

```
1  _sim_Timer.PRE := 50;
2  _sim_Timer.TimerEnable :=1;
3  TONR(_sim_Timer);
4
5  // Put sim logic here
6  IF ( _sim_Timer.DN) THEN
7      _sim_x := _sim_x + 0.1;
8  END_IF;
9
10 // If the vfd/pump (combine them for simplicity) is turned on:
11 IF ( _sim_vfd_en) THEN
12     //_sim_vfd_raw_systemOutput := 0;
13
14     // Scale the input sensor values into something we can work with:
15     _sim_vfd_input_SCP.EnableOut := 1;
16     _sim_vfd_input_SCP.EnableIn := 1;
17     NSCP(_sim_vfd_input_SCP, 16383, 0, 10, -10, _sim_vfd_raw_systemOutput, _sim_vfd_input_scaled);
18
19     _sim_change := _sim_change + _sim_vfd_input_scaled / 3.0;
20
21     // Equation to simulate changing environment
22     _sim_sensor_output_scaled := 15 * sin(0.5 *sin(_sim_x)) + 15 + _sim_change;
23
24     IF ( _sim_sensor_output_scaled >= 30) THEN
25         _sim_sensor_output_scaled := 30;
26     END_IF;
27
28     IF ( _sim_sensor_output_scaled <= 0) THEN
29         _sim_sensor_output_scaled := 0;
30     END_IF;
31 END_IF;
32
33 // If the vfd/pump (combine them for simplicity) is turned off
34 IF NOT ( _sim_vfd_en) THEN
35     _sim_sensor_output_scaled := 30;
36 END_IF;
37
38 // Scale the output sensor values:
39 NSCP(_sim_sensor_output_SCP, 0, 30, 16383, 0, _sim_sensor_output_scaled, _sim_sensor_raw_systemInput);
40
41 // End sim logic
42 _sim_Timer.Reset := _sim_Timer.DN;
```