

Program blocks / 02_Controller / NeuralNetwork

IMC+PID [FB5]

IMC+PID Properties

General

| | | | | | | | |
|------------------|---------|---------------|---|-------------|----|-----------------|-----|
| Name | IMC+PID | Number | 5 | Type | FB | Language | SCL |
| Numbering | Manual | | | | | | |

Information

| | | | | | | | |
|----------------|-----|------------------------|--|----------------|--|---------------|--|
| Title | | Author | | Comment | | Family | |
| Version | 0.1 | User-defined ID | | | | | |

| Name | Data type | Default value |
|----------|---------------------|---------------|
| ▼ Input | | |
| SP | Real | 0.0 |
| PV | Real | 0.0 |
| ▼ Output | | |
| MV | Real | 0.0 |
| InOut | | |
| ▼ Static | | |
| PV_model | Real | 0.0 |
| e_ob_mo | Real | 0.0 |
| e | Real | 0.0 |
| ef | Array[0..1] of Real | |
| MV1 | Real | 0.0 |
| MV2 | Real | 0.0 |
| Temp | | |
| Constant | | |

```

0001 "Model_DB" (wejście:=#MV,
0002     wyjscie=>#PV_model);
0003
0004
0005 #e_ob_mo:=#PV-#PV_model;
0006 #e:=#SP-#e_ob_mo;
0007
0008 #ef[1]:=#ef[0];
0009 #ef[0]:=0.2835*#e+0.7165*#ef[1];
0010
0011
0012 "Inversion_DB" (wejście:=#ef[0],
0013     wyjscie=>#MV1);
0014
0015 "PID_DB_1" (SP:=#SP,
0016     PV:=#PV,
0017     MV:=#MV,
0018     kp:=0.2,
0019     ki:=0.8,
0020     kd:=0.1,
0021     MV_PID=>#MV2);
0022
0023
0024 #MV:=#MV1+#MV2;
0025
0026 IF #MV>10.0 THEN
0027     #MV:=10.0;
0028 END_IF;
0029
0030 IF #MV<-10.0 THEN
0031     #MV:=-10.0;
0032 END_IF;

```