HIMatrix®F

Release Notes

Contact

HIMA Paul Hildebrandt GmbH

P.O. Box 1261

68777 Brühl, Germany

Phone: +49 6202 709-0

Fax: +49 6202 709-107

E-mail: info@hima.com

Document designation	Description
HI 800 405 D, Rev. 1.04 (1938)	German original document
HI 800 407 E, Rev. 1.04.00 (1938)	English translation of the German original document

Table of Contents

1 HIMatrix Operating System V13/V18 4

1.1 Compatibilities 4

1.1.1 Compatibilities with Previous Versions 4

1.1.2 Compatibility with F35 034 Hardware Revision Statuses 4

1.2 New Functions 4

1.2.1 Modbus Slave V2 4

1.2.2 Modbus Master via RS232 5

1.3 Improvements 6

1.3.1 Communication Warning 6

1.3.2 System Variable: Master Connection State 6

1.3.3 New Mode: Optimized Use of Com. Time Slice 6

1.3.4 No Reset to the Factory Settings 6

1.3.5 No COM Operating System Reboot During Temporarily Blocked TCP Connection 6

1.3.6 LLDP Messages with Ethernet Interface MAC Address 6

1.3.7 PROFINET Controller Communication to Devices in the Legacy Start-Up Mode 7

1.4 Restrictions 8

1.4.1 Unintentional Stop of Communication Module 8

1.4.2 Licenses and Reload 8

1.5 Upgrading from a Previous Version 9

1.5.1 Upgrading from V12.x/V16.x to V13/V18 9

1.5.1.1 Upgrading the HIMatrix System to V13/V18 9

1.6 References 9

2 HIMatrix Remote I/Os with Operating System V8 10

2.1 Compatibilities 10

2.1.1 Compatibilities with Previous Versions 10

2.2 Improvements 11

2.2.1 System Variables of Fault Statistics Exploitable 11

2.3 Restrictions 11

2.3.1 Cycle Time and Fault Statistics Not Resettable with *Read and Operate* Permissions 11

2.3.2 Consistent Ethernet Switch Settings (Speed and Flow Control) in Project and Remote I/O Required 11

Appendix 12

Index of Tables 12

1 HIMatrix Operating System V13/V18

The new operating system versions only support HIMatrix F*03 systems:

- F30 03
- F35 03
- F60 CPU 03

This main chapter describes the improvements and new functions of the following operating system versions:

OS version	File name	Description
V13.20	L3CPU_HA1_L3_OS_V13.20.ldb	Safety-related CPU operating system for F30 03, F35 03, F60 CPU 03 controllers
V11.2	L3CPU_HA1_L3_OSL_V11.2.ldb	OS loader for CPU operating system
V18.34	L3COM_HA1_L3_OS_V18.34.ldb	COM operating system for F30 03, F35 03, F60 CPU 03 controllers
V18.34	L3COM_HA1_L3_OSL_V18.34.ldb	OS loader for COM operating system

Table 1: Modified Operating System Versions

1.1 Compatibilities

1.1.1 Compatibilities with Previous Versions

The functions of operating systems V13.x/V18.x are compatible with the functions of the previous operating system versions V12.x/V16.x.

1.1.2 Compatibility with F35 034 Hardware Revision Statuses

An OS version and OS loader version ≥ V18.34 are mandatory for reliable operation of the non-safety-related COM module in the F35 034 with hardware revision status 02 (HW-AS 02).

This restriction does not apply to other variants of the F35 and other hardware revision statuses of the F35 034.

1.2 New Functions

The new functions described in this chapter require the use of SILworX V9 and higher.

1.2.1 Modbus Slave V2

The Modbus slave V2 protocol with extended functions is an alternative to the existing Modbus slave protocol. This variant improves the internal protocol data processing on the HIMA controller without changing the supported standard Modbus function codes.

The Modbus slave V2 protocol features the following new functions:

- Write requests from several Modbus sources and user programs to a single global variable possible.
- Definition of the authorized Modbus masters with corresponding data view assignment. Unauthorized Modbus masters are rejected!
- Compatibility with HIQuad Modbus slave.

1.2.2 Modbus Master via RS232

The Modbus master protocol supports communication via RS232.

To use the Modbus master protocol with RS232, the fieldbus interface must be equipped with an RS232 fieldbus submodule. A fieldbus submodule must be fitted at the factory for a free fieldbus interface (e.g., FB1 and FB2 for HIMatrix).

No changes for RS232 are required in SILworX!

In contrast to RS485, the RS232 interface can only establish a point-to-point connection between master and slave.

RS232 can be used in conjunction with RS485 on different fieldbus interfaces, i.e., the Modbus master may be operated, for example, on a HIMatrix F30 03 with RS485 (FB3) and RS232 (FB1 and FB2).

1.3 Improvements

1.3.1 Communication Warning

A communication warning (*A reload is to be performed…*) is issued if the connection between two safe**ethernet** partners exists, but the transport path in one safe**ethernet** partner is configured as redundant whereas one of the two channels in the transport path of the other partner is set to non-redundant.

In particular, the communication warning is issued during a reload change as long as only one partner has not been reloaded [HE24404].

1.3.2 System Variable: Master Connection State

The Modbus slave protocol's system variable *Master Connection State* is neither affected by the online command *Reset Statistics* nor by the system variable function *Reset All Counters* [HE28947].

1.3.3 New Mode: Optimized Use of Com. Time Slice

Using the new mode *Optimized Use of Com. Time Slice,* shorter response times can be achieved for safe**ethernet**/HIPRO-S V2/PADT communication provided that communication is predominantly routed via the processor module. In such cases, safe**ethernet** also includes communication with OPC/OTS/safeEDR/remote I/O partners.

Caution: This mode can affect the temporal utilization of *Max.Com. Time Slice [ms]* and the system parameter *Max. Duration of Configuration Connections [ms]* such that these two times can be subject to more demands. In turn, this may result in a higher overall cycle time; for this reason, the times derived therefrom must be taken into account.

In case of safe**ethernet**/OPC/OTS/safeEDR/HIPRO-S V2, the effect applies to the use of *Max.Com. Time Slice [ms]* whereas, in case of PADT communication, it is related to the use of *Max. Duration of Configuration Connections [ms]*. In case of communication with the remote I/Os, both the use of *Max.Com. Time Slice [ms]* and of *Max. Duration of Configuration Connections [ms]* may increase.

The improvement does not apply to the operating systems of HIMatrix F*01/02 or remote I/Os [HE27939].

1.3.4 No Reset to the Factory Settings

When upgrading to CPU operating system V13.x, system parameters are no longer reset to the factory settings [HE29177].

1.3.5 No COM Operating System Reboot During Temporarily Blocked TCP Connection

A temporarily blocked TCP connection of a TCP server in the ComUserTask no longer causes the COM operating system to reboot [HE29233].

1.3.6 LLDP Messages with Ethernet Interface MAC Address

The LLDP messages are issued with the MAC address of the Ethernet interface as chassis ID TLV instead of with the MAC address of the port [HE26152].

1.3.7 PROFINET Controller Communication to Devices in the Legacy Start-Up Mode

The PROFINET controller enables communication to PROFINET devices with protocol version > V2.2. The PROFINET device must support the Legacy start-up mode and provide a GSDML file ≤ V2.2 [HE29682].

1.4 Restrictions

1.4.1 Unintentional Stop of Communication Module

In very seldom cases, if one or more communication protocols such as Modbus or ComUserTask are used under load control and the controller or COM module changes from RUN to STOP, the COM module may reboot [HE25065].

1.4.2 Licenses and Reload

If a system's DEMO license is complemented with a suitable license (e.g., for a communication protocol) by performing a reload, the DEMO license remains active on the affected module. The message displayed in the license management of the CPU module notes that a regular license is available, but a DEMO license is in use.

The new license is only used and properly reported after a new restart, reload or cold reload of the affected module [HE29163].

1.5 Upgrading from a Previous Version

1.5.1 Upgrading from V12.x/V16.x to V13/V18

Only processor and communication operating system versions that were released together can be used together.

The operating system of processor and communication modules can only be upgraded in the STOP state.

When upgrading the operating systems, HIMA recommends upgrading the associated OS loaders as well.

1.5.1.1 Upgrading the HIMatrix System to V13/V18

i The order described below must be absolutely observed!

1. Set the controller to the STOP state, if this has not yet been done.
2. In the Hardware Editor online view, connect to the communication module (system login) and upgrade the OS loader to V16.x.
3. Upgrade the communication operating system to V18.x.
4. Connect to the processor module by logging in to the system and upgrade the OS loader to V11.x.
5. Connect to the processor module and upgrade the processor operating system to V13.x. The resource reboots.

The upgrade of the HIMatrix system to V13.x/V18.x is completed.

1.6 References

- HIMatrix system manual, document number HI 800 141 E
- HIMatrix safety manual, document number HI 800 023 E
- Communication manual, document number HI 801 101 E
- HIPRO-S V2 manual, document number HI 800 723 E
- ISOfast manual, document number HI 801 465 E

2 HIMatrix Remote I/Os with Operating System V8

The new operating system versions only support remote I/Os:

- F1 DI 16 01
- F2 DO 16 01
- F2 DO 8 01
- F2 DO 4 01
- F2 DO 16 02
- F3 AIO 8/4 01
- F3 DIO 20/8 02
- F3 DIO 16/8 01
- F3 DIO 8/8 01

This main chapter describes the improvements and new functions of the following operating system versions:

OS version	File name	Description
V8.12	RIONCCPU_HA1_L2_OS_V8.12.ldb	Safety-related operating system HIMatrix F1 DI 16 01, F2 DO 16 01. F2 DO 8 01, F2 DO 4 01, F2 DO 16 02, F3 AIO 8/4 01, F3 DIO 20/8 02, F3 DIO 16/8, F3 DIO 8/8 01
V7.6	RIONCCPU_HA1_L2_OSL_V1V7.6.ldb	OS loader for operating system

Table 2: Modified Operating System Versions

2.1 Compatibilities

2.1.1 Compatibilities with Previous Versions

The functions of V8.x are compatible with the functions of the previous versions V7.x.

i Operating system V8.x can be used for HIMatrix remote I/Os as of production year 2006, see type label.

2.2 Improvements

2.2.1 System Variables of Fault Statistics Exploitable

As of V8, HIMatrix remote I/Os support the system variables of fault statistics.

2.3 Restrictions

2.3.1 Cycle Time and Fault Statistics Not Resettable with *Read and Operate* Permissions

At least *Write and Read* permissions are required to reset the cycle time and fault statistics.

2.3.2 Consistent Ethernet Switch Settings (Speed and Flow Control) in Project and Remote I/O Required

If the Ethernet switch settings (Speed and Flow Control) in the project do not match the current settings in the remote I/O, loading is rejected by the remote I/O.

Appendix

Index of Tables

Table 1: Modified Operating System Versions 4

Table 2: Modified Operating System Versions 10

Release Notes

HI 800 407 E

For further information, please contact:

HIMA Paul Hildebrandt GmbH
Albert-Bassermann-Str. 28
68782 Brühl, Germany

Phone +49 6202 709-0
Fax +49 6202 709-107
E-mail info@hima.com

Learn more about HIMatrix online:

https://www.hima.com/en/products-services/himatrix/

www.hima.com