

Firmware Versions Bodac Versions

RE 30543-10-Z/04.15
Replaces: 08.14

User program BODAC and firmware



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1 General

This documentation describes the versions of the windows program Bodac and the firmware of the products based on HACD-2x technology.

Within the document there are several specific terms that are defined as follows:

Software (SW): windows based program Bodac which is used to configure and service the HACD family

Firmware (FW): The actual software which resides within the controller

Firmware package: Is a set of firmware modules necessary for a controller operate

Bugfixes: Incremental correction or improvements in the software/firmware functionality

Package solutions: Overview of the bugfixes and new features in a firmware package

Package information: Overview of the firmware modules in a firmware package.

Bodac

2 Bodac

2.1 Overview

Version	Date	Bugfixes	New features
Bodac2.03.03.00	05.3.2014	General Communication	
Bodac2.03.01.00	19.10.2012	General Communication Table	General Communication
Bodac2.03.00.00	01.04.2012	General Controller parameters Table	General Manufactory Feedback Encoder Communication Controller parameters
Bodac2.02.01.00	23.02.2011	General HACD-1x Family	General Communication
Bodac2.02.00.00	20.12.2010	General Communication Table	Communication
Bodac2.01.00.00	21.04.2010	Start of production	Start of production

2.2 Bugfixes

General

Bodac2.03.03.00

- A print of the window "Card Information" was not possible and was corrected.
- When enable is set, the default parameters cannot be loaded

Bodac2.03.01.00

- Fixes a printing problem of the screens Loop2, Loop3, Ethernet Send and Receive.

Bodac2.03.00.00

- Optimizing the download process of packages (pkg2) onto an HACD-2x

Bodac2.02.01.00

- Remedied download problems with firmware packages: A message "Unable to erase sector" appeared before programming Ethernet firmware.
- Remove an unnecessary shown "access violation" message that was displayed when opening the card information or the SSI screen

Bodac2.02.00.00

- Remedied download problems with Ethernet firmware: A message "Unable to erase sector" appeared after having downloaded the bootstrap.

HACD-1x Family

Bodac2.02.01.00

- Bugfix for downloading a parameterfile onto an HACD-1x
- Correct the reading and writing of valves parameters of a VSPD: Fault was noticeable in the user profiles.

Communication

Bodac2.03.03.00

- After an update has been done, the TCP connection will be automatically rebuilt. Bodac will not report an "unable to restart controller" error.

Bodac2.03.01.00

- Profibus Hardware Screen stays in front after opening the send/receive screen and you cannot move it

Bodac2.02.00.00

- Local Bus: ID-Adaption in screen „Search Cards“: There has been an offset of one.

Bodac

- Remove an unnecessary shown warning message that was displayed when a user opened the status screen of another card via Local Bus
- Extend the maximal allowed entries of the busmanager from 16 to 32
- Gray out the Ethernet Device Name subjected to the DIL switches

Controller parameters**Bodac2.03.00.00**

- When an HACD-1x parameterfile will be opened in an HACD-2x the velocity of 5000 Units/sec remains 5000 Units/sec instead of the maximum of 100000 Units/sec.
- Correct the structure overview when "Preset" or "Table" is selected.

Table**Bodac2.03.01.00**

- Fixes an unwanted move of the table end marker while zooming

Bodac2.03.00.00

- Fix problems caused by opening plt-files including digital signals

Bodac2.02.00.00

- Fix problems caused by opening plt-files

2.3 New features

General

Bodac2.03.01.00

- The area of the 31 blocks will now be displayed in a different color to distinguish it from the rest of the screen.

Bodac2.03.00.00

- Put all firmware modules to a firmware package together and do the resulting changes in Bodac:
 - o New card information screen
 - o Adapt the package download
 - o Add the attachment of which firmware package was used to newly created parameterfiles
 - o Allow only firmware packages with the suffix ".pkg2" to be downloaded to an HACD with Bodac
- Put the HACD-2x to the beginning when searching for offline applications
- The "Send Email to support" functionality was simplified.

Bodac2.02.01.00

- The screen Bodac>Tools>Preferences>Security>Login now accepts passwords with a maximum of 20 characters
- Gray out the "Continue" button while downloading a package to prevent user handling errors
- Allow the "Internal flags" screen to be put onto any security level in Bodac>Tools>Preferences>Security>Configure Screens

Manufacture

Bodac2.03.00.00

- Implementation of an additional check, if an HACD-2x hardware has got the corresponding HACD-2x software in it.

Feedback Encoder

Bodac2.03.00.00

- Allow single ended incremental encoder to be used, which is available with hardware version 21a or newer

Communication

Bodac2.03.01.00

- If no busoption-switch (in front of the VT-HACD-3-2x) is used, then DHCP can now be activated via software for ethernet capable HACDs

Bodac**Bodac2.03.00.00**

- Allow ethernet capable VT-HACD-3-2x to communicate not only serial, but also over an Ethernet service interface with Bodac
 - o New "Search cards" screen
 - o Move and shorten the address space of the bus code
 - o Renew the Bodac>Tools>Preferences>COM Interface screen
 - o Cards that are connected over the local bus, can now also be found and configured over TCP/IP.
- Remove the parameters "Ratio C1", "Ratio C2" and "Ratio C3" from the busmanager.
- Actualize the Multi-Ethernet (METH) screen

Bodac2.02.01.00

- Ethernet Hardware/Transmit/Receive: Changes will now only be accepted after a card reset. Otherwise there will appear a warning message
- Ethernet Hardware: Various conditions are checked regarding the DeviceName, IP, Gateway and Subnet. (see also chapter „IP-Address and device name“ unter RE 30543-04-Z / RE 30543-05-Z)

Bodac2.02.00.00

- Add new Profinet functionality

Controller parameters**Bodac2.03.00.00**

- Expand the parameter editor with the parameters „Stop CMD“ and „Limit I-Control“
- Expand the parameter summary with the parameters „Stop CMD“ and „Limit I-Control“

3 Firmware HACD-2x

3.1 Overview

Package solutions

Version	Date	Bugfixes	New features
FWA-HACD-2x-FW*-20V10	17.02.2015	Manufacture	
FWA-HACD-2x-FW*-20V08	24.06.2014		
FWA-HACD-2x-FW*-20V06_0010	15.04.2014	Communication	
FWA-HACD-2x-FW*-20V06_0009	06.03.2014	Communication	
FWA-HACD-2x-FW*-20V06_0008	16.09.2013	Feedback encoder	
FWA-HACD-2x-FW*-20V06_0007	08.08.2013	Command generator Controller structure	
FWA-HACD-2x-FW*-20V06_0006	18.06.2013	Controller parameters	
FWA-HACD-2x-FW*-20V06_0005	18.02.2013	Feedback encoder	
FWA-HACD-2x-FW*-20V06_0004	24.10.2012	Internal Flags	
FWA-HACD-2x-FW*-20V06_0003	19.10.2012	Internal Flags Communication	
FWA-HACD-2x-FWE-20V06_0002	13.07.2012	Communication	
FWA-HACD-2x-FWE-20V06_0001	28.04.2012	Controller parameters	
FWA-HACD-2x-FW*-20V06	01.04.2012		Manufacture Feedback encoder Communication Controller parameters
FWA-HACD-2x-FW*-20V04_0014	29.11.2011	Communication Controller parameters Controller structure	General Communication Tables
FWA-HACD-2x-FW*-20V04_0012	18.10.2011	General Internal Flags Controller structure	Analog I/O
FWA-HACD-2x-FW*-20V04_0010	22.07.2011	Manufacture	
FWA-HACD-2x-FW*-20V04_0008	14.04.2011	Feedback encoder	
FWA-HACD-2x-FW*-20V04_0006	01.03.2011	Feedback encoder Communication Controller parameters	
FWA-HACD-2x-FW*-20V04_0004	02.02.2011	Communication	
FWA-HACD-2x-FW0-20V04	20.12.2010	General	Communication

Firmware HACD-2x

FWA-HACD-2x-FWP-20V04 FWA-HACD-2x-FWE-20V04 FWA-HACD-2x-FWN-20V04		Communication Controller parameters	
FWA-HACD-2x-FW0-20V02 FWA-HACD-2x-FWP-20V02 FWA-HACD-2x-FWE-20V02	21.04.2010	Start of production	Start of production

Package information

Version	Hardware	Contents	Bodac	Ethernet
FWA-HACD-2x-FW*-20V10	22a	bot.04.03.00 MER.04.07.00 lxx.04.06.00 Pxx.04.00.00 VAL.02.00.00 KET.04.05.00 KPB.03.01.00	Bodac2.03.03.00	LW 0.6.5.0 FW 0.B.D.0
FWA-HACD-2x-FW*-20V08	21a	bot.04.02.00 MER.04.07.00 lxx 04.05.02 Pxx 04.00.00 VAL.02.00.00 KET.04.05.00 KPB.03.01.00	Bodac2.03.03.00	LW 0.6.5.0 FW 0.B.C.0
FWA-HACD-2x-FW*-20V06_0010	21a	bot.04.01.00 MER.04.07.00 IPB 04.03.02 VAL.02.00.00 KET.04.04.00 KPB.03.01.00	Bodac2.03.03.00	LW 0.6.5.0 FW 0.B.C.0
FWA-HACD-2x-FW*-20V06_0009	21a	bot.04.01.00 MER.04.07.00 lxx 04.03.00 VAL.02.00.00 KET.04.04.00	Bodac2.03.03.00	LW 0.6.5.0 FW 0.B.C.0
FWA-HACD-2x-FW*-20V06_0008	21a	bot.04.01.00 MER.04.07.00 lxx 04.03.00 VAL.02.00.00 KET.04.02.00/KPB.03.01.00	Bodac2.03.01.00	LW 0.6.5.0 FW 0.B.C.0
FWA-HACD-2x-FW*-20V06_0007	21a	bot.04.01.00 MER.04.06.00 lxx 04.03.00 VAL.02.00.00 KET.04.02.00/KPB.03.01.00	Bodac2.03.01.00	LW 0.6.5.0 FW 0.B.C.0
FWA-HACD-2x-FW*-20V06_0006	21a	bot.04.01.00 MER.04.04.00 lxx 04.03.00 VAL.02.00.00 KET.04.02.00/KPB.03.01.00	Bodac2.03.01.00	LW 0.6.5.0 FW 0.B.C.0
FWA-HACD-2x-FW*-20V06_0005	21a	bot.04.01.00 MER.04.04.00 IET.04.02.00 VAL.02.00.00 KET.04.02.00/KPB.03.01.00	Bodac2.03.01.00	LW 0.6.5.0 FW 0.B.C.0
FWA-HACD-2x-FW*-20V06_0004	21a	bot.04.00.00 MER.04.03.00 IET.04.02.00 VAL.02.00.00 KET.04.01.00/KPB.03.00.00	Bodac2.03.01.00	LW 0.6.5.0 FW 0.B.B.0
FWA-HACD-2x-FW*-20V06_0003	21a	bot.04.00.00 MER.04.02.00	Bodac2.03.01.00	LW 0.6.5.0 FW 0.B.B.0

Firmware HACD-2x

		IET.04.02.00 VAL.02.00.00 KET.04.01.00		
FWA-HACD-2x-FWE-20V06_0002	21a	bot.04.00.00 MER.04.00.00 IET.04.01.00 VAL.02.00.00 KET.04.00.00	Bodac2.03.00.00	LW 0.6.5.0 FW 0.B.B.0
FWA-HACD-2x-FWE-20V06_0001	21a	bot.04.00.00 MER.04.00.00 IET.04.01.00 VAL.02.00.00 KET.04.00.00	Bodac2.03.00.00	LW 0.6.3.0 FW 0.B.A.0
FWA-HACD-2x-FW0-20V06 FWA-HACD-2x-FWP-20V06 FWA-HACD-2x-FWE-20V06 FWA-HACD-2x-FWN-20V06	21a	bot.04.00.00 MER.04.00.00 Ixx.04.00.00 Pxx.04.00.00 VAL.02.00.00	Bodac2.03.00.00	LW 0.6.3.0 FW 0.B.A.0
FWA-HACD-2x-FW*-20V04_0014 / FWA-HACD-2x-FWN-20V04_0014	20b / 20a	bot.03.03.00 MER.03.06.00 Ixx.03.03.00 Pxx.03.01.00 VAL.02.00.00	Bodac2.02.01.00	LW 0.6.3.0 FW 0.B.9.0
FWA-HACD-2x-FW*-20V04_0012 / FWA-HACD-2x-FWN-20V04_0012	20b / 20a	bot.03.02.00 MER.03.05.00 INO.03.01.00/Ixx.03.02.00 Pxx.03.00.00 VAL.02.00.00	Bodac2.02.01.00	LW 0.5.1.0 FW 0.A.1.0
FWA-HACD-2x-FW*-20V04_0010 / FWA-HACD-2x-FWN-20V04_0010	20b / 20a	bot.03.01.00 MER.03.04.00 INO.03.01.00/Ixx.03.02.00 Pxx.03.00.00 VAL.02.00.00	Bodac2.02.01.00	LW 0.5.1.0 FW 0.A.1.0
FWA-HACD-2x-FW*-20V04_0008 / FWA-HACD-2x-FWN-20V04_0008	20b / 20a	bot.03.00.00 MER.03.04.00 INO.03.01.00/Ixx.03.02.00 Pxx.03.00.00 VAL.02.00.00	Bodac2.02.01.00	LW 0.5.1.0 FW 0.A.1.0
FWA-HACD-2x-FW*-20V04_0006 / FWA-HACD-2x-FWN-20V04_0006	20b / 20a	bot.03.00.00 MER.03.03.00 INO.03.01.00/Ixx.03.02.00 Pxx.03.00.00 VAL.02.00.00	Bodac2.02.01.00	LW 0.5.1.0 FW 0.A.1.0
FWA-HACD-2x-FW*-20V04_0004 / FWA-HACD-2x-FWN-20V04_0004	20b / 20a	bot.03.00.00 MER.03.00.00 Ixx.03.01.00 Pxx.03.00.00 VAL.02.00.00	Bodac2.02.01.00	LW 0.5.1.0 FW 0.A.1.0
FWA-HACD-2x-FW0-20V04 FWA-HACD-2x-FWP-20V04 FWA-HACD-2x-FWE-20V04 FWA-HACD-2x-FWN-20V04	20b 20b 20b 20a	bot.03.00.00 MER.03.00.00 Ixx.03.00.00 Pxx.03.00.00 VAL.02.00.00	Bodac2.02.00.00	LW 0.5.1.0 FW 0.A.1.0
FWA-HACD-2x-FW*-20V02	20b	bot.02.01.00 MER.02.00.00 Ixx.02.00.00	Bodac2.01.00.00	LW 0.4.A.0 FW 0.9.1.3

Firmware HACD-2x

		Pxx.02.00.00 VAL.02.00.00		
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Firmware HACD-2x

3.2 Bugfixes

General

FWA-HACD-2x-FWx-20V08

- DPQ and DPC functionalities are supported
- increased internal read buffer for parameter files

FWA-HACD-2x-FWx-20V04_0012

- Remedied download problems with Ethernet Logicware

FWA-HACD-2x-FWx-20V04

- Remedied download problems with Ethernet Firmware

Manufactury

FWA-HACD-2x-FWx-20V10

- New Flash will be supported (Hardware version 22a)

FWA-HACD-2x-FWx-20V04_0010

- Calibration of current output AO1 will now be at 19 instead of 20mA

Feedback encoder

FWA-HACD-2x-FWx-20V06_0008

- Increase the clock from SSI .Transducer from 62.5kHz to 125kHz

FWA-HACD-2x-FWx-20V06_0005

- Home-Mode with an incremental encoder (QUAD) is not working properly, if you have only selected INC-S in BODAC structure editor.

FWA-HACD-2x-FWx-20V04_0008

- Correct SSI-velocity value at enable low

FWA-HACD-2x-FWx-20V04_0006

- Set the SSI feedback values to zero at cablebreak
- Remove SSI fault that was shown at enable with an binary SSI encoder
- Correct the binary SSI feedback values
- Expand the interpretation of the busparameter "Set dig. FB to zero" for SSI encoder 1 and 2

Internal Flags

FWA-HACD-2x-FWx-20V06_0004

- Bug fix for FWA-HACD-2x-FWx-20V06_0003:
Some trigger constellations can result into a card crash of the HACD-2x

FWA-HACD-2x-FWx-20V06_0003

- Bug fix: The internal flags 9-16 couldn't be used as blocktriggers

FWA-HACD-2x-FWx-20V04_0012

- Correct the internal flags after a block change

Communication**FWA-HACD-2x-FW*-20V06_0010**

- The parameter limit- valve 1,2,3 and limit + valve1, 2,3 can be addressed correctly via Profibus.

FWA-HACD-2x-FW*-20V06_0009

- Gateway address is stored

FWA-HACD-2x-FWx-20V06_0003

- If no busoption-switch (in front of the VT-HACD-3-2x) is used, then DHCP can now be activated via software for ethernet capable HACDs

FWA-HACD-2x-FWx-20V06_0002

- Preparations for the EtherNet/IP certification

FWA-HACD-2x-FWx-20V04_0014

- Bug fix: Profinet input and output modules won't be recognized under certain circumstances:
 - o only if the power of the HACD is turned on after or at the same time as the plc.
 - o only if the addresses of the input and output modules are lying within the process image of the plc.
 - o only if the plc enters the STOP-mode, if it recognizes the power-off HACD
- Bug fix: A bustrigger at issue won't be recognized after toggling the enable signal.

FWA-HACD-2x-FWx-20V04_0006

- Expand the interpretation of the busparameter "Set dig. FB to zero" for SSI encoder 1 and 2
- Correct the Businitfault and the Ethernet Watchdog
- Correct the device name assignment by the SPS
- Adapt the max value of the busparameter "Bustrigger"

Firmware HACD-2x**FWA-HACD-2x-FWx-20V04_0004**

- Bugfix for the bustransfer of active damping and output edit parameters

FWA-HACD-2x-FWx-20V04

- Actualized IP address by DHCP usage
- Gray out the Ethernet Device Name subjected to the DIL switches
- Improve fault handling, if the Ethernet master has not configured all modules. Do not enter cyclic communication and stay in configuration mode.
- Improve the handling of the bus fault
- Adjust the internal Ethernet watchdog time
- Bugfix for 1 Byte read and write commands over Profibus DPV1 (acyclic)
- Extend the maximal allowed entries of the busmanager from 16 to 32

Controller parameters**FWA-HACD-2x-FWE-20V06_0006**

- Overriding the parameters "Accel. Rate" and "Decel. Rate" in Block 1 is prevented

FWA-HACD-2x-FWE-20V06_0001

- Gain+ and Gain- from Valve Output can now go from -10,00 ... +10,00

FWA-HACD-2x-FWx-20V04_0014

- Correct the conversion of the HACD-1x parameters „s-ramp start“ and „s-ramp end“ into the HACD-2x parameters „acceleration“ and „deceleration“

FWA-HACD-2x-FWx-20V04_0006

- Correct parameter interpretation of LS2/LS3 in the parameter editor

FWA-HACD-2x-FWx-20V04

- Correct the FeedForward scaling
- Realize T1 Lag without decimals
- Set T1 Lag default value to 640 Hz
- Set factory setting of constant CON 1 to zero.
- Correct handling of the Loop error debounce time

Controller structure

FWA-HACD-2x-FWx-20V06_0007

- Die Sollwertwertaufschaltung wird zu Null gesetzt im Modus "Geschwindigkeit" wenn sich der Sollwert nicht mehr ändert.

FWA-HACD-2x-FWx-20V04_0014

- Remove Bus-Option as external dwelltime, because it's not possible.

FWA-HACD-2x-FWx-20V04_0012

- Sporadic peaks in the DT1(LFB) signal are fixed.
- Bugfix: When a new block is started after an emergency ramp (start-stop-condition) command values go directly to their final value without executing any ramp

Command generator

FWA-HACD-2x-FWx-20V06_0007

- In a transition from a fast to a low velocity the parameter deceleration is used instead of the parameter acceleration.

Firmware HACD-2x

3.3 New Features

General

FWA-HACD-2x-FWx-20V06

- Put all firmware modules to a firmware package together

FWA-HACD-2x-FWx-20V04_0014

- Check address at firmware download
- Limit access to the FPGA-flash on the Ethernet daughterboard; only Logicware and Firmware can now be exchanged.

Analog I/O

FWA-HACD-2x-FWx-20V04_0012

- Improve the quality of the analog input signals

Manufactury

FWA-HACD-2x-FWx-20V06

- Implementation of an additional check, if an HACD-2x hardware has got the corresponding HACD-2x software in it.

Feedback encoder

FWA-HACD-2x-FWx-20V06

- Allow single-ended incremental encoder to be used, which is available with hardware version 21a or newer

Communication

FWA-HACD-2x-FWx-20V06

- Allow ethernet capable VT-HACD-3-2x to communicate not only serial, but also over an Ethernet service interface with Bodac
 - o Move and shorten the address space of the bus code
 - o Divide the bus communication "EtherNet/IP" or "PROFINET" from the service communication "TCP"
 - o Cards that are connected over the local bus, can now also be found and configured over TCP/IP.
- The consolidation of the GSDML files with the HNC100-3x and MAC8 causes incompatibility to the already delivered GSDML files.
- Only with EtherNet/IP: Add functionality "Save all Parameters over the bus"

FWA-HACD-2x-FWx-20V04_0014

- Actualize the Multi-Ethernet (METH) screen
- Allow an out-of-box reset over Ethernet
- Observe the min and max values of bus parameters (Profibus, EtherNet/IP and Profinet)
- All error states will be shown flashing red on the Ethernet MS (Module status) LED
- Check if BusIDs (slot/index) are valid for acyclic and cyclic reading and writing (Profibus, EtherNet/IP and Profinet)
- If the DIL-switch is used to determine the IP address, then the IP-suite cannot be changed over the PLC or Bodac anymore.
- Show actual IP-address in Bodac when using DHCP already in the state COMINIT instead of showing it in COMACTV (EtherNet/IP and Profinet)
- After power-on stay in the state COMCFG instead of the state SYSRDY as long as the firmware checksum is calculated (EtherNet/IP and Profinet)
- Activate Ethernet Watchdog
- After an ethernet capable card has reached the state COMACTV, cyclic and acyclic transmit data will be set invalid, if the card went back to bootstrap for an firmware download for example.
- Receive data will be ignored in an ethernet capable HACD which is in the state COMACTV, as long as the card went back to bootstrap for a firmware download for example.
- Change state of ethernet capable HACD from COMACTV, COMRDY or COMINIT to the state COMCFG, if the card went back to bootstrap for an firmware download for example.
- Only with EtherNet/IP: Allow access to the single table points by using the classes 0xC5 and 0xC6
- Allow access to the table setup parameters over the bus (Profibus, EtherNet/IP and Profinet)

FWA-HACD-2x-FWx-20V04

- Add new Profinet functionality (cyclic and acyclic) including Profinet alarms
- Activate control of the Ethernet MS (Module status) LED
- Add checksum check of the Ethernet Firmware after power-on and wait for the result before entering cyclic communication
- Implement coherency check of the ethernet objects chosen by a user, like the IP address or the device name
- Expand the description of the Ethernet CI_StateFlags in the Multi-Ethernet (METH) screen

Controller parameters**FWA-HACD-2x-FWx-20V06**

- Expand the parameter editor with the parameters „Stop CMD“ and „Limit I-Control“

Firmware HACD-2x**Tables****FWA-HACD-2x-FWx-20V04_0014**

- Only with EtherNet/IP: Allow access to the single table points by using the classes 0xC5 and 0xC6
- Allow access to the table setup parameters over the bus (Profibus, EtherNet/IP and Profinet)

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