B&R Revision Information

Technology Package mapp Control 5.7.1

26-Jun-2019
## Contents

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Version 5.7.1

MpTemp - MpTempController V5.7.1

ID#651605 : solved problem, solved since V5.7.1

When updating the PID parameters, the derivative component was calculated incorrectly.
If the PID parameters were updated during operation, this could result in an incorrect calculation of the derivative component of the controller.

Version 5.7.0

MpHydPump - MpHydPumpController V5.7.0

ID#637140 : Information valid since V5.7.0

New drive system available: "User-defined drive"
For controller modes "Speed" and "Flow", an external drive can now also be selected as the "motion system".

ID#637110 : Information valid since V5.7.0

New functionality: "Volumetric flow rate control"
New controller modes "Pressure/Flow" and "Flow" for controlling the volumetric flow rate of the pump.

ID#638730 : solved problem, solved since V5.7.0

Possible to modify "NegativeSetSpeedAllowed" with MpHydPumpControllerConfig
Parameter "NegativeSetSpeedAllowed" can now be modified with function block "MpHydPumpControllerConfig" in controller mode "Speed" as well during runtime.

ID#636625 : solved problem, solved since V5.7.0

Autotuning mode "mpHYDPUMP_TUNE_TEST_PRESSURE" not starting
If autotuning mode "mpHYDPUMP_TUNE_TEST_PRESSURE" was started and test signal parameter "Set speed" or "Set pressure" in the autotuning feature was greater than the configured maximum pump speed or the maximum set pressure of the pump controller, the test signal was not executed and no error was output. An error is now output if mpHYDPUMP_TUNE_TEST_PRESSURE is started and the configured test signal does not match the limits of the pump controller.

ID#635325 : solved problem, solved since V5.7.0

Possible to modify simulation parameters during runtime
The simulation parameters can now be changed with function block MpHydPumpControllerConfig while closed-loop control is active.

MpTemp - MpTempController V5.7.0

ID#609240 : new function since V5.7.0

Pulse frequency modulation
Pulse frequency modulation PFM has been added to signal modulation.

ID#400258547 : solved problem, solved since V5.7.0

Tolerance alarm not set if profile generation disabled
The alarm that the current temperature is outside the tolerance range is no longer set if profile generation is disabled.

MpTemp - MpTempHCM V5.7.0

ID#632010 : solved problem, solved since V5.7.0

The current measurement only works for positive changes
The current measurement within the HCM also supports measurements for which the current changes from a higher level to a lower level.

Version 5.6.0
MpHydPump - MpHydPumpController V5.6.0

ID#626335 : Information valid since V5.6.0
New functionality: "Reverse turn protection"
Protection against reverse rotation of the pump was added for the component.

ID#626320 : Information valid since V5.6.0
New feature: "Pump protection"
New feature for pump protection is added for the component MpHydPump.

ID#629615 : solved problem, solved since V5.6.0
Configured speed control not working
If the controller type was set to "Speed" in configuration file "pumpcontroller", the MpHydPumpController returned error -1064303115 after "Enable" was set to TRUE.
If controller type "Speed" is now selected and transferred to the controller, this error no longer occurs and the controller starts speed control.

ID#629610 : solved problem, solved since V5.6.0
Cannot start autotuning if controller type set to "Speed" in configuration file "pumpcontroller"
If the controller type in configuration file "pumpcontroller" was set to "Speed" and transferred to the controller accordingly, function block MpHydPumpController output error -1064039936. The linked Logger entry stated that parameter TestSignal[0].SetPressure in the autotuning feature was incorrectly configured (-1064291603). TestSignal[0].SetPressure was limited upwards by parameter "SetValueLimits.MaximumSetPressure", which appears in the configuration file only if controller type "Pressure/Speed" is selected. Parameter "SetPressure" in the autotuning feature is no longer limited to SetValueLimits.MaximumSetPressure".

MpTemp - MpTempController V5.6.0

ID#628055 : new function since V5.6.0
Quick start of slew rate limited profiles
For temperature profiles of mode mpTEMP_PROFILE_MODE_RATE_LIMITED, new parameter "QuickStart" can now be used to accelerate the heating process. The initial rounding of the profile is skipped, and a profile with the defined slew rate is generated immediately.

ID#612760 : new function since V5.6.0
Decoupling MTBasics
MpTemp now has no dependencies to MTBasics.

ID#604160 : new function since V5.6.0
Summing up PWM pulses
For the temperature control range, the individual pulses are summed up cyclically. If the sum of the pulses exceeds the minimum pause length, the sum of the pulses is output.

ID#622905 : solved problem, solved since V5.6.0
Inappropriate temperature setpoint during tuning with incorrectly configured room temperature
If the correct ambient temperature was not configured, this could lead to an unsuitable profile of the temperature setpoint during tuning, which resulted in longer tuning times.

ID#611600 : solved problem, solved since V5.6.0
Identified parameters written in idle time
The identified system parameters are now written to the configuration on the controller in idle time. This prevents a cycle time violation from occurring.

ID#603720 : solved problem, solved since V5.6.0
Now possible to output a 100% manipulated variable in conjunction with feed-forward control
With feed-forward control heating > 0%, the manipulated variable for cooling can now take on values up to 100%. Or with feed-forward control for cooling < 0%, the manipulated variable for heating can now take on values up to 100%.

MpTemp - MpTempGroup V5.6.0

ID#400254712 : solved problem, solved since V5.6.0
Group function block detecting errors in a controller
The group function block now outputs an error if an error has occurred with a controller linked to the group.

**MpTension** - **MpTensionController V5.6.0**

- **ID#623120**: Information valid since V5.6.0
  - Integration of MpTension
  - New component for closed-loop control of tensile force in the material of a web processing process

**MTBasics** - **MTBasicsTransferFcn V5.6.0**

- **ID#606150**: solved problem, solved since V5.6.0
  - Added parameter check for realizable transfer function
  - It is checked if the given transfer function is realizable. Added new error numbers mtBCD_ERR_NON_REALIZABLE_TF and mtBCD_WRN_NON_REALIZABLE_TF.

**MTFilter** - **MTFilterKalman V5.6.0**

- **ID#616620**: new function since V5.6.0
  - Adjustment in disturbance model for a constant disturbance.
  - The implementation of the disturbance model is now a constant disturbance on the input side no more on the output side. Due to that parameter aberrations has less effect to the first derivative of the output.

**Version 5.5.0**

**MpCorePull** - **MpCorePullBasic V5.5.0**

- **ID#609595**: solved problem, solved since V5.5.0
  - MpCorePullBasic: mpCOREPULL_STATE_XXX_MOVEMENT shown even when "Stop"-Command has been given

**MpEjector** - **MpEjectorBasic V5.5.0**

- **ID#609625**: solved problem, solved since V5.5.0
  - MpEjectorBasic: mpEJECTOR_STATE_XXX_MOVEMENT shown even when "Stop"-Command has been given

**MpHalfNut** - **MpHalfNutBasic V5.5.0**

- **ID#606230**: solved problem, solved since V5.5.0
  - MpHalfNut: Setting "Close" while "Open" is active results in "InPosition" being TRUE

**MpInjUnit** - **MpInjUnitBasic V5.5.0**

- **ID#609630**: solved problem, solved since V5.5.0
  - MpInjUnitBasic: mpINJUNIT_STATE_XXX_MOVEMENT shown even when "Stop"-Command has been given

**MpMHeight** - **MpMHeightBasic V5.5.0**

- **ID#609635**: solved problem, solved since V5.5.0
  - MpMHeightBasic: mpMHEIGHT_STATE_XXX_MOVEMENT shown even when "Stop"-Command has been given

**MpHydPump** - **MpHydPumpController V5.5.0**

- **ID#600175**: Information valid since V5.5.0
  - Integration of MpHydPump
  - New component for handling a hydraulic based pump drive.

**MpTemp** - **MpTempController V5.5.0**

- **ID#609250**: new function since V5.5.0
  - Configurable hysteresis for heating and cooling
  - The hysteresis responsible for switching between heating and cooling can now be freely configured by the user.

- **ID#605740**: new function since V5.5.0
  - Possible to disable and configure temperature filter
  - The filter that filters the measured temperature can now be disabled via the configuration.
  - In addition, it is possible to freely select the filter's degree of noise suppression. After tuning, the recommended noise reduction is also calculated and output.
**MpTemp - MpTempHCM V5.5.0**

ID#612400 : Information valid since V5.5.0
Integration of MpTempHCM
Added function block MpTempHCM.

**MpTieBar - MpTieBarBasic V5.5.0**

ID#609640 : solved problem, solved since V5.5.0
MpTieBarBasic: mpTIEBAR_STATE_XXX_MOVEMENT shown even when "Stop"-Command has been given

**Version 5.4.0**

**MpClamp - MpClampBasic V5.4.0**

ID#601300 : solved problem, solved since V5.4.0
MpPlastics: Plastic components are requiring mappControl base license at runtime in addition to Plastics base license

**MpClamp - MpClampBasicHConfig V5.4.0**

ID#590515 : solved problem, solved since V5.4.0
MpClampBasic: proportional valve settings ordered by decreasing valve signals result in error in valve linearization configuration

**MpInject - MpInjectPlastificationBasic V5.4.0**

ID#589825 : solved problem, solved since V5.4.0
MpInjectPlastificationBasic: Position Tolerance not accessible via AS mapp config

**MpScale - MpScalePressure V5.4.0**

ID#592970 : solved problem, solved since V5.4.0
MpScalePressure: Output Pressure value is not set if function block is disabled and enabled
ID#592900 : solved problem, solved since V5.4.0
MpScalePressure: No warning on function block interface when AnalogInput values is out of configured range

**MpTemp - MpTempController V5.4.0**

ID#597740 : solved problem, solved since V5.4.0
Passive cooling not possible for well-isolated zones
If a well isolated system was detected and no active cooling is available, no or only a very slow setpoint curve for cooling could be calculated.
In profile mode "Time optimized", a jump down to the setpoint is now always preset for cooling processes.
In ProfileMode "Slew rate limited" it is now also permitted to set all parameters to 0 during cooling, which also generates a jump down to the setpoint.

ID#400245743 : solved problem, solved since V5.4.0
Temperature overshoot if control is disabled at the operating point and then re-enabled
When control was disabled, the integral component was set to 0, which could result in a change in behavior when re-enabling. If MpTempController.Control is now set to 0, the integral component is stored and the controller is set up with this value when MpTempController.Control = 1.

ID#400257120 : solved problem, solved since V5.4.0
Profile generation not set up correctly after tuning
If a profile is started immediately after tuning, the output of the controller is now set correctly so that it adapts to the change in the feed-forward control.

ID#595430 : solved problem, solved since V5.4.0
Profile mode not updated
During active profile generation, the profile mode is now applied immediately if this is changed in the configuration.

ID#595000 : solved problem, solved since V5.4.0
Profile generation active although temperature setpoint at operating point
If profile generation is aborted by setting the temperature setpoint to the current temperature, a new profile generation process is not started.
Output "Info.Profile.Active" is therefore not set to TRUE.
Incorrect error output when tuning with a small temperature difference
If tuning is started with a temperature difference of less than 30°C and greater than 5°C, no warning is output.

ID#592680 : solved problem, solved since V5.4.0
Incorrect entry in logbook if invalid temperature setpoint
The dynamic entries in the logbook above the limit values of the temperature setpoint were removed and described in Automation Help exactly how they are determined. If the temperature setpoint is invalid for a gradient-limited profile, a warning is output.

ID#588635 : solved problem, solved since V5.4.0
Alarm "mpTEMP_ALM_OUTSIDE_TOLERANCE" output when tuning during system check
The check whether the current temperature is within the tolerance band is only carried out after successful completion of a tuning.

MpTemp - MpTempGroup V5.4.0
ID#400245979 : solved problem, solved since V5.4.0
Profile starts at incorrect temperature
If "SynchronizationMode = mpTEMP_PROFILE_SYNC_OFF", then profile generation starts from the current temperature.

ID#400244915 : solved problem, solved since V5.4.0
Call sequence not matching the order of linked components.
The controllers are recorded by the group in exactly the order in which they are specified under "Linked components". Accordingly, the components must be called in this order.

MTPIdentify - MTIdentifyTransferFcn V5.4.0
ID#601275 : new function since V5.4.0
Normalization of transfer function changed. Additional warning added.
The transfer function is normalized so that the highest denominator coefficient is one (a0 = 1). A warning is output if an identified denominator coefficient is negative.

Version 5.3.1
MpTemp - MpTempController V5.3.1
ID#603495 : solved problem, solved since V5.3.1
Active cooling interferes with heating tuning.
Cooling could have activated during heating tuning of well insulated systems with active cooling. This is now prevented since it negatively influenced the heating tuning.

Version 5.3.0
MpClamp - MpClampBasic V5.3.0
ID#400240233 : solved problem, solved since V5.3.0
MpClamp: wrong limitation used for lock profile when ToggleClamp = TRUE

MpCorePull - MpCorePullBasic V5.3.0
ID#400238406 : new function since V5.3.0
Request: proportional valve handling for MpCorePull

MpEjector - MpEjectorBasic V5.3.0
ID#574640 : new function since V5.3.0
MpEjector: add mpEJECTOR_ERR_MOVE_NOT_ENABLED to list of MpAlarmX alarms
ID#400240189 : solved problem, solved since V5.3.0
MpEjector: There is no error message if velocity filter time is configured wrong (results in Info.Velocity always 0)

MpInject - MpInjectBasic V5.3.0
ID#579085 : solved problem, solved since V5.3.0
MpInject: Injection Profile end can't be the same with switch over position
**MpInject - MpInjectPlastificationBasic V5.3.0**
ID#586510 : solved problem, solved since V5.3.0
MpInjectPlastificationBasic: Velocity output information is wrong

**MpInjUnit - MpInjUnitBasic V5.3.0**
ID#400238404 : new function since V5.3.0
Request: proportional valve handling for MpInjUnit

**MpScale - MpScalePressure V5.3.0**
ID#592670 : solved problem, solved since V5.3.0
MpScalePressure: Creates cyclic logger entries when AnalogInput values is negative (out of configured range)

**MpTemp - MpTempController V5.3.0**
ID#585580 : new function since V5.3.0
Should be quality statement of identified parameters
New output structure "MpTempQualityType" that indicates the quality of the parameters identified by tuning.

**MTFilter - MTFilterKalman V5.3.0**
ID#585490 : new function since V5.3.0
Integration of MTFilterKalman.
Added function block MTFilterKalman.

**MTIdentify - MTIdentifyTransferFcn V5.3.0**
ID#579890 : solved problem, solved since V5.3.0
Redundancy Pragma not set
Block MTIdentifyTransferFcn is fully redundancy-capable.

**Version 5.2.0**

**MpClamp - MpClampBasic V5.2.0**
ID#400236637 : solved problem, solved since V5.2.0
MpClamp: Output behaviour of e.g. MpClampBasic behaves inconsistent
ID#564565 : solved problem, solved since V5.2.0
MpClampBasic: Input plate "Close" not working when using measurement piston

**MpCorePull - MpCorePullBasic V5.2.0**
ID#565215 : solved problem, solved since V5.2.0
MpCorePullBasic: Logger-Entries contain wrong "Entered by"

**MpInjUnit - MpInjUnitBasic V5.2.0**
ID#577620 : solved problem, solved since V5.2.0
MpInjUnit: Protect timeout alarm is set cyclically and leads to cycle time violation
ID#400237122 : solved problem, solved since V5.2.0
MpInjUnitBasic: Protect profile timeout cannot be reset

**MpMHeight - MpMHeightBasic V5.2.0**
ID#400240236 : solved problem, solved since V5.2.0
MpMHeight configuration doesn't contain any preconfigured alarms
ID# - , 400240275 : solved problem, solved since V5.2.0
MpMHeightBasic
FB is allowing movements beyond limits

**MpMHeight - MpMHeightBasicHConfig V5.2.0**
ID#568730 : solved problem, known since 5.1.1.57 , solved since V5.2.0
MpMHeight: Missing element in MpMHeightErrorEnum (-1064239096)
MpSafeGate - MpSafeGateBasic V5.2.0
ID#566140 : Information valid since V5.2.0
  MpSafeGate
  New component to handle an automatic safety gate in an injection molding machine

MpScale - MpScalePoti V5.2.0
ID#400237124 : solved problem, solved since V5.2.0
  MpScalePoti: Configuration cannot be saved

MpScale - MpScalePulse V5.2.0
ID#570670 : solved problem, solved since V5.2.0
  MpScalePulse: Alarms for position limit violation are cyclically set

MpTemp - MpTempController V5.2.0
ID#578095 : solved problem, solved since V5.2.0
  The filtered temperature oscillates, the operating point is not reached.
  When the set temperature calculation starts, the system parameters for the internal filter are updated, which avoids the oscillation of the filtered temperature.
ID#574830 : solved problem, solved since V5.2.0
  Digital outputs not reset
  If control is switched off by setting "Control" to FALSE, the digital outputs for heating and cooling ("Heat" and "Cool") are set to FALSE if they are TRUE.
ID#570255 : solved problem, solved since V5.2.0
  Error when starting closed-loop control
  If profile mode "mpTEMP_PROFILE_MODE_OFF" is configured for all temperature controllers in a group, closed-loop control can be started using the group function block even if the profile parameters are zero and the synchronization mode is not configured with mpTEMP_PROFILE_MODE_OFF.
ID#568025 : solved problem, solved since V5.2.0
  Output "InTolerance" not set correctly
  If the component in the control state, profile generation is not active and output "InSetPoint" is set to "False", then a check whether the current temperature is within the tolerance was not performed. This occurs if switching to the control state after tuning.
  In this case, this check also now works.

MpTemp - MpTempGroup V5.2.0
ID#567990 : new function since V5.2.0
  Implementation of power limitation
  If "LimitPower" = True is set to enable power limitation for a group, the output power of all zones of a group is limited for heating to an average maximum output power per PWM period.

MTData - MTDataStatistics V5.2.0
ID#561795 : solved problem, solved since V5.2.0
  Index for minimum and maximum input value calculated incorrectly.
  If a moving window is specified for a function block, it is taken into account when reaching the maximum number of input values that the minimum and maximum input value in memory moves back as long as the new value is between the limit values.

MTIdentify - MTIdentifyTransferFcn V5.2.0
ID#571075 : new function since V5.2.0
  Integration of MTIdentify
  Added new library MTIdentify with function block MTIdentifyTransferFcn.

Version 5.1.0

MpClamp - MpClampBasic V5.1.0
ID#555760 : Information valid since V5.1.0
MpClamp
New component for handling the clamp of an injection molding machine

MpCorePull - MpCorePullBasic V5.1.0
ID#556060 : Information valid since V5.1.0
MpCorePull
New component for handling a core pull in an injection molding machine

MpEjector - MpEjectorBasic V5.1.0
ID#556075 : Information valid since V5.1.0
MpEjector
New component for handling an ejector in an injection molding machine

MpHalfNut - MpHalfNutBasic V5.1.0
ID#556080 : Information valid since V5.1.0
MpHalfNut
New component for handling a half nut in an injection molding machine

MpInject - MpInjectBasic V5.1.0
ID#556085 : Information valid since V5.1.0
MpInject
New component for handling the injection in an injection molding machine

MpInjUnit - MpInjUnitBasic V5.1.0
ID#556090 : Information valid since V5.1.0
MpInjUnit
New component for handling an injection unit in an injection molding machine

MpMHeight - MpMHeightBasic V5.1.0
ID#556125 : Information valid since V5.1.0
MpMHeight
New component for handling a mold height axis in an injection molding machine

MpPump - MpPumpBasic V5.1.0
ID#556135 : Information valid since V5.1.0
MpPump
New component for handling a third party pump

MpScale - MpScalePoti V5.1.0
ID#556150 : Information valid since V5.1.0
MpScale
New component for scaling signals in plastics industry

MpTemp - MpTempController V5.1.0
ID#549955 : solved problem, solved since V5.1.0
Possible to abort tuning for a zone via the closed-loop controller during group tuning
If tuning is started via the group, the tuning for the zone can no longer be aborted via the closed-loop controller.

ID#549910 : solved problem, solved since V5.1.0
Profile parameter values = 0 is permitted for the controllers with profile synchronization with the group
If profile synchronization is enabled for the group, values = 0 are not permitted for profile parameters if closed-loop control is active.
MpTieBar - MpTieBarBasic V5.1.0
ID#556155 : Information valid since V5.1.0
MpTieBar
New component for handling a tiebar in an injection molding machine

MTBasics - MTBasicsTransferFcn V5.1.0
ID#553055 : new function since V5.1.0
Integration of MTBasicsTransferFcn
Added function block MTBasicsTransferFcn.

MTData - MTDataStatistics V5.1.0
ID#549575 : solved problem, solved since V5.1.0
Function block marked as redundancy-capable
The function block has been switched over to "conditionally redundancy-capable".

MTLinAlg - MTLinAlgMatrixAddition V5.1.0
ID#555670 : new function since V5.1.0
MTLinAlgMatrixAddition
Integrated into mapp Control.

MTLinAlg - MTLinAlgMatrixInverse V5.1.0
ID#555675 : new function since V5.1.0
MTLinAlgMatrixInverse
Integrated into mapp Control.

MTLinAlg - MTLinAlgMatrixMultiplication V5.1.0
ID#555680 : new function since V5.1.0
MTLinAlgMatrixMultiplication
Integrated into mapp Control.

MTLinAlg - MTLinAlgMatrixSubtraction V5.1.0
ID#555685 : new function since V5.1.0
MTLinAlgMatrixSubtraction
Integrated into mapp Control.

MTLinAlg - MTLinAlgSolveEquation V5.1.0
ID#555690 : new function since V5.1.0
MTLinAlgSolveEquation
Integrated into mapp Control.

MTLookUp - MTLookUpTable2D V5.1.0
ID#549970 : solved problem, solved since V5.1.0
Redundancy switchover can result in page fault.
The alignment of internal variables has been adjusted to that memory is allocated during a redundancy switchover.

ID#549965 : solved problem, solved since V5.1.0
Memory is not freed up during an update.
During an update, new memory is allocated and the old memory is freed up.