

New functions in LOGO! ..0BA7

Astronomical clock



Excerpt from the manual:

The "Astronomical clock" function sets an output to "1", if the current time of the LOGO! basic module is between the time of sunrise (TR) and sunset (TS). LOGO! calculates these times automatically based on the /daylight saving time switch and the current time of the module.

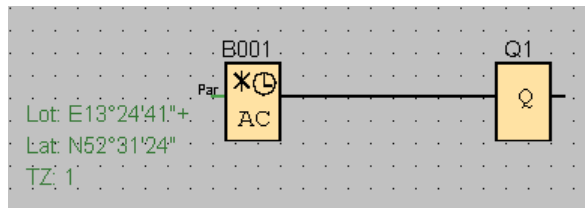


Figure 1 - Wiring example

For precise switching with the block, it must be assigned the specific location in the properties. Double-click to open the parameters of the block.

Some capitals are already listed in the drop-down list. But it is also possible to specify a user-defined location.

Select the location "user-defined". Enter the information (name, longitude, latitude and time zone) of the location (see figure 2).

Figure 2 – Parameters

Note:

You determine the longitude and latitude of locations with the help of the free program "Google Earth" or a navigation device.



Stopwatch

The "Stopwatch" function measures the time that has gone by as long as a 1 signal is present at the "En" input and outputs the value at output "AQ".

A positive edge (0 to 1 transition) at input Lap pauses the stopwatch, and sets output to lap time. A negative edge (1 to 0 transition) at input Lap resumes the stopwatch, and set the output to current elapsed time.

You reset the value of "AQ" to 0 with the input "R".

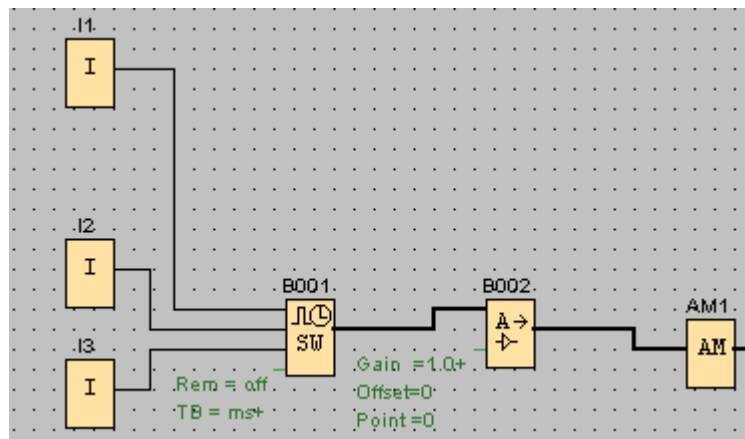


Figure 3 - Wiring example

Figure 3 shows a wiring with three inputs (I1 – I3), the stopwatch (B001), an analog amplifier (B002) and an analog flag (AM1). A 1 signal at input I1 starts the stop watch. With input I2 you can pause the output of the stopwatch and hold the current value at "AQ". Use input I3 to reset the stopwatch.

It is possible to set a time base for the selected time in the parameters of the stopwatch. You can select 10 milliseconds, seconds, minutes and hours (see Figure 4).



Figure 4 - Parameters

Analog filter

The “analog filter” function outputs the average value after sampling the analog input signal according to the set number of samples. This SFB can reduce the error of analog input signal.

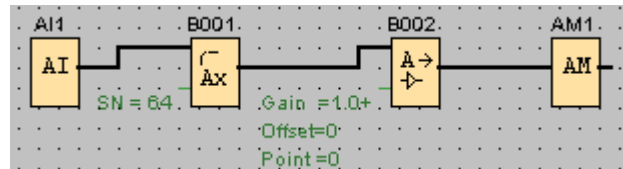


Figure 4 - Wiring example

Figure 4 shows a wiring example with analog filter (B001) that smoothes the analog signal of the AI1 input after 64 scans and then outputs the mean value at the analog amplifier (B002). The analog flag (AM1) terminates the wiring.

Excerpt from the manual:

The number of scans determines how many analog values are collected within the program cycles, whereby one scan corresponds to one program cycle.

See figure 5 for possible settings.

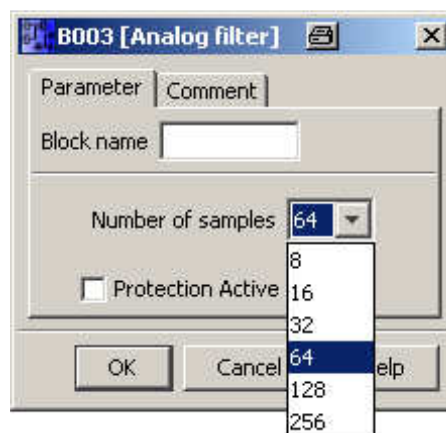


Figure 5 – Parameters

Max/Min

The Max/Min block records the maximum or minimum value present at the input. Several modes are available. You can output the minimum value, the maximum value or the current value at the output. You select the used mode permanently in the parameters (see Figure 6) or variably by using a reference.

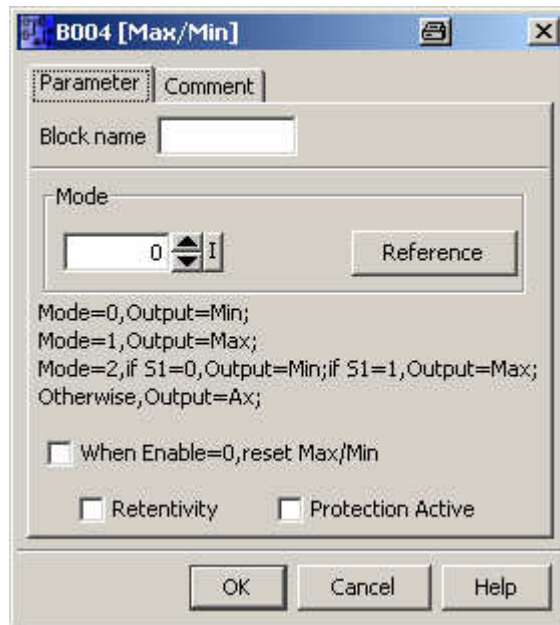


Figure 6 – Parameters

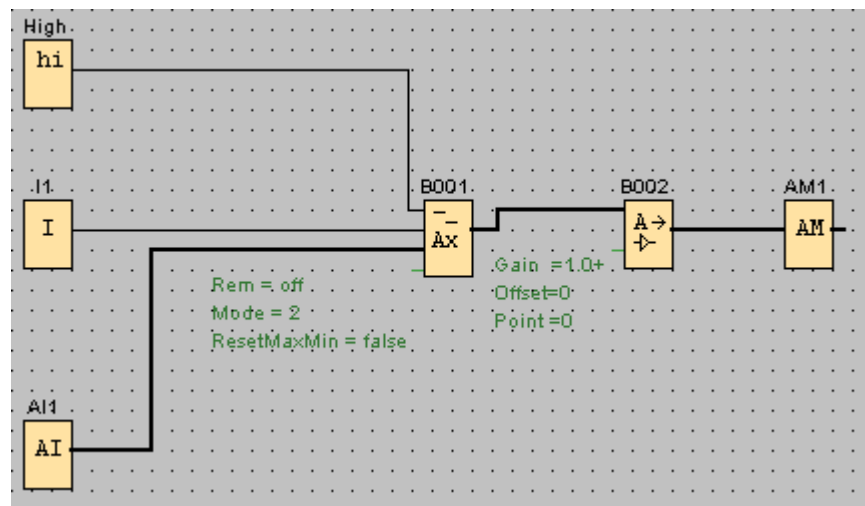


Figure 7 - Wiring example

Figure 7 shows a wiring example in which the input "En" of the Max/Min function is connected to a High signal. This means a value is permanently output at the output of the function. The Max/Min block is operated in mode 2.

If the Max/Min function is operated in mode 0, it outputs the minimum value at output "AQ". The maximum value is output at "AQ" in mode 1. In mode 2 the minimum value is output at "AQ" if the signal at input "S1" is low and the maximum value is output if the signal at input "S1" is high. In mode 3 the function outputs the actual analog input value.

Average value

The function "Average value" calculates the Average value of an analog input for a parameterizable time period. You specify the scan period as well as the number of scans during this time period in the parameters (see Figure 8).

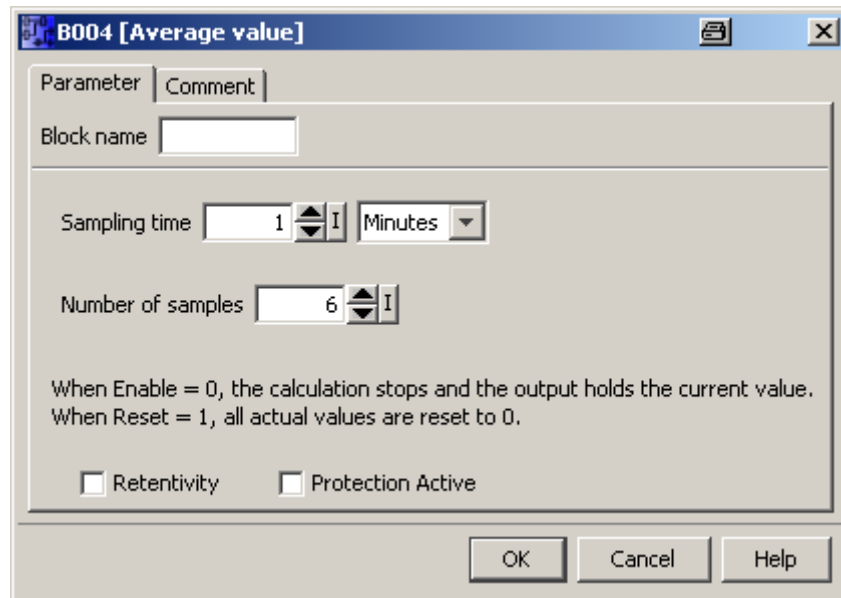


Figure 8 – Parameters

Figure 8 shows the parameters of the "Average value" function. The scan time is set to 1 minute. 6 scans have been set. This means the input is scanned six times in one minute and the Average value is formed from these scans. (6 scans in one minute corresponds to one scan every 10 seconds)

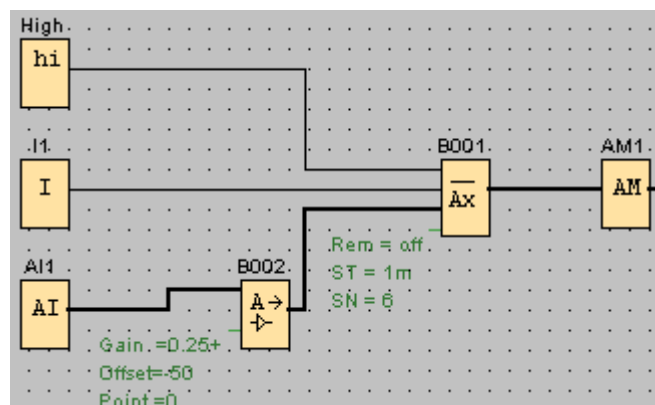


Figure 9 - Wiring example

Figure 9 shows a wiring example in which a temperature is being scanned for one minute using the analog input (AI1) and the analog amplifier (B002); the Average value is then output at the output of the Average value function. This process takes place permanently because the input "En" of the function has been connected to a High signal. To reset the Average value function use digital input (I1).