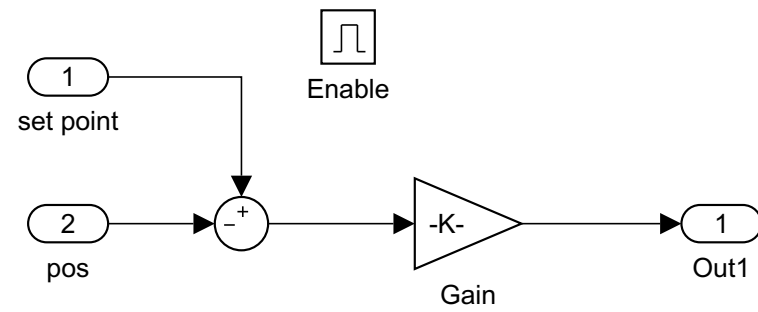
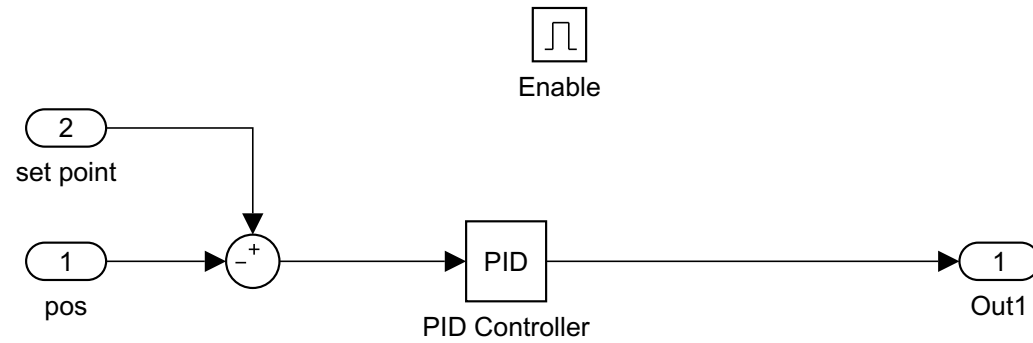
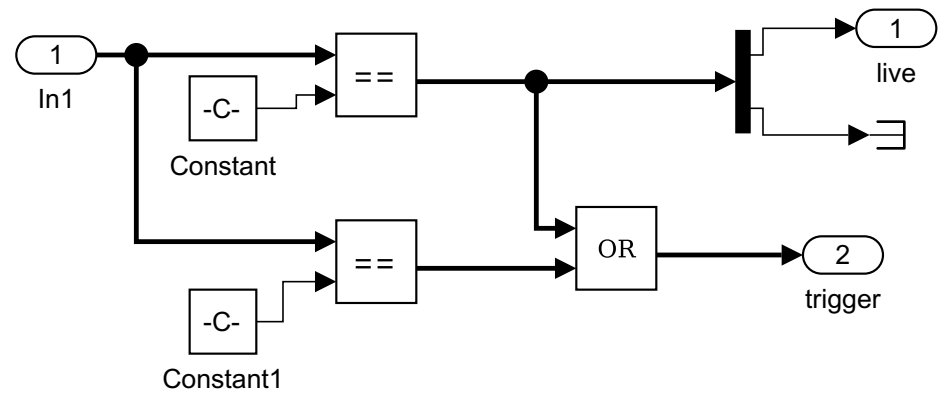
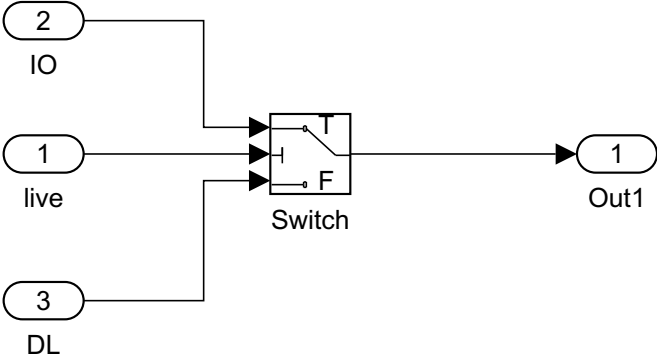


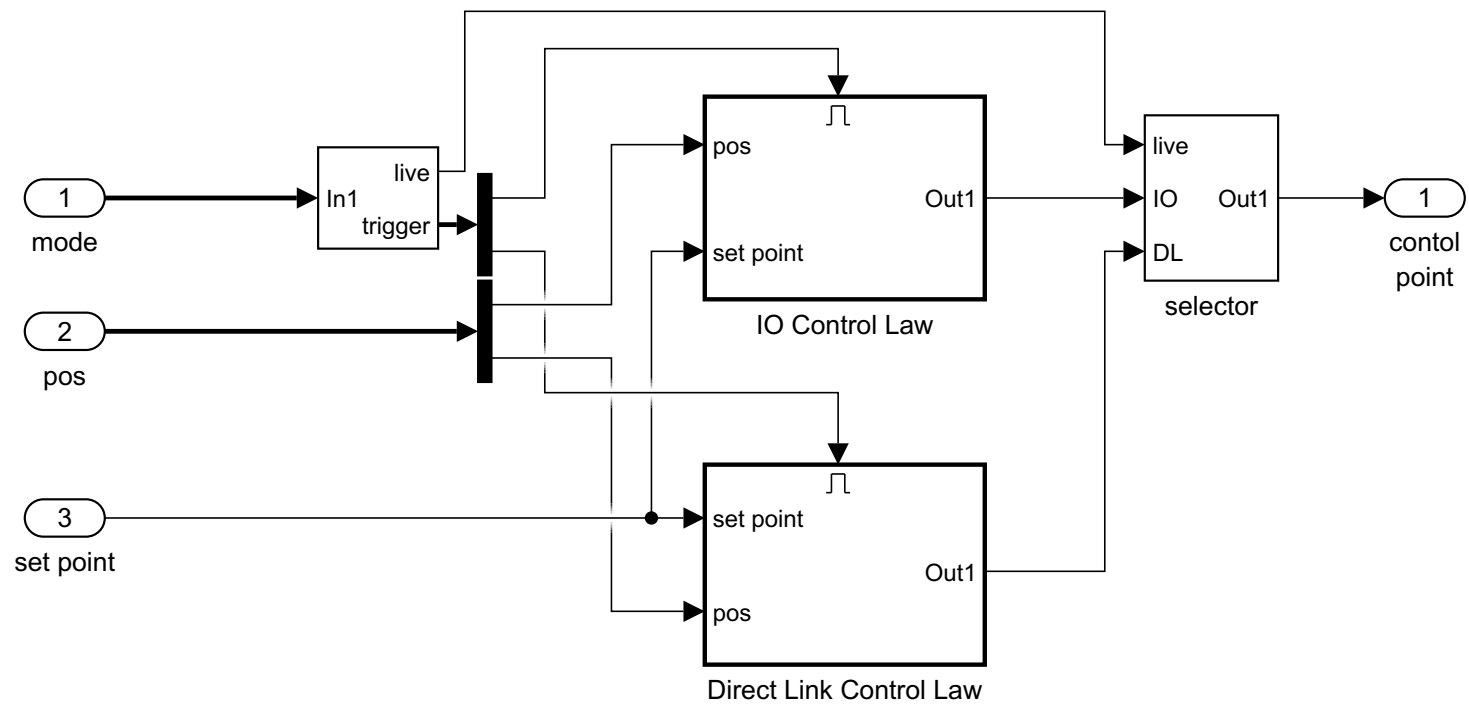
We could add an additional control law that did not rely on the position measurements in case if all position sensors fail (& pressure OK) pilot could still fly plane.



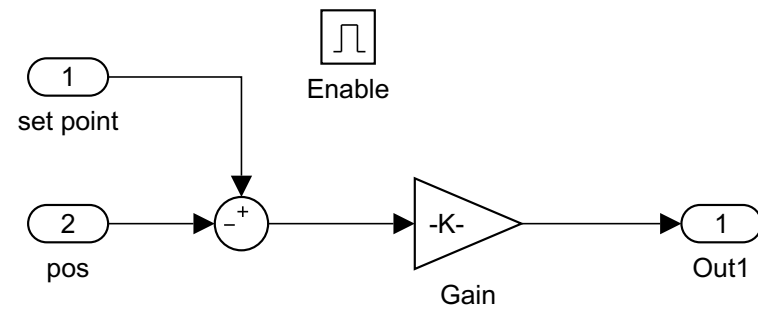


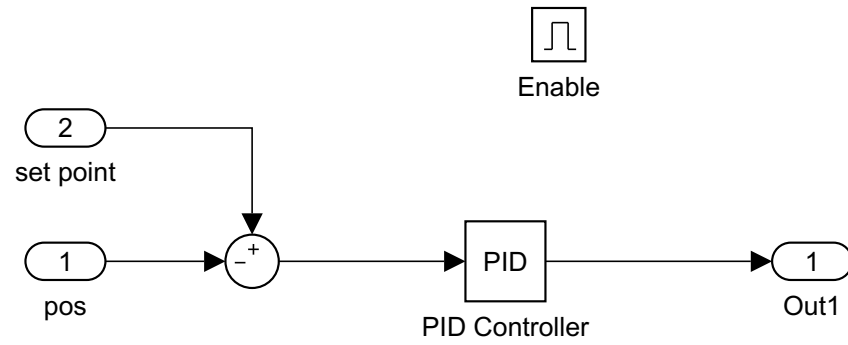


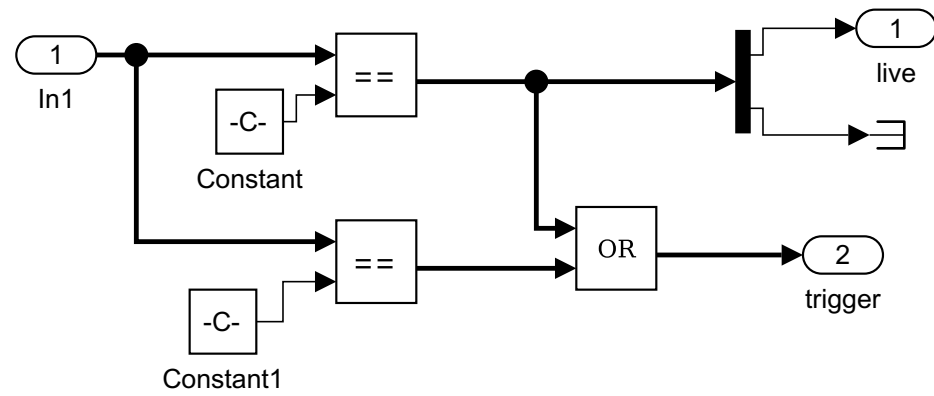


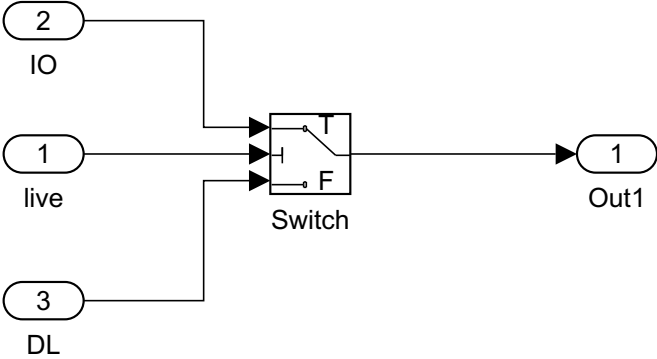


We could add an additional control law that did not have to rely on the position measurements in case if all position sensors fail (& pressure OK) pilot could still fly plane.





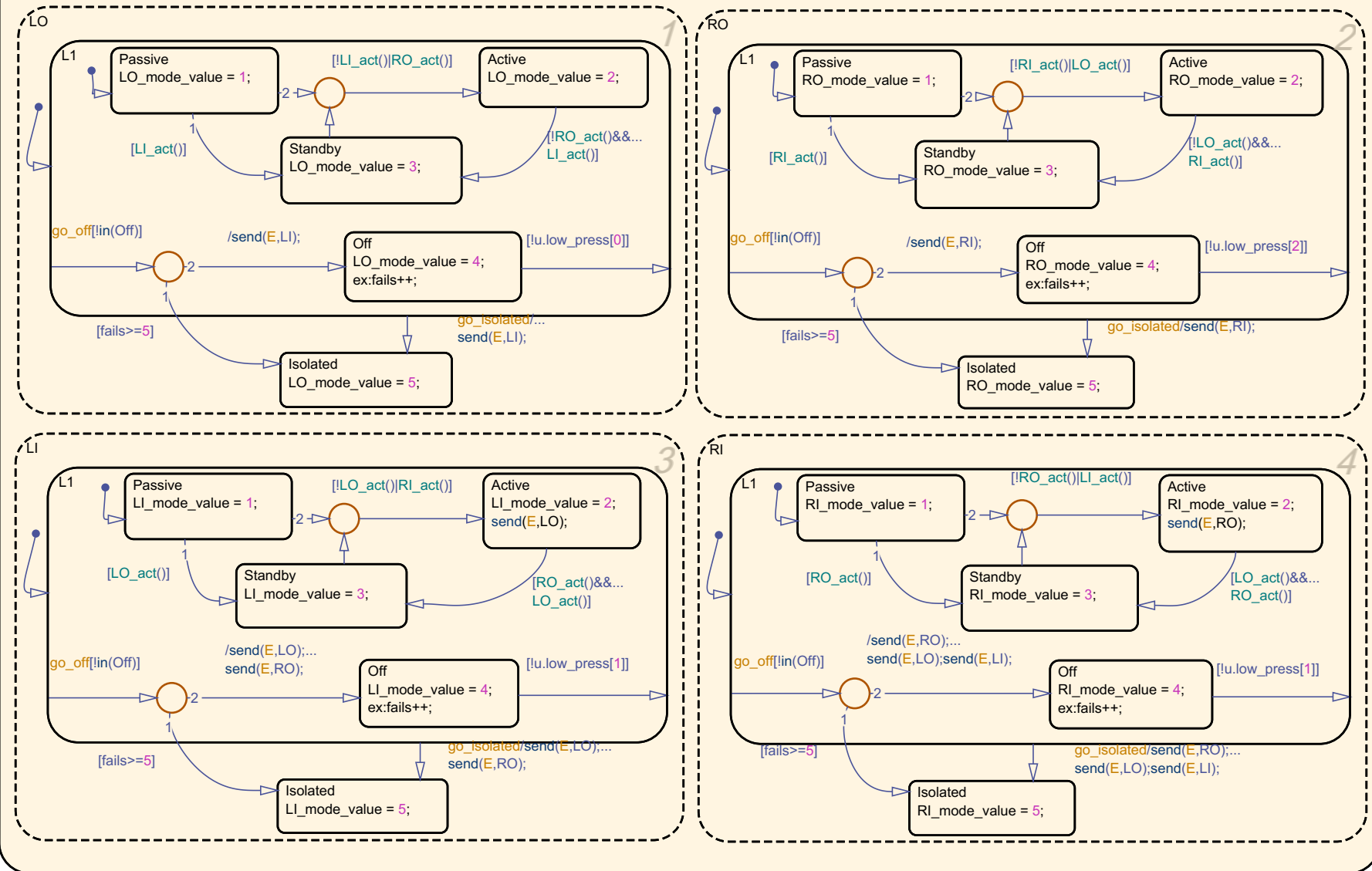




Actuators

en:L_switch();R_switch();

du:L_switch();R_switch();



truthable
L_switch

truthable
R_switch

function
y_act = LO_act

function
y_act = LI_act

function
y_act = RO_act

function
y_act = RI_act

This mode logic assumes that there are 3 hydraulic lines, one that is connected to the 2 redundant actuators (Left Inner and Right Inner actuators). The other two are connected to the primary actuators Left Outer and Right Outer (1 per actuator).

sf_aircraft/Mode Logic/L_switch

Condition Table:

| 1: Description | Condition | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|-----------------|---|-----|---|-----|---|---|---------|
| 1 Hydraulic system 1 Low pressure (Left Outer line) | u.low_press[0] | T | T | F | F | - | - | - |
| 2 Left Outer actuator position failed | u.L_pos_fail[0] | - | - | T | T | - | - | - |
| 3 Hydraulic system 2 Low pressure (Inner line) | u.low_press[1] | F | - | F | - | T | - | - |
| 4 Left Inner actuator position failed | u.L_pos_fail[1] | F | - | F | - | - | T | - |
| | Actions | 2 | 3,5 | 3 | 3,5 | 4 | 5 | Default |

Action Table:

| 1: Description | Action |
|---|---------------------------------|
| 1 Default - All ok, do nothing. | Default: |
| 2 Hydraulic System 1 Failure. Turn off Left Outer Actuator | send(go_off,Actuators.LO); |
| 3 Left Outer Actuator Failure. Isolate Left Outer Actuator | send(go_isolated,Actuators.LO); |
| 4 Hydraulic System 2 Failure. Turn off Left Inner Actuator | send(go_off,Actuators.LI); |
| 5 Left Inner Actuator Failure. Isolate Left Inner Actuator | send(go_isolated,Actuators.LI); |

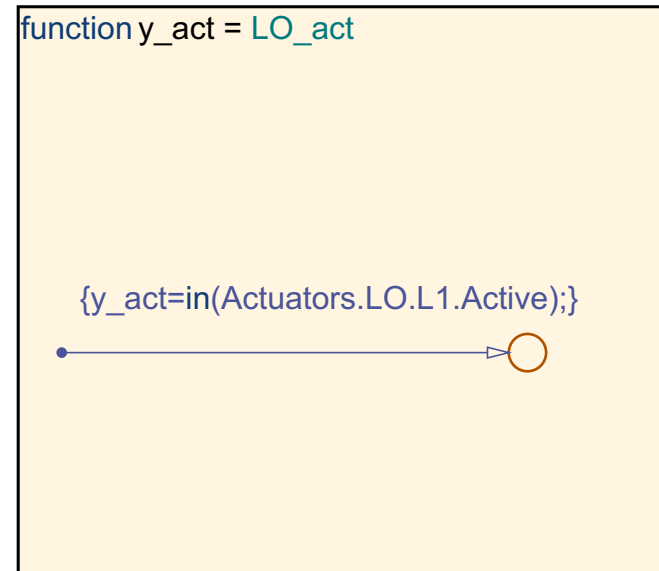
sf_aircraft/Mode Logic/R_switch

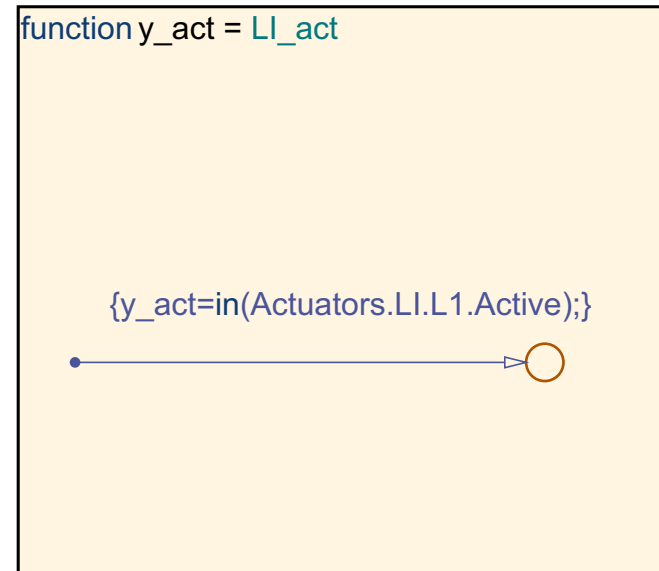
Condition Table:

| 1: Description | Condition | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|-----------------|---|---|---|---|---|---|---------|
| 1 Hydraulic system 3 Low pressure (Right Outer line) | u.low_press[2] | T | T | F | F | - | - | - |
| 2 Right Outer actuator position failed | u.R_pos_fail[0] | - | - | T | T | - | - | - |
| 3 Hydraulic system 2 Low pressure (Inner line) | u.low_press[1] | F | - | F | - | T | - | - |
| 4 Right Inner actuator position failed | u.R_pos_fail[1] | F | - | F | - | - | T | - |
| | Actions | 2 | 3 | 4 | 3 | 5 | 6 | Default |

Action Table:

| 1: Description | Action |
|--|--|
| 1 Default - All ok, do nothing. | Default: |
| 2 Hydraulic System 3 Failure. Turn off Right Outer Actuator | send(go_off,Actuators.RO); |
| 3 Multiple Failure. Isolate Right Outer AND Right Inner Actuators | send(go_isolated,Actuators.RO); send(go_isolated,Actuators.RI); |
| 4 Right Outer Actuator Failure. Isolate Right Outer Actuator | send(go_isolated,Actuators.RO); |
| 5 Hydraulic System 2 Failure. Turn off Right Inner Actuator | send(go_off,Actuators.RI); |
| 6 Right Inner Actuator Failure. Isolate Right Inner Actuator | send(go_isolated,Actuators.RI); |

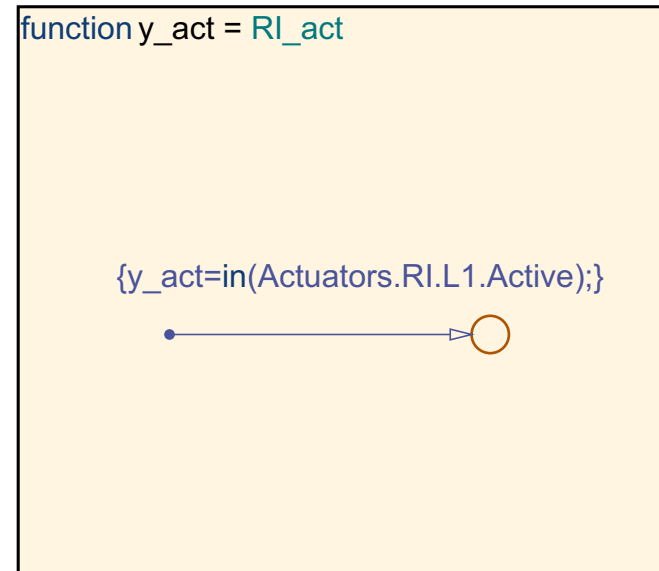


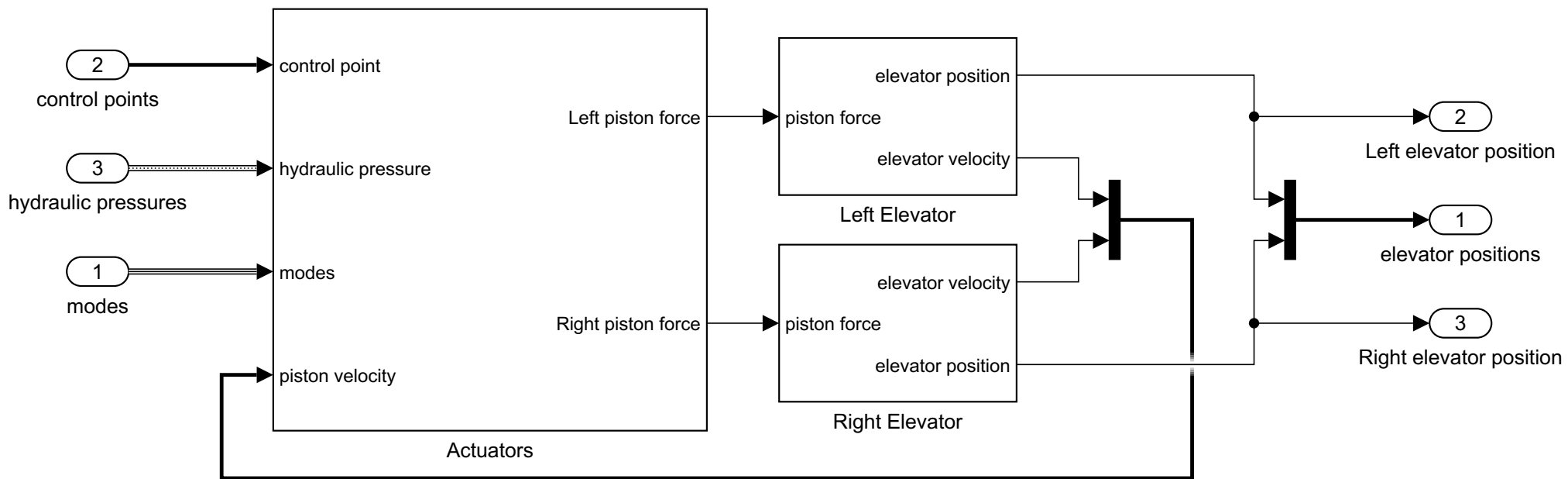


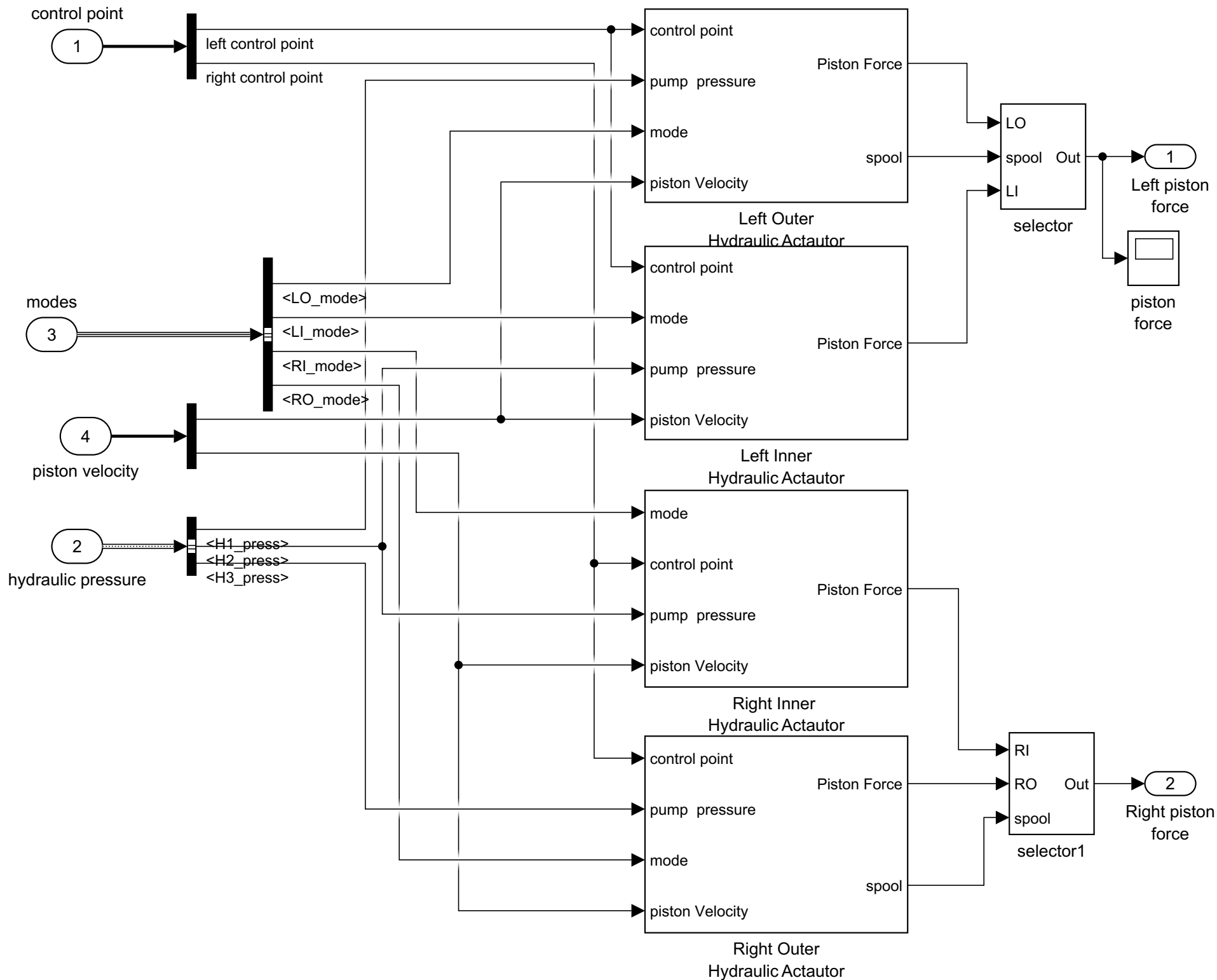
```
function y_act = RO_act
```

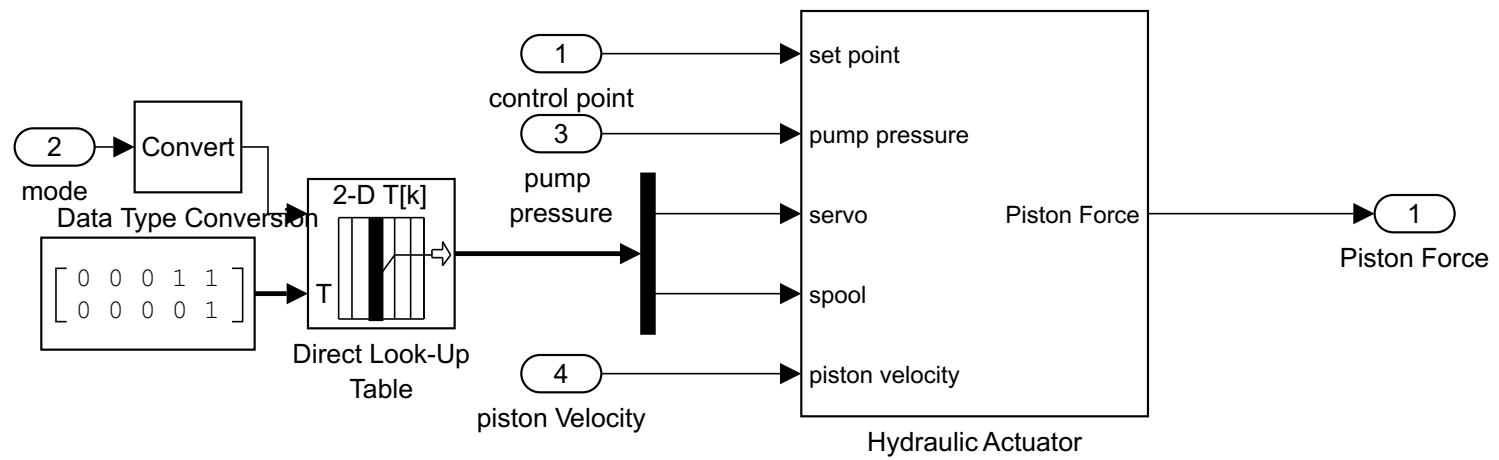
```
{y_act=in(Actuators.RO.L1.Active);}
```

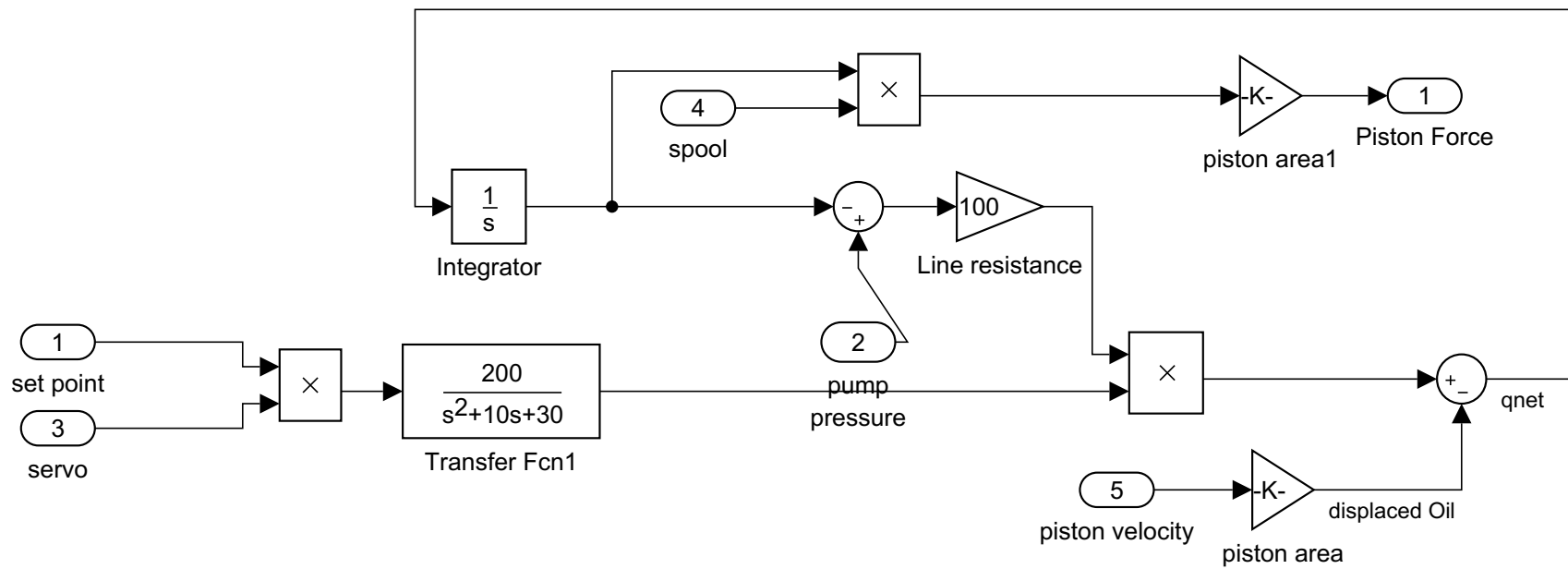


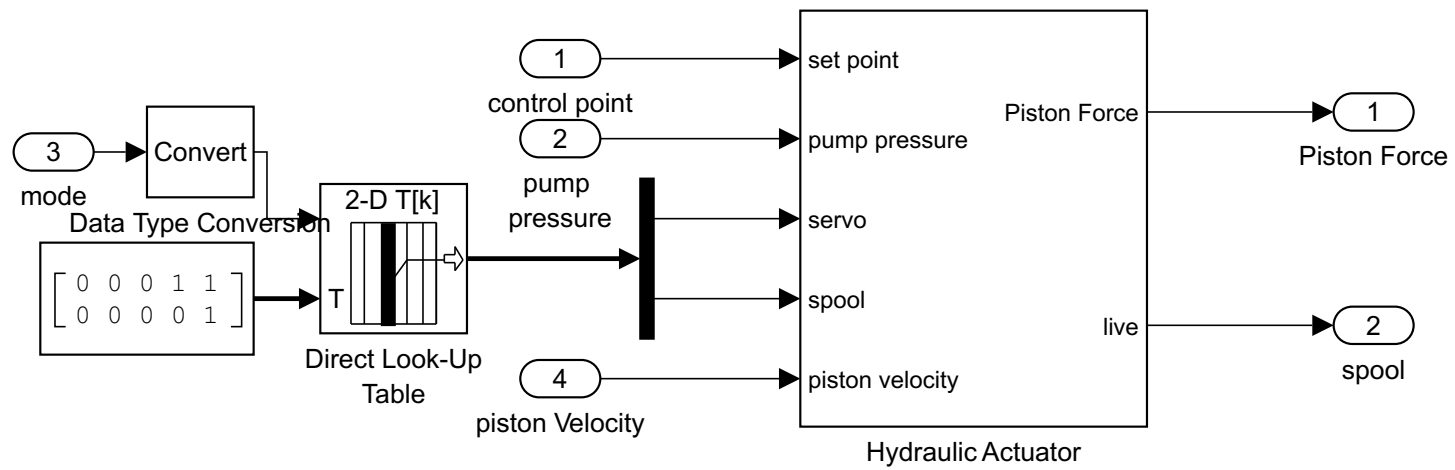


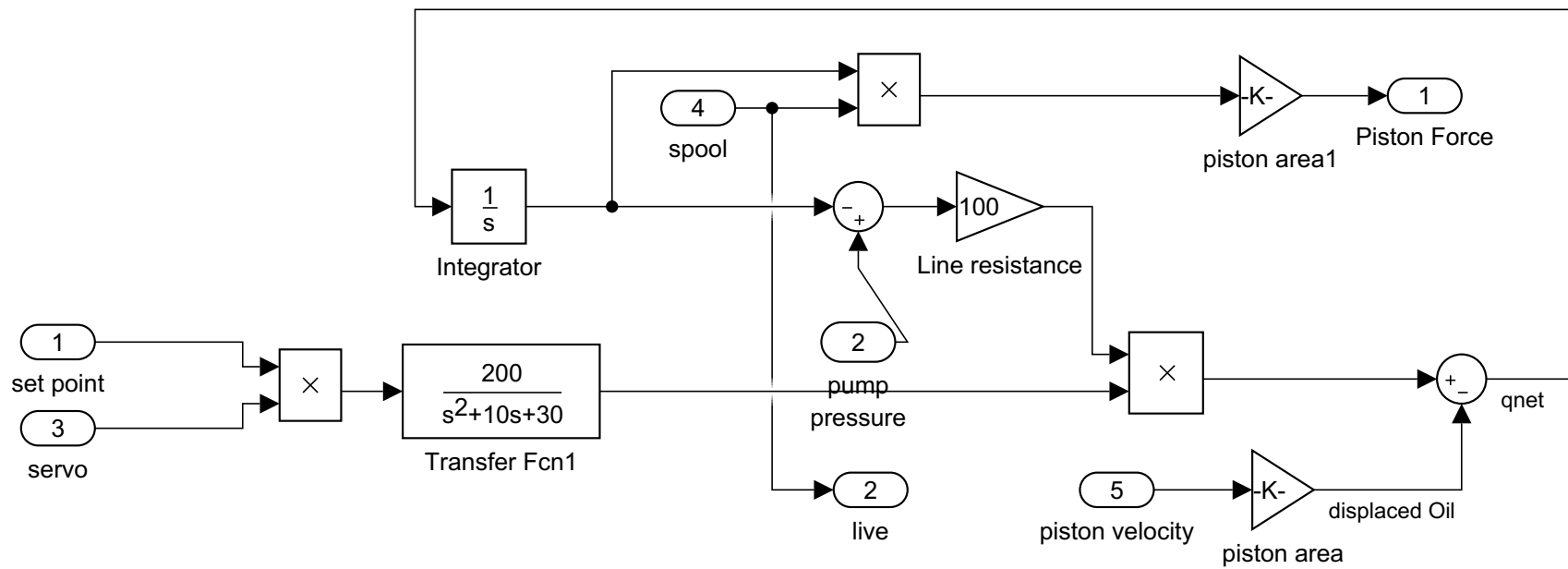


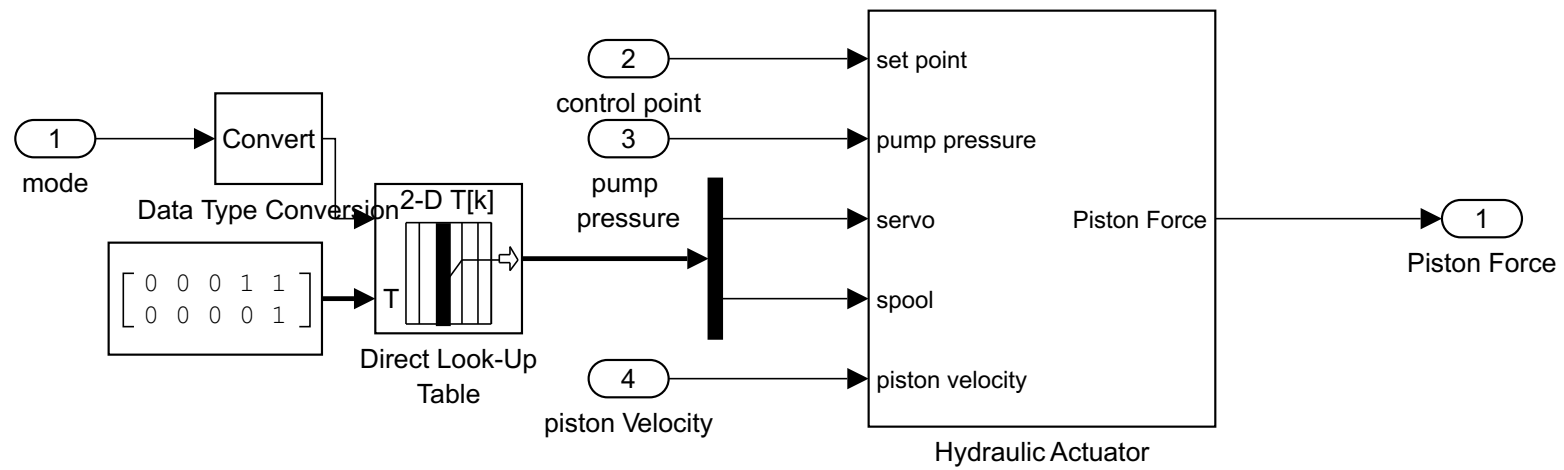


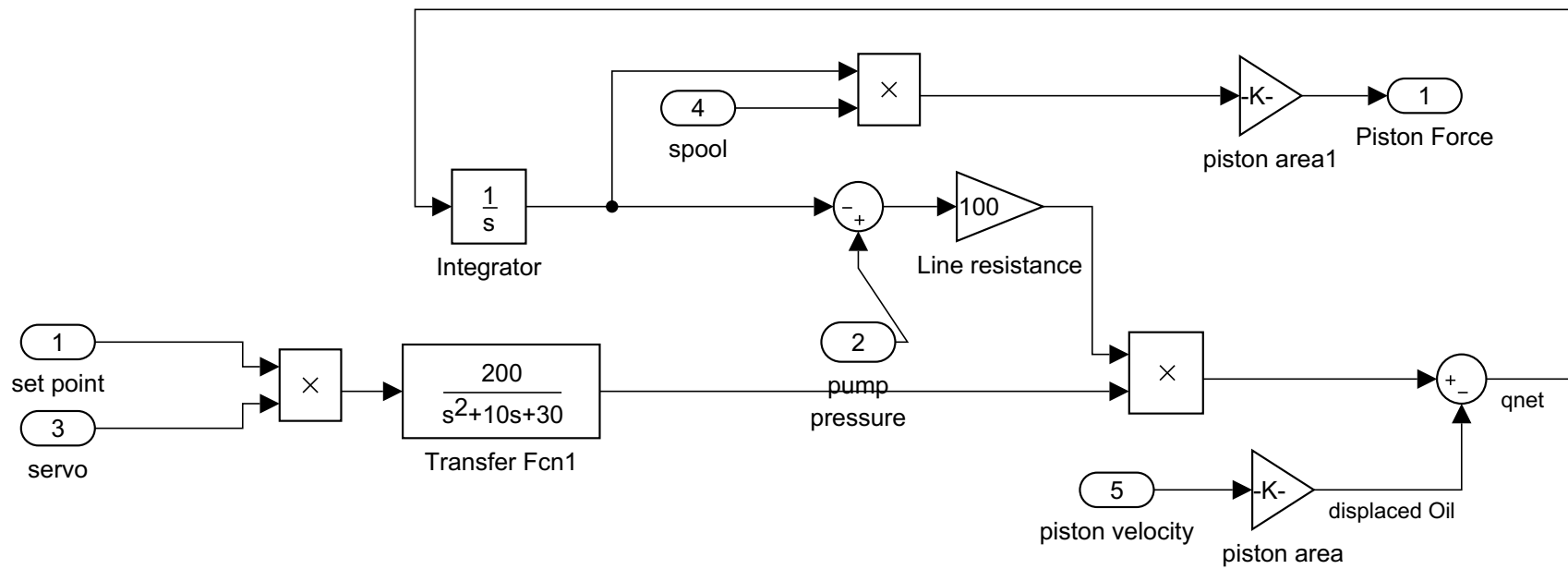


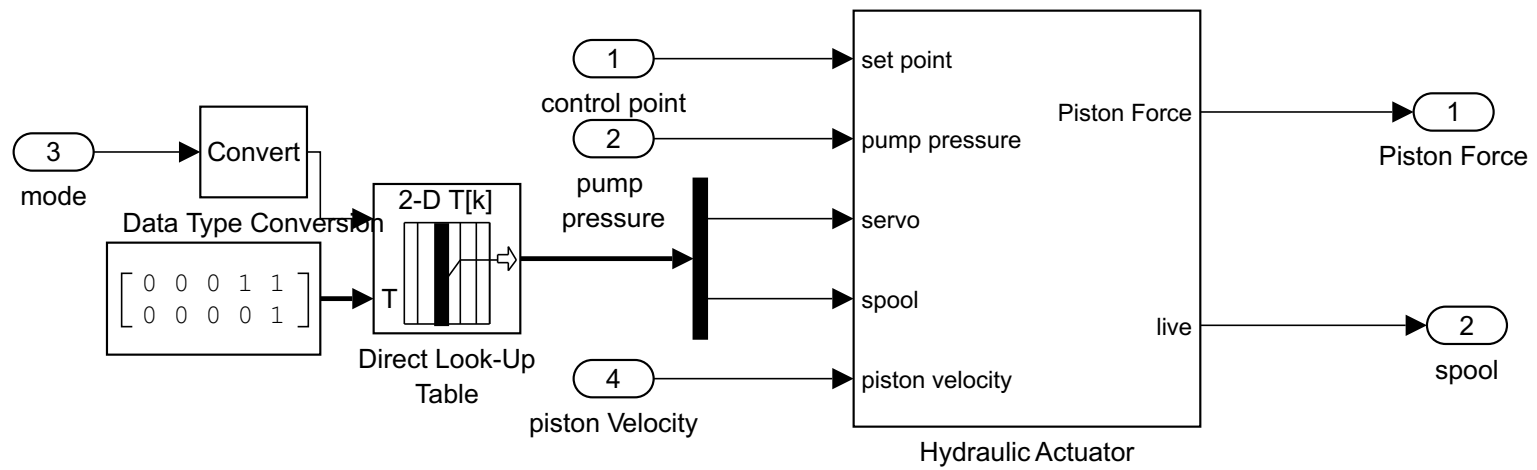


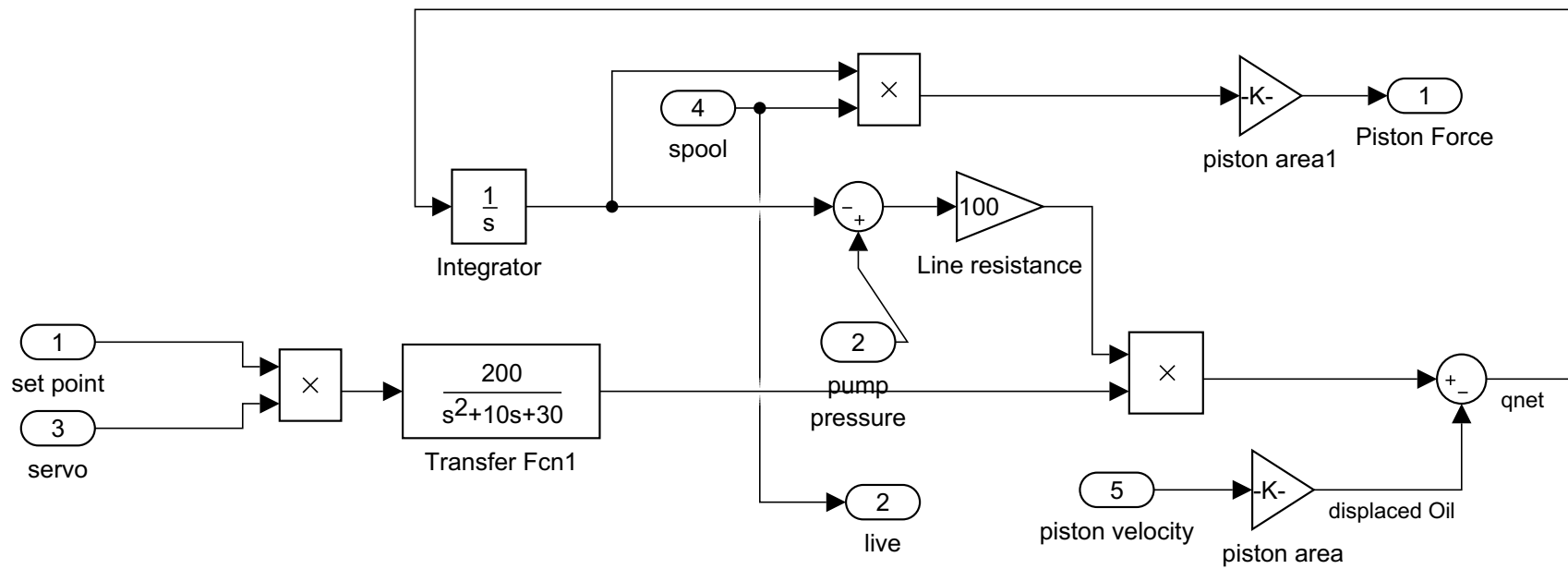


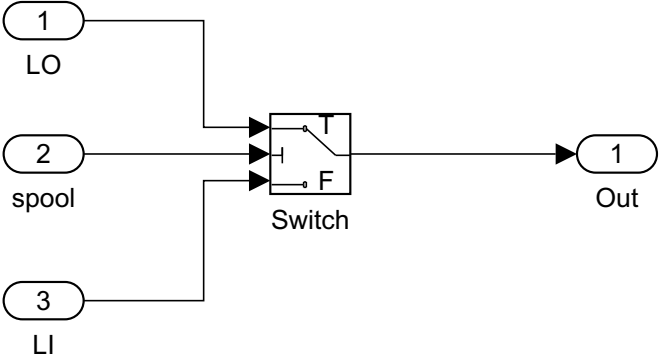


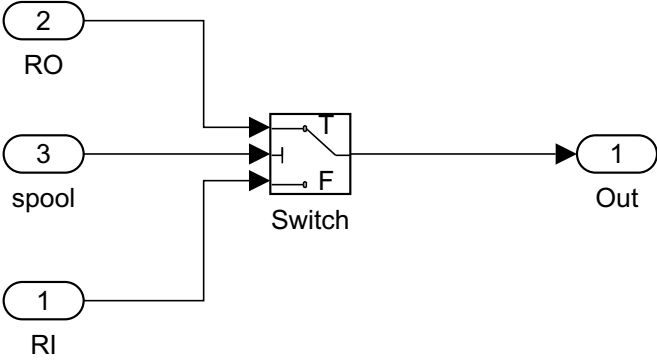


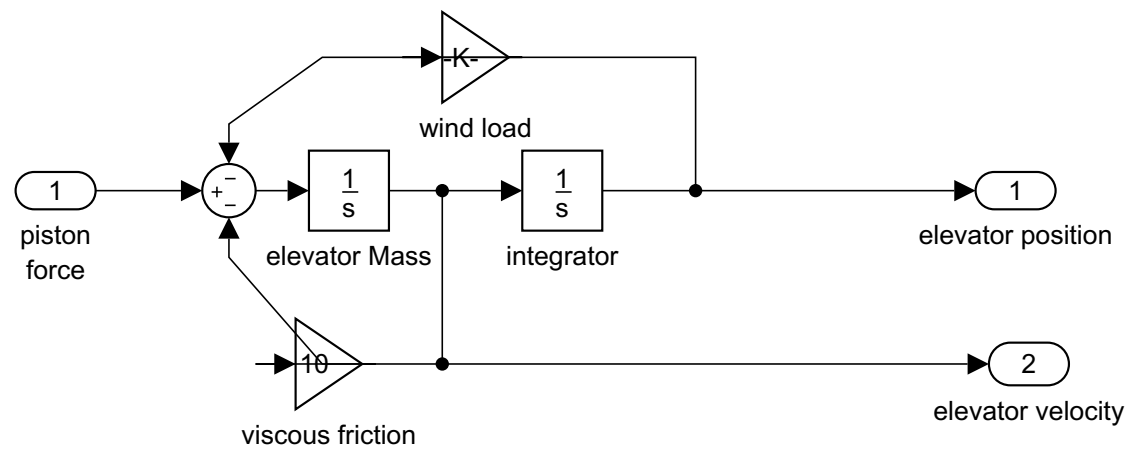


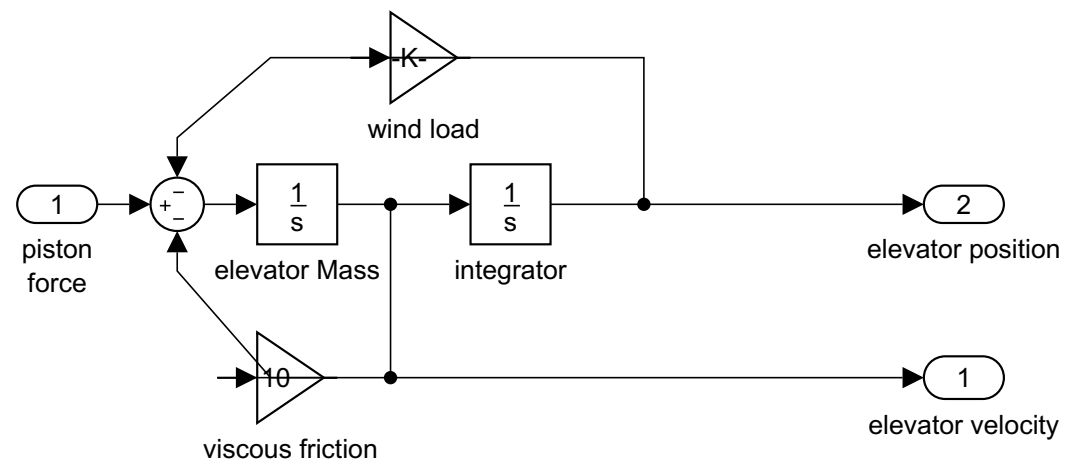


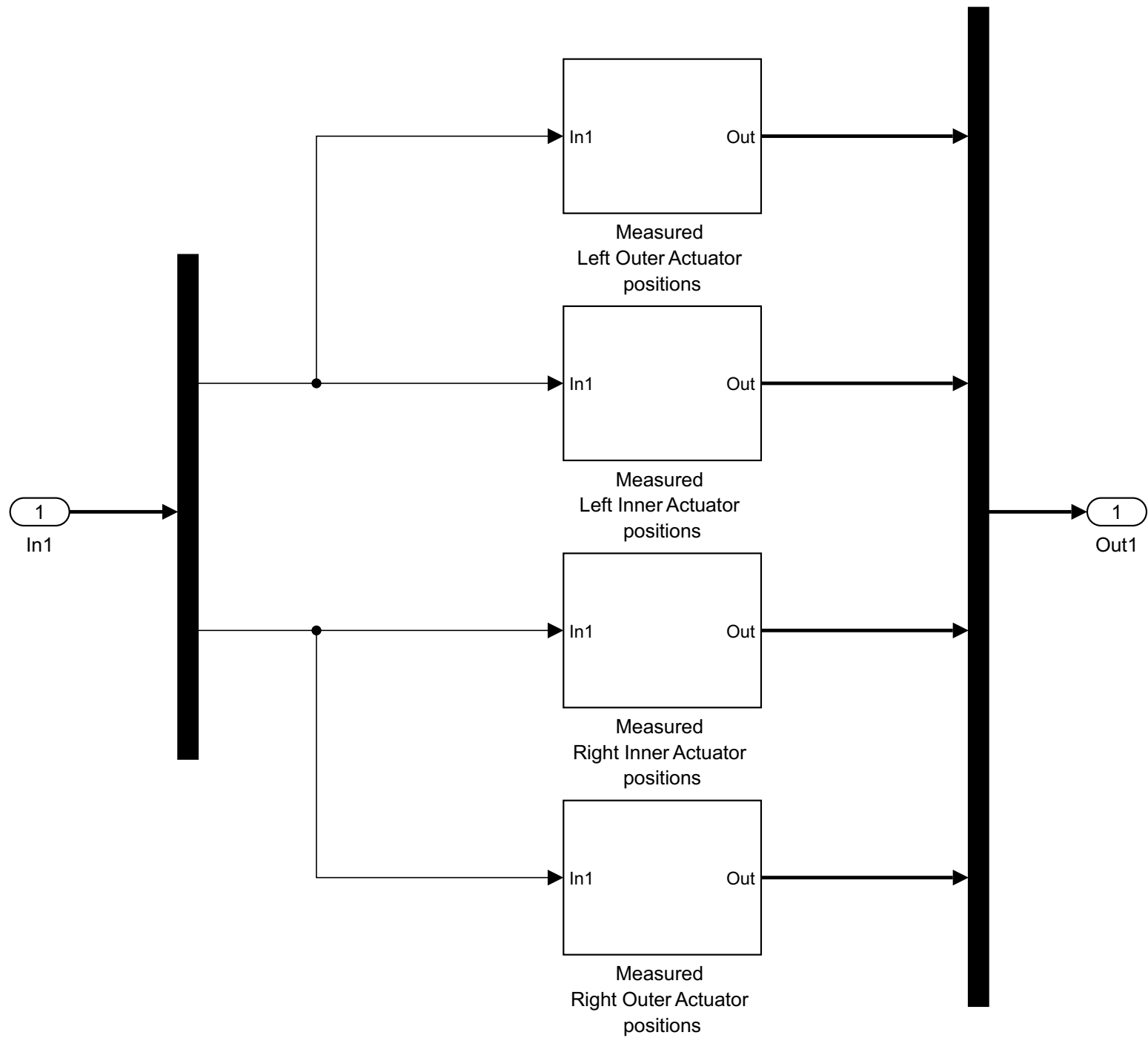


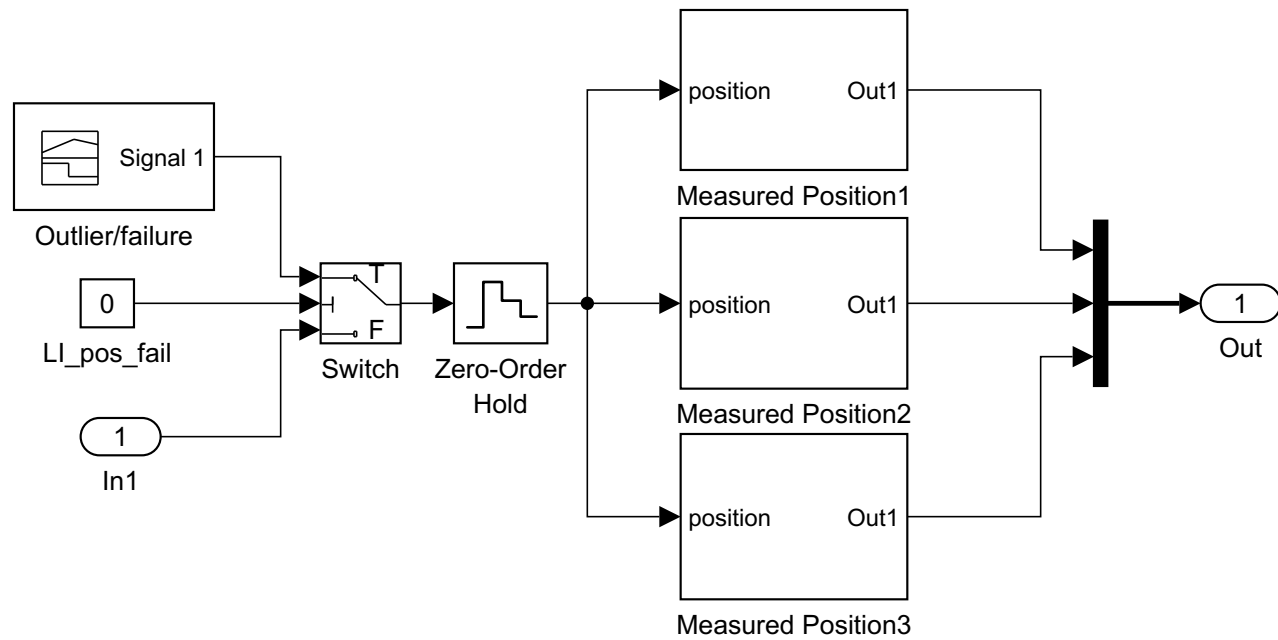


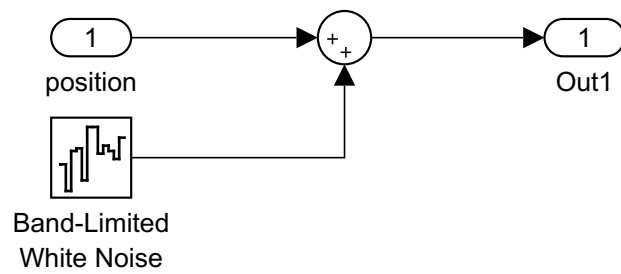


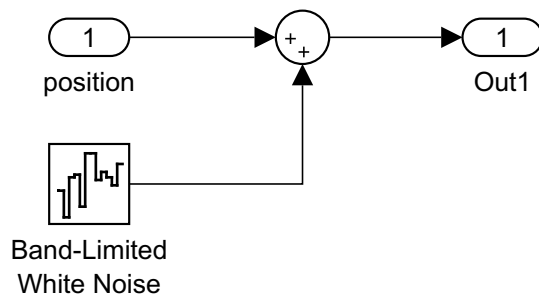


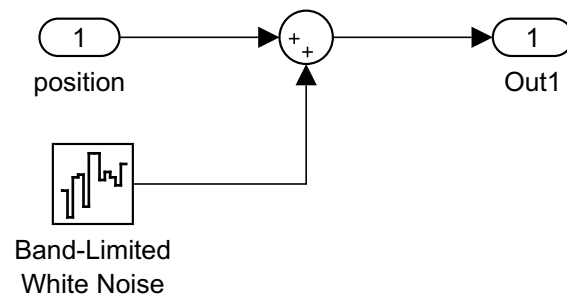


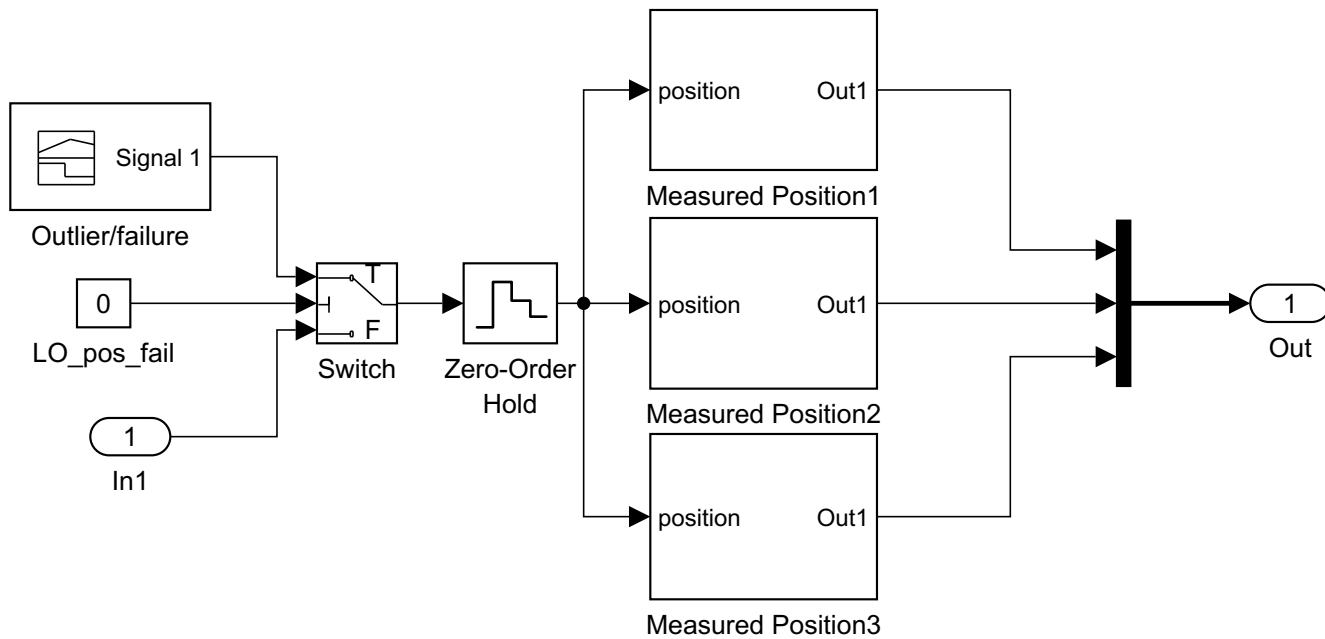


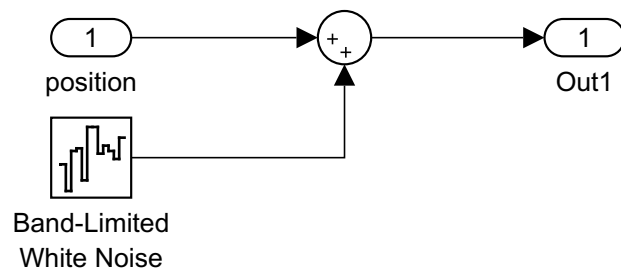


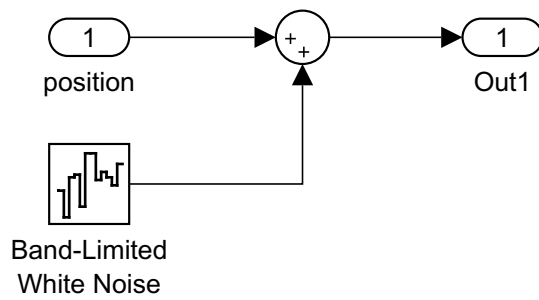


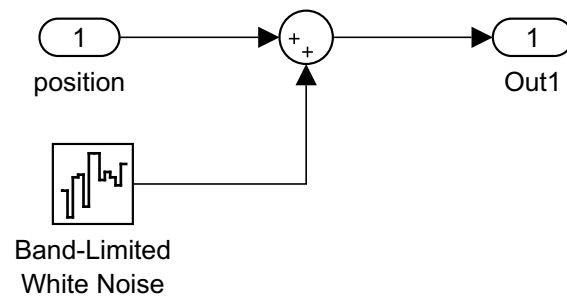


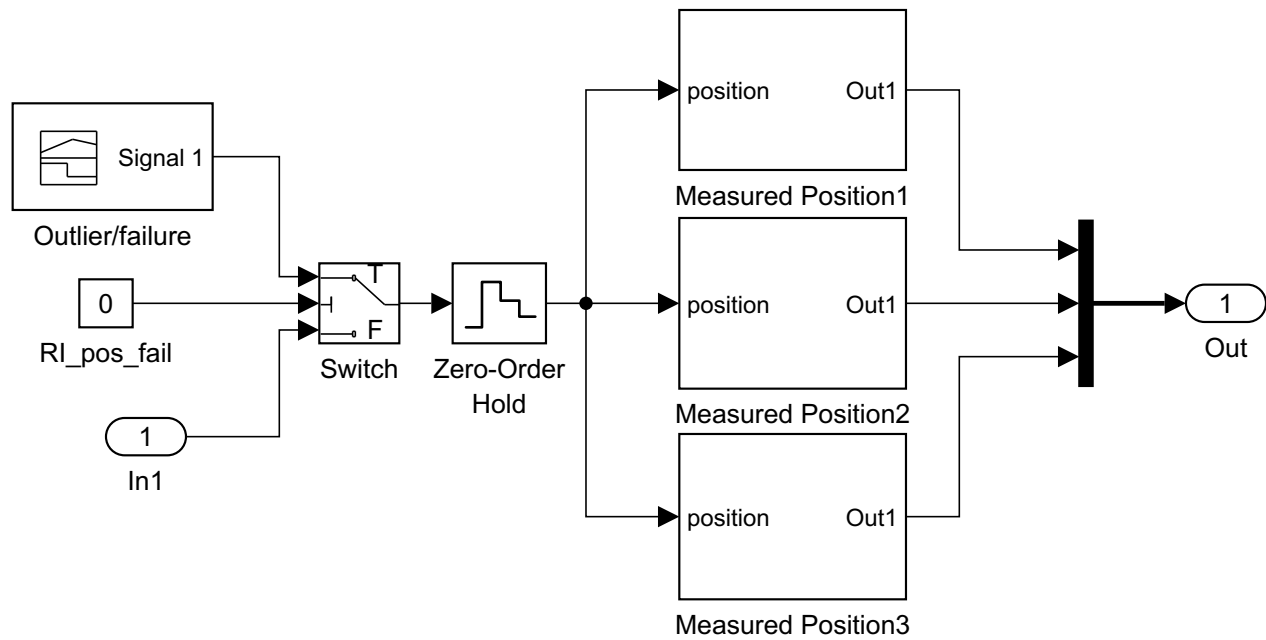


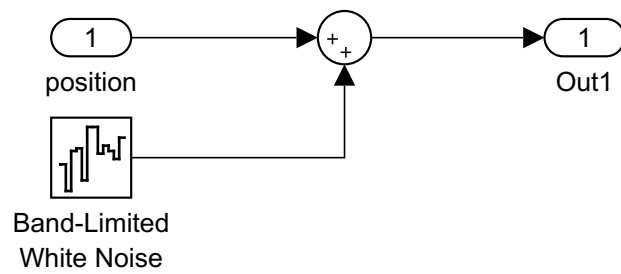


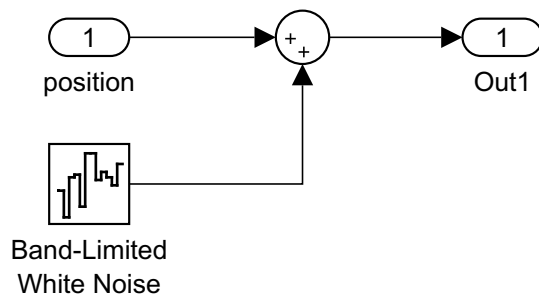


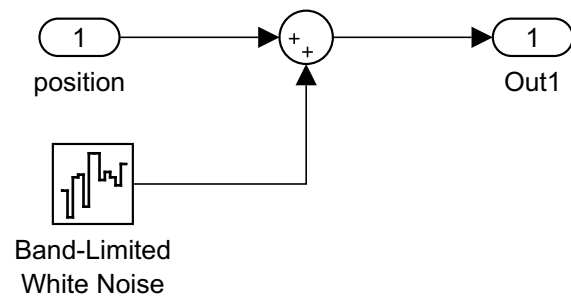


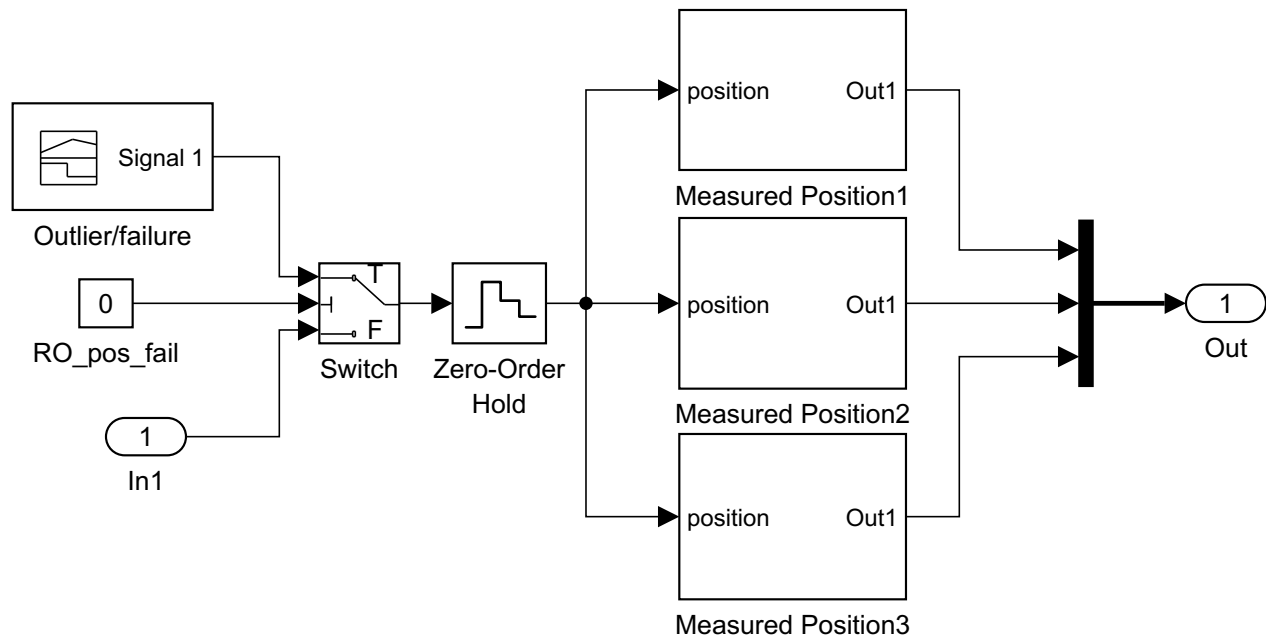


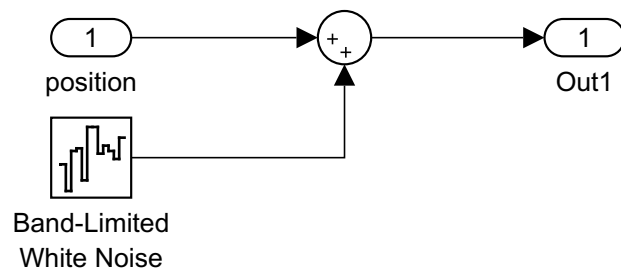


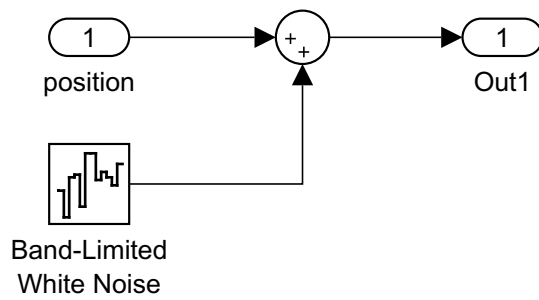


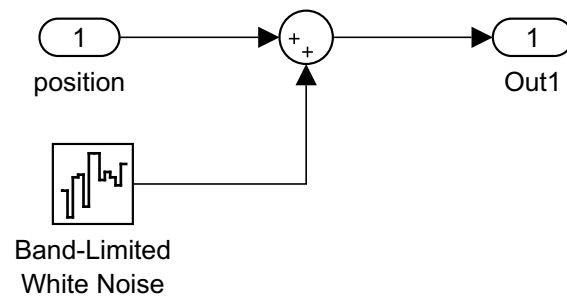


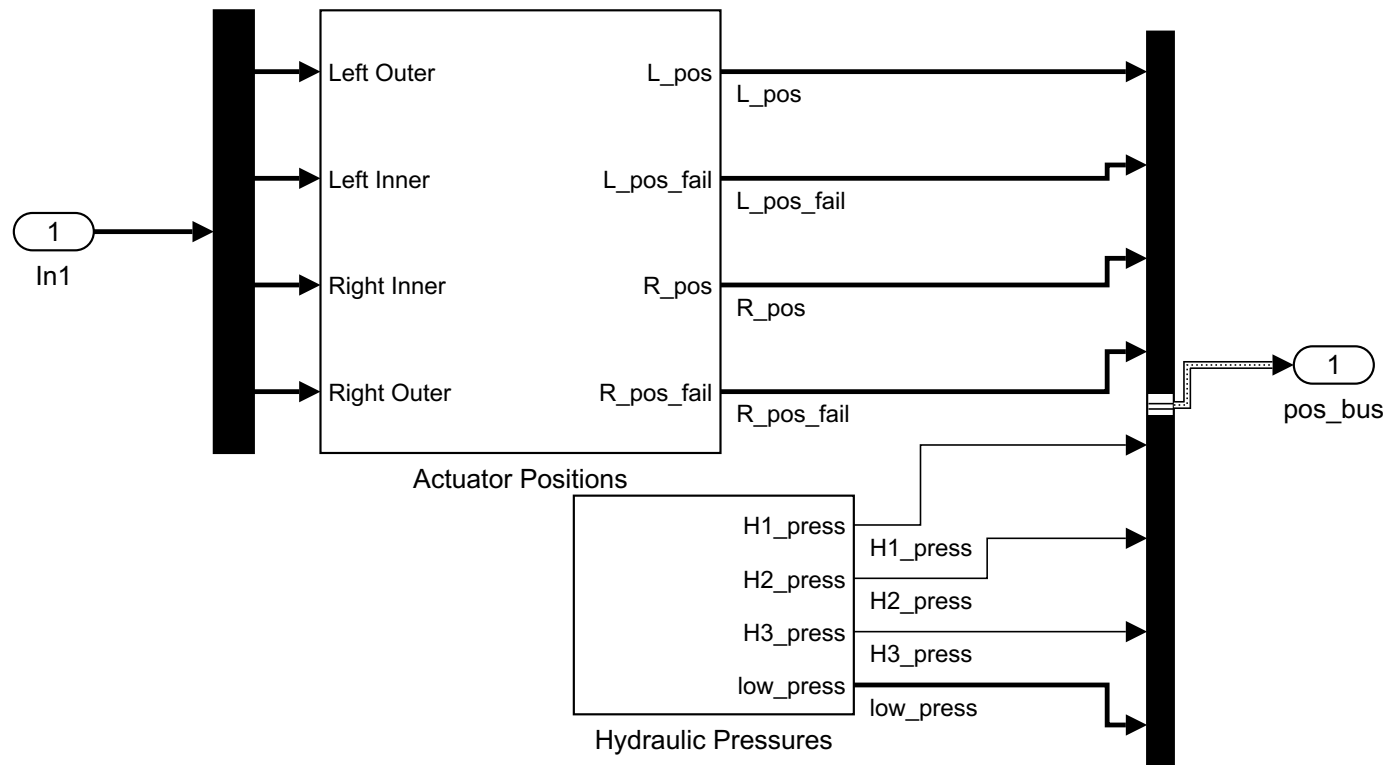




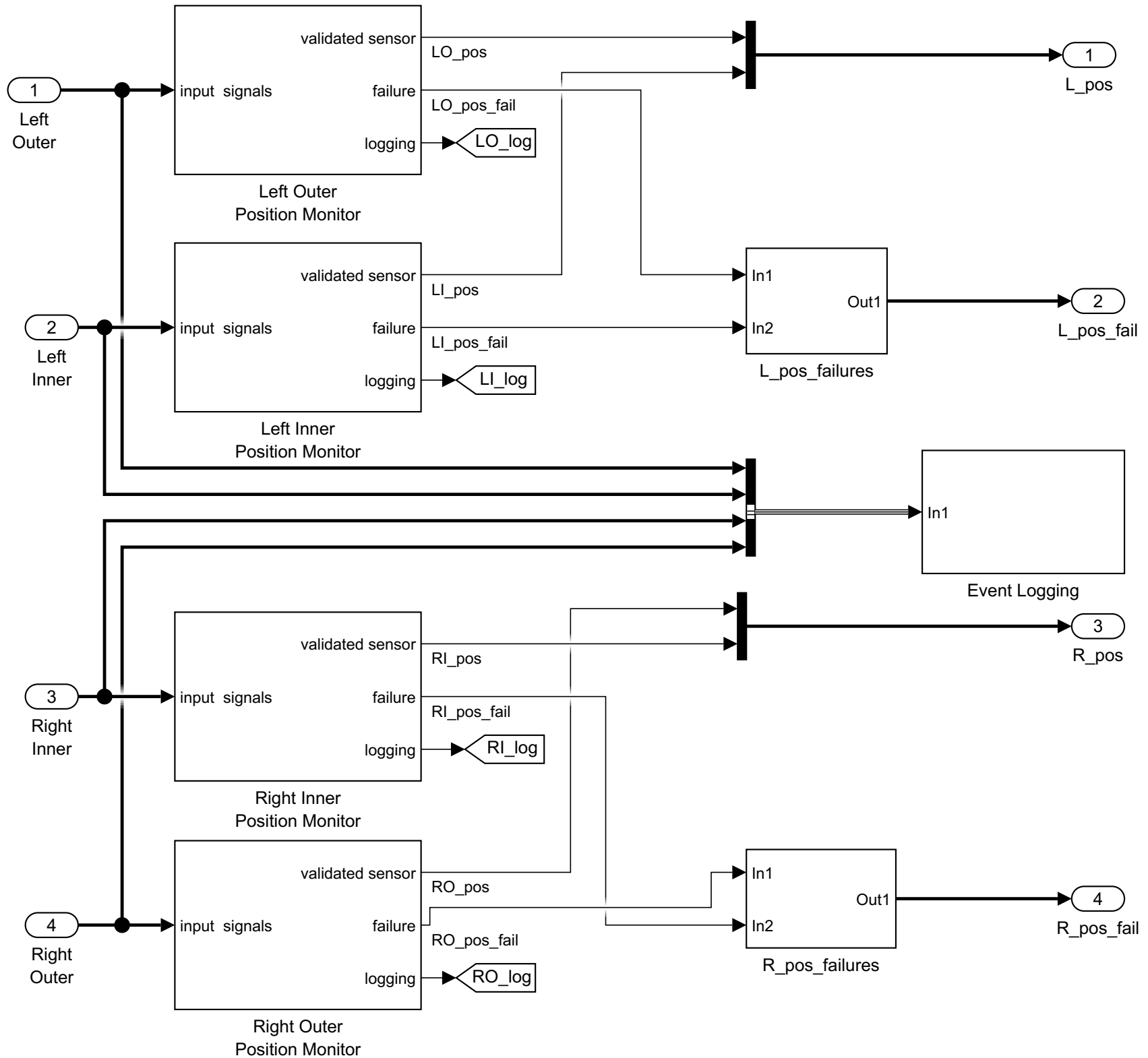


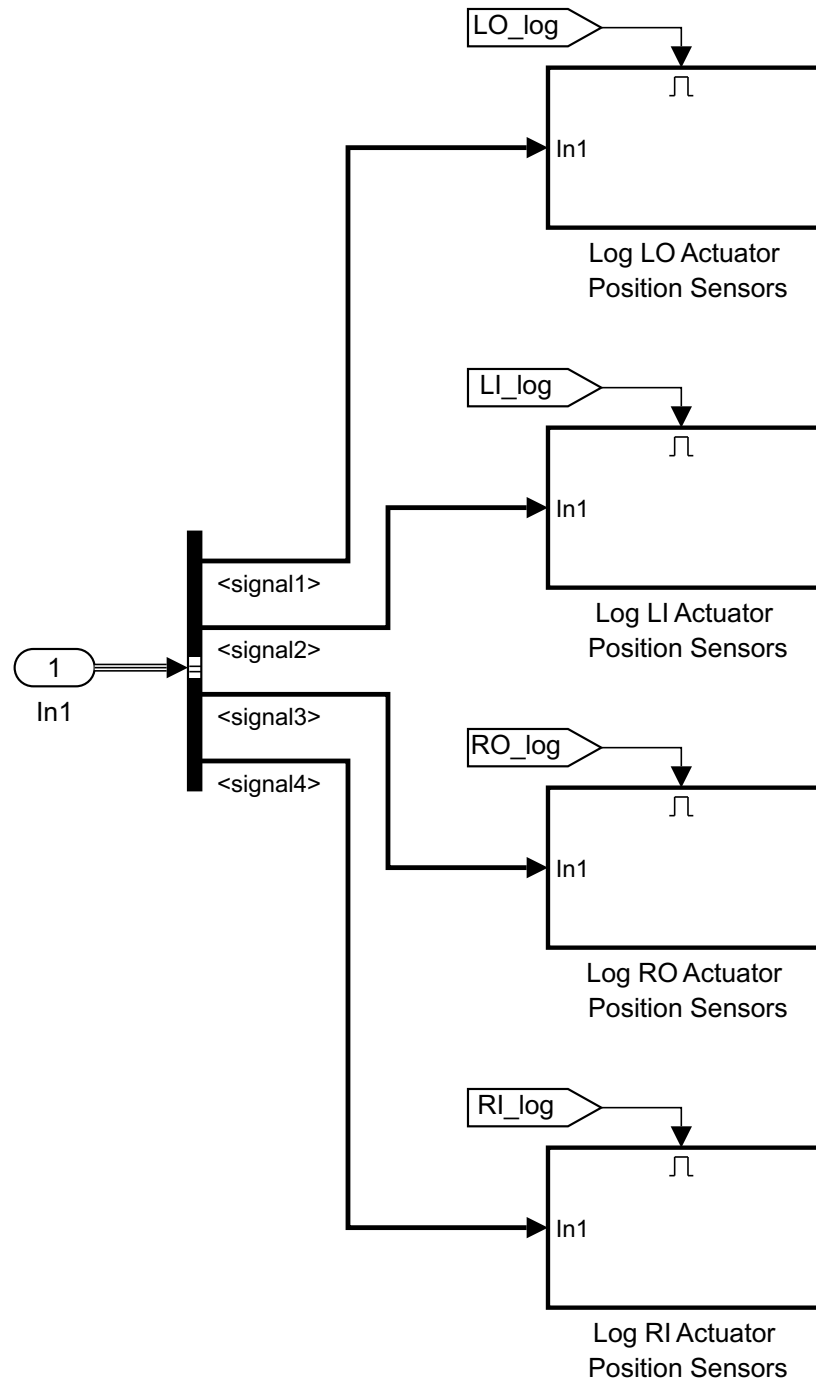






These could be 2/4 separate processors, and typically are not residing on the PFCUs







Enable

1

In1

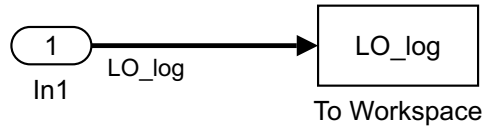
LI_log

LI_log

To Workspace



Enable





Enable

1

In1

RO_log

RI_log

To Workspace



Enable

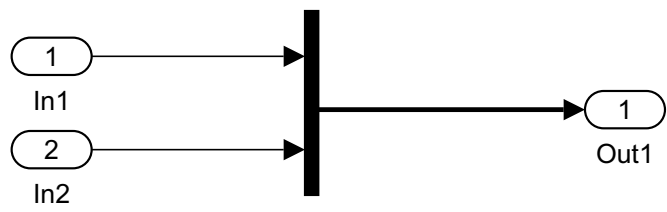
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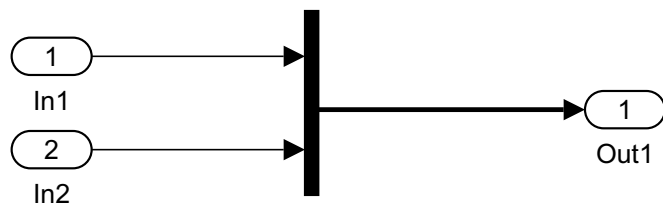
In1

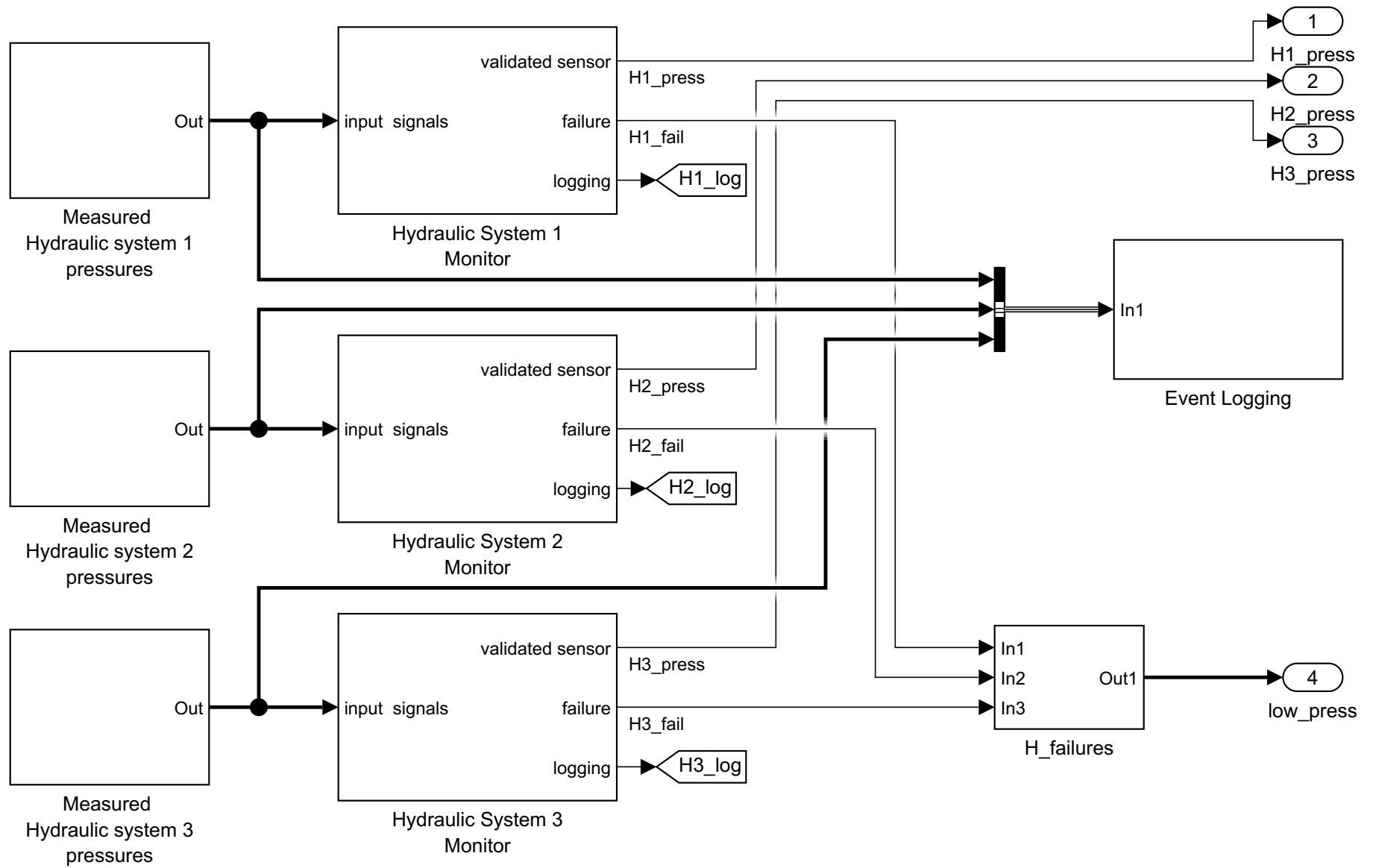
RI_log

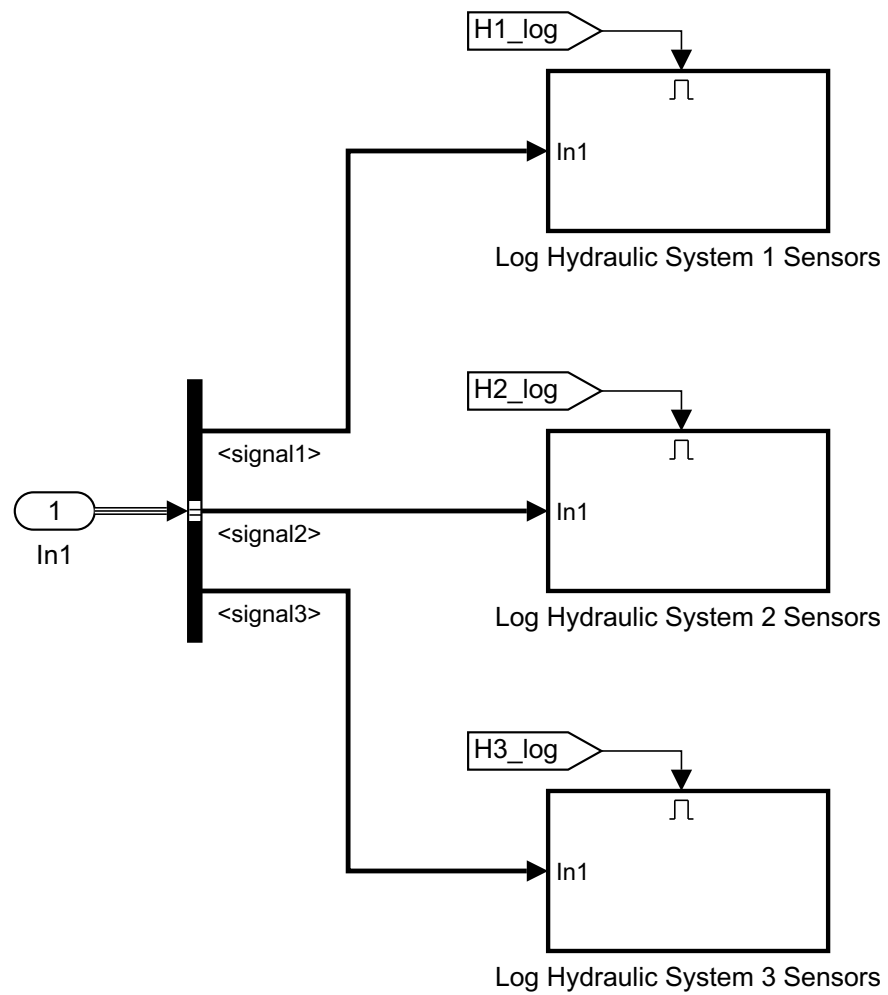
RO_log

To Workspace











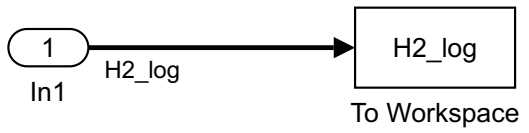
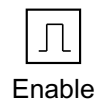
Enable

1

In1

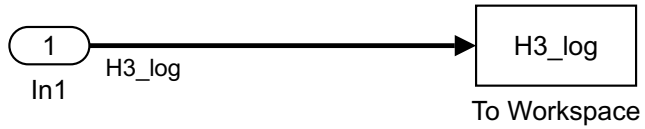
H1_log

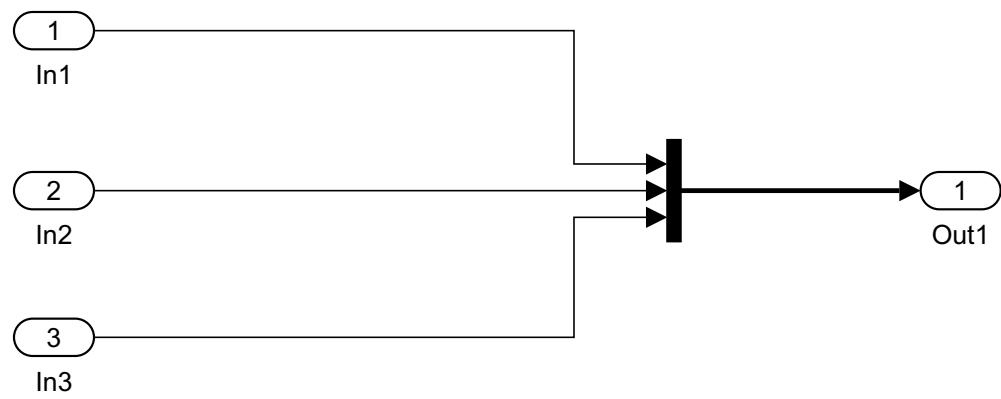
To Workspace





Enable





Send to Gauges for Display

