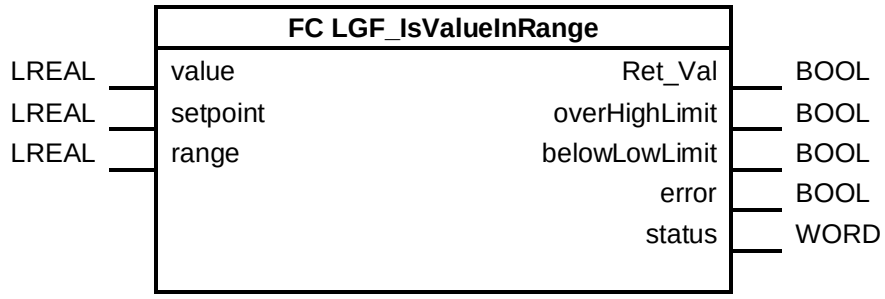
LGF_IsValueInRange

Short description

The function checks whether a value is within a defined value range. The value range is defined with a set point and a range around this set point. The function calculates the low limit and high limit of the value range.

Block



Input parameters

Parameters	Data type	Description
value	LREAL	Value to be checked to determine whether it is within the defined value range
setpoint	LREAL	Set point
range	LREAL	Area in which the set point is within the range

Output parameters

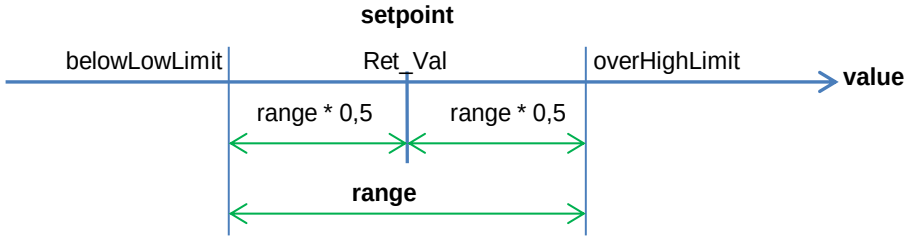
Parameters	Data type	Description
Ret_Val	BOOL	“TRUE” if the “value” is in the value range (range of the set point).
overHighLimit	BOOL	“TRUE” if the “value” is greater than the upper limit value (“setpoint” + 0.5 * “range”).
belowLowLimit	BOOL	“TRUE”, if the “value” is less than the lower limit value (“setpoint” - 0.5 * “range”).
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).

Status and error displays

Status	Meaning	Remedy / notes
16#0000	No error	-
16#8401	Error in the calculation of the limit values	-

Principle of operation

The “setpoint” and “range” variables define a range of values. The function checks whether the “value” is below, in or above the value range. The outputs “belowLowLimit”, “Ret_Val”, or “overHighLimit” show where the “value” is located.



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