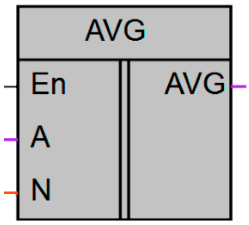
Arithmetic mean



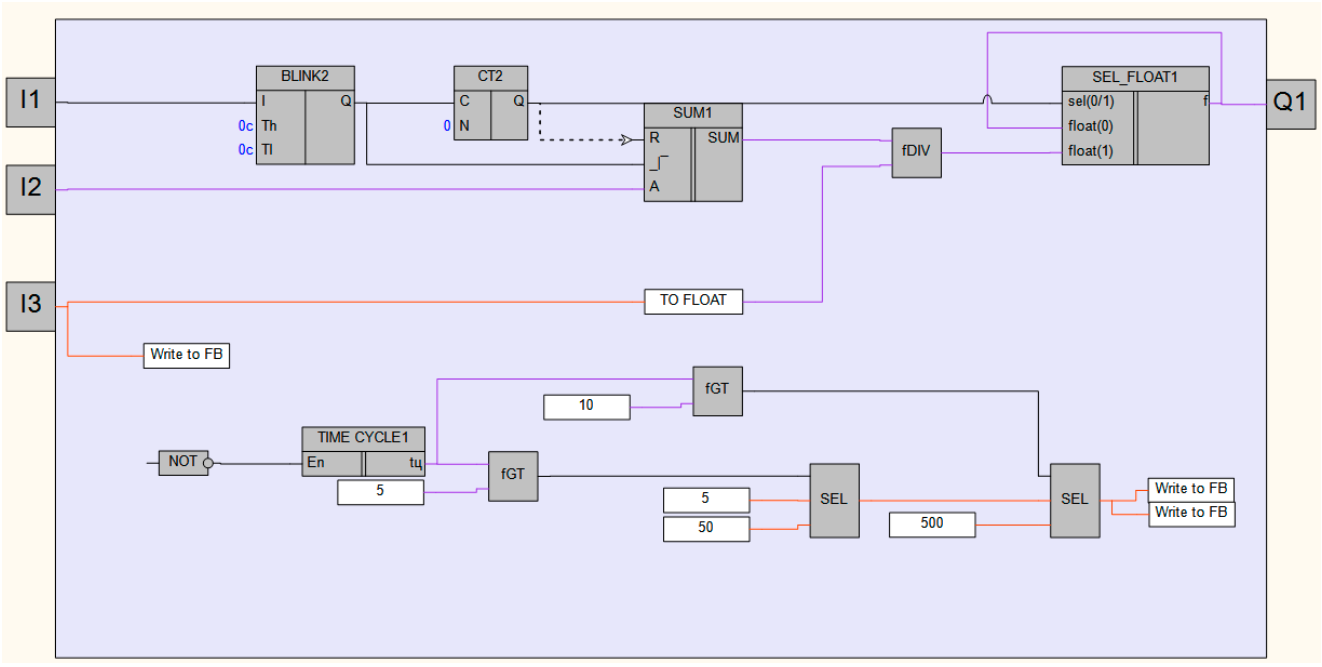
Input	Data type	Description	Area
En	BOOL	Permission to count	0/1
A	REAL	Average value	-3.40282347E+38… 3.40282347E+38
N	INT	Number of counts	0…2^{32}
Output	**Data type**	**Description**	**Area**
AVG	REAL	Calculation of the arithmetic mean	-3.40282347E+38… 3.40282347E+38

Function

The macro calculates the arithmetic mean of N numbers that arrive at input A when the En input is set to "1". The values are accumulated by an internal generator with a reference to the cycle time, this feature must be taken into account when setting the N value, as a long calculation causes a considerable delay in the generation of the calculated value at the AVG output. If the En input is set to "0", the summation and averaging of the input value is stopped and the last calculated value is fixed at the AVG output.

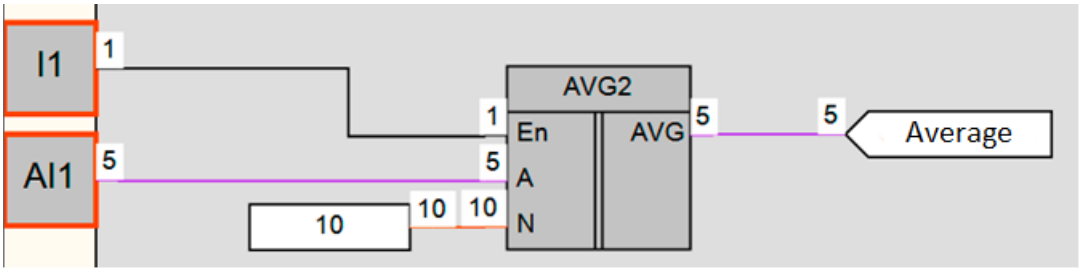
Structure of the macro

The structure diagram of the macro is shown below.



Sample project

The figure below shows an example of how a macro works in simulation mode. In this algorithm the value of the analog input AI1 is averaged, the number of input measurements is 10.



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