Sommario

VC10LPFilter

V = *Variables*

C = *Calculation functions*

The VC10LPFilter function implements a first-order low-pass digital filter (RC filter) for WORD dimension data.

IMPLEMENTATION

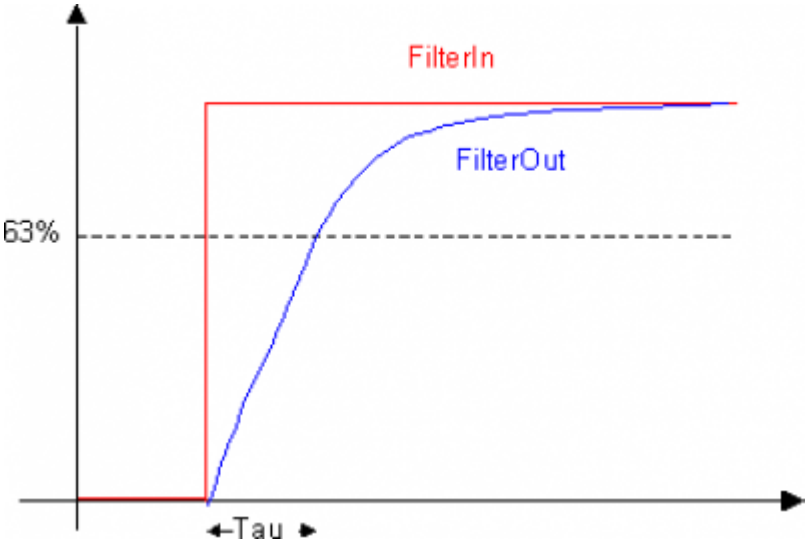
VC10LPFilter (Tsample, Tau, FilterIn, FilterOut)

Parameters:

IN/OUT	VARIABLE TYPE	EXAMPLE NAME	DIM	
IN	SYSTEM	swTsample	W	Sample time filter (msec) [0÷32767].
IN	SYSTEM	swTau	W	The filter time constant (ms) [0÷32767]
IN	GLOBAL	gwFilterIn	W	Value of the variable that you want to filter (UM) [-32768÷32767]
OUT	GLOBAL	gwFilterOut	W	Value of the filtered variable (UM) [-32768÷32767]

Description

The VC10LPFilter function implements a digital low-pass filter of the first order whose time constant (Tau) is defined in the parameters passed to the function itself. Assuming you start from a zero input variable value the output of the filter takes a value equal to 63% of the entrance after the long Tau time. Similarly the cutoff frequency of the filter is $f_t = \frac{1}{2 \cdot \pi \cdot Tau}$



Example

```
;---------------------------------------------
; Project          : REG_012
; Module Name  : ReadTemp
; Author            :
; Description     : Read temperature & filter
;---------------------------------------------
MAIN:
    CALL ReadTemp
    swTsample = 100        ;100 ms sampling time filter
        swTau = 5000        ;5 sec filter time constant
    VC10LPFilter (swTsample, swTau, gwFilterIn, gwFilterOut)

WAIT 1
JUMP MAIN
```

Note

- The function contains a timer that marks the time filter sampling. It's important that the function is placed

in the software that runs to each loop task.