B&R Revision Information

Technology Package mapp Motion 5.5.3

23-Oct-2019
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**System Module - McAcpSys / McAcpSim 5.5.3**

ID#665085 : solved problem, solved since 5.5.3

Holding brake mistakenly not closed after errors 6052, 6053, 6054, 6019, 9300 and 7200 (only in 5.4.0, 5.4.1, 5.5.0, 5.5.1, 5.5.2, 5.6.0)

With the following errors, the holding brake was mistakenly not closed after a movement abort:
- 6019: ACOPOS: Overcurrent
- 6052: Power unit: High side: Overcurrent
- 6053: Power unit: Low side: Overcurrent
- 6054: Power unit: Overcurrent
- 9300: Current controller: Overcurrent
- 7200: DC bus: Overvoltage

**Version 5.5.2**

**Library - McPathGen 5.5.2**

ID#660840 : solved problem, solved since 5.5.2

Unexpected movements of axes that are part of an axis group

If axes are outside their software end positions and movement commands are started at the axis group level, unexpected movements could occur. The problem occurs if the axis group is brought to state GroupMoving state but no movement was specified (e.g. NC program with G04 or MC_BR_GroupJogVelocity with JogVelocity =0). The affected axes with axis limits then moved towards the software end positions.

Subsequent affected versions: Version 5.6.0, Version 5.6.1 and Version 5.7.0

**Version 5.5.1**

**Configuration 5.5.1**

ID#400273866 : solved problem, solved since 5.5.1

ComauRacer71420 template: Unstable axis controller

Gain factors of the axis controllers that are too high could lead to vibrations on the joint axes.

ID#622360 : solved problem, solved since 5.5.1

ErrorStop resulting from McAcpAx axis with McProfGen, "Controller/Mode = Position controller with torque feed forward"

If a ProfGen feature was enabled for McAcpAx, controller mode "Position controller with torque feed forward" was selected and the cycle time of TC#1 was unequal to 400 µs, the axis was in ErrorStop. No function blocks could be used for this axis.

**Library - McAcpAx 5.5.1**

ID#400271900 : solved problem, solved since 5.5.1

Axis coupling: Coupling ACOPOS axis to axis with active profile generator resulting in incorrect master position

If parameter "Measurement resolution" was set to a value other than 1 in the configuration of the master axis (PureVAx or axis with active profile generator), this could result in an incorrect master position.

Affected function blocks:
- MC_GearIn
- MC_BR_CamAutomatCommand

ID#623695 : solved problem, solved since 5.5.1

ACOPOS P3: Axis state ErrorStop resulting from "Power supply" selection ETA

If "ETA system (for training only)" was selected for the ACOPOS P3 under "Power supply", an invalid ParID was transferred. As a result, axis state "ErrorStop" was triggered for all axes of the device and none of the axes could subsequently be used.

ID#623115 : solved problem, solved since 5.5.1

Loop filter 1 disabled when changing controller parameters via mapp Cockpit

Changing a controller parameter via mapp Cockpit mistakenly caused loop filter 1 to be disabled.

ID#618480 : solved problem, solved since 5.5.1

Error changing controller parameters via mapp Cockpit

Error messages occurred if "Controller mode" was "Position Cntrl FF" and a controller parameter was changed via mapp Cockpit.
Connection aborted due to invalid initial values for objects 0x6083_Profile_acceleration and 0x6084_Profile_deceleration.

Initial value 0 was used for objects 0x6083_Profile_acceleration and 0x6084_Profile_deceleration when creating an axis. This could lead to an "Out of range" error with CiA402-compliant drives, which led to a loss of communication. The initial values are now calculated from the limit values of the configuration.

Controller restart not possible after movement abort

If the controller was switched off during an active movement, this resulted in an undefined state for a drive that does not support a quick stop.

From this state, the controller of the drive could no longer be enabled. The quick stop has been replaced by resetting the "enable operation" bit.

The homing command was ignored under the following conditions:
- Axis feature "ProfGen" was used.
- The homing command was started after another motion command was executed.

Cycle time violation when using MC_Reset

For a DS402 axis, using MC_Reset after an error occurred could result in a cycle time violation.

Necessary conditions for the error behavior to occur:
- Per standard IEC 61800-7-201, a drive fault is transferred to the controller via object 0x603F_ErrorCode.
- Function block MC_Reset is not enabled immediately after axis state "ErrorStop" has occurred.

Immediate acknowledgment of drive fault

When using a DS402 axis, the drive was acknowledged immediately after a drive fault occurred and thus set to an error-free state.

This is not compliant with standard IEC 61800-7-201. The drive is now only acknowledged by calling MC_Reset.

Incorrect calculation of position setpoint in increments

The position setpoint value of an axis in "Measurement units" is internally converted to a setpoint in increments before it is transferred to the drive.

This conversion was incorrect in the area of the natural data type overflow if the following points applied:
- Axis feature ProfGen was used.
- "Measurement resolution" of the slave axis was not equal to 1.

Error correction when using feed-forward control

The setting to exclude an axis from feed-forward control was ignored when initializing the connected axes. When using an axis that does not support feed-forward control, therefore, an unrecoverable error state occurred.

Error correction for monitoring elements

Property "Byte offset" of monitoring element "Line identification" was not described correctly. This error is corrected.

Pagefault if axis 3 was configured but axis 2 not (only in V5.5.0)

If in the configuration for an ACOPOS module an axis reference was defined for channel 3 but not for channel 2, a pagefault occurred.

Error correction when checking the license of 4-axis CNC (XYZB) mechanical system
System Module - McAcpSys / McAcpSim 5.5.1

ID#626645 : solved problem, solved since 5.5.1
Motor current flow test: Error 6045
With low DC bus voltages (< 100V) and motors with high inductance, it was possible that the following error was incorrectly reported when the controller was switched on:
- 6045: Inverter: Output: No current flow

ID#619815 : solved problem, solved since 5.5.1
8BVxxxxxxA.xxx-x: EnDat 2.1 or sine encoder with SafeMOTION: Error 7032 after ACOPOS startup (only in 5.4.1 - 5.5.0)
If the encoder was used before the state "NotEnEnc = TRUE" (see I/O Mapping of the SafeMOTION module), the following error could be reported:
- 7032: Encoder: Incremental signal amplitude too small (Disturbance, no connection)

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Configuration 5.5.0

ID#619905 : new function since 5.5.0
Taking into account the effective direction of gravitational force
The gravitational force is now defined in a negative direction to the Z axis of the global coordinate system for the Object hierarchy. For feed-forward control based on a dynamic model (Feed-forward), this ensures that the effect of the gravitational force is taken into account accurately for rotating mechanical systems also.

ID#617745 : new function since 5.5.0
New mechanical system: 3-Axes Delta (XZB)
Mechanical system "3-Axes Delta (XZB)" is a parallel kinematic chain consisting of a parallel arrangement of two serial kinematic chains connected via a joint. An additional revolute joint enables an extra degree of freedom. Its mechanical structure permits translational movement in direction X and Z as well as tilting of the tool.

ID#617740 : new function since 5.5.0
New mechanical system: 2-Axes Delta (A)
Mechanical system "2-Axes Delta (A)" is a parallel kinematic chain consisting of a parallel arrangement of 2 serial kinematic chains connected via platforms. Its mechanical structure permits translational movement only.

ID#617095 : new function since 5.5.0
New encoder type for 8EAC0152.001-1 and 8EAC0152.003-1
Encoder type "HIPERFACE" can now also be used for plug-in modules 8EAC0152.001-1 and 8EAC0152.003-1.

ID#613255 : new function since 5.5.0
New simulation mode for ACOPOS: Set value generation
A new simulation mode is available for ACOPOS axes: Set value generation only.
The new simulation mode can be set in the hardware configuration of ACOPOS drives: Simulation mode on ACOPOS = "Set value generation"

ID#612055 : new function since 5.5.0
ACOPOS P3: "ETA" selection for "Power supply"
For the ACOPOS P3, "ETA system (for training only)" can now be selected for "Power supply".

ID#605140 : new function since 5.5.0
New encoder type for 8EAC0150.001-1 and 8EAC0150.003-1
Encoder type "Hiperface DSL" can now also be used for plug-in modules 8EAC0150.001-1 and 8EAC0150.003-1.

Cam list, cam automat features: Selection of cam names
In AS V4.4.1 and later, only cam names from the software configuration are offered for selection in the cam list and cam automat features and no longer all of them from the Logical View.
In AS <V4.4.1, the cam names from the Logical View are offered for selection, but these also contain the package names separated by ".". The text after the last "." is interpreted as the cam name and must correspond to that in the software...
configuration.

Important: mapp Motion TPs < V5.5.0 cannot interpret cam names with "."! After selecting the cam, it is recommended to delete all characters up to and including the last "." in order to be able to switch to a TP < V5.5.0 without any problems.

ID#400255150 : solved problem, solved since 5.5.0
ACOPOS P3: Incorrect connector designation
Connector designation X41 was used instead of X43.
The following hardware modules were affected:
- 8EI013HWS10.xxxx-1
- 8EI017HWS10.xxxx-1
- 8EI013HWS50.xxxx-1
- 8EI017HWS50.xxxx-1

ID 400248015, 400250003, 400255026, 400257943 : solved problem, solved since 5.5.0
ACOPOSmulti/remote/motor, ACOPOS P3: "DC bus voltage" selection for "Power supply"
For the ACOPOSmulti/remote/motor and ACOPOS P3, "DC bus voltage" can now be selected for "Power supply" and the supply voltage can be entered.

Diagnose 5.5.0
ID#400258567 : solved problem, solved since 5.5.0
Error in mapp Cockpit "Messages" display after writing or reading ACOPOS reACTION ParID
After writing or reading an ACOPOS ParID in mapp Cockpit, the "Messages" display outputs which ParID was written or read. For ParIDs of an ACOPOS reACTION Technology function block with instance numbers "+1" to "+7" (e.g. LOGIC_MODE+1), an error was previously entered in the "Messages" display instead of the name of the ParID constant.

Library - MpCnc 5.5.0
ID#400260929 : solved problem, solved since 5.5.0
MpCncXAxis: Error in single block mode when calling subprograms
The function block remained stuck in single block mode when a subprogram was called. In this case, the internal MC_BR_SingleStep FB output Interrupted was not reset. As a solution, MpCnc FBs now always use the FB MC_GroupContinue and do not check any time-dependent signals.

ID#589130 : solved problem, solved since 5.5.0
MpCncXAxis: Error in single block mode with programmed non-motion blocks
The function block remained stuck in single block mode when a non-motion block was programmed. In this case, the internal MC_BR_SingleStep FB output Interrupted was not reset. As a solution, MpCnc FBs now always use the FB MC_GroupContinue and do not check any time-dependent signals.

Library - McAxis 5.5.0
ID#607500 : solved problem, solved since 5.5.0
MC_BR_JogLimitPosition: Specified "FirstPosition" or "LastPosition" not observed
Under the following circumstances, the specified "FirstPosition" or "LastPosition" were exceeded:
- Function block is called for a periodic axis.
- "Measurement resolution" of the axis is not equal to 1.

ID#605980 : solved problem, solved since 5.5.0
MC_BR_MoveCyclicPosition: Specified positions used incorrectly
When using MC_BR_MoveCyclicPosition, it was possible that the position specified on input "CyclicPosition" was not transferred correctly to the drive. This could have different effects on the different implementations.
Now the positions are transferred correctly if the specified positions meet the following conditions:
- Limited axis: The specified absolute position must lie within the axis limits.
- Periodic axis - Option 1: The position is specified as the periodic position. This means that it must always lie between 0 and the set period.
- Periodic axis - Option 2: The position is specified as the absolute position. Switching the position specification between periodic values and absolute values is not permitted. The specified absolute position must lie within the value range of data type DINT, taking the resolution into account, and must also overflow accordingly from the positive DINT maximum to the negative DINT maximum and vice versa.

Library - McAcpAx 5.5.0
ID#613280 : new function since 5.5.0
MC_BR_LoadSimulationSetPar_AcpAx, MC_BR_LoadSimulationGetPar_AcpAx: New simulation mode
"mcACPAX_SIMULATION_SETGEN_ONLY"
The new simulation mode can be selected with function block MC_BR_LoadSimulationSetPar_AcpAx, "Parameters.Mode" = mcACPAX_SIMULATION_SET_GEN_ONLY.

When reading the simulation parameters with MC_BR_LoadSimulationGetPar_AcpAx, the new simulation mode is displayed as "Parameters.Mode" = mcACPAX_SIMULATION_SET_GEN_ONLY.

ID#400264025 : solved problem, solved since 5.5.0
MC_Home with mHOME_RESTORE_POS: Wrong position restored
An incorrect position was restored when using "HomingMode = mHOMING_RESTORE_POS" to home an axis whose encoder count range (Encoder revolutions * Axis units/revolution) was greater than the range of values of data type DINT. The position is now restored correctly in this case.

ID#612295 : solved problem, solved since 5.5.0
McAcpAx axis as slave: Receive channels not correctly configured if more than one position of a McPureVAx or McProfGen axis should be received
If more than one master position of one or more McPureVAx axes or axes with active McProfGen feature were configured to receive for an McAcpAx axis, the receive channels were not configured correctly. All positions were sent to the McAcpx axis via the same receive channel. This always resulted in the position of the master axis that was last executed in the internal processing being received at the slave. In addition, no error was reported if more than 5 master positions on an ACOPoS channel were configured for reception. This problem occurred both when using a coupling function block and when using axis feature "Cam automat" of type "ACOPoS".

The following function blocks were affected by this problem:
- MC_GearIn
- MC_BR_CamAutomatSetPar_AcpAx

ID#611840 : solved problem, solved since 5.5.0
MC_BR_LoadSimulationSetPar_AcpAx: Output "Done" not set if drive not ready
If MC_BR_LoadSimulationSetPar_AcpAx was called while the drive was not ready, output "Done" was not set.

ID#610340 : solved problem, solved since 5.5.0
ACOPoS axis with active profile generator: No error message when calling invalid function blocks
No error was reported and should have been if the following function blocks were called for an ACOPoS axis with active profile generator.
- MC_BR_Phasing
- MC_BR_Offset
- MC_BR_PhasingAbsolute
- MC_BR_PhasingRelative
- MC_BR_PhasingVelocity_AcpAx
- MC_BR_OffsetVelocity_AcpAx
- MC_BR_MoveAbsoluteTrgStop_AcpAx
- MC_BR_MoveAdditiveTrgStop_AcpAx
- MC_BR_MoveVelocityTrgStop_AcpAx

ID#608355 : solved problem, solved since 5.5.0
ACOPOS multi power supply module: "Activate ACOPoS simulation on PLC" not working
If "Activate ACOPoS simulation on PLC" was set to "On" in the configuration for an ACOPOS multi power supply module, it was not enabled on the drive.

Library - McPureVAx 5.5.0
ID#400267233 : solved problem, solved since 5.5.0
Position and velocity value after error stop not correct
After an error stop, a small remaining speed was displayed despite the standstill (for example with MC_ReadActualVelocity.Velocity or MpAxisBasic.Velocity).
If the error stop was caused by reaching the SW limit positions, MC_ReadActualPosition.Position or MpAxisBasic.Position displayed a value that was slightly greater than the set SW end position.

Library - McPathGen 5.5.0
ID#618069 : new function since 5.5.0
New configuration file for interpreter configuration
The default settings of the mapp Motion interpreter can be modified using the new configuration file for the interpreter configuration.

ID#618064 : new function since 5.5.0
Wireframe model for tools
Tools can now be provided with a wireframe model. This is taken into account in workspace monitoring.
Movements in the tool coordinate system

The following McAxGroup blocks support tool coordinate system mcTCS:

- MC_MoveDirectAbsolute_15
- MC_MoveDirectRelative_15
- MC_MoveLinearAbsolute_15
- MC_MoveLinearRelative_15
- MC_BR_GroupJogRelative_15
- MC_BR_GroupJogDirect_15
- MC_BR_GroupJogVelocity_15
- MC_BR_OnlinePathInfluence_15

Error correction when using MC_BR_GroupJogVelocity_15 function block

When using the MC_BR_GroupJogVelocity_15 function block an internal deadlock could occur.

Error correction for the internal synchronization of the axes positions

When an internal synchronization of the axes positions (e.g.: for a POS command or for Probing) is carried out a deadlock of the system could occur.

System crash in case of a too deep Frame Hierarchy

A system crash occurred if there were too many levels in the Frame Hierarchy configuration (depending on the used PLC).

Interrupt status with interpreter single step

The interrupt status now reports "mcINTERRUPT_SINGLESTEP" when the single-step interpreter breakpoints are active.

Error correction when using non-configured features

When using a non-configured feature, the response was sometimes incorrect. Now an error is entered when using non-configured features and the corresponding function is aborted.

Programming Languages 5.5.0

New functions: Geometric manipulations

The following functions are available for geometric manipulations:
- G-code
- SCALE: Absolute scaling of a programmed contour
- MIRROR: Absolute mirroring of a programmed contour
- ASCALE: Cumulative scaling of a programmed contour
- AMIRROR: Cumulative mirroring of a programmed contour

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Errors in kinematic transformations linked correctly

If the kinematic transformation cannot be resolved during a movement, e.g. at a target position outside the reachable workspace, the generated error is linked to the causal function block call in the logbook.

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Possible for ErrorStop to be reset too early and stop ramp not taken into account

If an ErrorStop triggered by error " -1066527762: Too many curve changes per cycle (master period too short)" occurred when using McProfGen, it could be reset too early with MC_Reset and the stop ramp was not transferred completely to the drive.

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When using ACOPOSmulti drives with 8BVSV2SAFE1-1, network initialization was accelerated for the following cases:
- Encoder not connected
- Encoder defective
- Unconfirmed change of encoder

For this new function at least version 1.10.1.5 of 8BVSV2SAFE1-1 must be used.

Field weakening, induction motor: Error 1002 when setting Bit8 of parameter FCTRL_MODE (only in 3.14.0 - 5.4.x)

If in the case of induction motors when writing the mode of the field weakening controller Bit8 (field weakening at zero speed) was set, the following error was mistakenly reported:
- 1002: Parameter outside the valid range

 CMD_MOVE_STOP_A2, CMD_MOVE_HALT_A2: Warning message if maximum deceleration exceeded

With commands CMD_MOVE_STOP_A2 "Stop movement" and CMD_MOVE_HALT_A2 "Basis movement halt", the specified deceleration parameter is limited to AXLIM_A2_POS or AXLIM_A2_NEG depending on the direction. If exceeded, a warning message is no longer issued.

If the deceleration parameter is NULL, braking is now performed with the direction-dependent maximum value (also without warning).

The following warning was previously reported:
36001: Parameter limited to valid range.

This primarily affects PLCopen function blocks MC_Halt and MC_Stop.

8BVSV2SAFE1-1: EnDat 2.2 with SafeMOTION: Error 7014 or 7015 after ACOPOS startup

If the encoder was used before the state "NotErrENC = TRUE" (see I/O Mapping of the SafeMOTION module), one of the following errors could have been reported:
- 7014: Encoder: CRC error during parameter transfer
- 7015: Encoder: Timeout error during parameter transfer

In addition, at least version 1.10.1.5 of 8BVSV2SAFE1-1 must be used to solve this problem.

Version 5.4.2
System Module - McAcpSys / McAcpSim 5.4.2

Holding brake mistakenly not closed after errors 6052, 6053, 6054, 6019, 9300 and 7200 (only in 5.4.0, 5.4.1, 5.5.0, 5.5.1, 5.5.2, 5.6.0)

With the following errors, the holding brake was mistakenly not closed after a movement abort:
- 6019: ACOPOS: Overcurrent
- 6052: Power unit: High side: Overcurrent
- 6053: Power unit: Low side: Overcurrent
- 6054: Power unit: Overcurrent
- 9300: Current controller: Overcurrent
- 7200: DC bus: Overvoltage

Version 5.4.1

General 5.4.1

System crash in case of too long component names

A system crash occurred if there were mapp Motion system components (e.g. axes or axis groups) that did not differ in the significant part (i.e. the first 32 characters including the prefixes for application module and application program) of their names.

Configuration 5.4.1

Drag-and-drop by Comau Racer robot triggering unhandled exception

Adding a Comau Racer robot from the Object Catalog using drag-and-drop results in an unhandled .NET exception.

Encoder type "SSI sine encoder": Parameter not transferred correctly

For parameter "Position values per encoder revolution", value 2147483647 was always transferred to the drive instead of the value specified in the configuration. This caused initialization of the axis on which the encoder was used to be aborted. The parameter also had the incorrect name "Position values per sinus period".

The following modules were affected by this problem:
- 8EAC0152.001-1
Library - McPathGen 5.4.1

ID#400267890 : solved problem, solved since 5.4.1
Error correction in dynamic planning
In rare cases, the following internal error occurred: "Preparation of trajectory failed. [Error: 20497]" - error code: 0xc0665011L.

ID#400267890 : solved problem, solved since 5.4.1
Error correction in dynamic planning
In rare cases, an unnecessary reduction of the path velocity could occur.

ID#400267890 : solved problem, solved since 5.4.1
Error correction when using the compressor
In rare cases, parameter maxNonCartesianTransitionAngle was not taken into account, which resulted in unexpected geometries.

ID#400265809 : solved problem, solved since 5.4.1
Bug fix when using MC_BR_GroupJogRelative and MC_BR_GroupJogAbsolute
In mechanical systems without complete orientation description, undefined movements occurred. This bug was introduced with version 5.4.0.

ID#400265600 : solved problem, solved since 5.4.1
Error correction when using G126 and configuring a "physical axis path"
When using a "Physical axis path" and a non-Cartesian movement (e.g. slave axes only), rounding could cause undefined behavior. In these cases, rounding is now suppressed.

ID#400264080 : solved problem, solved since 5.4.1
Error correction in signaling feature
If a prediction distance was set in the signaling feature, a deadlock occurred for some function blocks. This bug was introduced with version 5.4.0.

System Module - McAcpSys / McAcpSim 5.4.1

ID#610185 : solved problem, solved since 5.4.1
ACOPOSmicro: Status of enable input delayed (only in 5.2.1 - 5.4.0)
After activating the enable input, the corresponding status in the cyclic status bits was set delayed.

ID#400251096 : solved problem, solved since 5.4.1
POWERLINK: Error 32280 after CMD_SW_RESET
In rare cases it could happen after CMD_SW_RESET that the POWERLINK communication to ACOPOS modules could not be re-established. In this case, the following error was entered in the network command trace after CMD_SW_RESET:
32280: Timeout for enable of acyclic network communication
At the drive, this error caused all LEDs to glow statically, with the exception of the Link LEDs
Among other things, CMD_SW_RESET is executed if:
- a CPU restart was performed
- a new firmware has been transferred to the drive

Version 5.4.0

Configuration 5.4.0

ID#602940 : new function since 5.4.0
New axis group feature: Customized frame hierarchy
In contrast to the standard frame hierarchy, both the structure of the hierarchy and the assignment of frame types and frame properties can be freely configured in the customized frame hierarchy.
In this way, the actual structure of a machine can be simulated and individual coordinate systems can be placed at important points (e.g. tool mounting point, work table, workpiece, storage point, etc.).
Among other things, programmed moving frames can be configured.
New mechatronic design: Open robotics Comau Racer 7-1.4
With open Robotics, mapp Motion provides ready-made mechatronic designs specifically for Comau robots.
Supported Comau robot: Comau Racer 7 - 1.4

New mechanical system: "5-axis robotic arm (A)"
Mechanical system "5-axis robotic arm (A)" is a serial kinematic chain consisting of a sequence of arm elements connected via 5 active revolute joints.
Its mechanical structure permits translational and rotational movement. As a result, there are 5 degrees of freedom for positioning a tool.

ACOPOSmulti: Automatic process variable for ACOPOSmulti power supply modules
The process variable for the axis reference of type McPsmAxisType for ACOPOSmulti power supply modules is automatically created from the specified name in the hardware configuration of the power supply module. This starts with Automation Studio 4.4, mapp Motion 5.4.0 and hardware version 2.3.x.x.

New axis feature: Analog inputs
With this axis feature, analog inputs of ACOPOS plug-in modules can be configured for use in other features.

Cam automat: New mode for compensation gear: "Slave compensation to absolute master and slave position"
The following mode is now supported for the compensation gear: "Slave compensation to absolute master and slave position".
With this mode, compensation is performed to an absolute master and absolute slave position.
The following parameters are taken into account for this mode:
- Master position
- Slave position
- Max slave velocity
- Max slave acceleration1
- Max slave acceleration2
- Advanced parameters/Master cam lead in
- Advanced parameters/Min master distance
- Advanced parameters/Min slave distance
- Advanced parameters/Max slave distance

New mechatronic design: "3-slave axis CNC (UVW)"
Mechatronic design "3-slave axis CNC (UVW)" is a ready-made configuration package for a 3-slave axis CNC (UVW) (an axis group with 3 slave axes).

Hardware: New selection "Delay limit with jerk filter" for "Quickstop / Stop reaction".
New selection "Deceleration limit with jerk filter" is available for "Quickstop / Stop reaction" in the hardware configuration. If this is selected, a value can be entered for the associated "Jerk time" parameter. The value is not permitted to exceed half the "Jerk filter / Jerk time".
This extension is available for the following drives:
- ACOPOS P3
- ACOPOS
- ACOPOSmicro
- ACOPOSmulti
- ACOPOSremote
- ACOPOSmotor

8EAC0130.000-1: Text of error output in Logger not informative
If an error was detected in the configuration of plug-in module 8EAC0130.000-1, the text of the error message in the Logger was not meaningful. A text is now entered that refers to the faulty element.

Cam automat: More specific error output if values for parameters are too large
If values were specified for the cam automat that exceed the permissible data type taking into account the resolution of the axis, it was previously entered in the Logger that a cam automat parameter was outside the valid range. Now the error is entered explicitly for the affected parameter in the Logger.
ID#595920 : solved problem, solved since 5.4.0

Cam list: No error information for missing names or multiple instances of same ID

If the cam name was empty or the same ID was used multiple times, no information was provided in the Logger. In spite of the faulty configuration, the axis reached PLCopen axis state "Disabled".

ID#400252780 : solved problem, solved since 5.4.0

ACOPOS: Operation on one phase for ACOPOS 8V101x.50x-2

Operation on one phase for the ACOPOS modules listed below is now supported. Enabling takes place using setting "Power supply / Single phase operation". In addition, the supply voltage in the range 110 V - 230 V can be set under "Power supply / Single phase operation / Supply voltage".

The following ACOPOS modules support this mode:
- 8V1010.50-2
- 8V1010.501-2
- 8V1016.50-2
- 8V1016.501-2

ID#578330 : solved problem, solved since 5.4.0

Axis: Too large limit values were transmitted with incorrect value

If the set limit values overshoot or undershoot the permissible data type range for an axis, taking into account the set resolution, an overflow occurred and an incorrect value was used on the drive. The axis could be operated with these incorrect limit values. In this case, an error is now entered in the Logger and the axis is not ready for operation.

The following axis limit values were affected:
- Movement limits/Position/Lower limit
- Movement limits/Position/Upper limit
- Movement limits/Velocity
- Movement limits/Acceleration
- Movement limits/Deceleration

ID#550040 : solved problem, solved since 5.4.0

Hardware: Avoidance of multiple assignments of axis configuration files

To avoid misconfigurations, axis configuration files can only be assigned to one piece of hardware. This starts with Automation Studio 4.4, mapp Motion 5.4.0 and hardware version 2.3.x.x.

Diagnose 5.4.0

ID#580610 : new function since 5.4.0

Missing axis instance should be displayed in Cockpit message window

If an axis has not been instanced, a message is output in the Cockpit message window with a link to the AS Logger.

ID#400243951 : solved problem, solved since 5.4.0

Command buffer disabled on fast repeated execution

The execution of autotuning commands takes a few ms and therefore runs as a background task to prevent cycle time violations. If the execution of such a command is requested repeatedly by quickly clicking button "Execute" in mapp Cockpit, the commands are buffered and executed one after the other. The processing time accumulates, which leads to delays. To prevent this, it is no longer possible to issue such a command repeatedly if the same command that was previously executed has not yet been processed. An error appears in the Logger indicating this.

Library - McAxis 5.4.0

ID#598435 : new function since 5.4.0

MC_BR_CamAutomatSetPar, MC_BR_CamAutomatGetPar: New mode for compensation gear: "mcCOMP_MA_SL_ABSOLUTE"

The following mode is now supported for the compensation gear: "CompMode = mcCOMP_MA_SL_ABSOLUTE". With this mode, compensation is performed to an absolute master and absolute slave position.

The following parameters are taken into account for this mode:
- MasterCompDistance (interpreted as the absolute position)
- SlaveCompDistance (interpreted as the absolute position)
- MaxSlaveCompVelocity
- MaxSlaveCompAccel1
- MaxSlaveCompAccel2
- MasterCamLeadIn (optional)
- MinMasterCompDistance (optional)
- MinSlaveCompDistance (optional)
- MaxSlaveCompDistance (optional)

ID#602505 : Information valid since 5.4.0

MC_BR_CamAutomatCommand: Start process accelerated
The axis coupling of masters was not initialized until command "Start". This initialization is now already performed when the function block is enabled so that switching to state "Running" can occur more quickly after command "Start".

If the cam automat is reconfigured using MC_BR_CamAutomatSetPar after command "Enable", the axis coupling is reinitialized with command "Start" (if one of the axes has been changed).

ID#602215 : solved problem, solved since 5.4.0

MC_BR_CamAutomatSetPar: More specific error output if values for parameters are too large

If values were specified for the cam automat that exceed the permissible data type taking into account the resolution of the axis, it was previously entered in the Logger that a cam automat parameter was outside the valid range. Now the error is entered explicitly for the affected parameter in the Logger.

ID#602030 : solved problem, solved since 5.4.0

MC_GearIn: Position jump or delayed value application possible

If MC_GearIn was started when MC_GearIn had already been active before, the following problems could occur:
- Delayed application of the new values. The movement was still started with the gear ratio of the previously active MC_GearIn.
- With a changed gear ratio, a speed jump occurred on the slave axis.

ID#599250 : solved problem, solved since 5.4.0

MC_BR_CamAutomatCommand: Error text displayed incorrectly

If command "Restart", "SetSignalX" or "ResetSignalX" was called in the incorrect axis state, the axis state was not output in the error text of the event log. The correct error text is now displayed.

Library - McAxGroup 5.4.0

ID#400247102 : solved problem, solved since 5.4.0

MC_BR_GroupMoveCyclicPosition: No error message if coordinate system incorrect

An error was incorrectly reported when calling the function block with a coordinate system other than ACS, but not with every coordinate system.

ID#603600 : solved problem, solved since 5.4.0

MC_BR_GroupMoveCyclicPosition: Possible service mode in administrative axis group

Administrative axis group: If a parameter update was performed on function block MC_BR_GroupMoveCyclicPosition, it could result in a restart of the CPU in service mode.

ID#595505 : solved problem, solved since 5.4.0

MC_BR_OnlinePathInfluence_N: Online path influence was not applied correctly for slave axes.

Online path influence offsets were not applied correctly for slave axes at the start of a program.

ID#578595 : solved problem, solved since 5.4.0

MC_BR_GroupMoveCyclicPosition: Speed limitation not taken into account

Limiting the speed in the advanced parameters of an axis did not result in the desired limitation.

Library - McAcpAx 5.4.0

ID#598375 : new function since 5.4.0

MC_BR_CamAutomatSetPar_AcpAx, MC_BR_CamAutomatGetPar_AcpAx: New mode for compensation gear: "mcCOMP_MA_SL_ABSOLUTE"

The following mode is now supported for the compensation gear: "CompMode = mcCOMP_MA_SL_ABSOLUTE". With this mode, compensation is performed to an absolute master and absolute slave position.

The following parameters are taken into account for this mode:
- MasterCompDistance (interpreted as the absolute position)
- SlaveCompDistance (interpreted as the absolute position)
- MaxSlaveCompVelocity
- MaxSlaveCompAccel1
- MaxSlaveCompAccel2
- MasterCamLeadIn (optional)
- MinMasterCompDistance (optional)
- MinSlaveCompDistance (optional)
- MaxSlaveCompDistance (optional)

ID#607320 : solved problem, solved since 5.4.0

MC_BR_CamAutoSetPar_AcpAx: Service mode if master axis with profile generator is used
MC_BR_CamAutSetPar_AcpAx caused a service mode, if the following conditions were fulfilled:
- With mode "mcSET_ALL_PAR_FROM_ADR" or "mcSET_UPDATE_FROM_ADR" a pure virtual axis was assigned to the parameter "MasterAxis".
- With mode "mcSET_ALL_PAR_FROM_ADR" or "mcSET_UPDATE_FROM_ADR" a DS402 axis with active profile generator was assigned to the parameter "MasterAxis".

ID#603225 : solved problem, solved since 5.4.0
Error -1067315200 reported by MC_Home if using filtered encoder position
MC_Home reported error "-1067315200: Command Home failed" if the following conditions applied:
- A filtered encoder position was used as the actual position of the position controller (mcACPPAR_PCTRL_S_ACT_PARID = mcACPPAR_ENCODx_S_ACT_FILTER).
- An address for the endless position was initialized (via the configuration or MC_BR_InitHome_AcpAx).

ID#602235 : solved problem, solved since 5.4.0
MC_BR_CamAutomatSetPar_AcpAx: More specific error output if values for parameters are too large
If values were specified for the cam automat that exceed the permissible data type taking into account the resolution of the axis, it was previously entered in the Logger that a cam automat parameter was outside the valid range. Now the error is entered explicitly for the affected parameter in the Logger.

Library - McPureVAx 5.4.0
ID#578735 : new function since 5.4.0
MC_Home: Homing mode "mCHOMING_DEFAULT" now supported
MC_Home can now be used with homing mode "mCHOMING_DEFAULT". When using this mode, the necessary parameters (Homing/Mode) must be set in the configuration.

ID#602415 : solved problem, solved since 5.4.0
MC_BR_ReadCyclicPosition: Support for mcVALUE_ACTUAL and mcVALUE_ACTUAL_AXIS_UNITS
Function block MC_BR_ReadCyclicPosition now also supports modes mcVALUE_ACTUAL and mcVALUE_ACTUAL_AXIS_UNITS. If one of the two modes is used, the same values are output as for modes mcVALUE_SET and mcVALUE_SET_AXIS_UNITS.

Library - McPathGen 5.4.0
ID#604189 : solved problem, solved since 5.4.0
Probing and PureVAx axes
Referencing PureVAx axes in the axis group in combination with the axis group probing feature does not result in an error during startup. During latching, position 0 is returned for PureVAx axes.

ID#602539 : solved problem, solved since 5.4.0
Shortened response time for jerk-limited stops during signaling
The response time for jerk-limited stops with active signaling feature has been improved.

Library - McProgInt 5.4.0
ID#604444 : solved problem, solved since 5.4.0
Support for up to 21 Coordinats
The number of programmable coordinates in G-Code or ST programs was increased from 15 to 21. This change allows using a 6-axes robot (6 TCP coordinates and 6 joints) with up to 9 slave axes per axes group.

Library - McBase 5.4.0
ID#602925 : new function since 5.4.0
New function block: MC_BR_GetCoordSystemIdent
The function block can be used to retrieve the ID of a coordinate system.

ID#400257675 : solved problem, solved since 5.4.0
Startup blocked with ARembedded and hypervisor
When using ARembedded with hypervisor a deadlock between the OPC-UA server and mapp Motion could happen during the PLC boot phase. This prevented the PLC to enter the RUN mode.

Programming Languages 5.4.0
ID#602965 : new function since 5.4.0
New function: Cutter diameter compensation

A new function is available for cutter diameter compensation:

Structured Text
- CDCLookahead: Defines the length of the lookahead buffer for cutter diameter compensation.

ID#602955 : new function since 5.4.0

New functions: Trajectory planning

New functions are available for trajectory planning:

Structured Text
- LinearFeedCharacteristicOn: With the linear feed characteristic, the current feed rate (linear feed rate) is changed linearly from the beginning of the block to the programmed feed rate at the end of the block.
- LinearFeedCharacteristicOff: Disables the linear feed characteristic.
- AxisAccelerationPercent: A percentage of the configured axis acceleration and deceleration can be specified as a limit value.

ID#602950 : new function since 5.4.0

New functions: Extended coordinate system functions

The following functions are available for editing coordinate systems:

G-code
- G395: Moves coordinate system with property PCS property into the tool
- SET_FRAME: Manipulates the coordinate system relative to the current position
- SET_FRAME_INDEX: Moves the coordinate system of type "Frame table frame" relative to the predecessor
- WFRAME: Manipulates the coordinate system with property PCS relative to the current position
- WFRAME_ADD: Manipulates the coordinate system with property PCS relative to the current position
- WFRAME_ADD: Manipulates the coordinate system with property PCS relative to the current position
- SET_PCS: Moves property PCS

Structured text
- TcpFrame: The current TCP positions are defined as PCS.
- SetFrameIndex: Change of the currently used frame from a frame table
- SetPCS: Property PCS is defined on a different frame

System Module - McAcpDrv 5.4.0

ID#583155 : solved problem, solved since 5.4.0

Single axis trace: Data was recorded with a delay

If only a single ACOPOS channel was used in the trace configuration to define the trigger condition and data points, data recording started delayed after the trigger event was detected. Before recording, trigger information had to be transferred to the driver first of all and then the trigger command back to ACOPOS.

For such a single axis trace configuration, data recording now starts immediately after the trigger event is detected.

For single axis trace, up to now "CMD_TRACE=ncSTART_CYC_TRACE_CTRL_BIT" was transferred to the ACOPOS, now "CMD_TRACE=ncSTART_NETWORK_REQU_PARCMD" is used.

System Module - McMechSys 5.4.0

ID#592020 : solved problem, solved since 5.4.0

Error correction of 4-axis SCARA (A) mechanical system at workspace boundary

Movements at the workspace boundary with 4-axis SCARA (A) mechanical system could trigger unexpected errors. These have been corrected.

System Module - McProfGen 5.4.0

ID#602385 : solved problem, solved since 5.4.0

Axes with central setpoint generation, MC_GearIn, MC_BR_CamAutomatCommand: Incorrect acceleration in compensation

Incorrect acceleration was used in compensation for axes with an active ProfGen feature if the axis acceleration limit value was equal to the value set on the function block.

This behavior could occur with the following function blocks:
- MC_GearIn
- MC_BR_CamAutomatCommand

ID#602370 : solved problem, solved since 5.4.0

MC_BR_CamAutomatSelPar: Position jumps when changing the master axis reference

If the master position source was changed during an update, this could result in a position jump on the slave axis. MC_BR_CamAutomatSelPar now detects a change and outputs a corresponding error message.

The following parameters were affected by this:
- Common.Master.MasterSource
- Common.Master.MasterVariable.VariableAddress
ACOPOS simulation with mode "Complete": Modification of simulated DC bus voltage

When using the ACOPOS simulation with mode "Complete", from now on the simulated DC bus voltage (UDC_ACT) is set to the nominal DC bus voltage (UDC_NOMINAL).

External braking resistor: Current flow test on axes 2 and 3

The current flow test for external braking resistance is now also performed on axes 2 and 3. The following error is now reported on axes 2 and 3:

- 38008: Bleeder: No current flow

Two-encoder control for load simulation

From now on, the configuration of a two-encoder control is possible for following simulation variants:

- Simulation mode on the drive
- ACOPOS simulation on PLC with mode "Complete"

For configuration, the parameter SIM_LOADENC_S_ACT_PARID (Simulation mode: Parameter ID for the encoder of load position) must be set equal to the parameter PCTRL_S_ACT_PARID.

Incorrect torque after switching on controller while axis was moving

If the controller was switched on while the axis was moving, an invalid current offset was calculated. As a result, it could happen that an incorrect torque was generated depending on the angle.

Motor temperature measurement: External temperature sensor on EnDat 2.2 encoder: Error 9010, 9012 or 9013 (only in 3.16.0 - 5.3.x)

If the motor temperature sensor was connected to the external temperature sensor input of an EnDat 2.2 encoder and bit15..8 in parameter MOTOR_TEMPSENS_TYPE was set to 0x10 instead of 0x11, then at least one of the following errors was incorrectly reported:

- 9010: Temperature sensor (Motor|Choke|External): Overtemperature
- 9012: Temperature sensor (Motor|Choke|External): Not connected or destroyed
- 9013: Temperature sensor (Motor|Choke|External): Short circuit

Incorrect movement when activating the pitch error and backlash compensation with mode 4

When activating the pitch error and backlash compensation while the controller is switched on in the mode "direction-independent compensation with speed correction" (PBC_MODE = 4) a short motor movement could occur.

Autotuning of speed controller: Error 10100 for motors with very low moment of inertia

When executing autotuning of the speed controller with the function block MC_BR_AutoTuneSpeedCtrl_AcpAx, for motors with a very low moment of inertia (e.g. 8WS series motors) it could happen that the setup function was aborted with error "10100: Parameter identification: Quality factor not fulfilled". From now on, appropriate values will be identified for these motors.

Version 5.3.3

Library - McAcpAx 5.3.3

Plug-in module 8AC123.60-1: Error during axis initialization

If plug-in module 8AC123.60-1 was used for an ACOPOS drive, a parameter with an invalid value was transferred to the drive during axis initialization. As a result, the axis was not successfully initialized and could not be used subsequently.

Library - McPathGen 5.3.3

Error correction when changing override during standstill
If the override is changed during a standstill and a succeeding short movement followed by an interpreter synchronization was programmed a deadlock could occur.

**System Module - McAcpSys / McAcpSim 5.3.3**

ID#606900 : solved problem, solved since 5.3.3  
ACOPOS P3 plug-in modules 8EAC0151.00x-1: Default setting of maximum frequency for RS422 mode too high  
For the 8EAC0151.001-1 and 8EAC0151.003-1 plug-in modules, the default maximum frequency setting for the RS422 mode was set too high by mistake.  
This default setting has now been reduced from 10MHz to 200kHz and can be increased up to 6.25MHz using ENCOD2_OUTPUT_FREQUENCY.

ID#606505 : solved problem, solved since 5.3.3  
ACOPOS P3 plug-in module 8EAC0130.000-1: Reduced immunity  
In rare cases, an external source of electromagnetic interference could have caused a malfunction of the 8EAC0130.000-1 plug-in module.

**Version 5.3.2**

**Library - McAxGroup 5.3.2**

ID#400256889 : solved problem, solved since 5.3.2  
PLCopen GroupState freezes on state "GroupMoving"  
If a group movement that is aborted with an error is followed by a single-axis movement of an axis from the group, GroupState no longer changes the status to GroupStandby after the single-axis movement has ended.

**Library - McPathGen 5.3.2**

ID#591830 : solved problem, solved since 5.3.2  
Workspace monitoring for MoveLinear and MoveDirect  
The workspace monitoring feature is taken into account for MoveLinear and MoveDirect commands of technology function blocks.

**System Module - McProfGen 5.3.2**

ID#601205 : solved problem, solved since 5.3.2  
Axes with central setpoint generation: Unexpected abort of a command  
When using motion function blocks of library McAxis for axes with an active ProfGen feature, the function block could abort itself.

**Version 5.3.1**

**System Module - McAcpSys / McAcpSim 5.3.1**

ID#594990 : solved problem, solved since 5.3.1  
ENCOD0: Network encoder: Wrong position in mode "Absolute encoder" (only in 5.2.0 - 5.3.0)  
When using network encoder mode "Absolute encoder", the position detection did not work without reporting an error.  
For positions less than one encoder revolution, the output position remained frozen. For positions greater than one encoder revolution, the output position has been increased by a certain value with every POWERLINK cycle.

ID# 400227680, 400254356, 400247390 : solved problem, solved since 5.3.1  
80Vxxxxxx.xxxx-xx: Error 9003 and Warning 41002 were reported mistakenly  
At low temperatures above 0°C, the following error and warning have been mistakenly reported:  
- 9003: Heatsink temperature sensor: Not connected or damaged  
- 41002: Heatsink temperature sensor: Not connected or damaged

**Version 5.3.0**

**General 5.3.0**

ID#591715 : new function since 5.3.0  
Support of mapp Services alarm handling by mapp Motion components  
mapp Motion components "Axis" and "Axis group" support mapp Services alarm handling with MpAlarmX.  
The alarms can be enabled and configured directly in the configuration of the component.

ID#585140 : solved problem, solved since 5.3.0
Single-axis function blocks: Logger entries changed

Error messages were previously entered in the Logger for some single-axis function blocks that were not meaningful or that referred to RecordID "0". These error messages have been made more precise or replaced by more meaningful ones. Furthermore, it was possible that drive errors were linked to Logger entries of the axis initialisation. Now drive errors are always entered as stand-alone entries into the Logger.

ID#400239194 : solved problem, solved since 5.3.0
Support of ARM CPUs
CPUs with ARM processors are supported.

Configuration 5.3.0

ID#591740 : new function since 5.3.0
New mechanical system: 4-axis CNC (XY2B)
Mechanical system "4-axis CNC (XY2B)" consists of 3 perpendicular linear axes and 1 rotary axis. The rotary axis rotates around the y-axis.
Its mechanical structure permits translational and rotational movement. As a result, there are 4 degrees of freedom for positioning a tool.

ID#591730 : new function since 5.3.0
New axis group feature: Signaling
Signaling is used to output a signal from a CNC program to a PLC either at a specific remaining time or in a specific remaining distance before the end of a path section.
Such a signal can even be output with microsecond precision if necessary.

ID#593405 : solved problem, solved since 5.3.0
ACOPOS: Virtual axis jerk time transferred to real axis
Parameter "Jerk filter / Jerk time" of the virtual axis was transferred to the corresponding parameter of the real axis. If "Jerk filter" of the virtual axis was set to "Not used", "Jerk time" of the real axis was set to 0. As a result, "Jerk filter / Jerk time" configured for the real axis was overwritten.

ID#581925 : solved problem, solved since 5.3.0
ACOPOS P3: Plug-in modules: Only usable channels configurable
On plug-in modules with 3 channels, it was previously possible to change settings for all channels although they could not be used with servo drives with one or two real axes.
Now it is only possible to configure those channels for which an axis also exists on the servo drive module.
The following modules are affected by this change:
- 8EAC122.003-1
- 8EAC150.003-1
- 8EAC152.003-1

Diagnose 5.3.0

ID#591785 : new function since 5.3.0
Internal data points for trace recording supported by mapp Motion components
mapp Motion components provide a series of internal data points for a trace recording.
Such a trace recording can be made either directly with mapp Cockpit or with function blocks in library CoTrace.

Library - McAxis 5.3.0

ID#581885 : new function since 5.3.0
Cams: Up to 128 polynomials possible
Up to 128 polynomials can now be specified for cams. Only 64 polynomials were previously possible.
The data types of the following structure elements were also adjusted:
- McCamDataType.PolynomialData: from McPolynomialDataType[64] to McPolynomialDataType[128]
- McAdvCalcCamFromPointsParType.NumberOfPolynomials: from USINT to UDINT
The following function blocks are affected by these updates:
- MC_BR_CamPrepare
- MC_BR_CalcCamFromPoints

ID#590620 : solved problem, solved since 5.3.0
MC_BR_CamAutomatCommand: Slave axis possibly not coupling to master axis when setting input "Start"
If input "Start" was set after function block MC_BR_CamAutomatCommand was enabled, the slave axis did not couple to the master axis if the slave axis used the McProfGen feature.
Library - McAcpAx 5.3.0

ID#582240: new function since 5.3.0

MC_BR_ProcessParID_AcpAx: New mode mcACPAX_PARID_GET_NO_NCT

Mode mcACPAX_PARID_GET_NO_NCT can be used to read a list of ACOPOS drive parameters from the drive without entering them in the network trace.

Exceptions:
The data records for parameter request and parameter response are entered in the network trace if an error occurs during the read operation or the parameter data type is not BOOL, SINT, USINT, INT, UINT, DINT, UDINT, REAL or LREAL.

ID#590740: solved problem, solved since 5.3.0

MC_GearIn: Page fault when trying to couple an AcpAx with a DS402Ax

If an attempt was made to couple an McAcpAx axis as master with an McDS402Ax axis as slave without the McProfGen feature, this led to a page fault on the CPU.
Now message "The specified master cannot be used for the coupling" is entered in the Logger. The function block used reports an error.

ID#590440: solved problem, solved since 5.3.0

MC_BR_AutoTuneSpeedCtrl_AcpAx: "Output.IntegrationTime" always "0.0".

Previously, output "Output.IntegrationTime" of function block MC_BR_AutoTuneSpeedCtrl_AcpAx always had value "0.0". Now this value is read and output by the drive.

ID#589365: solved problem, solved since 5.3.0

ACOPOSmulti power supply module: Preceding colons applied to the axis name

If a variable of data type McPsmAxisType was used for the axis reference of an ACOPOSmulti power supply module and this variable was selected via dialog box "Select", the two colons placed in front of the variable name were also applied to the axis name. If the axis reference was then used for a function block, these two colons had to be taken into account in the name of the axis reference.
Now only the actual name of the variable is used as the axis name.

ID#585880: solved problem, solved since 5.3.0

Plug-in modules assigned to incorrect ACOPOS modules

Plug-in modules may have been assigned to an ACOPOS module that has the same interface but a shorter station number than the ACOPOS module to which the plug-in module was assigned in System Designer.
This was possible for ACOPOS modules with node numbers whose number sequence occurs in higher node numbers of ACOPOS modules.

Examples:
- ACOPOS modules with node number 1 used plug-in modules of ACOPOS modules with node number 10-19 or 100-199 (ST1...ST10)
- ACOPOS modules with node number 21 used plug-in modules of ACOPOS modules with node number 210-219 (ST21 ...
  ST215)

ID#559845: solved problem, solved since 5.3.0

Cam automat: Invalid master axis references entered incorrectly in the Logger

If an invalid axis reference was specified for an axis reference in the cam automat, a vague error message was entered in the Logger.
This was the case for the following parameters:
- Master / Value source / Axis reference
- Advanced parameters / Additive axes / Additive master value source / Axis reference
- Advanced parameters / Additive axes / Additive slave value source / Axis reference
- State x / Advanced parameters / Master value source / Axis reference

Library - McDS402Ax 5.3.0

ID#588965: solved problem, solved since 5.3.0

MC_ReadAxisInfo: Output "IsHomed" not reset

If an axis was successfully homed, output "IsHomed" was no longer reset during an additional homing procedure.

Library - McPureVAx 5.3.0

ID#589090: solved problem, solved since 5.3.0

MC_ReadAxisInfo: Output "IsHomed" not reset

If an axis was successfully homed, output "IsHomed" was no longer reset during an additional homing procedure.

ID#400249391: solved problem, solved since 5.3.0
Support for MC_ReadAxisError

Function block MC_ReadAxisError from library McAxis is supported.

Library - McPathGen 5.3.0

ID#588730 : solved problem, solved since 5.3.0

Error correction when using override equal to zero

When modifying an override from zero to a new value, an internal path calculation error could occur.

ID#587900 : solved problem, solved since 5.3.0

Use of an incorrect coordinate system in the workspace monitoring configuration

Workspaces defined in the configuration were assumed to be relative to the BCS coordinate system instead of the correct MCS coordinate system.

ID#558965 : solved problem, solved since 5.3.0

Error correction when changing the override during standstill

If the override is changed during a standstill phase triggered by a waiting time (G04) or blocking M-function, the new value is only applied after the prepared movement has been executed.

Newly supported Hardware 5.3.0

ID#590520 : new function since 5.3.0

ACOPOS P3: Support for new hardware upgrades

The following ACOPOS P3 hardware can now be configured:

- 8EI013HWS10.xxxx-1
- 8EI013HWSS0.xxxx-1
- 8EI017HWD10.xxxx-1
- 8EI017HWD50.xxxx-1
- 8EI017HWSS0.xxxx-1
- 8EI022HWS10.xxxx-1
- 8EI024HWS10.xxxx-1
- 8EI024HWSS0.xxxx-1
- 8EI034HWS10.xxxx-1
- 8EI034HWSS0.xxxx-1
- 8EI044HWS10.xxxx-1
- 8EI044HWSS0.xxxx-1
- 8EI11XHWS10.xxxx-1
- 8EI11XHWSS0.xxxx-1
- 8EI11X6MWS10.xxxx-1
- 8EI1X6MWS10.xxxx-1
- 8EI22XHWD10.xxxx-1
- 8EI22XHWD50.xxxx-1
- 8EI22XHWT10.xxxx-1
- 8EI22XHWT50.xxxx-1
- 8EI22XMWD10.xxxx-1
- 8EI22XMWD50.xxxx-1
- 8EI22XMWT10.xxxx-1
- 8EI22XMWT50.xxxx-1
- 8EI42XHWD10.xxxx-1
- 8EI42XHWD50.xxxx-1
- 8EI42XHWT10.xxxx-1
- 8EI42XHWT50.xxxx-1
- 8EI42XMWD10.xxxx-1
- 8EI42XMWD50.xxxx-1
- 8EI42XMWT10.xxxx-1
- 8EI42XMWT50.xxxx-1
- 8EI82XHWD10.xxxx-1
- 8EI82XHWD50.xxxx-1
- 8EI82XHWT10.xxxx-1
- 8EI82XHWT50.xxxx-1
- 8EI82XMWD10.xxxx-1
- 8EI82XMWD50.xxxx-1
- 8EI82XMWT10.xxxx-1
- 8EI82XMWT50.xxxx-1
- 8EI8E2XHWD10.xxxx-1
- 8EI8E2XHWD50.xxxx-1
- 8EI8E2XHWT10.xxxx-1
- 8EI8E2XHWT50.xxxx-1
- 8EI8E2XMWD10.xxxx-1
- 8EI8E2XMWD50.xxxx-1
- 8EI8E2XMWT10.xxxx-1
- 8EI8E2XMWT50.xxxx-1
- 8EI8E5XHWD10.xxxx-1
- 8EI8E5XHWD50.xxxx-1
- 8EI8E5XHWT10.xxxx-1
- 8EI8E5XHWT50.xxxx-1
- 8EI8E5XMWD10.xxxx-1
- 8EI8E5XMWD50.xxxx-1
- 8EI8E5XMWT10.xxxx-1
- 8EI8E5XMWT50.xxxx-1

ID#585755 : new function since 5.3.0

ACOPOS P3: Plug-in module 8EAC0130.000-1
Plug-in module 8EAC0130.000-1 for ACOPOS P3 can now be configured.
This plug-in module supports the following:
- 10 digital inputs/outputs

ID#585530 : new function since 5.3.0
ACOPOS P3: Plug-in modules 8EAC0151.001-1 and 8EAC0151.003-1
Plug-in modules 8EAC0151.001-1 and 8EAC0151.003-1 for ACOPOS P3 can now be configured.
These plug-in modules support:
- Incremental encoders with RS422 output signals
- Incremental encoders with TTL outputs
- Incremental encoders with HTL outputs

ID# 400241985, 400240235 : new function since 5.3.0
Synchronous and induction motor
Motors "MotorSynchronous_any" and "MotorInduction_any" can now be configured. Minimum version 2.2.0.0 of the hardware upgrades is required.

Programming Languages 5.3.0
ID#591775 : new function since 5.3.0
New functions: Signal functions
The following functions are available for signal functions:
G-code
G220: Time signal
G221: Signal prediction
G222: Path distance signal
Structured Text
- SignalTime
- Signal prediction
- SignalDistance

ID#591765 : new function since 5.3.0
New functions: Synchronous actions
With synchronous actions, processes can be executed parallel to the CNC program. Extension available for G-code languages.

ID#591760 : new function since 5.3.0
New functions: Extended coordinate system functions
The following functions are available for processing coordinate systems:
G-code
- TRANS: Programmed zero point offset
- ATRANS: Additive programmed zero offset
- ROT: Programmed zero point rotation
- AROT: Additive programmed zero point rotation

ID#591755 : new function since 5.3.0
New functions: Linear feed characteristic
The following functions are available for the linear feed characteristic:
G-code
- G193/G194: Linear feed characteristic

ID#591750 : new function since 5.3.0
New functions: Percentage-based axis acceleration override
The following functions are available for the percentage axis acceleration override:
G-code
- ACC: Percentage-based axis acceleration override

System Module - McAcpSys / McAcpSim 5.3.0
ID#400242000 : solved problem, solved since 5.3.0
Torque limiter: Warning 38001 was incorrectly reported
It was possible in rare cases that the following warning was incorrectly reported when writing to parameter LIM_T1_POS, LIM_T1_NEG, LIM_T2_POS, LIM_T2_NEG, LIM_T1_POS_OVR, LIM_T1_NEG_OVR, LIM_T2_POS_OVR or LIM_T2_NEG_OVR:
- 38001: Torque limiter: Limit value higher than maximum value
Version 5.2.1

Configuration 5.2.1

ID#586570 : solved problem, solved since 5.2.1

ACOPOS P3: Plug-in modules with 3 channels: Parameter of the first channel were applied to the other channels too

With the usage of an ACOPOS P3 plug-in module with 3 channels the parameter of the first channel were applied also to the channels 2 and 3.

The following modules were affected by this problem:
- 8EAC0122.003-1
- 8EAC0150.003-1
- 8EAC0152.003-1

Library - McAxis 5.2.1

ID#584905 : solved problem, solved since 5.2.1

Incorrect Logger entry with invalid axis reference

If an instance of MC_Power was called with an invalid axis reference, error "-1067319294: The axis object has changed since the last call" was entered in the Logger.
Now in this case, error "-1067319295: Function block input 'Axis' not set" is entered in the Logger.

Library - McAcpAx 5.2.1

ID#578610 : solved problem, solved since 5.2.1

MC_BR_CamAutomatGetPar_AcpAx: Compensation parameters output incorrectly

An incorrect value was output for parameters MaxSlaveCompVelocity, MaxSlaveCompAccel1 and MaxSlaveCompAccel2 under the following circumstances:
- "Command" = mcGET_PAR_ACTUAL
- A cam automat where the default values were used for the parameters listed above is configured on the drive.
- The measurement resolution of the slave axis was not equal to 1.

Library - McPureVAx 5.2.1

ID#584900 : solved problem, solved since 5.2.1

McPureVAx: Incorrect ErrorID with missing McProfGen module

If an McPureVAx axis was used for a function block without module McProfGen on the controller, incorrect error number "-1067319293: Communication to drive lost" was output on function block output "ErrorID".
Now in this case, error number "-1067319295: Function block input 'Axis' not set" is output since a purely virtual axis cannot be created if module McProfGen is missing.

ID#584755 : solved problem, solved since 5.2.1

McPureVAx: No error message with axis state "Errorstop"

If an axis changed to axis state "Errorstop", no error was reported with active motion function blocks.
The following function blocks were affected by this problem:
- MC_Halt
- MC_MoveAdditive
- MC_MoveAbsolute
- MC_MoveVelocity
- MC_GearIn
- MC_BR_CamAutomaticCommand
- MC_BR_MoveCyclicPosition
- MC_BR_VelocityControl
- MC_Home

Library - McPathGen 5.2.1

ID#585875 : solved problem, solved since 5.2.1

Probing function: Error message if an axis of an axis group is configured in "Voltage / frequency controller" control mode

If an axis group uses the probing function, an error was reported if an axis of this axis group was configured in "Voltage / frequency controller" control mode. This misconduct has been corrected and now also axes with the controller mode "Voltage / frequency controller" can be used.
System Module - McAcpDrv 5.2.1
ID#582625 : solved problem, solved since 5.2.1
SDM Hardware Tree: Information about motors were not displayed
The hardware information for motors were incorrectly not entered in the AR Hardware Tree, so that it were not displayed under Plugged in the Hardware Tree view in the SDM (System Diagnostics Manager).

System Module - McAcpSys / McAcpSim 5.2.1
ID#400237775 : solved problem, solved since 5.2.1
Encoder interfaces 8AC121.60-x, 8BAC0121.000-x and 8CVIxxxH1xxxx xx-1 with HIPERFACE: Incorrectly calculated encoder position (only in 2.26.0 - 5.2.0)
The encoder position was sometimes initialized incorrectly by 1/4 of a signal period.

ID#578695 : solved problem, solved since 5.2.1
Error 6067 when simulating a dynamical system using ACOPOS function block DYNSYS (only in 5.0.0 - 5.2.0)
When simulating a dynamical system using the ACOPOS function block DYNSYS without observer option (DYNSYS_MODE <= 5), the error 6067 "Error during initialization of the dynamical system" was mistakenly reported.

ID#400230524 : solved problem, solved since 5.2.1
80Vxxxxxx.xxxx-xx: Change of current controller behavior after reactivation of the enable input
After reactivation of the enable input, it was possible that the current measurement and voltage output of the inverter were not executed synchronously. This could lead to an increased tendency to oscillate of the current controller and to current measurement errors.

Version 5.2.0
Configuration 5.2.0
ID#572705 : new function since 5.2.0
Configurable modal behavior of path-controlled axis groups
The behavior of modal data of axis groups and axis group features can now be configured.

ID#572660 : new function since 5.2.0
New axis group feature: Probing
This axis group feature enables functionality for saving positions on trigger events.

ID#572655 : new function since 5.2.0
New axis group features: Geometric compensation
Geometric compensation corrects undesired geometric deviations of a machine that can occur due to manufacturing imprecisions or misalignments. The 2D geometric compensation axis group feature is used for planar translations; the 3D geometric compensation axis group features is used for three-dimensional translations.

ID#572650 : new function since 5.2.0
New axis group feature: Exclusions: Path-controlled axes
This axis group feature enables functionality for excluding path-controlled axes from axis group functions.

ID#574595 : solved problem, solved since 5.2.0
Cam automat: "Relative master start position" also displayed in error if "Start state" = 0
If "0 (base state) was selected under "Common parameters / Advanced parameters / Start state parameters / Start state" then field "Relative master start position" was also displayed in error. This setting is not used if "Start state" = 0 (base state). The field is no longer displayed.

Library - McAxis 5.2.0
ID#571855 : new function since 5.2.0
New function blocks: MC_BR_CamAutomatSetPar and MC_BR_CamAutomatGetPar
MC_BR_CamAutomatGetPar:
This function block copies the parameters of a cam automat for axes with central setpoint generation to a structure. Depending on the command, the data is taken from different sources.
MC_BR_CamAutomatSetPar:
Depending on the command, this function block transfers the parameters of a configuration object or specified structure to the cam
automat for axes with central setpoint generation. The cam automat can be overwritten or updated.

ID#571490 : new function since 5.2.0

New function block: MC_BR_CalcCamFromPoints
This function block converts two node vectors to a polynomial cam.

ID#577410 : solved problem, solved since 5.2.0

MC_ReadParameter: Incorrect value for non-periodic axis with "ParameterNumber = mcPAR_AX_PERIOD".
If MC_ReadParameter was called for a non-periodic axis with "ParameterNumber = mcPAR_AX_PERIOD", an incorrect value was output on output "Value". Value "0" is now output in this case.

Library - McAcpAx 5.2.0

ID#571485 : new function since 5.2.0

Extended functionality through the use of module McProfGen
The functionality of module McProfGen allows the following additional applications:
- Central setpoint generation: Calculation of position setpoint values on the controller
- Axis coupling: Gearbox or cam coupling

ID#578590 : solved problem, solved since 5.2.0

MC_BR_CamAutomatGetPar_AcpAx: State parameters output incorrectly
The state parameters were output incorrectly by factor "Measurement resolution" of the master axis.
The following "CompensationParameters" were affected by this:
- SlaveCompDistance
- MinSlaveCompDistance
- MaxSlaveCompDistance
- MinSlaveCompVelocity
- MaxSlaveCompVelocity
- MaxSlaveCompAccel1
- MaxSlaveCompAccel2
- SlaveCompJoltTime

ID#577865 : solved problem, solved since 5.2.0

Cam automat: Maximum master velocity transferred incorrectly under certain circumstances
An incorrect value for the maximum velocity of the master axis could be transmitted under certain circumstances. This could occur both if the cam automat was configured using a feature configuration as well as using a structure of data type McAcpAxCamCamAutParType.
The following values are now transferred while taking into account the master position being used:
Master / ValueSource = Set position --> Master / Max. velocity: The specified value is transferred in axis units or limit value of the axis.
Master / ValueSource = Actual position --> Master / Max. velocity: The specified value is transferred in axis units or limit value of the axis.
Master / ValueSource = MasterParID --> Master / Max. velocity: The specified value is transferred.
Master / ValueSource = ParID --> Master / Max. velocity: The specified value is transferred.
Master / ValueSource = System time [µs] --> Master / Max. velocity: 1000000 is transferred.

ID#400241371 : solved problem, solved since 5.2.0

MC_BR_CamAutomatSetPar_AcpAx: Errors when updating without parameter changes
If MC_BR_CamAutomatSetPar_AcpAx was enabled with "Command = mcSET_UPDATE_Xxxx" and if no parameter changes existed that had to be transferred to the drive, errors were reported (function block outputs and Logger).

ID#400241318 : solved problem, solved since 5.2.0

MC_BR_CamAutomatGetPar_AcpAx: MasterStartInterval not output with "Command = mcGET_PAR_ACTUAL"
If function block MC_BR_CamAutomatGetPar_AcpAx was executed with "Command = mcGET_PAR_ACTUAL", no value was output on structure component "Master.MasterStartInterval" of data type "McAcpAxCamAutParType".

ID#574785 : solved problem, solved since 5.2.0

Cam automat: Parameters not checked for valid range of values
If a parameter was specified for the cam automat (configuration of the feature or MC_BR_CamAutomatSetPar_AcpAx) that exceeds the number range of data type DINT when converted to drive units, then no error was reported. An undefined value was transferred. An error is now reported in this case and no cam automat parameters are transferred.
Library - McDS402Ax 5.2.0
ID#571480 : new function since 5.2.0
Extended functionality through the use of module McProfGen
The functionality of module McProfGen allows the following additional applications:
- Central setpoint generation: Calculation of position setpoint values on the controller
- Axis coupling: Gearbox or cam coupling

ID#577060 : solved problem, solved since 5.2.0
McDS402Ax: Missing log entries if error occur
If an error occurred when using a DS402 axis, an error was indicated on the function block output but the specific information was not entered in the Logger.
This was the case with the following errors:
- "Communication to drive lost"
- "Error occurred on axis"
- "DC bus voltage too low"

Library - McPureVAX 5.2.0
ID#571470 : Information valid since 5.2.0
First version
First version of McPureVAX

Library - McPathGen 5.2.0
ID#578165 : solved problem, solved since 5.2.0
Bugfix for cutter diameter compensation
Cutter diameter compensation could not be used for 2-Axes CNC machines.

ID#578050 : solved problem, solved since 5.2.0
Error correction in geometric rounding
In some cases, only up to half of the configured permissible deviation for path section transitions (corners and tangential transitions) was used.

ID#400240477 : solved problem, solved since 5.2.0
Error message "No limit is active for this state" caused by axis group movement
This error message was triggered in rare cases by an error in the dynamic calculation.

Programing Languages 5.2.0
ID#572685 : new function since 5.2.0
New functions: Probing
The following functions are available for probing:
G-code
- G200: Latch position
- G201: Latch position and stop
Structured Text
- Probe
- ProbeStop

ID#572680 : new function since 5.2.0
New functions: Geometric compensation
The following functions are available for geometric compensation:
G-code
- G340/G341: Geometric compensation
Structured Text
- GeometricCompensationOn
- GeometricCompensationOff

ID#572675 : new function since 5.2.0
New functions: Diagnostics
The following functions are available for diagnostics:
- G-code
- MPLOG_INTERRUPT / MPLOG_CONTINUE: Suppress logging of motion packets
- MPLOG_WRITE: User log entry

Structured Text
- SingleStepOff
- SingleStepOn
- MpLogWrite
- MpLogInterrupt
- MpLogContinue

ID#572670 : new function since 5.2.0
New function: Interpolation types

The following function is available for performing a threading procedure:
Structured Text
- MoveThread

ID#572665 : new function since 5.2.0
New function: Excluding an axis from group interpolation

The following function is available for excluding an axis from group interpolation:
- G-code
  - RELEASE: Exclude axis from group interpolation

System Module - McProfGen 5.2.0

ID#571475 : Information valid since 5.2.0
First version

System Module - McAcpSys / McAcpSim 5.2.0

ID#4003158 : new function since 5.2.0
Encoder interfaces AC121.60-x, 8BAC0121.000-x and 8CVIxxxH1xxxx.xx-1 with HiPERFACE: Support of the encoder type LinCoder L230

When using this type of encoder, the following error has been reported so far:
- 7052: Encoder: Encoder is not supported

ID#40025228 : new function since 5.2.0
ENCOD0, Virtual encoder: The network encoder mode is now also supported for ACOPOS-2

Supported encoders:
- Incremental encoders
- Incremental encoders with reference track
- Incremental encoders with absolute information

Not supported encoders:
- Absolute encoders

ID#574656 : solved problem, solved since 5.2.0
UI control: Errors 9030 and 9070 and warnings 41031 and 41070 at standstill and low speeds

When calculating U/f characteristic curves "Linear" and "Quadratic", the boost voltage was 1.22 times too high. In addition, the boost voltage was initialized 1.41 times too high when the characteristic curves were configured automatically ("Automatic configuration = Based on motor parameters").

This could have caused the following errors or warnings to be reported:
- 9030: Junction temperature model: Stop limit exceeded
- 9070: Motor temperature model: Stop limit exceeded
- 41031: Junction temperature model: Warning limit exceeded
- 41070: Motor temperature model: Warning limit exceeded

ID#400250209 : solved problem, solved since 5.2.0
Encoder interfaces 8AC130.60-1, 8BAC0130.00x-1, 8BAC0133.000-1 with emulation: Reset of ENCOD_OUT_PARID

When writing to ENCODx_COUNT_DIR, SCALE_LOAD_UNITS or SCALE_LOAD_MOTOR_REV, encoder emulation was switched off (ENCOD_OUT_PARID = 0). It had to be set up again.
Parameter ENCOD_OUT_PARID is now kept, and a new setup is not necessary.

ID#400140629 : solved problem, solved since 5.2.0
HIPERFACE encoder with AC121.60-x, 8BAC0121.000-x or 8CVIxxxH1xxxx.xx-1: Errors 7022 and 7038

During initialization of HIPERFACE encoders, Bit5 "Encoder initialization active" was not set in the status bits. If parameters were transferred to the ACOPOS that lead to the use of the encoder position, the following errors could occur:
- 7022: Encoder: Initialization is active
- 7038: Encoder: Position value not synchronous with absolute value

**Version 5.1.2**

**Configuration 5.1.2**

ID#587315 : solved problem, solved since 5.1.2

ACOPOS P3: Plug-in modules with 3 channels: Parameter of the first channel were applied to the other channels too

With the usage of an ACOPOS P3 plug-in module with 3 channels the parameter of the first channel were applied also to the channels 2 and 3.

The following modules were affected by this problem:
- 8EAC0122.003-1
- 8EAC0150.003-1
- 8EAC0152.003-1

**Version 5.1.1**

**Automation Help 5.1.1**

ID#400239194 : solved problem, solved since 5.1.1

Missing note regarding target system limitations

Target system limitations are not noted in the system requirements. mapp Motion only supports SG4 target systems with the exception of ARM target systems. ARM target systems are currently not yet supported by mapp Motion.

**Configuration 5.1.1**

ID#570835 : solved problem, solved since 5.1.1

Cam automat: Corrected unit for selection "System time" with "Value source"

With selection "System time", unit [s] used to be incorrectly displayed. The correct unit [µs] is now displayed.

The following settings were affected:
- Common parameters / Master / Value source
- States / States 1-15 / Advanced parameters / Master value source

ID#569405 : solved problem, solved since 5.1.1

Hardware: Corrections in "Simulation mode on ACOPOS / Load model" for ACOPOS drives

- Simulation mode on ACOPOS / Load model / Mass 2 / Stiffness: Unit Nm/rad displayed instead of N
- Simulation mode on ACOPOS / Load model / Mass 2 / Damping: Unit Nms/rad displayed instead of Nms
- Simulation mode on ACOPOS / Load model: Notation for the unit of "Inertia" was adapted to that used for other parameters with comparable units (kgm² instead of kgm^2).

The changes have no effect on the behavior of the axes.

The following drives are affected by this correction:
- ACOPOS P3
- ACOPOS
- ACOPOSmicro
- ACOPOSmulti
- ACOPOSremote
- ACOPOSmotor

**Library - McAcpAx 5.1.1**

ID#570880 : solved problem, solved since 5.1.1

MC_Home: Undefined axis state after enabling and simultaneously switching off the controller

Function block MC_Home caused an undefined axis state with the following sequence:
- MC_Power is active.
- Input "Execute" is set in the same task class cycle as "MC_Power.Enable = FALSE".
- MC_Home is after MC_Power in the execution order.

ID#568705 : solved problem, solved since 5.1.1

MC_BR_CamAutomatSetPar_AcpAx: Incorrect error number if invalid master axis

If MC_BR_CamAutomatSetPar_AcpAx was used for a configuration of a cam automat that contained an invalid value for an axis or MasterParID, error "-1067319295: Axis FB input not set" used to be reported in error instead of "-1067448320: An error in the application was detected". The correct error "-1067448317: Invalid value for (ParameterName)" is now entered in the motion logbook.
The incorrect error was reported with the following parameters:
- Common.Master.MasterAxis
- Common.Master.MasterParID
- State.AdvancedParameters.MasterAxis

Library - McPathGen 5.1.1

ID#571699 : solved problem, solved since 5.1.1
Page fault or error message when stopping axis group movement
This error occurred in rare cases if an active axis group movement was stopped by calling function block MC_GroupStop or an error (e.g. workspace violation).

System Module - McAcpSys / McAcpSim 5.1.1

ID#400235028 : solved problem, solved since 5.1.1
Warning 33002 when initializing the "Maximum Torque per Current (MTPC)" functionality
When initializing the "Maximum Torque per Current (MTPC)" functionality, depending on the motor parameters the Warning 33002 "Floating-Point exception" could had occurred.

ID#5651000 : solved problem, solved since 5.1.1
8BAC0125.000-1, 8BVxxxxxxxSA.xxx-x: UP/DN LEDs lit up continuously (only in 3.18.0 - 5.1.0)
When using sinusoidal encoders, SSI encoders or SSI sine encoders, the UP/DN LEDs lit permanently in some modules and showed no change in position.

Version 5.1.0

Configuration 5.1.0

ID#558640 : new function since 5.1.0
New axis group feature: Exclusions
This axis group feature makes it possible to exclude axes from axis group functions. The excluded axes are then not affected by axis group functions such as "GroupStop" and "GroupOverride".

Library - McAxis 5.1.0

ID#561275 : new function since 5.1.0
MC_BR_CamPrepare: Input parameter "Cam.DataAddress" supported
From now on, the address of cam data can be specified on input "Cam.DataAddress" that is present on a PV of data type McCamDataType.

ID#561270 : new function since 5.1.0
New function block: MC_BR_GetAxisLibraryInfo
This function block reads information for the implementation-specific library of an axis.

ID#558750 : new function since 5.1.0
New function block: MC_PhasingRelative
This function block generates a phase shift in the position of the master on the slave axis with a relative value as a function block input.

ID#558745 : new function since 5.1.0
New function block: MC_BR_Offset
This function block generates an offset shift in the position of the slave on the slave axis.

ID#558740 : new function since 5.1.0
New function block: MC_BR_Phasing
This function block generates a phase shift in the position of the master on the slave axis.

ID#558035 : new function since 5.1.0
New function block: MC_PhasingAbsolute
This function block generates a phase shift in the master position on the slave axis with an absolute value as an FB input.
Library - McAcpAx 5.1.0

ID#558735 : new function since 5.1.0

New function block: MC_BR_OffsetVelocity_AcpAx
This function block generates a phase shift in the position of the slave on the slave axis when using a velocity profile.

ID#558725 : new function since 5.1.0

New function block: MC_BR_PhasingVelocity_AcpAx
This function block generates a phase shift in the position of the master on the slave axis when using a velocity profile.

Programming Languages 5.1.0

ID#562995 : new function since 5.1.0

New functions: Workspace monitoring
The following functions are available for workspace monitoring:
- G-code
  - SAFE_CUBOID
  - SAFE_CUBOID_REMOVE
  - WORK_CUBOID
  - WORK_CUBOIDREMOVE
  - SAFE_HALFSPACE
  - SAFE_HALFSPACEREMOVE
  - WORK_HALFSPACE
  - WORK_HALFSPACEREMOVE
  - SELF_COLLISION
  - WIRE_FRAME_MODEL
- Structured Text
  - SafeCuboid
  - RemoveSafeCuboid
  - WorkCuboid
  - RemoveWorkCuboid
  - SafeHalfSpace
  - RemoveSafeHalfSpace
  - WorkHalfSpace
  - RemoveWorkHalfSpace
  - SelfCollisionOn
  - SelfCollisionOff
  - WireFrameModel

System Module - McAcpSys / McAcpSim 5.1.0

ID#552250 : Information valid since 5.1.0

Error texts: Group "Encoders": Changed additional information for "Slot" in "Encoders"
Error texts that belong to the encoders group and contained the slot number as additional information now contain the encoder number instead.

ID#606115 : solved problem, solved since 5.1.0

CMD_MOVE_STOP_A2, CMD_MOVE_HALT_A2: Wrong verification of the deceleration parameter
For the commands CMD_MOVE_STOP_A2 (stop movement) and CMD_MOVE_HALT_A2 (halt basis movement), the transferred deceleration parameter was always checked for AXILIM_A2_POS (maximum deceleration in positive direction). The deceleration parameter is now checked direction-dependent for AXILIM_A2_POS or AXILIM_A2_NEG and limited accordingly when exceeded with a warning message.

ID#400230282 : solved problem, solved since 5.1.0

Homing with hardware limit switch LIMIT SWITCHIGNORE=1: Homing procedure not exited
Homing mode ncEND SWITCH did not work if parameter LIMIT SWITCHIGNORE=1 (ignore limit switch) was set.

ID#543580 : solved problem, solved since 5.1.0

Incorrect calculation of power inverter junction temperature (only in 2.25.0 - 5.0.x)
The junction temperature of the power inverter (TEMP JUNCTION) was calculated incorrectly if PWM was inverted (PWM CONFIG = 1).
On multi-axis modules, PWM for axis 2 is inverted automatically (from 2.37.0).
Due to the error correction, the following warnings/errors may be reported when using highly loaded power inverters with inverted PWM:
- 41031: Junction temperature model: Warning limit exceeded
- 9030: Junction temperature model: Stop limit exceeded
- 9031: Junction temperature model: Switch off limit exceeded

ID# 400223693, 400229474 : solved problem, solved since 5.1.0
SafeMOTION: 2 encoder control: Error 35252 with gear ratio between motor and load encoder

If the 2-encoder control was active with gear ratio between motor and load encoder, and the shaft break monitoring was activated on the SafeMOTION module, the following errors were reported:
- 35198: SMC Functional Fail Safe: Encoder error was detected
- 35252: SMC: Position lag error limit exceeded

From now on, the use of a gear ratio between the motor and the load encoder is possible. Due to this extension, errors 35198 and 35252 are no longer reported even if the direction of rotation of the motor and load encoder is unequal. Thus the Param SAFEMC_COUNT_DIR_CORR is obsolete and has been removed.

Version 5.0.2

General 5.0.2

ID#548280 : Information valid since 5.0.2

First Version

First version of mapp Motion