Release Notes for SD Basic FB Library 2.10

Supported Versions of PLUS+1 GUIDE™

The SD Basic FB Library 2.10 will only be supported by GUIDE 2.1 and later.

Enabled Top Page View

All of the function blocks now have information contained inside their top page. This is denoted by the slash on the upper right corner of the block. The information includes input value limits, functional formulas, and explanations of abbreviations, output types, and general notes. A user just needs to enter the function block after it is placed in the application to view the info.

Expanded Library Manual

Descriptions of functions and information have been added to accompany the library.

Fault and Status Code Changes

All of the blocks have been updated to use a new Fault and Status Code scheme. This new format uses a bitwise interpretation of the values on these outputs. Each bit in the number represents a specific fault or status being reported. This allows the Function Block to report multiple faults or statuses simultaneously regardless of priority.

To differentiate between function blocks from previous libraries and the current ones being released, bit 16 is always true if any other bit is set. For example, if an input value is below the allowed range, fault bit 1 is set because it is the bit assigned to that fault by the Sauer-Danfoss Standard and bit 16 is also set.
If no fault or status is being reported, both outputs will equal zero.
Please see the SD Basic FB Library Manual for more information.

Loop Time / OS.ExecTime inputs removed from view

The Loop Time inputs have been removed from the top view of function blocks that require this input. This value is automatically obtained from the operating system inside the top page of the block. The user is no longer required to connect Loop Time or OS.ExecTime to the function block. The following blocks are affected:

- Average Filter
- Exponential Filter
- Median Filter
- Hysteresis
- Soft Ramp
- Time Ramp
- Controller PID
- Sensor 2Pt AC
- Sensor 3Pt AC

Sensor 3Pt AC and Sensor 2Pt AC

The Open Circuit fault detection threshold has been raised to 150mV. Any input below 150 will cause the block to declare this fault and clear the calibration points if Auto Calibration is enabled.
Both the Sensor 3Pt AC and Sensor 2 Pt AC now have dynamically allocated nonvolatile memory embedded inside the top page. This allows the user to drop the function block into an application and compile without setting up any external memory. Optionally, the user can delete the Local Para page and route the parameters to memory that is organized outside the block.

Sensor 3Pt AC

A bug has been fixed that would inverse the sign of the output when Cal_1*Snsr_Pwr/10000 is greater than Dbnd_1.

Controller PID

An overflow condition resulting from large gains being used in combination with large differences in Setpoint and Feedback has been resolved.

Exp Filter

The precision of the output calculation has increased.

Freq To Speed

The precision of the output calculation has increased.

Median Filter and Average Filter

The Smpl Tm (Sample Time) input specifies the time between two consecutive samples. The Smpl Nbr (Sample Number) input specifies the number of samples to use when computing the output.

New Blocks

Soft Ramp

The Soft Ramp returns to the library with the functionality to change parameters while in the middle of a ramp without a large step change in output.

State Brake

The State Brake block is a soft ramp that uses different parameters for decelerating based on the current output and the new input. It also allows the user to define a more aggressive deceleration if a brake is applied.

Profile Knee

The Profile Knee block is similar to the Profile_8Pt in respect to the endpoints are fixed at 0 and 10000. In this block there is only one point to specify along the curve. This curve is also mirrored for negative inputs.

Freq To RPM

Given the pulses per revolution, this new block will output the revolutions per minute for a frequency input.

CAN_Rx

The CAN_Rx block is a wrapper for the new **Receive CAN with ID Mask** symbol that demonstrates basic use of arrays. This can also be used to help convert old CAN software to using the new CAN symbols.

CAN_Tx

The CAN_Tx block is a wrapper for the new **Transmit CAN** symbol that demonstrates basic use of arrays. This can also be used to help convert old CAN software to using the new CAN symbols.