FC5 - <offline>

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Nome: Smmoth **Famiglia:** Funct
Autore: SimoneS **Versione:** 0.1
Versione blocco: 2
Data e ora Codice: 24/07/99 12:37:53
Interfaccia: 24/07/99 12:36:29
Lunghezze (blocco / codice / dati): 00206 00090 00010

Indirizzo	Dichiarazione	Nome	Tipo	Valore iniziale	Commento
0.0	in	Smooth_factor	REAL		Smoot factor (0-15)
	out				
4.0	in_out	Input_value	REAL		Value to smooth
8.0	in_out	CLK	BOOL		Timing step
10.0	in_out	Out_smoothed	REAL		Smoothed value
14.0	in_out	Prev_value	REAL		Initial value/previous output
18.0	in_out	Dummy_bit_1	BOOL		Dummy bit
0.0	temp	Dummy_real_1	REAL		Dummy real
4.0	temp	Dummy_real_2	REAL		Dummy real
8.0	temp	Calc_ON	BOOL		Calculation ON

Blocco:FC5 Smoothing

This function provide to smooth a analog input.
The function calculate the smooth value by add S/16 of previous value with
(16-S)/16 of actual value

the formula used is

Out = ([Smooth_factor]/16)*[Prev_value]+((16-[Smooth_factor])/16)*[Input_value]

S = smoothing factor
X1 = initial value/previous output
X2 = new input from I/O table

Valid entries for S smooth factor

If you want to.....	then enter.....
Prevent the smoothing process	0
Provide minimal smoothing	1
provide maximum smoothing	15

Segmento: 1 Timing

This network manage the timing of function

```
      U     #CLK
      FP    #Dummy_bit_1
      =     #Calc_ON      // One-shot clock
      UN    #Calc_ON      //Timng calculation
      BEB
```

Segmento: 2 Formula

This network apply the smoothing formula

```
      L     #Smooth_factor
      L     1.600000e+001
      /R                  // [Smooth_factor]/16
      L     #Prev_value
      *R                  // ([Smooth_factor]/16)*[Prev_value]
      T     #Dummy_real_1
//
      L     1.600000e+001
      L     #Smooth_factor
      -R                  // 16-[Smooth_factor]
      L     1.600000e+001
      /R                  // (16-[Smooth_factor])/16
      L     #Input_value
      *R                  // ((16-[Smooth_factor])/16)*[Input_value]
      T     #Dummy_real_2
//
      L     #Dummy_real_1
      L     #Dummy_real_2
```

```
      +R                  // ([Smooth_factor]/16)*[Prev_value] + ((16-[Smooth_factor])/16)*[Input_val
                          ue]
      T     #Out_smoothed
      T     #Prev_value   // Save previous value
```