PLUS+1 Controls Function Block Library
70026747v401
Revision History

This file contains important supplementary and late-breaking information that may not appear in the main product documentation. We recommend that you read this file in its entirety.

Version 4.01 (February 2019)

What is Included
- PLUS+1 GUIDE® Function Blocks (In SDL)
- User Manual (In SDL)
- Service Tool Log Screens

What is New
- Fixed an issue where the Ackermann blocks could overflow in a calculation, resulting in an incorrect output value.
- Aligned spelling across Ackermann blocks.
- Added existing service screens to the library structure.
- Changed font used in service screens from Tahoma to Verdana.
- Corrected referenced signals for the Controller PI service screen.

Known issues
- None

Minimum Requirements
- PLUS+1 GUIDE 10.1 or greater
- PLUS+1 Service Tool 10.1 or greater

Version 4.00 (June 2016)

What is Included
- PLUS+1 GUIDE® Function Blocks (In SDL)
- User Manual (In SDL)
- Service Tool Log Screens

What is New
- Support for Professional Licensing.

- Controller_PID: Adjusted derivative function to use OS.ExecTime for Smpl Tm if Smpl Tm is lower. Increased accuracy of derivative sample calculation when Smpl Tm is not a multiple of OS.ExecTime.
- State_Brake: Added initialization for Dec_Tm to prevent output from following input when commanded direction changes rapidly after startup.

Known issues
- None

Minimum Requirements
- PLUS+1 GUIDE 8.1 or greater

Version 3.00 (April 2014)

What is Included
- PLUS+1 GUIDE® Function Blocks (In SDL)
- User Manual (In SDL)
- Service Tool Log Screens

What is New
This library is a replacement for the controls functions found SD Basic FB Library (PN: 10103408).
- Companion service tool screens that can be imported to P1D files.
- Embedded checkpoints and namespace for each function block to support service tool integration.
- IO bus for alternative connectivity to your application.
- Requires specific data types for all inputs.
- Connection errors now indicate (by page name) which input has a problem.
- Ackermann
  - New block that combines both the speed and angle calculations.
- Ackermann_Spd
  - Added Max Strg Ang output.
  - Combined Steering mode inputs into one signal.
- Ackermann_Strg
  - Added Max Strg Ang output.
  - Combined Steering mode inputs into one signal.
- Controller_PI
  - New block based on the latest version of the Controller_PID, only without the differential calculation.
- Controller_PID
  - Added Error and Saturate outputs.
  - Max/Min limits are now applied on the total output.
  - Integrator sum is now recalculated when either limit is reached.

- Gains now have new ranges and scales. Refer to user manual for more information.
- Integrator calculation now applies gain before integration, thus allowing for variable gains without unintended step changes in output.
- I Stop feature added to prevent oscillations around the setpoint.
- Derivative calculation replaced with one that allows adjustable sample time and includes averaging for more stable control.
- Hysteresis
  - Maximum input is now reduced from 40000 to 32767.
- Inverse_Acker
  - New block that estimates a steering angle command from measured wheel angles.
- Profile_6Pt
  - Output now set to zero when parameters are invalid.
- State_Brake
  - Added Dwell option to force a pause when changing direction/crossing zero.
  - Added output for current state.
  - Added Split option for ramping to a stop at zero when changing direction/crossing zero.

Known issues
- None

Minimum Requirements
- PLUS+1 GUIDE 6.1 or greater

Support

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