TÜV Rheinland Group

Automation, Software and Information Technology

Type approval safety-related automation devices HIMA H41q: H41q-MS, H41q-HS, H41q-HRS HIMA H51q: H51q-MS, H51q-HS, H51q-HRS of HIMA Paul Hildebrandt GmbH + Co. KG

Report-No.: 968/EZ 129.06/05
Date: 2005-08-02

This report is the English translation of the original report in German with the same report-no.

Amendment to
Type approval safety-related automation devices
HIMA H41q: H41q-MS, H41q-HS, H41q-HRS
HIMA H51q: H51q-MS, H51q-HS, H51q-HRS
of HIMA Paul Hildebrandt GmbH + Co. KG

Report-No.:	968/EZ 129.06/05
Date:	2005-08-02
Number of pages: **(excluding appendices)**	6
Object(s) subject to testing:	HIMA H41q: H41q-MS, H41q-HS, H41q-HRS HIMA H51q: H51q-MS, H51q-HS, H51q-HRS
Client/Manufacturer:	HIMA Paul Hildebrandt GmbH + Co. KG Alber-Bassermann-Straße 28 D-68782 Brühl
P.O. number client/Date:	Frame contract HIMA/TÜV dated 2002-11-08
Test house:	TÜV Industrie Service GmbH Automation, Software, Information Technology (ASI) Am Grauen Stein D-51105 Köln
Quotation number **test house/Date:**	Proposal to the frame contract HIMA/TÜV dated 2002-10
Order number test house/Date:	9071450 dated 2004-07-06
Processor:	Dipl.-Ing. Wolfgang Velten-Philipp
Place of testing:	See test house
Testing period:	July - August 2005

The test results exclusively relate to the test objects.

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1 Objective

The scope of the type approval should determine if new test requirements for the safety-related automation devices H41q-MS, H41q-HS, H41q-HRS, H51q-MS, H51q-HS, H51q-HRS manufactured by HIMA Paul Hildebrandt GmbH + Co. KG result from newer releases of the test standards.

2 Testing standards

Functional Safety

[N1] IEC 61508:2000, parts 1 - 7
Functional safety of electrical/electronic/programmable electronic safety related systems

Electrical safety and resistance against environmental conditions

[N2] IEC 61131-2:2003
Programmable Controllers
Part 2, Equipment requirements and tests

Electromagnetic Compatibility

[N3] EN 61000-6-2:2001
Electromagnetic Compatibility (EMC)
- Generic Standards
- Immunity for Industrial Environments

[N4] EN 61000-6-4:2001
Electromagnetic Compatibility (EMC)
- Generic emission standard
- Residential, commercial, and light industry

Application specific standards

[N5] DIN VDE 0116:1989
Electrical Equipment of Furnaces

[N6] EN 50156-1:2004
Electrical Equipment for Furnaces
Part1: Requirements for Application Design and Installation

[N7] NFPA 85:2001
Boiler and Combustion Systems Hazards Code

[N8] EN 954-1:1996
Safety of machinery - Safety related parts of control systems
- Part 1: General principles for design

[N9] EN 60204-1:1997
Safety of machinery
- Electrical equipment of machines

[N10] EN 298:2003
Automatic gas burner control systems for gas burners and gas burning appliances with or without fans

[N11] EN12067-2:2004
Gas/air ratio controls for gas burners and for gas burning appliances
Part 2, Electronic types

[N12] EN 230:1990
Monobloc Oil Burners
Safety, control and regulation devices and safety times

[N13] EN 54-2:1997
Fire detection and fire alarm systems
Part 2: Control and indicating equipment

[N14] NFPA 72:1999
National Fire Alarm Code

[N15] ISA S84.01
Application of safety instrumented systems for the process industry

[N16] IEC 61511:2004, parts 1-3
Functional safety - Safety instrumented systems for the process industry sector

3 Test object(s)

The test objects are the safety-related automation devices H41q-MS, H41q-HS, H41q-HRS, H51q-MS, H51q-HS, H51q-HRS manufactured by HIMA Paul Hildebrandt GmbH + Co. KG. These products were certified in /U1/, /U2/ in accordance with the test standards listed the respective reports.

4 Documentation

4.1 Test and certification reports

U1	Test report No.: 968/EZ129.00/02 dated 2002-05-24, TÜV Rheinland
U2	Test report No.: 968/EZ129.01/03 dated 2003-09-10, TÜV Rheinland

4.2 Other documentation

H1	Overview, product documentation H51q(e), Rev. 1.2 dated 2005-08 (CD-ROM with cross references to all relevant documents, dated 2005-08
H2	EMC Test report 5200-340 dated 2005-08-17, EMV Rhein-Neckar
H3	HIMA QSE Type approval F8650X.1 dated 2005-06-02, HIMA
H4	PFD and PFS H41q/H51q system according to IEC 61508, Rev. 1.9, HIMA
H5	Safety manual H41q/H41qc and H51q, HI 800012 EDA, HI 800012 EEA
H6	User manual, system family H41q and H51q, catalogue HK0008D, HK0008E

5 Protocol and results type approval

The test objects were analyzed with respect to changed or amended requirements specified in chapter 2 of the test standards.

Result

The partially modified tests for environmental simulation in accordance with [N2] were performed and passed [H2, H3]. No additional requirements resulted in comparison with the test standards used in [U21 U2].

6 Summary

The carried out analyses have indicated that the safety automation devices H41q-MS, H41q-HS, H41q-HRS, H51q-MS, H51q-HRS of HIMA Paul Hildebrandt GmbH + Co. KG can be used for applications up to SIL 3 according to IEC 61508 and to IEC 61511.

The results as described in test reports /U1/, /U2/ have not changed and remain valid.

The basis for the classification is the low and high demand mode with and without continuous supervision.

All system configurations are fulfilling the requirements of the application related standards while complying with the constraints detailed by the safety and user manuals.

The actual version of hard and software can be obtained from the module and firmware release list which is released together by the manufacturer and the test house.

Cologne, 2005-08-02
TIS/ASI/Kst. 968 vt-nie

The expert

Dipl.-Ing. Wolfgang Velten-Philipp