

StateMonitor

```
domain = "Signal";
displayName = "StateMonitor";
brief = "Check for steady state";
componentType = "ComponentSignal";
author = "Petter Krus <petter.krus@liu.se>";
affiliation = "Division of Fluid and Mechatronic Systems, Linköping University";
SetFileNames[defaultPath, domain, displayName];
ResetComponentVariables[];
```

```
inputVariables = {
  {y1, 0., double, "", "monitored variable 1"},
  {y2, 0., double, "", "monitored variable 2"},
  {y3, 0., double, "", "monitored variable 3"},
  {sOn, 0., double, "", "extra trigg signal"}
};
```

```
inputParameters = {
  {y10, 0.02, double, "", "treashold variable 1"},
  {y20, 0.02, double, "", "treashold variable 2"},
  {y30, 0.02, double, "", "treashold variable 3"},
  {thau, 1., double, "sec", "filter time constant 2"}
};
```

```
outputVariables = {
  {s1, 0., double, "", "One when varaibles in steady state"},
  {y1f, 0., double, "", "filtered variable 1"},
  {y2f, 0., double, "", "filtered variable 2"},
  {y3f, 0., double, "", "filtered variable 3"}
};
```

```
logicUnit = .5;
```

```
systemEquationsDa = {
  Abs[y1]
  y1f -  $\frac{\text{Abs}[y1]}{(\text{thau } s + 1)}$ ,
  Abs[y2]
  y2f -  $\frac{\text{Abs}[y2]}{(\text{thau } s + 1)}$ ,
  Abs[y3]
  y3f -  $\frac{\text{Abs}[y3]}{(\text{thau } s + 1)}$ ,
  s1 - onPositive[(onPositive[Abs[y1f] - Abs[y10]] +
    onPositive[Abs[y2f] - Abs[y20]] + onPositive[Abs[y3f] - Abs[y30]]) + sOn - logicUnit]
};
```

```
boundaryEquations = {};
```

```
systemVariables = {y1f, y2f, y3f, s1};
```

```
Compgen[file]
```