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Welcome to ABB Automation Builder 1.2.3
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This README file contains important information about the Automation Builder and the Control Builder Plus software.
Please read this file carefully and completely. It contains the latest information and relevant documentation.

System Requirements:
- Pentium PC, 1GHz, 3 GB RAM
- Hard disk memory: 14 GB
- SVGA graphics adaptor 256 colors, resolution of 1024x768 pixels
- USB 2.0 port
- Windows 7 (32/64 Bit) Professional / Enterprise / Ultimate
  Windows 8.1 (32/64 Bit)
  Windows 10 (32/64 Bit)
  Limited support for Windows XP (Service Pack 3 or later): some features can't be installed and used refer to release notes of each option for details

Attention:
- The installation of the ABB Automation Builder software requires administrator rights.
- Prior to installation, the Automation Builder/Control Builder Plus, CODESYS software and the CODESYS Gateway Server must be shut down.
- Automation Builder 1.2.3installation completely replaces installed versions of Automation Builder prior to 1.2.0/Control Builder Plus. Side-by-side installations of Automation Builder and Control Builder Plus are not supported.
  Please uninstall previous Automation Builder versions prior to Automation Builder 1.2.0 before installing Automation Builder 1.2.3. Automation Builder 1.2.0 ,1.2.1 and 1.2.2 installations can be updated without uninstallation.
- Automation Builder 1.2 creates a new device repository. Devices which had been installed additionally in previous versions of Automation Builder/Control Builder Plus have to be installed in Automation Builder 1.2 via menu "Tools" → "Device Repository".
- Only the English documentation contains the latest changes for Automation Builder 1.2.3. All other languages (DE, FR, ES, CN) are available for Automation Builder 1.1. Latest documentation packages can be found on the ABB website: www.abb.com/plc → Download Documentation, then select your language.
- The installation of other CODESYS version 2.3 based engineering tools together with the Automation Builder on one PC is not supported. Issues in usage of CODESYS software might arise.
- The licensing has changedfor PS562 Solar and PS552-MC-E Motion control from 3S-licensing manager to Automation Builder license.

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Changes in Automation Builder 1.2.3

The release includes the following device groups:

ABB Automation Builder:

Functional changes / New features	Version
Automation Builder Installation Manager - Software Clean Up script as executable Clean up executable during Automaton Builder asks automatically for administrator rights and checks also after clean up if the folders are deleted and the registry entries removed.	1.2.3
Automation Builder Installation Manager – Silent uninstallation improvement without user intervention	1.2.3
Improved log zipping in Automation Builder installer This feature helps in consolidating and saving log files in to zip files in event of installation failure occurred. This feature also supports emailing the zipped log files by invoking available email client in the system/PC.	1.2.3
New CHM file in online help: ABB_Contact.chm (Address information).	1.2.3
New SVN Plugin 4.1.0.0 AB ProjectVersionControl updated to 4.1.0.0	4.1.0.0
Codesys silent uninstallation features while uninstalling Automation Builder	1.2.3

Bug corrections	Version
Missing "ScriptLib" in AB1.2.1 (Python script libraries) included	1.2.3
Issue Cut-Paste of node in extension slots throws exception and does not allow commit when versioning is enabled[SVN] – fixed	1.2.3
Installation manager bug fixes	1.2.3
Installation issues with Mint workbench fixed	1.2.3

Known Problems	Version
Installed AB with SVN packages - installed successfully , but not showing in the plugin information and not showing the SVN option in AB .This shall be given as hotfix separately	1.2.3

PLC - AC500:

Functional changes / New features	Version
AC500 Firmware V2.5.3 improvements **Real time clock:** POU 'CurTimeEx' return 65535 in Day of Week on Sunday. Fixed **System:** PLC failure if maximum number of tasks (100) is exceed. Fixed PM573-ETH: don't startup after a power off for <1s. Fixed **SMTP** CPU stops when an email is sent on a Sunday. Fixed Some mail servers reject email addresses without "<>". Fixed Improve stability of SMTP. Fixed **Modbus TCP** Stop communication as a Modbus server after telegram with function code 43. Fixed **SD card** Several removing/plugging of SD card in run mode of PLC can lead to an exception. Fixed **EtherCAT** Configuration error when using EtherCAT slave with only Inputs or only Outputs. Fixed **ARCNET** CPU PM590-ARCNET (1SAP145000R0261) cannot operate on TB521-ARCNET (limited status SAP112100R0160). Not fixed, use today active TB521-ARCNET (1SAP112100R0260). **Webserver** Improve stability. Fixed Improve stability of JAVA script. Fixed	2.5.3

New Features
 	
DC541-CM
The DC541-CM module now supports in standard several modes which where before only on specific versions. Only one HW module with new FW and new functions available for all. Compatible with previous applications.
 	
    • Support of PWM mode
    • Support of Dampener mode
	1.2.3

Support of new devices	1.2.3
New CANopen Master Communication module CM598-CN (as replacement of CM578-CN)	
Support of new feature for that communication module:	
• Sync Mode triggered by CAN2A/CAN2B message, this feature will start a CPU task on receiving a special CAN 2A/2B message	

Bug corrections	*Version*
DA501/DA502 DevDesc – address mapping issues fixed Issue description:Address mapping of CS31 (e.g. DC551) / Profibus (DC505) application using DA501/DA502 followed by digital module (e.g. DC523, DO524) was erroneous.The last byte used for process data of DA501/DA502 will be used twice also for the first byte	1.2.3
DO526: Wrong default value for reserved parameter fixed	1.2.3
PM595 LREAL operations not thread-safe Issue fixed	1.2.3
AC500 configuration package with bug fixes	1.2.3
Correct FW Version for eCo(ETH) and CM574-RS - FW V 2.5.1	1.2.3
Error occurring while configuring DO526 with CS31(i.e.there is always an error (LED S-ERR and I/O-Bus flashes) - fixed.	1.2.3
Error occurring while configuring DO526 with PROFINET (i.e. LED S-ERR CI501 and CI506 are always on) - fixed.	1.2.3
can't configure DO526 with EtherCAT(i.e.DO526 not visible add object dialog) - fixed.	1.2.3
Problem of adding a FENA-11 or FENA-21 module (provided as DevDesc in AB 1.2.2) in the configuration provides two slots for PPO(slot1) and the safety module FSO (slot2).If one tries to put in the FSO module, then a CRC check error message occurs - fixed	1.2.3
Problem that when one creates a new project in AB1.2.1.3306 which includes a drive (e.g. ACS355), then the parameter "Watchdog interval" for the drives is set to "0"! .This leads to a configuration failure - fixed.	1.2.3
Problem : error occurring while configuring EOE parameters in EtherCAT allows to creation configuration data. - fixed	1.2.3
Some binary outputs of the DC532 as first Module at the IO-Bus are not working	

Known Problems	*Version*

Safety:

Bug corrections	*Version*
Issue when FENA-21 configured with safety module fixed Issue description ;AB shows error message if we configure FENA-21 with safety module under CM579-PNIO. It shows a error message "Failed to access the F-Parameters of module PROFIsafe_ABB_PS1".	1.2.3
Opening archived project(with safety devices) in in AB1.2.1.3306 causes lot of error messages pop-up - fixed	

Solutions:

Functional changes / New features/Bug corrections	*Version*
AC500 HA Library - Support of more than one CS31 bus by using CM574 with new function blocks. - HA_CS31_CALLBACK_STOP updated from program to function. - New PID function blocks to use dedicatedly with Digivis Faceplates. - Visualization for Control, Diagnosis and Synchronization function blocks. - New HA system overview visualization. - Increased total size of the sync entry array from 256 to 1024. - Timer & RAMP Utility function block synchronization gaps are fixed. - fG_HA_PRIMARY, fG_HA_PM1_PRIMARY Variable status update issues are fixed. - Adaptation for compatibility with new FW 2.4.0 - Several bugs fixed - Online help updated with V2.4.3	2.4.3
PS552-MC-E Motion Control Library • New function blocks o ECAT_AC500_APPL_V21	3.2.0

New block ECAT_402_ParameterHoming_APP to send homing related parameters per SDO support for drive-based homing and input parameter for drive-operation mode with ECAT_CiA402_CONTROL_APP
   o MC_BLOCKS_AC500_V11
New block MCA_DriveBasedHome to execute a drive based homing method for 402-profile drives on Ethercat
New block MCA_GearInDirect, a modified MC_GearInPos which does not need the master to move for starting synchronization
New block MCA_CamInDirect, a modified MC_CamIn which does not need the master to move for starting synchronization
New block MCA_SetOperatingMode, allows to set the axis in a state to work just velocity based, switch of position control loop, ignore position jumps and following error
   o MC_CoBlocks_AC500_V23
New block MCA_SyncInfeedToPath
New block MCA_SyncCamToPath
 	
•   New behavior
   o Axis will go to an ERRORSTOP when 32-Bit position overrun occurs with an axis in positioning mode, in velocity mode, position overrun is allowed (related to MCA_SetOperatingMode)
•   Bug fixing
   o CMC_Sinterpolation, had wrong deceleration when velocity changed to smaller values during movement
   o SPLINE interpolation for profiled movement had not used the last data point, problem since 3.1.0
   o V_CHECK_TIME was not used anymore, problem since 3.1.0
   o modified the velocity calculation for CAM with MasterStartDistance,had before wrong result with non-linear velocity transition
   o changed the functionality for MCA_SetPositionCOntinuous with SUPER=FALSE, did create a small movement
   o improvement for jerk calculation
   o MCA_JogAxis had wrong behavior when moving backward with MinJogDistance > 0
   o MCA_MoveBuffered, output ActiveEvent ok, problem since 3.1.0	

PS553-DRIVES Library
Improved generation time of DONE output for Profibus and Profinet DPV1 function blocks (V1.0.1)
      - ACSDrivesComPB_AC500_V24
      - ACSDrivesComPN_AC500_V24
	1.2.2

PS562 Solar Library Solar_AC500_V22.lib compatible with new CPU type PM595 SolarNREL_AC500_V22.lib compatible with new CPU type PM595	1.0.2
PS563 Water Library Pump Station Configuration Tool as Technology Preview: Boost Control Mode added LogData_AC500_V23.lib: Bugfix direct communication Mode 2	1.2.1
PS564 Temperature Control Library Current monitoring with common or individual sensor, 1 phase or 3 phase Data logging modified in order to reduce number of data log lost Online help updated with V1.1.1 (AB-8489)	1.1.1
PS565 BACnet-ASC Library Several fixes due to BACnet certification Known limitations or bugs eCo (PM554 etc.): Very little applications possible only - ASC_SERVER + BASC_DEVICE + 1 ANALOG_IN is working - May be one to two more FBs will work too	1.0.0
Condition Monitoring System (CMS) Library Updated version of CMS_IO_AC500_V24.lib (V1.0.2): Minor bug fixes Updated version of WAV_FILE_AC500_V24.lib (V1.1.0): FB WAV_FILE_CREATE: Added ability to read in WAV files with 64Bit data size	2.5.3

Panel Builder:

Functional changes / New features	Version

New Panel Builder version 2.0.1
PB610 Panel Builder 600 and PB610-B Panel Builder 600 Basic:
   –   General
      o Add Multi language support in the installation procedures of PB610Suite (EN,ZH and DE)
   –   Deployment and run time operation
	2.0.1.215

○ Improve error log for skipped Javascript actions	
– Documentation	
○ User manual in DE	
○ Manuals update EN/DE/ZH	
– PB4web (HTML5 pages for mobile devices)	
○ Enable PB4web for CP600-eCo (BSP: UN60)	
– Support of operation systems: Windows 10 32-/64-Bit	
– Protocols, variables	
○ Help users to identify supported protocols based on target selected	
○ Retentive variables on flash	
– Tag importer	
○ Split linear tag imports that allow multiple file selection	
– Trends	
○ Trend computed initial range results up in blank screen (plot out of range)	
– User widgets	
○ Enable User Widget gallery for PB610-B and PB610	
– Standard widgets	
○ Enable IPCamera to show images in IE browser with MJPEG codec	

Bug corrections	*Version*
– Actions and events	2.0.1.215
○ ScrollTrendToTime action not working if "Page Duration" is higher than "30 min"	
○ Restore recipe data is not working anymore if used on PC Runtime,	
○ Dump trend action option dump as csv changed from CSV to Binary after project conversion with V2.00	
– Data transfer	
○ Data transfer enters in a loop if one of the tags uses scaling and DT is bi-directional	
○ Data Transfer with scaling on destination causes unwanted double write operation to controller	
– Deployment and run time operation	
○ Pressing 'X' button of MobiledialogPage in iPad causing logout from the project	
○ Runtime updater fails when the logger is active	
○ Compatibility problem with ComboBox Widget in Internet Explorer	
○ Tag editor scaling doesn't work properly for array tags and all array elements are reset to zero	
○ Bad quality seen on widget in web page if it attached to a tag and an action attached to its OnDataUpdate event	
○ Watchdog expired on UN31 (CP620…CP635 devices) after 6 days of running of customer project: leaks & deadlocks detected	
○ Memory leak in Un31 (CP620…CP635 devices) with special project	
○ Group ID property does not work as expected	
○ Indexed Tags not updated after execution of CloseDialog(selected) action	
○ Indexed Tags not updated if used in Template Pages	
○ SetBit action not working on Indexed Tags	
○ Customer application reboot: leak	
○ Numeric array value not updates correctly in runtime when we attach widget as the tag array index	
○ Delete Dynamic Files doesn't work on customer's PC	
○ OnDataUpdate event triggered twice due to number format	
○ PB610 could create an empty JS file that result into invalid package error for HMI with BSP 1.54 and elder	
○ Data entry on UTF16-LE coded string shows double refresh of numeric field	
○ PB610 studio could crash after specific sequence of widgets	
○ Numeric field attached to Tag using conversion is not updated correctly	
○ Detect and manage RTC time reset to default to avoid to loose historical data in production and inform users when data is cleanup	
○ Project Manager does not show all projects downloaded	
○ Field not updated at page loading when value placeholder in PB610 is set as yyyy	
○ Numeric field shows wrong value when returning into page	
○ Bit index of value property of an Hex numeric field is wrong	
○ Bit Index xform on Recipe resources not working anymore in V2.00	
○ HMI overwrite every value inserted greater than 128 with value 254 when "Display Brightness" are edited on runtime	
○ Error message "Failed to load dll Error code = 193" displayed during update procedure	
○ CP607 auto reboot after run project for few seconds	
○ The load/reload project action of context menu should be visible in debug mode only	
– Fonts	
○ JM Studio report "Copying file Tahoma.ttf file" during download project on PC Runtime if it is opened by network	
– Gallery	
○ User gallery page size changing when converting the project type...	
○ Custom fonts in gallery not shown properly, if not loaded in project.	

- JavaScript
  - JS code in a page is not deleted
  - Runtime executes JS command after page is changed
- PB4web (HTML5 pages for mobile devices)
  - Sort and Sort Order into PB4web Active and History Alarm widgets doesn't respect configuration
  - Scaling on widget in PB4web works only if specified by range, not by formula
  - Label text spaces are not preserved if static optimization value is "dynamic".
  - Wrong visualization of line shape if static optimization is set to 'dynamic'
  - Warning icons displayed in PB4web pages on the same widgets that work correctly on standard page
  - Warning icons displayed in PB4web pages related to old or ungrouped touch button objects
- Keypads
  - CP600-eCo could crash after try to move keyboard on screen
  - Keypad problems on Login page if screensaver is enabled
- Printing
  - Print operation could fail if user navigates through some application's pages
  - Printed PDF reports are empty
- Productivity tools and IDE UI
  - Web page size changes according to normal page converting the project type
  - Project corruption if project is saved into a network path via PB610 studio
  - Time taken to delete project via Manage Target is more compared to delete from panel.
  - Array tags not working in PB4web
  - DataTransfer action wrong warning for incompatibility data type
  - Space or special char in dialog page name or table column name freeze the page.
  - Attaching Tag to Array index of Alias tag on field could lead to PB610 studio crash
  - Issues converting project from 1.91 to v2.0
  - Font Tahoma Bold added when reopen project
  - PB610 studio could crash on creating update package if the drive has not enough space....
  - PB610 studio could crash on attempting to open standard gallery pages
  - Indexed Tag Set add [-1] to selected tag
  - Portrait icons in project wizard mismatch
- Protocols
  - "Local IP" bug in BACnet Protocol: freeze on un60 (CP600-eCo devices) runtime during project loading
  - Ethernet/IP CIP (optional plug-in): Accessing INT tag as boolean result into communication error
  - Ethernet/IP CIP (optional plug-in): Increased datalength on Ethernet IP/CIP when used with Scatter Diagram.
  - Bacnet: Enable Offline node Management for BACnet protocol
- Protocol editor
  - Modbus RTU: HMI report message failed: Error Parser: parameter 'parity' has invalid value" creating a new project without changing comm properties
- Recipes
  - CurrentRecipeSet value fields are showing values even if all sets of the recipe are deleted dynamically
  - Button "Move Up/Down" in Recipe editor does not move element in the order list displayed
  - Data Transfer doesn't write string in the Recipe-Set-Name variable
  - Wrong behavior of CurrentRecipe.LastDownloadedSet. Element1. Value system variable
  - Array index option disabled in attached to dialog after switching from Recipe editor
- Scheduler
  - Special application could crash and restart due to a scheduled action
- Security
  - Runtime could crash when wrong username is typed inside Client application
- Customized widgets
  - Custom property in custom widget not applied
  - Studio crashing while trying to add edit custom property of Customer Widget.
- Standard Widgets
  - Gauges in customer application are not visible into PB4web clients
  - DateTime widget doesn't work correctly when connected to a tag
  - Multistate image not showing some of the frames on panel
  - PB4web IPCamera widget not working with Axis IP camera
  - Horizontal slider doesn't move if it has no tag attached.
  - IP Camera widget not working with D-Link IP camera
  - PB4web Knob does not work if start angle < 0
- Tag editor
  - Dictionary window not refreshed
- Tag importer
  - Wrong tagURI created by Bacnet importer: no instance number
- Trends
  - Current Cursor Value from a historical trend displays "0.0" if the value is scaled - instead "nothing"
  - Negative value not plotting in trend on UN60 (CP600-eCo) if the data type is byte...

HMI runtime could crash using consumption meter widgets	

Drive Manager:

Bug corrections	Version
AB crashes in case Drive Manager connects to drive over Profisafe	1.2.3
The CRC file for the sdd provided with the device description for FENA (0x001A_0x0003_FENA_DAP_V4\2.5.0.0) does not match to the sdd	1.2.3
DriveManager does not support FENA-21	1.2.3

Known Problems	Version
Automation Builder is crashing when user edit same bit pointer parameter or value pointer parameter twice in Drive Manager	1.2.3

Programmable Drive:

Note 1: In order to program ACS880 drive there shall be Application programming license (+N8010)
loaded to drive memory unit. Please contact ABB representative.
Note 2: In order to get ABB Standard and System library visible disable *Enable simplified library handling* and *Hide system libraries*
options in Library management Tools/Options/Feature.
Note 3: Drive composer pro version 1.9 or newer is recommend. See appendix 1 how to set Drive composer pro working parallel
with Automation Builder.

VERSION INFO	
ABB Driveware IEC programming package Automation Builder Compiler versions ABB Standard library in project (AS1LB)	3.5.516.708 1.2.3 3.4.4.30, 3.5.7.0 1.0.1.2
ABB System library in project (AY1LB)	1.9.1.0
D2D communication library in project (AY2LB)	1.9.0.2
Target FW	AINFX 2.40 (recommended*)
Target device ACS880_AINF_BCU12_M_V3_5	3.5.5.3 (BCU-12/02/22)
Target device ACS880_AINF_ZCU12_14_M_V3_5	3.5.5.3 (ZCU-12 /14)
Target device ACS880_AISF_BCU12_M_V3_5	3.5.5.3 (BCU-12)
Target device ACS880_AISF_ZCU14_M_V3_5	3.5.5.3 (ZCU-14)

*) If used with older firmware please check that parameters in Drive Interface are available in target and
version 3.4.4.30 compiler must be used. Firmware 2.40 must be used in case of F-series I/O IECprogramming.

Functional changes / New features	Version
No new features.	1.2.3

Bug corrections	ID
Drive customizer failed to make correct loading package because Application.wrp file didn't include all application language file names correctly.	TFS-67680
Exclude parameter for backup was not working for signals. Signals were in backup even if they were excluded.	TFS-69129
Hide flag in Drive Interface could hide a parameter but application parameter read functions were unable to access a parameter. Total hiding flag in Drive Interface had no effect.	TFS-66950
Issue in Creating Formatted Param of Type "Short date(DD.MM)": After adding a parameter its type was changed from "Short date" to "None".	TFS-66962
Bit list parameter bit name setting failed.	TFS-72368

Lang name returned back to handle_0 after entering a new name.	
Bitlist row × Delete 	Bit	Bit Name (English)	Default value	Lang Name
---	---	---	---
⊙ 0	handle_0	False	handle_0		
Negative Value for New Default was not working in Drive Interface (In-House Mode). Updating a new negative default value for Real type F/W parameter failed. 	Min	Max	Default	New Default	Unit
---	---	---	---	---
-30000,00	30000,00	-1500,00	-1600,00	rpm | Invalid value –error message was given.	TFS-75138

Known problems	ID
Mapping to existing IEC variable is denied when compiler version 3.5.7.0 selected. REMEDY: Select compiler version 3.4.4.30, define mappings and change back to version 3.5.7.0.	AB-8545
Codesys Internal error during code generating if MIN and MAX operators are used like following: result :REAL; xxx: INT; result := MAX(0.1, xxx); REMEDY: result := MAX(REAL#0.1, xxx);	AB-8630
CODESYS gateway V3 settings are not correctly set right after the installation of Automation builder. Reboot of the PC is needed. Before that the scan time of thedrive targets is too short and it's not enough long to get drive connected. Anotherproblem is that it possible to be connected other CODESYS Gateway's in sameLAN. This might cause confusion. REMEDY: Reboot PC after installation.	AB-9070
User Set's may have incompatible parameter values if the drive is not having same original application. Pointer type of FW parameters which are linked to application memory are not cleaned from the User sets in case of some other application has been downloaded to drive and User set is loaded back. REMEDY: Use application loading package to remove incompatible User sets (option 4).	TFS-16751 AB-6682
Formatted parameters are not working properly with Drive Composer Pro. | Minimum	1.1
Maximum	31.12
Default value	1.1
Display format for Data Parameter	Short date (DD.MM) ▼ | | Index	Name	Value	Unit	Min	Max
---	---	---	---	---	---
10	test	1.1	NoUnit	1.1	12.7		TFS-17859
Import parameter XML file in ApplicationParametersandEvent editor is not working properly. REMEDY: Use only Export XML.	TFS-20679
Create Boot application to multiple device fails before a login at least one device isdone. This command is available only in Pro/In-house mode. Download interrupts to load Application.dat file. REMEDY: Take a login to one device and logout. After that multidownload works.	TFS-20026
Par_Scale_CHG function block is generating error code 3 when Base Value of an application parameter is changed. However, Base Value scaling is done properly. But PAR_SCALE_CHG has Err output = 3 ``` 23 ● Inst_PAR_SCALE_CHG1(24 Enable TRUE := EnableIN TRUE , 25 Group 80 := 80, 26 Index 13 := 13, 27 Basevalue 5 := bVal 5 , 28 BIT32_scaler 1 := 1, 29 BIT16_scaler 1 := 1, 30 Err 3 => Err4 3); ```	TFS-36761
Par_Def_CHG function block is not changing the default value of all parameters in afamily. Only the first parameter's default value was changed.	TFS-36769

Index	Name	Value	Unit	Min	Max	Default
▼	80. Test Parameters 1					
1	Test Par1	0	Unit1	-15000	15000	1500
2	Test Par2	0	Unit1	-15000	15000	0
3	Test Par3	0	Unit1	-15000	15000	0
4	Test Par4	0	Unit1	-15000	15000	0

In case selecting Function Type to "Signal" (readonly) and existing variable is Global(GVL) then parameter creation fails. Parameters are not fully available or drive tripsto fault 64A3 and no parameters are created at all.	TFS-49494
Unnecessary RAM download in case of no changes in project.	TFS-60564
F-series I/O bus is not able to recover automatically, in the next cases: We suppose here that encoder and some F-series IO modules are connected into same ring. Drive is running motor and FEA-03 board is then powered on first time. Bus will stayin fault state, until motor is stopped and restarted. Same happens in case FEA-03 is powered on, drive is running motor, and then bus(fiber) is disconnected and reconnected. (bus break) Bus is recovering from both cases, when motor is stopped and restarted.	TFS-71451
Automation Builder will crash if Lang Name –column of the default language (English) is deleted without giving a new name. | No.	Name (English)	IEC Variable Type	Parameter Type	Lang Name | |---|---|---|---|---| | 📁 9 | Group 9 | | | | AutomationBuilder ☒ ❌ Object reference not set to an instance of an object.	TFS-77905

Drive Composer:

Functional changes / New features	Version
New Drive Composer Pro version 1.11 Refer respective release notes for included features.	1.2.3

Motion:

Functional changes / New features	Version
New Mint Workbench 5.8.20	1.2.3
New firmware release for EtherCAT slaves **Support for Build 5852 firmware on MicroFlex e150 and MotiFlex e180**	1.2.3

Bug corrections	Version
Minor issues for windows 8.1 Blank 'Change Connection' window of MintWorkbench is blank fixed in Windows 8.1 environment	1.2.3

*Disclaimer: Technology Previews are designed to give you a sneak peek at upcoming technologies. They are non-final versions of our product and should NOT be taken as a measure of the fit, finish, capability, and overall quality of the final release (including user documentation). Technology Preview features can be removed without further notice. If you use the preview, you could experience things that go wrong, data that gets lost, and things to change. While we don't stop you using these versions in projects, we don't recommend it if you cannot afford data loss and the usual quirks of running preview software. It will not be possible to call ABB Support hotlines for help with Technology Preview features. If you are interested in getting support for a Technology Preview feature this can be done in the context of a piloting. In this case please contact us to set up a piloting agreement.

Changes in Automation Builder 1.2.2

The release includes the following device groups:

ABB Automation Builder:

Functional changes / New features	Version
Automation Builder Setup: Setup supports directly the uninstallation of previous Automation Builder versions without the need for manual uninstallation before launching the installation	1.2.2
Advanced IO device handling with structures Automated generation of a POU objects for accessing the already existing data structures for input and output channels	1.2.2
Various documentation updates	1.2.2

PLC - AC500:

Functional changes / New features	Version
Various documentation updates	2.5.2
PS565 BACnet-ASC Library Package 0.9.0 – Technology Preview* (license required) BACnet B-ASC library allows to integrate an AC500 CPU into a BACnet network and to exchange data between the AC500 CPU and other devices connected to BACnet network. The library provides the BACnet B-ASC profile which enables the AC500 CPU to act as a server. The CPU receives client requests, performs them and reports back the results. You can use BACnet IP or MS/TP as communication protocol. For BACnet IP communication use a device with onboard Ethernet. For MS/TP communication use a device with onboard serial interface. Please refer to appendix for detailed release information.	0.9.0

Bug corrections	Version
Stability improvements	2.5.2

Known Problems	Version
Library PROFIBUS_AC500_V25 Library PROFIBUS_AC500_V25.lib provided with AB V1.2 is the replacement for library PROFIBUS_AC500_V10.lib which is provided in earlier revisions. In applications created with AB V1.2 and later on using Communication Module of type CM572-DP or CM592-DP the library PROFIBUS_AC500_V25.lib is included automatically. In applications created in one of the earlier revisions PROFIBUS_AC500_V10.lib is included already. Updating these applications to AB V1.2 or later on will add PROFIBUS_AC500_V25.lib while PROFIBUS_AC500_V10.lib remains included also. This causes duplicated symbols implemented in both libraries. Compilation of the project will not be possible and leads to errors. E.g. "Error 3700: DPM_CTRL (1): A POU with name 'DPM_CTRL' is already in library 'PROFIBUS_AC500_V25.lib'" Workaround: Since there is no automatically deletion of the old library available PROFIBUS_AC500_V10.lib has to be deleted manually. The delete operation has to be done only once since PROFIBUS_AC500_V10.lib will not be included by AB V1.2 and later revisions anymore.	2.5.2

C-Code:

Known Problems	Version
Any usage of string constants in PLC_PRG, that calls the C-POU DRIVE_DISCOVERY, leads to inputerror = 1, if it wasn't initialized at definition. Any usage even means a call to IEC function which takes a STRING as parameter and is called after the DRIVE_DISCOVERY got called. Workaround: Initialize variable inputerror = 0	2.5.2

Solutions:

Functional changes / New features	Version
PS562 Solar Library Package 1.0.2 The PS562 Solar Library package contains the following parts • Solar_AC500_V22.lib • SolarNREL_AC500_V22.lib The Solar_AC500_V22 Library contains Function Block to calculate sun position at defined location and time. Other Function Blocks work together to position active area (solar panels) towards the sun in order to maximize energy	1.0.2

harvest. Mode manager controls different operations e.g. homing, calibration, cleaning, tracking etc. A function block to move tracker using hydraulics is also available. The SolarNREL_AC500_V22 Library is intended to calculate sun position at defined location and time with high accuracy. Sun position calculation is very precise and with range of ± 0.0003º. Solar_AC500_V22 Library can be used additionally to configure axis movement for tracker. Please refer to appendix for detailed release information.	

PS564 Temperature Control Library Package 1.1.0
The Temperature Control library package contains several parts and is overall designed for the demand of advanced temperature control for critical processes, which need precise temperature control and e.g. adaptive tuning for ease of handling and changing environmental or process conditions.
 	
The package consists of
• Libraries
    o TECT_TEMP_CONTROL_AC500_V24 library.
    o ADCTRL_AC500_V24 library (internal, automatically referenced and loaded)
    o TECT_EXT_AC500_V24 library (internal, automatically referenced and loaded)
• One example project consisting of four examples (incl. one advanced CB610 Panel project)
• Additional example for current monitoring
• Documentation can be found in the online help
 	
Please refer to appendix for detailed release information.
	1.1.0

PS563 Water Library Package 1.2.1 The Water Library package contains the following parts • AC500 Datalogging Library • HMI example for ACQ Drive • AC500 Pumping Library • Technology Preview: PSCT - Pump Configuration Tool The AC500 Datalogging Library contains Function Blocks for the purpose of advanced time-stamped data logging for different use cases. In typical use cases the AC500 application program generates data which are normally transmitted to a telecontrol system for storage and further processing or displaying to the end user. Typically, these may be remote applications like water pumping stations or solar power plants where the connection between the remote station (AC500) and a central SCADA/telecontrol station is not always stable or only sporadically connected. Sporadically connected can be by intention e.g. to save communication costs or open ports/connections to be handled by a control station. Then the Datalogging Function Blocks can store data in case of a broken or intentionally interrupted connection between AC500 and the telecontrol system. HMI example for ACQ Drive: Configuration of the CP600 family HMIs functionality to directly interface to a complex drive, like the ACQ810 with its Intelligent Pump Control (IPC) functions The AC500 Pumping Library is intended for smaller pump stations (or pump skids) and medium sized stations. It contains the block for the basic functionalities as well as advanced functions for very different applications. This version is usable for 1-3 pumps. It is best suited for the use of frequency converters/drives for each pump but also for the traditional setup with one drive and 1-2 switched outputs for the pumps. For easy configuration of the AC500 Pumping library a Pump Station Configuration Tool is provided as Technology Preview. This includes now also Boost control (with variable speed drive and traditional mode). Please refer to appendix for detailed release information.	1.2.1
PS552-MC-E Motion Control Library 3.1.0 The PS552-MC-E is a set of libraries to create Motion Control applications based on Function Blocks according to the standard of PLCopen Motion Control. These Function Blocks can be used for PLC-based (Central) Motion Control as well as for drive-based axis implementations. The Central Motion Control axis implementation covers a wide range of possible Motion Control functionalities starting from single axis movements to master-follower axes to perform electronic gearing and CAM functions up to coordinated Motion Control in Cartesian coordinates with optional kinematic transformations to realize a portal or robotic application. Please refer to appendix for detailed release information.	3.1.0
New licensing mechanism for PS562 Solar and PS552-MC-E Motion control from 3S-licensing manager to Automation Builder license.	1.2.2

Drive Manager:

Bug corrections	Version
Installation issue Drive Manager package on PCs with only .Net 4 installed is resolved	1.2.2
Various stability improvements	1.2.2

Programmable Drive:

Note 1: In order to program ACS880 drive there shall be Application programming license (+N8010)
loaded to drive memory unit. Please contact ABB representative.
Note 2: In order to get ABB Standard and System library visible disable *Enable simplified library handling* and *Hide system libraries*
options in Library management Tools/Options/Feature.
Note 3: Drive composer pro version 1.9 or newer is recommend. See appendix 1 how to set Drive composer pro working parallel
with Automation Builder.

VERSION INFO	
ABB Driveware IEC programming package	3.5.516.420
Automation Builder	1.2.2
Compiler versions	3.4.4.30, 3.5.7.0
ABB Standard library in project (AS1LB)	1.0.1.2
ABB System library in project (AY1LB)	1.9.1.0
D2D communication library in project (AY2LB)	1.9.0.2
Target FW	AINFX 2.40 (recommended*)
Target device ACS880_AINF_BCU12_M_V3_5	3.5.5.0 (BCU-12/02/22)
Target device ACS880_AINF_ZCU12_14_M_V3_5	3.5.5.0 (ZCU-12 /14)
Target device ACS880_AISF_BCU12_M_V3_5	3.5.5.0 (BCU-12)
Target device ACS880_AISF_ZCU14_M_V3_5	3.5.5.0 (ZCU-14)

*) If used with older firmware please check that parameters in Drive Interface are available in target and
version 3.4.4.30 compiler must be used. Firmware 2.40 must be used in case of F-series I/O IECprogramming.

Functional changes / New features	Version
There is available a support for F-series I/O modules for IEC-programming purpose.Supported module types are FIO-01, FIO-11 and FAIO-01. Maximum 7 modulescan be used driven by application. Supported total number of I/O mappings to thesemodules is 100. There is not yet support for checking analog signal unit selection ofthe module (AINFX 2.40 switch data of FIO-11, FAIO-01). See more details on theProgramming manual Drive application programming (IEC 61131-3) revision D.	1.2.2
System library ParSetPointer_xx function blocks are update with new input. (ParSet_BitPTR_IEC, ParSet_ValPTR_IEC_DINT, ParSet_ValPTR_IEC_REAL,ParSet_ValPTR_IEC_UDINT, ParSet_BitPTR_Par, ParSet_ValPTR_Par) - New updated function blocks are having a store-input to define if the new setting is stored non-volatile memory or not. - Earlier the setting was saved always to non-volatile memory in case any change of inputs. This leads some application to too many unnecessary writings to non-volatile memory. - NOTE: There is a difference that earlier versions of the ParSetPointer function blocks store the value always to non-volatile memory and these new updated function blocks are not storing the value to non-volatile by default. In order to have same functionality as earlier the Store pin must be set to TRUE. - Applications made with older SystemLibrary version 1.9.0.8 using these blocks must be updated manually for avoiding compiler errors or load errors. This is concerning also load packages, which must be re-build.	1.9.1.0
System library (AY1LB_System_ACS880_V3_5) functional enhancements: - ParWrite_DINT block is able also to write REAL and INT type of parameters.	1.9.1.0
System library (AY1LB_System_ACS880_V3_5) enhancements of new function - New ParWrite_INT block is added to be able to write REAL, DINT and INT type of parameters. - New ParRead_INT block is added to be able read REAL, DINT and INT type of parameters. - New block GetPtrParConf is added. Block is returning details of pointer parameter setting. Source parameter can be value pointer, bit pointer or formatted number (parameterIndexFB).	1.9.1.0

	1.2.2
In ApplicationParametersandEvents tool the minimum, maximum and default valueof formatted number type parameters is possible in give corresponding format.	

Bug corrections	ID
IEC program download to RAM fails in case fieldbus or other drive is writing to application parameters. REMEDY: Disconnect PLC communication or use option (Pro-level) to load application directly to permanent memory (ZMU).	TFS-40187

Known problems	ID
Mapping to existing IEC variable is denied when compiler version 3.5.7.0 selected.Workaround: Select compiler version 3.4.4.30, define mappings and change back toversion 3.5.7.0.	AB-8545
Codesys Internal error during code generating. This error happens with MIN and MAX operators if they are used like following: result :REAL; xxx: INT; result := MAX(0.1, xxx);	AB-8630
CODESYS gateway V3 settings are not correctly set right after the installation of Automation builder. Reboot of the PC is needed. Before that the scan time of the drive targets is too short and it's not enough long to get drive connected. Another problem is that it possible to be connected other CODESYS Gateway's in same LAN. This might cause confusion. REMEDY: Reboot PC after installation.	AB-9070
User Set's may have incompatible parameter values if the drive is not having same original application. Pointer type of FW parameters which are linked to application memory are not cleaned from the User sets in case of some other application has been downloaded to drive and User set is loaded back. REMEDY: Use application loading package to remove incompatible User sets (option 4).	TFS-16751 AB-6682
Formatted parameters are not working properly. TFS-17859 Import parameter XML file in ApplicationParametersandEvent editor is not working properly. REMEDY: Use only Export XML.	TFS-20026 AB-6645
Create Boot application to multiple device fails before a login at least one device is done. This command is available only in Pro/In-house mode. Download interrupts to load Application.dat file. REMEDY: take a login to one device and logout after that multidownload works.	TFS-33155
Par_Scale_CHG function block is generating error code 3 when Base Value of an application parameter is changed even though Base Value scaling is done properly.	TFS-36761
Par_Def_CHG function block is changing only one parameter's default value instead of all parameters' default values in the family.	TFS-36769
IEC Variable Scope "Var_CONFIG" is not supported.	TFS-48758
In case selecting Function Type to "Signal" (readonly) and existing variable is Global(GVL) then parameter creation fails. Parameters are not fully available or drive tripsto fault 64A3 and no parameters are created at all.	TFS-49494
Unnecessary RAM download in case of no changes in project.	TFS-60564
Total hiding firmware parameters option In Drive Interface has no effect.	TFS-66950 AB-3933
Issue in Creating Formatted Param of Type "Short date(DD.MM)"	TFS-66962

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Changes in Automation Builder 1.2.1

The release includes the following device groups:

Safety PLC - AC500-S:

Note 1: Before using the safety configuration and programming tools contained in Automation Builder, you must have read and understood the AC500-S Safety PLC User Manual (see www.ABB.com/PLC). Only qualified personnel are allowed to work with AC500-S safety PLCs.
Compiling and executing safety projects on SM560-S Safety CPUs require the purchase of a PS501-S license enabling package.

Functional changes / New features
Internal updates only - no functional changes

Bug corrections
Internal improvements only - more stable

Known problems
Refer to the latest version of AC500-S Safety User Manual located at http://www.abb.com/PLC

PLC - AC500:

Bug corrections	*Version*
Minor bug fix in SD card creation	2.5.1

AC500 Firmware

Bug corrections	*Version*
SD-Card creation with Firmware V2.5.1 and PLC browser commands (sdappl or sdclone) / Boot project load with Firmware V2.5.1 for SM560-S Safety CPU and CM574-RS from SD-Card Previous problem, which is relevant for Firmware V2.5.1 only, is now fixed in Firmware V2.5.2. **Note:** the browser commands sdappl or sdclone don't functioning with PM591-2ETH and PM595-4ETH CPU	2.5.2

ABB Automation Builder:

Functional changes / New features	*Version*
Automation Builder Setup: Support user via built-in clean up script in setup if uninstallation of previous Automation Builder versions was not successful. To run this script please check the message box option during setup "Execute lean clean up of Automation Builder from PC and continue with installation (Recommended in case of issues)"	1.2.1

Drive Manager:

Bug corrections	*Version*
Drives below CM592-DP PROFIBUS coupler can now be connected to Automation Builder.	1.2.1

Robot Controller – IRC5:

Software requirements

Operating System	
Microsoft Windows 7 SP1	*32-bit edition*
Microsoft Windows 7 SP1 (recommended)	*64-bit edition*
Microsoft Windows 8.1 (recommended)	*64-bit edition*

Note: *RobotStudio 6.0 does not support Windows XP and Vista. The reason is that RobotStudio uses .NET Framework 4.5 which is not supported by XP or Vista.*
RobotStudio is not tested on Windows 8.1 32-bit edition, why it is not added to the list of supported operating systems. However, at the time of writing, there are no known obstacles that prevent RobotStudio to run on Windows 8.1 32-bit.

The AutomationBuilder Addin in RobotStudio is now adopted to handle the RobotWare 6.x format.

Bug corrections	*Version*
RobotStudio Addin - Minor stability improvements	**6.02.6690**

Changes in Automation Builder 1.2.0

The release includes the following device groups:

ABB Automation Builder:

The following notes are related to Automation Builder Platform, platform extensions, Installer and Installation Manager:

Functional changes / New features	Version
Automation Builder:	**1.2.0**
- SVN versioning support of Automation Builder projects:	
o Multi user engineering: Coordination of shared access for developers to objects within the same project	
o Online and disconnected offline workflows possible	
o Log of changes: It can be reproduced what changes have been made, when and by whom.	
o Difference view and merging between revisions	
o Restore of old revisions. Changes done by mistake can by undone at any time.	
o Archiving of specific revision of a project. It is always possible to go back to older versions.	
o Simultaneous development of multiple branches of a project	
- ECAD integration:	
o data exchange supports CS31 and third party devices	
o data exchange to Zuken E3	
- Support of Automation Builder floating licensing:	
o Floating licenses offer to have an m:n ratio between number of licenses and number of users.	
o Spatial and temporal sharing of licenses between team members	
o Easy switchover between several workstations with a single license	
Remark: Special documentation available from ABB Support, covering installation, activation and configuration of the license server	
- Automation Builder setup improvements:	
o Faster installations and updates via parallelization	
o Disk space checks	
- Automation Builder Installation Manager:	
o Enable modifications of installed software including additional tools and customer specific packages	
- Usability Improvements:	
o Improved Device Editor via horizontal tab control	
o Improved Project Compare	
▪ Project compare support for logical exchange global variable lists	
▪ Multi-select in I/O mapping list	
▪ Implementation of "Accept" on devices	
o Improved Device type overview via Device Information Tab	
- Performance Improvements IO Mapping for improved usability	
o Reduced loading time of IO Mapping Tab when bulk number of devices (or channels) needs to be supported	
o Improved refresh of IO Mapping Tab (after changes in Device Tree)	
o Improved performance of copy and paste actions	
- Documentation:	
o Unified help structure across IEC editor and device configuration	
o Single source help files	
▪ Automation Builder Platform online help now also contains IEC61131 Editor online help	
▪ IEC61131 Editor online help still existing for the scope of the IEC61131 Editor scope	
Technology previews*:	
o Open Device Integration: user friendly parameterization of ACS355 on Modbus TCP and Modbus RTU including storage of settings and application parameters	
Solutions:	
Technology previews*:	
o PackML support:	
▪ quick start via a comprehensive and partly tailored template	
o Pump station configuration wizard:	
▪ Creating pump applications via configuration	
▪ Guidance through the preferred workflow	

Known problems	ID
Pump station configuration wizard: Object disappears after PLC update or PLC target change Workaround: not available	AB-8203
Previous Automation Builder projects including third party modules will show question marks in device tree after project upgrade Workaround: use a project archive to upgrade projects to keep all third party device descriptions	AB-2240
whenever an ACS880 - IEC61131-3 device is added or deleted along with PLC and other objects ,subsequent delete operation of PLC and other objects throwing Language model error Workaround: confirm error message, no further issues are known	AB-8245
In SVN project versioning commit window, error message appears when double clicking on "Project Settings" node Workaround: not available	AB-7913
If higher CodeMeter versions than 5.10 are installed on your PC you have to restart your PC after Automation Builder 1.2 installation to make your Automation Builder licenses available again	

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PLC - AC500:

Functional changes / New features	Version

AC500 Configuration:
- New device types:
   o PM585-ETH
   o CM592-DP (replacement for CM572-DP)
      ▪ easy configuration update from CM572-DP to CM592-DP
   o PM595 with EtherCAT
- Condition Monitoring System (CMS):
   o Engineering of condition monitoring solution based on FM502
   o 16 fast sampling IEPE/+-10V channels with encoder connectivity for vibration analysis and machine monitoring
   o Library function for control and data analysis
   o Combination with other IO for e.g. temperature measurement
- AC500 Firmware Identification and Update via Automation Builder:
   o Identify firmware version on AC500 devices
   o Download of matching firmware by Automation Builder
- Advanced IO device handling: define structures (DUT) of devices
   o Productivity improvements: Modularity in hardware can be reflected in Automation Builder → Re-use during configuration and application programming
   o In general: Access to IO channels without need for defining individual mappings
- General CAN improvements:
   o New editor for complete PDO configuration (no modal dialogs)
   o Improved SVN support
- MultiOnlineChange Tool:
   o Enable parallel downloads to PLCs via multiple instances of MultiOnlineChange tool
   o Option to select up to 5 firmware files incl. file type (firmware, boot code, display, etc.) that are written to the PLC
   o The timeout to download one file and to reboot the PLC can be manually set (activation delay)
   o For firmware 2.4 and newer, the sdcard.ini is always written to the PLC
- Enable library licensing via WIBU licensing
 	
  Technology previews*:
   o IEC Application Programming in Automation Builder
      ▪ Global variable lists (GVL), user defined data unit types (FUT) and structured text POUs can be added to application object in Automation Builder
      ▪ All objects are copied automatically to the IEC 61131 editor
   o Open Modbus RTU/TCP device integration based on ACS355
	2.5.0

Bug corrections	Version
Various stability improvements	**2.5.0**

Known problems	ID

17

Configuration parameters for Modbus TCP client do not exist in the Modbus-TCP client tab Workaround: Configure parameters in Modbus TCP server tab	AB-7928
Invalid use of character ' in alarm string leads to runtime exception on PLC Workaround: use $ as escape character for special characters (like ')	AB-6852
CODESYS project is still marked as dirty when changes are undone/deleted Workaround: check the changes and save/don't save project correspondingly	AB-4383
Drives below CM592-DP PROFIBUS coupler cannot be connected to Automation Builder. Error message "Unable to connect to drive" is shown Workaround: use instead CM572-DP	AB-8100
Copy/paste of communication protocol sub-trees (e.g. PROFIBUS) between two different parent node types (e.g. CM572-DP and CM592-DP) is only supported within one and the same Automation Builder instance: - If the protocol sub-tree is copied between different Automation Builder instances and with different parent node types, all parameters are set to their default values. - If the protocol sub-tree is copied between two Automation Builder instances, but below the same parent node type (e.g. CM572-DP to CM572-DP), all parameters keep their values. Workaround: use export and import functionality	AB-7822
ECAD import/export does not work for modular EtherCAT IO modules Workaround: not available	AB-7751
In case of INVALID task intervals (e.g. 0) just a warning is shown not an error Workaround: double check the settings and warnings	AB-7577
Parameters might get changed for third party modules in Device Editor (e.g. watchdog (ms) and VLAN Id) Workaround: not available	AB-7357
For CAN the check for double COB-Ids is not working properly. No error message is shown Workaround: double check COB-Ids	AB-7169
II_Settings are missing in project tree of Extension_Bus after merging projects via SVN Workaround: not available	AB-6937

Function Export Boot Project and Firmware (SD Card) generates invalid SD card image
 	
The AB1.2 functionality "Application-Node" -> "Export"->"Boot project and firmware (SD card)…" generates and SD-Card with invalid folder names for the PLC PM595-4ETH and PM591-2ETH. A PLC will not be updated with this SD Card.
 	
Workaround:
The folder name can be corrected by editing the folder name in a file explorer. Please rename the folder names and correct the file sdcard.ini as follows:
• SD-Card created PM591-2ETH for version V2.5 or higher
    o Rename the folder name \FIRMWARE\PM591-2ETH to \FIRMWARE\PM591_2.ETH
    o Rename the folder name \USERDATA\PM591-2ETH to \USERDATA\PM591_2.ETH
    o Edit the file sdcard.ini and rename **all** folder names in the section [CPU] to PM591_2.ETH:
        ▪ Boot=FIRMWARE\PM591-2ETH\2_3_1\Pm59xRDB.gza
        ▪ Firmware=FIRMWARE\PM591-2ETH\2_5_1\Pm59xRD.gza
        ▪ Display=FIRMWARE\PM591-2ETH\Display\2_9\Display.app
        ➔
        ▪ Boot=FIRMWARE\PM591_2.ETH\2_3_1\Pm59xRDB.gza
        ▪ Firmware=FIRMWARE\PM591_2.ETH\2_5_1\Pm59xRD.gza
        ▪ Display=FIRMWARE\PM591_2.ETH\Display\2_9\Display.app
• SD-Card created PM591-2ETH for version smaller than V2.5
    o Rename the folder name \FIRMWARE\PM591-2ETH to \FIRMWARE\PM591_2.ETH
    o Rename the folder name \USERDATA\PM591-2ETH to \USERDATA\PM591_2.ETH
 	
• SD-Card created PM595-4ETH for version V2.5 or higher
    o Rename the folder name \FIRMWARE\PM595-4ETH to \FIRMWARE\PM595_4.ETH
    o Rename the folder name \ USERDATA \PM595-4ETH to \ USERDATA \PM595_4.ETH
    o Edit the file sdcard.ini and rename **all** folder names in the section [CPU] to PM595_4.ETH:
        ▪ Boot=FIRMWARE\PM595-4ETH\2_4_1\PM595B.gza
        ▪ Firmware=FIRMWARE\PM595-4ETH\2_5_1\PM595.gza
        ▪ OnboardCAN=FIRMWARE\PM595-4ETH\ONB_CAN\1_4_0\OnbCAN.app
        ▪ LedBoard=FIRMWARE\PM595-4ETH\LEDBOARD\1_5\LEDBoard.app
        ➔
        ▪ Boot=FIRMWARE\PM595_4.ETH\2_4_1\PM595B.gza
        ▪ Firmware=FIRMWARE\PM595_4.ETH\2_5_1\PM595.gza
        ▪ OnboardCAN=FIRMWARE\PM595_4.ETH\ONB_CAN\1_4_0\OnbCAN.app
        ▪ LedBoard=FIRMWARE\PM595_4.ETH\LEDBOARD\1_5\LEDBoard.app
• SD-Card created PM595-4ETH for version smaller than V2.5
    o Rename the folder name \FIRMWARE\PM595-4ETH to \FIRMWARE\PM595_4.ETH
    o Rename the folder name \USERDATA\ PM595-4ETH to \USERDATA\ PM595_4.ETH
	AB-8419, AB-8421, AB8422

EtherCAT Firmware for an internal coupler of PM595-4ETH	

To use EtherCAT on an internal communication module of a PM595-4ETH the FW has to be updated via an SD-Card. Please download the installation package and follow the instructions: http://search.abb.com/library/Download.aspx?DocumentID=1SAP192000R4302&LanguageCode=en&DocumentPartId=&Action=Launch	

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AC500 Firmware:

Functional changes / New features	Version

- Ethernet:
  o IEC60870-5-104: Variable Broadcast Address for General Interrogation FB from AC500 (AC500 IEC60870-104 type C_IC_NA_1).
- System:
  o New CPU parameter "Task compatibility mode" with values:
    ▪ File Handling prioritized for Idle CPU time (default/same as v2.4.x)
    ▪ Balanced Handling of Ethernet and file operations for Idle CPU time
    ▪ Ethernet Handling prioritized for Idle CPU time
  o Support of CM5xx firmware identification and download from Automation Builder (AB)
  o Support of PM5xx firmware identification and download from Automation Builder (AB)
  o Display firmware V2.9 - extension for EC58x (Custom specific)
  o PM59x: For CMS Signal Processing Lib (C-Code) memory is allocated in the HEAP. Increasing the HEAP would give more possibilities for further algorithms.
- EtherCAT:
  o Support of EtherCAT slaves with several layers of submodules (e.g. Beckhoff EK1110)
  o Support of sync units
  o EtherCAT support on PM595-4ETH, internal couplers ETH3 and ETH4 can now be used as PROFINET master or as EtherCAT master.
- Support of new devices:
  o New PROFIBUS DP communication module CM592-DP (as replacement of CM572-DP)
  o New AC500 CPU PM585-ETH
  o New AC500-eCo PLC PM566-ETH
	2.5.1

Bug corrections	Version

- PROFINET:
  o PM595-4ETH shows configuration error in case of configuration of PROFINET for internal coupler ETH3 and/or ETH4 and external coupler CM579-PNIO in slot 1 or slot 2 and SM560-S. Fixed
- File handling:
  o File handling in RUN mode of PM5xx (e.g. by CAA_File_, write Bootproject, ..) can limit the Ethernet throughput to guarantee volume. The can lead to timeout e.g. in Modbus TCP communication. Fixed
- System:
  o Online change + RESET: Project with large structures with REAL/LREAL variables can lead to fault values after Online change and followed by RESET. Fixed
  o "IEC conversion function LWORD_TO_STR() doesn't work for numbers > (2^32)-1". Fixed
- Webserver:
  o PM595-4ETH can crash when typing a LREAL Variable in Webvisu. Fixed
- Online access:
  o Force will not be released when logged in via Ethernet and connection is broken (no logout). Fixed
	2.5.1

C/C++ Programming:

Functional changes / New features	Version

- C/C++ Toolchain:
  o Now supports compiler optimization for size (-Os)
- User interface:
  o Export of C/C++ library binaries for all PLC types
- FWAPI:
  o Added wrapper functions for requesting unique identifiers from PLC (e.g. MAC address of onboard ethernet interface)
	2.5.0

Bug corrections	Version

- C/C++ Toolchain:
    o Fixed link errors related to link-time initialization of struct members
- User interface:
    o Fixed various errors in Automation Builder C/C++ user interface
	2.5.0

Known problems	ID
Online change not possible with C++ libs Workaround: not available	AB-2127

Safety PLC - AC500-S:

Automation Builder 1.2.0 is not containing the Safety PLC – AC500-S feature for the latest version. AC500 Firmware V2.5 does not support functional safety components.

<u>Resulting behavior</u>: When opening a project that contains functional safety components in Automation Builder 1.2.0 the following error message will be displayed: "The project contains objects that are not supported by the current installation: AC500_S. Please install the appropriate packages."

<u>Recommendations</u>:
- New projects: For projects containing functional safety components install and use Automation Builder version profile 1.1 (which contains AC500 Firmware V2.4).
- Existing projects: Projects containing functional safety components shall not be upgraded to Automation Builder 1.2. Open and modify these projects instead in compatibility mode for previous Automation Builder versions. We recommend to install and use Automation Builder version profile 1.1 (which contains AC500 Firmware V2.4).

The functional safety feature for Automation Builder 1.2 will be again available with Automation Builder 1.2 Service Release 1.

Note 1: Before using the functional safety configuration and programming tools contained in Automation Builder, you must have read and understood the AC500-S Safety PLC User Manual (see www.ABB.com/PLC). Only qualified personnel are allowed to work with AC500-S safety PLCs.
Compiling and executing functional safety projects on SM560-S Safety CPUs require the purchase of a PS501-S license enabling package.

Control Panel – CP600:

Functional changes / New features	Version

PB610 Panel Builder:
- Tag dictionary:
    o Redesign of tag dictionary
    o New graphical interface for dictionary
    o Native support for complex data items like multi-dimensional arrays, structures
- Data logging:
    o New data logging tools for collecting and sharing more data at the HMI level
    o Data acquisition and storage of multiple data items
    o Synchronous sampling of values with same time stamp
    o Improved data export for logged data to *.csv file format: Single table/file for multiple data items with the same timestamp
- Recipes:
    o Improved operation with recipes (functionality, performance)
    o Add/delete data sets at runtime
    o Copy/paste recipe sets at runtime
    o No more necessity to specify the maximum number of sets for any recipe at runtime
    o Recipe data can be copied from/to USB device
    o File selection via browser
    o Recipe actions added to tracing support in audit trail
    o New system variables for recipe dump
    o Performance/reliability improvement for renaming recipe actions
- Runtime:
    o Improvement of runtime performance
    o Optional compilation of components (page files) of the projects. Content of compiled files is transferred as binary format rather than a text (XML) format.
    o Reduced time for change pages at runtime
	2.0.0.161

Functional changes / New features	Version
- PB4WEB: o Option of designing pages for HTML5 web access - BACnet protocol: o The implementation of the BACnet protocol follows the B-OD device profile with the exception of AE-VN-A. - Ethernet IP protocol: o The Ethernet IP protocol can be added by means of an external plug-in, available for download. - Simatic S7 ETH protocol: o The Simatic S7 ETH protocol can be added by means of an external plug-in, available for download. - ABB Pluto protocol: o The ABB Pluto protocol has been improved for easier tag management with Pluto Safety PLC. - Media player widget: o For CP651, CP661, CP665, CP676: Play videos from a playlist for. o Storage of video files:USB drive, flash card or SD card. o Two types of widgets: One includes a multimedia frame for user control, the other is a plain frame without user control. - Browser widget: o For embedding web pages into HMI device pages. o HTML5 compatible browser widget based on the WebKit engine. - Alarm management: o Remote acknowledgement of alarms - Multilanguage support: o Memory consuming fonts can be moved to external memory (USB/SD) - Java-Script: o Syntax-directed editor for Java-Script (auto-complete code coloring, highlighting - Macros: o New macros to upload/download files from remote client to the control panel. - E-mail: o SSL support for sending emails encrypted - PDF viewer: o For CP651, CP661, CP665, CP676: Launch of PDF viewer. - Touch screen position: o System variables for touch pressure that report continuously x and y position.	
Panel Builder integration into Automation Builder: - Panel Builder new project wizard is used when launching Panel Builder the first time for a new CP600 panel object - Panel Builder project rename in Automation Builder device tree possible - Panel Builder Project Information available in Automation Builder: o Fast access to project information without launching Panel Builder	**1.2.0**

Known problems	ID
Panel Builder fails to open from Automation Builder when any previous Panel Builder version is uninstalled Workaround: uninstall also the latest Panel Builder version via Control Panel and then run the Automation Builder setup again which is then reinstalling the Panel Builder version and fixing this problem	AB-4286
<user logoff and screen saver> Problem X: Keypad problems on Login page if screen saver is enabled and triggered before user logoff. Workaround: Do not enable user automatic logoff while screen saver is also enabled. Instead of that, add a LogOut action into the onStart event of the Screen Saver.	2.0.0.161

Control Panel – CP600-eCo:

Functional changes / New features	Version
PB610-B Panel Builder 600 Basic: Engineering software for configuration and programming of CP600-eCo control panels This software package provides the following main components and features: - Configuration, programming and commissioning of CP600-eCo control panels - Multiple communication protocols - Alarm management and historical alarm lists - User management and security - Data logging and trend presentation - Multilanguage applications - Powerful macro editor - Vector graphic capabilities - Support of multiple layers and object transparency - Remote access	**2.0.0.161**

Panel Builder integration into Automation Builder:	1.2.0
- Same functionality as for CP600 panels	

Known problems	ID
Panel Builder fails to open from Automation Builder when any previous Panel Builder version is uninstalled Workaround: uninstall also the latest Panel Builder version via Control Panel and then run the Automation Builder setup again which is then reinstalling the Panel Builder version and fixing this problem	AB-4286
<user logoff and screen saver> Problem X: Keypad problems on Login page if screen saver is enabled and triggered before user logoff. Workaround: Do not enable user automatic logoff while screen saver is also enabled. Instead of that, add a LogOut action into the onStart event of the Screen Saver.	2.0.0.161

Panel Builder 600 Runtime:

Functional changes / New features	Version
PB610-R Panel Builder 600 Runtime HMI Runtime software for Win32 platforms - Run your PB610 applications on Windows 32bit-based computers with the benefits of a powerful computing platform. - Fully compatible with PB610. - Supported protocols depending on the PC´s interfaces	2.0.0.161
Panel Builder 600 integration into Automation Builder: - PB610-R can be found in additional tools section of Automation Builder Installation Manager. Note: The Automation Builder License Manager must be used to activate a license for PB610-R	1.2.0

Known problems	Version
- USB adapter (e.g. USB ←→ RS-485 adapter) shall be connected to the target PC for serial protocols: If the USB adapter is unplugged and plugged to the target PC during operation, PB610-R will not automatically resume from the interrupted communication. Workaround: restart PB610-R	2.0.0.161

Robot Controller – IRC5:

Software requirements

Operating System	
Microsoft Windows 7 SP1	32-bit edition
Microsoft Windows 7 SP1 (recommended)	64-bit edition
Microsoft Windows 8.1 (recommended)	64-bit edition

Note: *RobotStudio 6.0 does not support Windows XP and Vista. The reason is that RobotStudio uses .NET Framework 4.5 which is not supported by XP or Vista.*
RobotStudio is not tested on Windows 8.1 32-bit edition, why it is not added to the list of supported operating systems. However, at the time of writing, there are no known obstacles that prevent RobotStudio to run on Windows 8.1 32-bit.

The AutomationBuilder Addin in RobotStudio is now adopted to handle the RobotWare 6.x format.

Functional changes / New features	Version
Support for RobotWare 6.0x General: Since the data and format in the I/O configuration has changed in RW 6.x, the addin is extended to handle both new and old robotware versions (5.x and 6.x).	*6.02.6690*

Bug corrections	Version
IRC5 Integration Package: - Minor stability improvements	1.2.0

Programmable Drive:

Note 1: In order to program ACS880 drive there shall be Application programming license (+N8010)
loaded to drive memory unit. Please contact ABB representative.
Note 2: In order to get ABB Standard and System library visible disable *Enable simplified library handling* and *Hide system libraries*
options in Library management Tools/Options/Feature.
Note 3: Drive composer pro version 1.9 or newer is recommend. See appendix 1 how to set Drive composer pro working parallel
with Automation Builder.

VERSION INFO	
ABB Driveware IEC programming package	3.5.515.1119
Automation Builder	1.2
Compiler version**s**	3.4.4.30, 3.5.7.0
ABB Standard library in project (AS1LB)	1.0.1.2
ABB System library in project (AY1LB)	1.9.0.8
D2D communication library in project (AY2LB)	1.9.0.2
Target FW	AINFX 2.30 (recommended*)
Target device ACS880_AINF_BCU12_M_V3_5	3.5.5.0 (BCU-12/02/22)
Target device ACS880_AINF_ZCU12_14_M_V3_5	3.5.5.0 (ZCU-12 /14)
Target device ACS880_AISF_BCU12_M_V3_5	3.5.5.0 (BCU-12)
Target device ACS880_AISF_ZCU14_M_V3_5	3.5.5.0 (ZCU-14)

*) If used with older firmware please check that parameters in Drive Interface are available in target and version 3.4.4.30 compiler
must used.

Functional changes / New features	Version
There is support for the newer compiler version. This compiler corrects the bug TFS-16752 and TFS-48371. Application programs compiled with this new version of the compiler can be used only on the drives which are having firmware version AINFx 2.3. or later.	1.2.0
The reporting of errors related to the application parameters and events is improved. The AB message window shall display details of errors. These errors are caused because of the inconsistent data created in application parameters and events manager. AB user interface is not able to block all cases to enter inconsistent data. See bug TFS-48409.	1.2.0
IecVarAccess library added. Compiler 3.5.7.0 uses it in case of Symbol Configuration.	1.2.0

Bug corrections	ID
Drive CODESYS compiler for ZCU-12 and ZCU-11 is not compiling the VAR TEMP type variables correctly. This causes drive to crash.	TFS-16752
APEM Parameter Family causing "XmlDeserialization" error while downloading. There is now better error message.	TFS-48409
Internal Error (C28x) invalid type size in case notation "result:= var1.2 AND var2.1;" is used. New version 3.5.7.0 of the compiler must be used.	TFS-48371
If you log out, close and reopen a project you have to rescan a node again even if it seems to be scanned and it was already scanned during previous session.	AB-4432
Different application parameter types (REAL/UDINT/UINT/...) with same family selected will not create boot application.	AB-4429
When parameters are reset to default in BCON, bit pointers to application memory can point to the wrong memory location. Fixed in ACS880 firmware AINFx 2.12:	TFS-32805
Decimal parts for Default, Minimum and Maximum -fields of REAL type application parameters are rounded (1.5 is rounded to 2, 0.3 to 0).	TFS-31622
Login to drive fails because the start-inhibit is not granted if the drive external start trigger type is **level** (par 20.2 and 20.7). There is now an instruction displayed: Change drive in local control mode.	TFS-31758
FW pointer parameter is disconnected from the application in case of restore to default and macro change commands with firmware versions 2.01.0.0.	TFS-21655
In case different data type Parameters with same Family Selected in APEM fails to Create Boot Application. Build error created.	AB-4429
Custom name of mapped parameter does not disappear after it becomes unassigned.	AB-3222
Wrong parameter value written to parameter in case of -0.0. When using functions MUL or DIV in IEC application the result may be -0.0. (0.0 x -1 = -0.0 or 0.0 /-1 = -0.0). In this case the written parameter value is negative maximum value instead of 0.	TFS-37415
PID_REAL function block version1.1 updated to ABB Standard library 1.0.1.2. If the high or low limit was reached, the PID calculation will be continued with allowed reference even if TC has value 0. In the previous version PID output was standing in high/low limit in case of TC value 0.	
Loading package remove option (3) of the application fails with Drive loader 2.1 in case the application is first loaded with Automation builder Create boot application -command.	
16-bit interface support is impossible to enable if the parameter belongs family.	TFS-18878

Known problems	ID
IEC program download to RAM fails in case fieldbus or other drive is writing to application parameters. REMEDY: Disconnect PLC communication or use option (Pro-level) to load application directly to permanent memory (ZMU).	TFS-40187
User Set's may have incompatible parameter values if the drive is not having same original application. Saving User Set and loading it back loads all drive interface mappings back even if there is no application after reset origin. REMEDY: Use application loading package to remove incompatible User sets (option 4).	AB-6682
Pointer type of FW parameters which are linked to application memory are not cleaned from the User sets in case of some other application has been downloaded to drive and User set is loaded back. REMEDY: Use application loading package to remove incompatible User sets (option 4).	TFS-16751
Import parameter XML file in ApplicationParametersandEvent editor is not working properly. REMEDY: Use only Export XML.	AB-6645
Visualization of Tools object is not having content.	AB-4385
Total hiding firmware parameters option In Drive Interface has no effect.	AB-3933
Formatted parameters are not working properly.	TFS-17859
Create Boot application to multiple device fails before a login at least one device is done. This command is available only in Pro/In-house mode. Download interrupts to load Application.dat file. REMEDY: take a login to one device and logout after that multidownload works.	TFS-33155
In case selecting Function Type to "Signal" (readonly) and existing variable is Global (GVL) then parameter creation fails. Parameters are not fully available or drive trips to fault 64A3 and no parameters are created at all.	TFS-49494
Create Boot application to multiple device fails before a login at least one device is done. This command is available only in Pro/In-house mode. Download interrupts to load Application.dat file. REMEDY: take a login to one device and logout after that multidownload works.	TFS-33155
IEC Variable Scope "Var_CONFIG" is not supported.	TFS-48758

Drive Manager:

Functional changes / New features	Version

- Improved process data mapping with new "process data editor"
   o Process data selection made easy. Now data can be choose from a window where it shows all drive parameters.
   o Automatically create symbol names and descriptions after process data selection.
   o Change PPO type by keeping the symbol names and descriptions.
   o Generate default symbol names and descriptions
- ACS380 drive support for both PROFIBUS and PROFINET.
- New structure of drive object
	1.2.0

- Drive Management node is removed and now Process data editor, Drive Management, Monitoring tabs are available on drive device object.
  - Drive firmware selection can be made in Drive Management tab.
- New Firmware support
  - ACS880 – AINFX 2.12.0.0, AINFX 2.21.0.0
  - ACS580 – ASCC2 1.50.0.0
  - ACS850 – UIFI 2900
  - ACSM1 Speed – UMFI 1881
  - ACSM1 Motion – UMFI 1881
  - ACS550 – 316A

Bug corrections	*Version*
- Process data selection window is behaving erratically for ACS850, ACQ810, ACSM1 drives. Unable to choose parameters from 40 to 99 groups. - All drive devices are not organized under Drives Category. - Drive status (Running/Stopped) & Mode of control in Drive Manager was not updating after changing Drive firmware when online. - Selected drive firmware is not saved in project file when reopened the drive manager always loads default firmware. - Process data symbol name is updated even when cancel button is clicked. - Selected firmware of specific drive is not shown in Drive overview window. - New Libraries ACSDrivesComPN_AC500_V24.lib for Profinet, ACSDrivesComPB_AC500_V24.lib for Profibus are not added to Codesys Library manager when Drive manager object is added. - Selected parameters are not visible in monitoring window for ACS380 drive. - Existing Process data variable name was deleted when check box "Overwrite PPO symbol names & description after changing process data" is unchecked in process data editor. - Drive Manager for ACS880 FW2.12 fails to fetch all parameters and looses communication frequently. - Process data variable names & descriptions are not saved in the project file after save -> close project -> open project file. - Automation Builder is crashed when user edit same bit pointer/ value pointer/ binary parameter twice in Drive Manager. - Text in drive manager is overlapping when non recommended resolution is selected.	1.2.0

Known problems	*Version*
- Drive Manager doesn't go online with drive connected under CM592-DP module. Workaround: No workaround Use CM572-DP instead. - While going online with PLC focus is always changed to first tab of active editor and during logout always last tab of active editor is getting the focus. Workaround: No workaround - Drive Manager does not support FENA-21 Workaround: No workaround - No synch between Process data tab and Drive Manager's FBA data in & data out parameter group with 32 bit parameters. Workaround: While configuring offline data in FBA data in & data out in drive manager if 32 bit parameter is selected then leave next parameter as empty. - When we connect multiple drives from Drive overview, it connects only one drive under some specific scenarios. Workaround: Connect drives one by one then it works.	1.2.0

Servo Drives:

Changes for Servo Drives package from 1.1.2 to 1.2.0:

Functional changes / New features	*Version*
Mint WorkBench: - Add support for EthernetPOWERLINK on MotiFlex e180. Can now be selected as a network CN in the system configuration wizard. - New Autotune test to measure or estimate the motor magnetizing current for induction motors. - Autotune options now have separate options per test. - General improvements to the Drive Setup and Operating Mode wizards. - Add confirmation on delete from Mint Library. - Add MotorPowerFactor API. - All files are now digitally signed as 'ABB Technology Ltd'.	**Build 5818**
Integration into Automation Builder: - File export dialog now shows modern folder view. (AB-7399) - Support added for SVN integration. (AB-4050, AB-4046, AB-4042) - Add support for MotiFlex e180 firmware Build 5815.3.0 and Build 5817.8.0	**1.2.0**

Bug corrections	Version
Mint WorkBench: - Mint WorkBench now includes resources for all offline MicroFlex e150 and MotiFlex e180 controllers. (AB-7244) - Mint HTTP Server tray control application now correctly checks for administration rights. (NCR06434) - Fix crash in Mint Machine Center when scanning MotiFlex e180. (NCR06387) - Add missing resolver resolution in the Drive Setup wizard for MotiFlex e100. (NCR06381) - Serial port baud rate is now correctly changed during scanning. (NCR06357) - Byte order for default gateway value now correctly set. (NCR06353)	**Build 5818**
Integration into Automation Builder: - Mint editor tab no longer blank if first opened whilst logged in. (AB-8170) - Only offline devices that can be connected to are shown in the change connection dialog. (AB-7897) - The connection status is correctly updated when opening and closing Mint WorkBench. (AB-7881, AB-7487, AB-4266) - A crash no longer occurs when launching an offline Mint WorkBench. (AB-7877) - Can now correctly delete Servo Drive objects from the device tree. (AB-7501) - Only one instance of Mint WorkBench can be started per Servo Drive object. (AB-7486) - Undo no longer causes the device tree to display incorrectly. (AB-7475) - Mint WorkBench installs correctly. (AB-7417) - User is correctly prompted on import when overwriting files of the same origin. (AB-7401) - Cannot now remove Servo Drive object whilst connected Mint WorkBench is open. (AB-6632) - File import does not cause a crash. (AB-4241)	**1.2.0**

Known problems	Version
Mint WorkBench: - Installation of Mint WorkBench is not silent. (AB-4087) Workaround: The security dialogs presented during device driver installation must be accepted manually.	**Build 5818**

Integration into Automation Builder:
- Upgrading a project from AB 1.1 to AB 1.2 may not work correctly. (AB-6893)
  Workaround: Export the files from each Servo Drives object and then import into freshly added objects in the AB 1.2 project.
- The Change Connection dialog can be blank.(AB-6541)
  Workaround: Using the Mint HTTP Server tray control, select Properties and open the Web link. When the servers' web page has loaded, check if any online or offline controllers are present. If the web page does not load:
   o Check for another service using the port (default is 8080)
   o Check that ASP.NET 4.5 is enabled. Check in 'Turn Windows features on or off'.
	1.2.0

Drive composer pro:

Note 1: *New version 1.10 of startup and maintenance PC tool Drive composer pro is available.*

Note 2: *Drive composer pro is compatible with for common architecture devices such as ACS580 and ACS880 drives, DCT880 power controller, and PRO-33.0-TL solar inverter.*

Functional changes / New features	Version

Drive composer pro:
- Opening of a support package as file drive including parameters, event logger and system info
- Enhancements in Adaptive Programming (ACS880 only)
   o Additional blocks
   o Parameter read / write
- Support for HVAC drives (ACH580)
- Drive type based control of available modules and features
Automation Builder integration:
- Embedding of FSO configuration into Automation Builder project
	1.10.0

Bug corrections	Version
- Fixed database for FSO-12 fault AUX codes	**1.10.0**

Appendix 1: How to use Drive Composer Pro and Automation Builder in parallel

Update Settings of Drive composer pro to get it working parallel with Automation Builder (*Share connection with Automation Builder*).
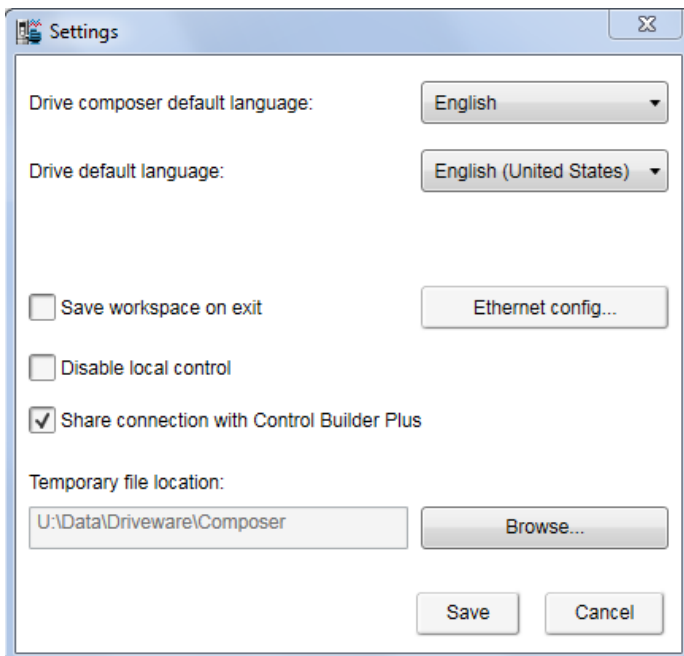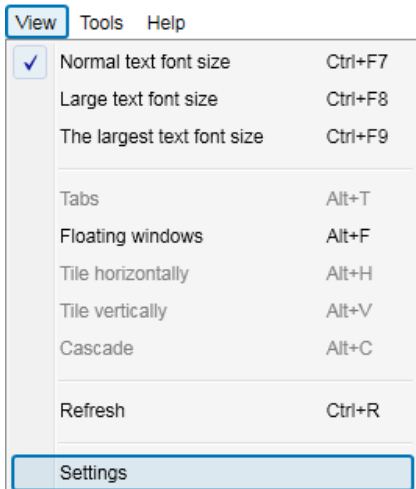
Appendix 2: Release notes HA Library Package 2.4.3
AC500 HA Library Package

The software Libraries in HA Library Package V2.4.3 have been tested with the following versions:

- Automation Builder V1.1, Firmware V2.4.2 (CPU and CM574), CI590-CS31-HA: Firmware T3.0.15

- Automation Builder V1.2, Firmware V2.5

- Automation Builder V1.2.4, Firmware V2.5.3

In no event will ABB or its representatives be liable for loss of data, profits, revenue or consequential, incidental or other damage that may result from the use of other versions of product / software / firmware versions.

The error-free operation of the HA Libraries V2.4.3 with other products / software / firmware versions can not be guaranteed.

This README file contains important information about the library and it´s installation.

Changes in different versions

Previous library versions:

V1.0.0 HA_CS31_AC500_V13.lib
V2.0.0 HA_CS31_AC500_V20.lib
V2.3.0 HA_CS31_AC500_V23.lib (2013-12-11)   HA_CS31_CALLBACK_STOP updated from program to function
V2.4.0 HA_CS31_AC500_V23.lib (2014-04-29)   Support of more than one CS31 bus by using CM574, Bug fixes.
V2.4.1 HA_CS31_AC500_V23.lib (2014-10-24)   Adaptation for compatibility with new FW 2.4.0 (LIB-391, LIB-394)
V2.4.2 HA_CS31_AC500_V23.lib (2015-03-27)   bugs fixes (LIB-347, LIB-419, LIB-347, LIB-418)
V2.4.3 HA_CS31_AC500_V23.lib (2015-03-27)   no changes in library, only online help CAA-Merger-9.chm updated (2016-05-02)

Known limitations or bugs

- A list of limitations can be found in the online help: High Availability - System Technology - System structure - HA-CS31 Limitations
- CI590 Sync ERR LED is not blinking after switchover (manual). This is fixed with CI590 FW T3.0.15
- CI590 Analogue + Digital output compare is not working. This is fixed with CI590 FW T3.0.15

Installation and Update

The AC500 HA Library Package, Version 2.4.3 is part of the Automation Builder

Whats new in Version V2.4.2 / V2.4.3

- Support of more than one CS31 bus by using CM574 with new function blocks.
- HA_CS31_CALLBACK_STOP updated from program to function.
- New PID function blocks to use dedicatedly with Digivis Faceplates.
- Visulization for Control, Diagnosis and Synchronization function blocks.
- New HA system overview visualization.
- Increased total size of the sync entry array from 256 to 1024.
- Timer & RAMP Utility function block synchronisation gaps are fixed.
- fG_HA_PRIMARY, fG_HA_PM1_PRIMARY Variable status update issues are fixed.
- Adaptation for compatibility with new FW 2.4.0
- Several bugs fixed
- Online help updated with V2.4.3

Appendix 3: Release notes PS553-DRIVES 1.2.2

This is the Version 1.2.2 of the PS553-DRIVES

AC500 libraries for control and communication to ABB ACS and DCS Drives using ABB Drives Profile.

The software Libraries PS553-DRIVES V1.2.2 have been tested with the following versions:

ABB Automation Builder V1.1 (FW2.4)

ABB Automation Builder V1.2 (FW2.5)

ABB Automation Builder V1.2.3 (FW2.5.3)

In no event will ABB or its representatives be liable for loss of data, profits, revenue or consequential,

Incidental or other damage that may result from the use of other versions of product / software / firmware versions.

The error-free operation of the PS553-DRIVES V1.2.2 with other

Products / software / firmware versions could not be guaranteed.

This Release Note contains important information about the

library and it´s installation.

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Changes in different versions

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V1.2.2: (24.06.2016)

Improved generation time of DONE output for Profibus and Profinet DPV1 function blocks (V1.0.1)

- ACSDrivesComPB_AC500_V24

- ACSDrivesComPN_AC500_V24

V1.2.1: (17.03.2016)

Update of online help

V1.2.0: (27.10.2015)

Added following new libraries (V1.0.0)

- DCSDrives_AC500_V24.lib

- ACSDrivesComPB_AC500_V24

- ACSDrivesComPN_AC500_V24

- ACSDrivesComModTCP_Ext_AC500_V24

Several improvements in the existing libraries

- ACSDrivesBase_AC500_V20.lib (V1.1.2)

- ACSDrivesComModRTU_AC500_V20.lib (V1.1.2)

- ACSDrivesComModTCP_AC500_V22.lib (V1.0.1)

Update of online help and examples

V1.1.7: (17.07.2013)

Corrections in PB / PNIO Example documentations - now version E

Added Presentation "PS553 Library Introduction and Exercises V34.pdf" and

ACS Drives - AC500 overview fieldbus connectivity.xls in folder   "Examples\PS553-DRIVES"

V1.1.6: (17.05.2013)

Update of folder structure, documents and projects in Examples

V1.1.5: (03.05.2013)

Update of AC500 online help (CAA-Merger11.chm) - Version delivered with Control Builder Plus V2.3.0

V1.1.4: (12.04.2013):

Update of AC500 online help (CAA-Merger11.chm) including German translation.

V1.1.3: (03.04.2013):

Update of example documentations and AC500 online help (CAA-Merger11.chm).

V1.1.1: (16.01.2013):

ACSDrivesBase_AC500_V20.lib:

Bug fixes in existing visualizations for webserver use

ACSDrivesComModRTU_AC500_V20.lib:

Bug fixes in existing visualizations for webserver use

installshield:

Bug fix to install (setup) documentation without libraries

V1.1.0: (14.12.2012):

ACSDrivesComModTCP_AC500_V22.lib:

new library for Modbus TCP communication to all ACSxxx drives

ACSDrivesBase_AC500_V20.lib:

New function blocks for fieldbus independent control and scaling

Bug fixes in existing function blocks and visualizations

ACSDrivesComModRTU_AC500_V20.lib:

New function blocks for Modbus RTU communication to all ACSxxx drives

New function blocks for communication to generic slave devices used on same RTU line.

Bug fixes in existing function blocks and visualizations

Documentation:

Update of chm docu in CAA-Merger11.chm

Examples:

New examples for connection with Profibus, ProfiNet

V1.0 (10.12.2010):

Release for AC500-eCo and ACS3XX

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Known bugs

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- Currently user cannot use enumeration from ACS_PB_PN_PRM_TYPE_ENUM. Instead user need to use numerical values from ACS_PB_PN_PRM_TYPE_ENUM only. (LIB-940)

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Installation and Update

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PS553-Drives library, documentation and examples are installed as part of Automation Builder installation.

Examples can be found in C:\Users\Public\Documents\AutomationBuilder\Examples\PS553-DRIVES

Appendix 4: Release notes PS563 Water Library Package 1.2.1 (license required)

The software Libraries in PS563 Water Library Package V1.2.1 have been tested with the following versions:

- Automation Builder V1.0 (CBP 2.3.0), CPU-FW V2.3

- Automation Builder V1.1, Firmware V2.4.2

- Automation Builder V1.2, Firmware V2.5

- Automation Builder V1.2.3, Firmware V2.5.3

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The error-free operation of the PS563 Water Library Package V1.2.1 with other products / software / firmware versions can not be guaranteed.

This README file contains important information about the library and it´s installation.

Changes in different versions

PS563 Water Library Package	LogData_AC500_V23.lib	PUMP_AC500_V23.lib	HMI Example	PSCT Pump Station Configuration Tool (Technology Preview)
V1.0.0	V1.0.0 (2013-10-24)	V1.0.0 (2013-10-22)	HMI_ACQ_V18_Example.zip	n/a
V1.1.0	V1.1.0 (2015-04-17)	V1.0.1 (2014-10-15)	HMI_ACQ_V191_Example.zip	n/a
V1.2.0	V1.1.0 (2015-04-17)	V1.1.0 (2015-09-15)	HMI_ACQ_V191_Example.zip	V1.2.0
V1.2.1	V1.1.1 (2016-03-17)	V1.1.0 (2015-09-15)	HMI_ACQ_V191_Example.zip	V1.2.2

Known limitations or bugs

LogData_AC500_V23.lib

- Not running on Eco

- CPU firmware must be V2.3.3. or higher

- Use SD card from ABB

- Maximum number of files (input of FB LOG_HANDLING) is limited to 500, if SD card is formatted with FAT16

PUMP_AC500_V23.lib

- (no known limitations)

HMI example for ACQ Drive (project for pumping functions in ACQ810)

- Only working with with Panel Builder V1.91.0

Installation and Update

The PS563 Water Library Package is part of the Automation Builder. It can be selected as a Solution during installation.

This Library needs a valid license for compilation.
- License is obtained via an authorization code as a product, which has to be bought via the normal AC500 sales channels.
- If you had an authorization code for this major library version already, please contact support for an update license/code.

Whats new in Version V1.1.0

- PUMP_AC500_V23.lib compatible with new CPU type PM595

- LogData_AC500_V23.lib: Bugs fixed (details in LOG_VERSION_INFORMATION)

- HMI example compatible with Panel Builder V1.91.0

Whats new in Version V1.2.0

- PUMP_AC500_V23.lib with new simulation blocks

- Pump Station Configuration Tool as Technology Preview

Whats new in Version V1.2.1

- Pump Station Configuration Tool as Technology Preview: Boost Control Mode added

- LogData_AC500_V23.lib: Bugfix direct communication Mode 2

Disclaimer: Technology Previews are designed to give you a sneak peek at upcoming technologies. They are non-final versions of our product and should NOT be taken as a measure of the fit, finish, capability, and overall quality of the final release (including user documentation). Technology Preview features can be removed without further notice. If you use the preview, you could experience things that go wrong, data that gets lost, and things to change. While we don't stop you using these versions in projects, we don't recommend it if you cannot afford data loss and the usual quirks of running preview software. It will not be possible to call ABB Support hotlines for help with Technology Preview features. If you are interested in getting support for a Technology Preview feature this can be done in the context of a piloting. In this case please contact us to set up a piloting agreement.

Appendix 5: Release notes PS564 Temperature Control Library Package 1.1.1 (license required)

The software Libraries in PS564 Temperature Control Library V1.1.1 have been tested with the following versions

- Automation Builder V1.1 (CPU-FW V2.4, Panel Builder V1.9)

- Automation Builder V1.2 (CPU-FW V2.5, Panel Builder V2.0)

- Automation Builder V1.2.3 (CPU-FW V2.5.3 Panel Builder V2.0.1.195)

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The error-free operation of the PS564 Temperature Control Library Package with other products / software / firmware versions can not be guaranteed.

This README file contains important information about the library and it´s installation.

Changes in different versions

see below

Known limitations or bugs

- Cooling not possible if Heat is disabled (LIB- 918)

- If TECT_WrongLimits error is generated, then Reset warm is required to reset the Error. (LIB- 939)

- Autotune will still be started when Actual Temperature is greater than Tune Setpoint (LIB-912)

Installation and Update

The PS564 Temperature Control Library Package is part of the Automation Builder. During installation it can be slected as a Solution package.

The Libraries need a valid license for compilation.
- License is obtained via an authorization code as a product, which has to be bought via the normal AC500 sales channels.
- If you had an authorization code for this major library version already, please contact support for an update license/code.

Whats new in Version V1.1.0 / V1.1.1

- Current monitoring with common or individual sensor, 1 phase or 3 phase

- Data logging modified in order to reduce number of data log lost

- Online help updated with V1.1.1 (AB-8489)

Appendix 6: Release notes PS562 Solar Library Package 1.0.2 (license required)

The software Libraries in PS562 Solar Library Package have been tested with the following versions:

- Automation Builder V1.0 (CBP 2.3.0), CPU-FW V2.3

- Automation Builder V1.1, Firmware V2.4.2

- Automation Builder V1.2, Firmware V2.5

- Automation Builder V1.2.3, Firmware V2.5.3

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The error-free operation of the PS562 Solar Library Package with other products / software / firmware versions can not be guaranteed.

This README file contains important information about the library and it´s installation.

Version history

PS562 Solar Library Package	Solar_AC500_V22.lib	SolarNREL_AC500_V22.lib
V1.0.0	V1.0.0 (2012-12-19)	V1.0.0 (2012-12-19)
V1.0.2	V1.0.2 (2016-02-16)	V1.0.2 (2016-02-16)

Known limitations or bugs

SolarNREL_AC500_V22.lib

- Not running on Eco

Solar_AC500_V22.lib

- (no known limitations)

Solar example does not work with PM595. If user wants to use PM595, then user needs to do some changes in program e.g. at some places REAL variable is used to store multiplication of two REAL variables. User needs to replace these REAL variables with LREAL variables (Lib 1178).

Installation and Update

The PS562 Solar Library Package is part of the Automation Builder. It can be selected as a Solution during installation.

This Library needs a valid license for compilation.
- License is obtained via an authorization code as a product, which has to be bought via the normal AC500 sales channels.
- If you had an authorization code for this major library version already, please contact support for an update license/code.

Whats new in Version V1.0.2

- Solar_AC500_V22.lib compatible with new CPU type PM595

- SolarNREL_AC500_V22.lib compatible with new CPU type PM595

Appendix 7: Release notes PS552-MC-E Motion Control Library 3.2.0 (license required for coordinated motion)
PS552-MC-E Motion Control Library (license required for coordinated motion)

Welcome to PS552-MC-E Motion Library Package, Version 3.2.0

The software Libraries in PS552-MC-E Motion Library Package, Version 3.2.0 have been tested with the following versions:

- Automation Builder V1.2, Firmware V2.5

- CM579-ETH EtherCAT coupler FW 4.3.0

- Bosch Indra Drive Cs FW MPB-16V20-D5-1-NNN-NN

- ACSM1 FW 1510 + FECA-01 FW 109

- E150 FW 58.09

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The error-free operation of the PS552-MC-E Motion Library Package with other products / software / firmware versions can not be guaranteed.

This README file contains important information about the library and it´s installation.

Version history of the Motion library package

- Version 1.0   PS551-MC   (2010)   First version

- Version 2.0   PS552-MC   (2011)   PLC based Motion

- Version 3.0   PS552-MC-E   (2014)   Coordinated Motion

- Version 3.1   PS552-MC-E   (2016)   see below

- Version 3.2   PS552-MC-E   (2016)   see below

Known limitations or bugs

- CMC_MOTION_KERNEL_REAL function block ErrorID values can be overwritten by subsequent motion errors - e.g. passing the axis wrap boundary when using a linear axis will initially result in ErrorID 13 [Position Overrun] that may then be quickly overwritten by ErrorID 1 [Following error]. Consider using a circular buffer (array) to log all instances of Kernel errors (LIB-682)

- Initial delta times values for MC_PositionProfile, MC_VelocityProfile and MC_AccelerationProfile must be zero (LIB-550)

- Motion profiles for linear moves using values for Jerk greater than zero can produce small inaccuracies in the resulting acceleration and deceleration times (up to 10%) when compared to the theoretical calculated values (LIB-967)

- ACS355_Drive-based_MotionControl_ProfibusDP.project and ACSM1_Drive-based_MotionControl_ProfibusDP.project: Compilation error due to new Profibus library. Work around is user should manually delete PROFIBUS_AC500_V10.lib.

Installation and Update

The PS552-MC-E Motion Library Package is part of the Automation Builder. It can be selected as a Solution during installation.

The Library CoordinatedMotion_AC500_V23.lib needs a valid license for compilation.
- License is obtained via an authorization code as a product, which has to be bought via the normal AC500 sales channels.
- If you had an authorization code for this major library version already, please contact support for an update license/code.

Whats new in Version V3.1.0

- New function blocks

    o MCA_MoveRelativeOpti

    o CMC_Sinterpolation

    o Buffered and blending movement for coordinated motion

- Direct parameter access through AXIS_REF structure

    o Position control loop parameters directly available

- Additional actual values from AXIS_REF structure

    o Improvement for software limit switches

    o U_PER_REV_NOMINATOR/U_PER_REF_DENOMINATOR as DINT (from WORD)

- Bug fixing

    o Improved accuracy of acceleration/deceleration times when using Jerk

    o Allow access to new axis run-time parameters to adjust gains, following error limits and other axis related settings

    o Additional error codes added to Kernel ErrorID

    o Inclusion of new software limit functions including ramp to limit

    o Fixed issue with modulo master axis when using MC_PhasingRelative

    o Fixed issue with MC_CamIn when using data that is relative to start point

    o Improved operation of MC_ReadStatus function block

    o Scaling parameters for axis now defined as DINT instead of WORD

    o Fixed issue with MC_MoveContinuousAbsolute caused by constantly changing Velocity parameter

    o Increased range of various axis parameters (e.g. MaxVelocityApplication changed from WORD to LREAL)

    o Added new generic ECAT_CiA402_CONTROL_APP function block to replace previous block that referenced e150 servo drive

    o In combination with PM595, Ehercat and motion-cycle < 1ms possible

    o 16 bit limits for velocity, acceleration and deceleration removed

Whats new in Version V3.2.0

- New function blocks

- ○ ECAT_AC500_APPL_V21
  New block ECAT_402_ParameterHoming_APP to send homing related parameters per SDO
  support for drive-based homing and input parameter for drive-operation mode with
  ECAT_CiA402_CONTROL_APP

- ○ MC_BLOCKS_AC500_V11
  New block MCA_DriveBasedHome to execute a drive based homing method for 402-profile drives on Ethercat
  New block MCA_GearInDirect, a modified MC_GearInPos which does not need the master to move for starting
  synchronization
  New block MCA_CamInDirect, a modified MC_CamIn which does not need the master to move for starting
  synchronization
  New block MCA_SetOperatingMode, allows to set the axis in a state to work just velocity based, switch of
  position control loop, ignore position jumps and following error

- ○ MC_CoBlocks_AC500_V23
  New block MCA_SyncInfeedToPath
  New block MCA_SyncCamToPath

- New behavior

  - ○ Axis will go to an ERRORSTOP when 32-Bit position overrun occurs with an axis in positioning mode, in velocity
    mode, position overrun is allowed (related to MCA_SetOperatingMode)

- Bug fixing

  - ○ CMC_Sinterpolation, had wrong deceleration when velocity changed to smaller values during movement

  - ○ SPLINE interpolation for profiled movement had not used the last data point, problem since 3.1.0

  - ○ V_CHECK_TIME was not used anymore, problem since 3.1.0

  - ○ modified the velocity calculation for CAM with MasterStartDistance,had before wrong result with non-linear
    velocity transition

  - ○ changed the functionality for MCA_SetPositionCOntinuous with SUPER=FALSE, did create a small movement

  - ○ improvement for jerk calculation

  - ○ MCA_JogAxis had wrong behavior when moving backward with MinJogDistance > 0

  - ○ MCA_MoveBuffered, output ActiveEvent ok, problem since 3.1.0

Appendix 8: Release notes PS565 BACnet-ASC Library Package 1.0.1 (license required)

The software Libraries in PS565 BACnet-ASC Library Package have been tested with the following versions:

- Automation Builder V1.2, Firmware V2.5

- Automation Builder V1.2.3, Firmware V2.5.3

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The error-free operation of the PS565 BACnet-ASC Library Package with other products / software / firmware versions can not be guaranteed.

This README file contains important information about the library and it´s installation.

Version history

V0.9.0   First version, technology preview   (2016-03)
V1.0.1   First product version (2016-07)

Known limitations or bugs

eCo (PM554 etc.): Very little applications possible only

- BASC_SERVER + BASC_DEVICE + 1 ANALOG_IN is working

- May be one to two more FBs will work too

Runtime error #81 after program change and download -> Solution: Perform "Project - Clean all" and download again

Installation and Update

The PS565 BACnet-ASC Library Package is part of the Automation Builder. It can be selected as an Option below AC500 during installation.

This Library needs a valid license for compilation. Please contact sales for a preview license

Whats new in Version V1.0.1

Several fixes due to BACnet certification