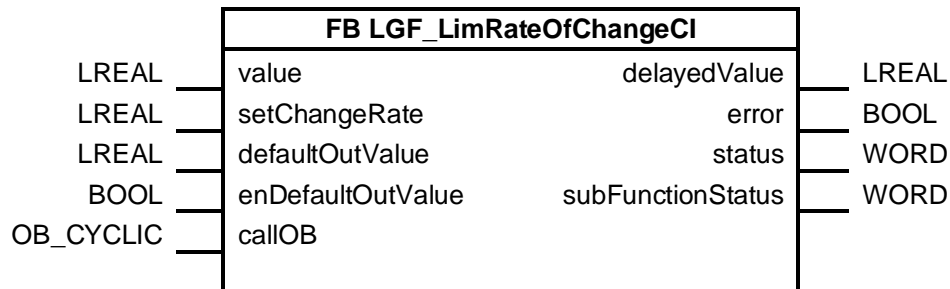


LGF_LimRateOfChangeCI

Short description

This block limits the rate of change of an input variable. A jump function becomes a ramp function.

Block



Input parameters

Parameters	Data type	Description
value	LREAL	Input variable (jump function)
setChangeRate	LREAL	Rate of change of ramp function (1/second)
defaultOutValue	LREAL	Value for pre-assignment of the output variable
enDefaultOutValue	BOOL	Pre-assign output value
callOB	OB_CYCLIC	Calling cyclic interrupt OB

Output parameters

Parameters	Data type	Description
delayedValue	LREAL	Output variable
error	BOOL	FALSE: No error TRUE: An error occurred during the execution of the FB.
status	WORD	16#0000-16#7FFF: Status of the FB, 16#8000-16#FFFF: Error identification (see following Table).
subFunctionStatus	WORD	Status or return value of the called FCs and system blocks.

Status and error displays

status	Meaning	Remedy / notes
16#0000	No error	-
16#8200	Negative rate of change.	The parameter for the change rate must not be negative.
16#8600	Error in "QRY_CINT" command.	Check the error code in "subFunctionStatus"
16#8601	OB on input "callOB" is not configured / present.	Interconnect the constant name of a configured cyclic interrupt OB at the input "callOB".

Note

The status of called commands is output in "subFunctionStatus". In this case, the output value in "status" indicates which command caused the error. In this case, refer to the TIA Portal Online Help section for information on the respective commands.

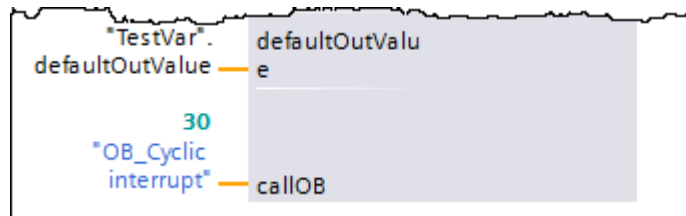
Principle of operation

The ramp is a limit line and refers to a rate of change per second; if, for example, "setChangeRate = 10.0" is parameterized at a sampling time of 1s/100ms/10ms for every block call, then if "value > delayedValue", 10.0/1.0/0.1 is added to "delayedValue" until "value" is reached.

The limitation of the rate of change applies to both positive and negative values for the rise and fall.

The output "delayedValue" can be preset or initialized.

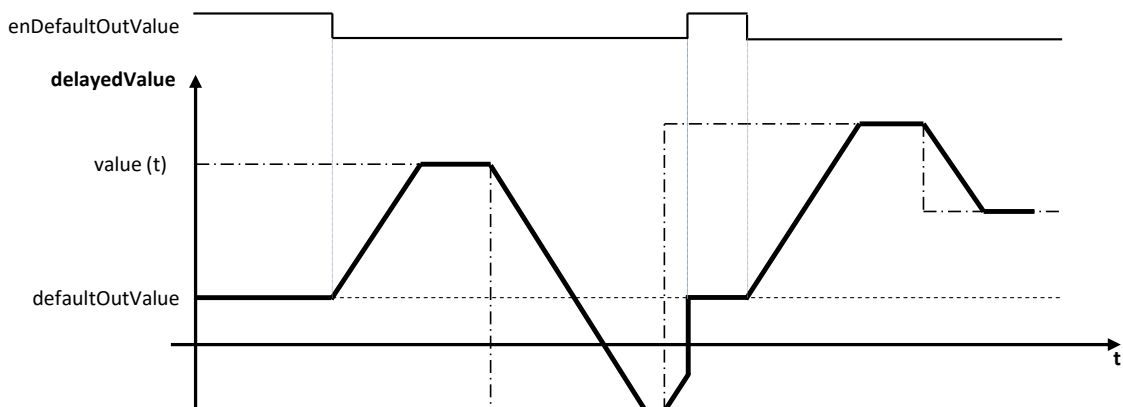
The time interval of the calling cyclic interrupt OB is determined by interconnecting the calling cyclic interrupt OB at the input parameter "callOB".



Pre-assigning an output

If "enDefaultOutValue = TRUE" is set, the value at "defaultOutValue" is output. When changing from TRUE to FALSE, the output "delayedValue" is ramped from "defaultOutValue" to "value". When changing from FALSE to TRUE, the output "delayedValue" immediately jumps to "defaultOutValue".

Functional processes



Further information on libraries in TIA Portal:

- Topic page libraries
<https://support.industry.siemens.com/cs/ww/en/view/109738702>
- Guideline on Library Handling
<https://support.industry.siemens.com/cs/ww/en/view/109747503>
- Programming Guideline for S7-1200/1500 in chapter "Libraries"
<https://support.industry.siemens.com/cs/ww/en/view/81318674>
- Programming Styleguide
<https://support.industry.siemens.com/cs/ww/en/view/81318674>