FC101 - <offline>

"First_Order_Filter" Simple First Order Filter
Name: Filter_1 **Family:** GENERAL
Author: YHZ **Version:** 1.1
Block version: 2
Time stamp Code: 05/16/2008 05:04:51 PM
Interface: 05/16/2008 03:36:46 PM
Lengths (block/logic/data): 00332 00200 00016

Name	Data Type	Address	Comment
IN		0.0	
r_IN	Real	0.0	Input to Filter
t_CYCLE	Time	4.0	Sample Time
t_TMLAG	Time	8.0	Filter Time
r_DEADW	Real	12.0	Dead Band Width
OUT		0.0	
r_OUT	Real	16.0	Output From Filter
IN_OUT		0.0	
TEMP		0.0	
p_CYCLE	Real	0.0	Format Time To Real
p_TMLAG	Real	4.0	Format Time To Real
p_ER	Real	8.0	Save IN(k)-OUT(k-1)
p_OUT	Real	12.0	Save OUT(k)
RETURN		0.0	
RET_VAL		0.0	

Block: FC101 First.Order.Filter

功能：减小输入信号噪声，该功能生成一个简单一阶（低通）滤波器。

修改记录：
1 YHZ,20080516，通过测试，V1.1；注意，INC,DEC,+ 指令不同。

Network: 1 空语句

算法：y(k)=y(k-1)+[x(k)-y(k-1)]/(N+1) .

注意：输入信号x(k)可以为负值.

```
      NOP   0
```

Network: 2 简单一阶低通滤波器

```
      L     #r_IN           // Load x(k)
      L     #r_OUT          // Load y(k-1)
      -R
      T     #p_ER           // Get ER(k)=x(k)-y(k-1)
      JZ    _023            //IF ER(k)=0,THEN OUT=IN.
      L     #r_DEADW
      NEGR
      <R
      JCN   _024
      JU    _025            //如果 -DEADW<ER<+DEADW，则 OUT=IN。
_024: L     #p_ER
      L     #r_DEADW
      >R
      JCN   _023

_025: L     #t_CYCLE
      ITD
      L     1.000000e+003
      /R
      T     #p_CYCLE

      L     #t_TMLAG
      ITD
      L     1.000000e+003
      /R
      T     #p_TMLAG

      L     #p_CYCLE
      L     #p_TMLAG
      +R
      L     #p_CYCLE
      TAK
      /R
      L     #p_ER
      *R
      L     #r_OUT
      +R
      T     #p_OUT

      L     #r_IN
      L     #r_OUT
      >R
      JCN   _022
      L     #p_OUT
      L     #r_IN
      >R
      JCN   _021
      T     #p_OUT
      JU    _021
_022: L     #p_OUT
      L     #r_IN
      <R
      JCN   _021
      T     #p_OUT
      JU    _021
_023: NOP   0
      L     #r_IN
      T     #p_OUT
_021: NOP   0
      L     #p_OUT
      T     #r_OUT
```