

Program blocks / 02_Controller / NeuralNetwork

Model [FB3]

Model Properties

General

Name	Model	Number	3	Type	FB	Language	SCL
Numbering	Manual						

Information

Title		Author		Comment		Family	
Version	0.1	User-defined ID					

Name	Data type	Default value
▼ Input		
wejscie	Real	0.0
▼ Output		
wyjscie	Real	0.0
InOut		
▼ Static		
x	Array[0..5] of Real	
s	Array[0..7] of Real	
o	Array[0..7] of Real	
s2	Real	0.0
i	Int	0
w1_1	Array[0..7] of Real	
w1_2	Array[0..7] of Real	
w1_3	Array[0..7] of Real	
w1_4	Array[0..7] of Real	
w1_5	Array[0..7] of Real	
w1_6	Array[0..7] of Real	
w_2	Array[0..7] of Real	
bias	Array[0..7] of Real	
bias2	Real	0.0
N	Int	0
Temp		
Constant		

```

0001 #x[2]:=#x[1];           // x(k-2)
0002 #x[1]:=#x[0];         // x(k-1)
0003 #x[0]:=#wejscie;      // x(k)
0004 #x[5]:=#x[4];         // y(k-3)
0005 #x[4]:=#x[3];         // y(k-2)
0006 #x[3]:=#s2;           // y(k-1)
0007
0008 FOR #i:=0 TO #N-1 DO
0009     #s[#i]:=#x[0]*#w1_1[#i] + #x[1]*#w1_2[#i] + #x[2]*#w1_3[#i];
0010     #s[#i]:=#s[#i] + #x[3]*#w1_4[#i] + #x[4]*#w1_5[#i] + #x[5]*#w1_6[#i] + #bias[#i]; // jw, + bias
0011     #o[#i]:=(1.0-EXP(-#s[#i]))/(1.0+EXP(-#s[#i])); //f. activation sigmoidalna
0012 END_FOR;
0013
0014 #s2:=0.0;
0015 FOR #i:=0 TO #N-1 DO
0016     #s2:=#s2+#o[#i]*#w_2[#i];
0017 END_FOR;
0018
0019 #s2:=#s2+#bias2;
0020 #wyjscie:=#s2;

```