**
Rockwell Automation
- /U 5/ Installation & User Manual 1734-IB8S, 1734-OB8S Publication 1734-UM013C-EN-P - August 2010**
Rockwell Automation

3.4. Presented test reports and certificates

Previous test reports and certificates:

- /U 6/ Report-No.: 968/EZ 342.00/09 dated 2009-02-05**
TÜV Industrie Service GmbH

The following tests were performed by other accredited test labs:

- /U 7/ ODVA DeviceNet Safety Composite Test, ODVA File Number 10638-2**
ODVA Inc.

4. Performance of tests and results

4.1. General

The measuring and test equipment, which has been used by the TÜV Rheinland Group in the tests described in the following, is subject to regular inspection and calibration. Only devices with valid calibration have been used. The devices used in the various tests are recorded in the inspector's documentation.

All considerations concerning tolerance of the measurements, so far applicable, are stated in the inspector's documentation, too.

In cases where tests have been executed in an external test lab or in the test lab of the manufacturer and where the results of these tests have been used within the here documented approval, this has occurred after a positive assessment of the external test lab and the achieved test results in detail according to the Quality Management procedure QMA 3.310.05.

4.2. Performance of testing and test results

The inspection was done by comparison of the approved firmware version 1.001 with the changed firmware version 1002. The analysis at code line level was performed under consideration with the described changes listed in /U 3/.

Results:

The assessment has shown that the performed changes under version V1.002 for the Point Guard I/O Safety Module 1734-IB8S have no functional safety related impact.

The provided test plan /U 4/ was accepted by the test institute to address the documented updates (listed under /U 3/) of the firmware version V1.002.

5. Summary

The product with the firmware V1.002 complies with the requirements of the relevant standards (Cat. 4 / PL e acc. to ISO 13849-1, SIL CL 3 acc. to EN 62061, SIL 3 acc. to IEC 61508 and can be used in applications up to Cat. 4 / PL e acc. to ISO 13849-1 and SIL 3 acc. to EN 62061 / IEC 61508.

Therefore the Firmware Version: V1.002 can be used in safety related applications.

Observance has to be given to the installation instructions /U 5/.

On the basis of the assessment performed under /U 6/ the following requirement remain valid for the utilization in SIL 3 (IEC 61508) and PL e / Cat. 4 (ISO 13849-1) applications:

- The modules shall be configured to perform the safety test pulses for the corresponding inputs (normal closed switches shall be used) and outputs (de-energized state shall be the safe state).

Cologne, 2010-09-15
TIS/ASI/Kst. 968 hay-nie

Report released after review:
Date: 2010-09-15

The inspector



Dipl.-Ing. Matthias Haynl



Dipl.-Ing. Oliver Busa

Statement of the certification body:

According to the test results documented in this report and the shown conformity to the relevant and applied standards respectively to their protection goals it is confirmed, that the certificate with the no.: 968/EZ 342.00/09 dated 2009-02-05 remains further valid.

Certification body
Date: 2010-09-15



Dipl.-Ing. Heinz Gall