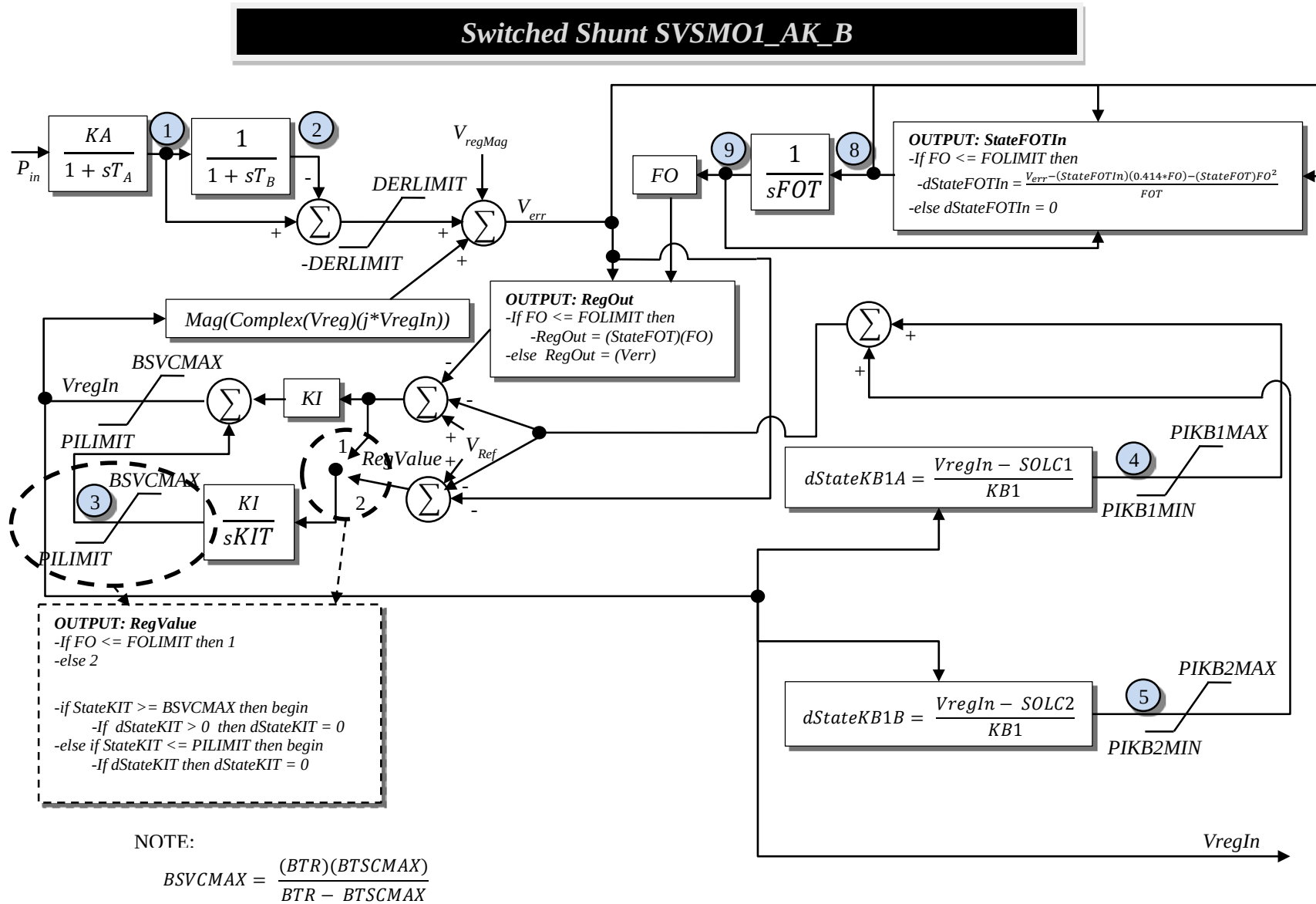
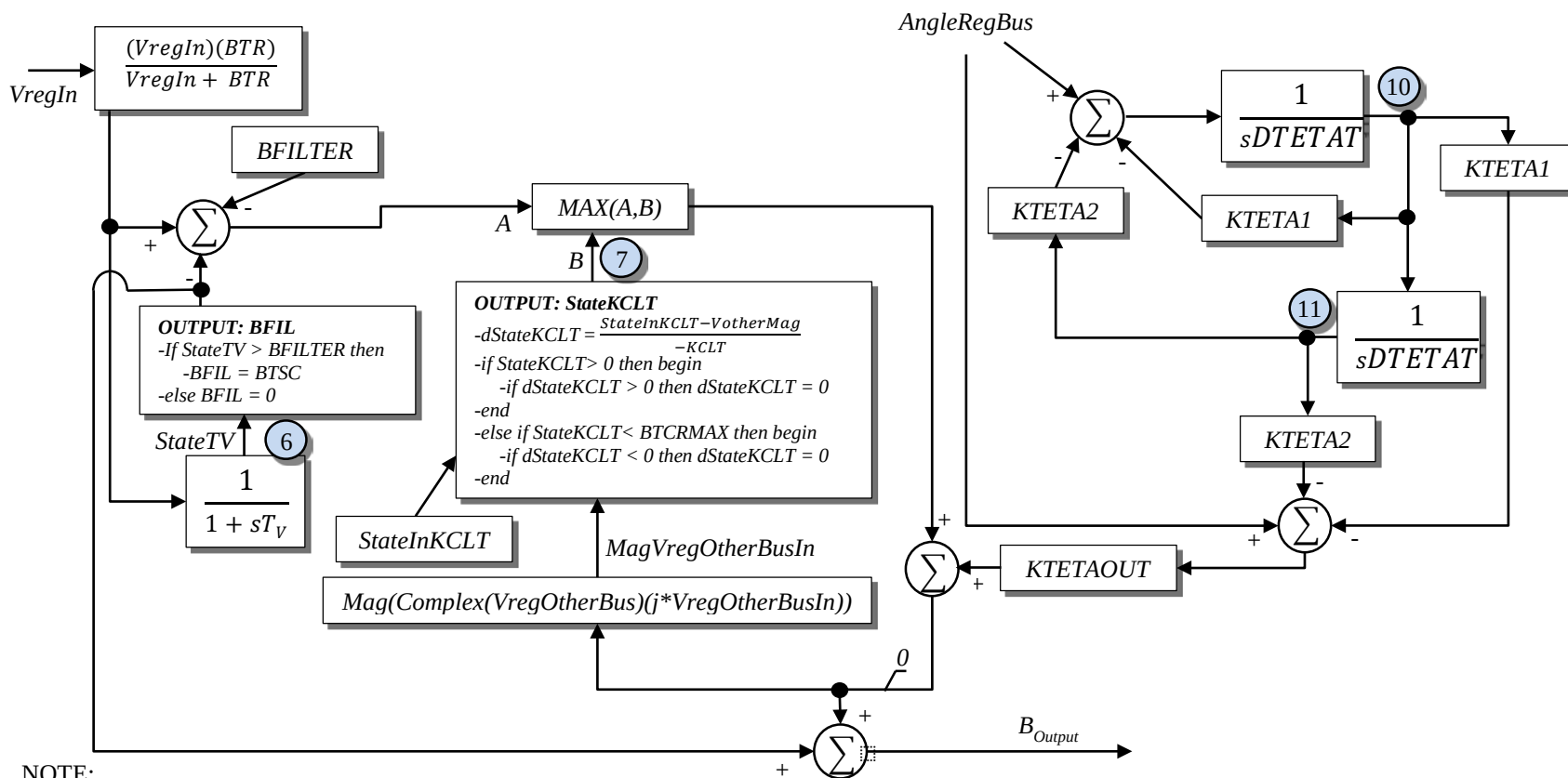


Switched Shunt SVSMO1_AK_B



Model supported by PW

Switched Shunt SVSMO1_AK_B



NOTE:

$$BTCRMAX = \frac{(PILIMIT)(BTR)}{PILIMIT + ITCLIMITER1} - BFLTER$$

For time constant T_v See Note on TSC and TSR monitoring During Voltage Depressions.

Model supported by PW

Switched Shunt SVSMO1_AK_B

MagVregOtherBusIn →

OUTPUT: StateInKCLT

```

-If MagVregOtherBusIn < 0.95*ITCLIMITER1 then begin
  -if StateInKCLT = ITCLIMITER1 then begin
    -if OldTimeLim < -1 then -OldTimeLim = PresentTime
    -if (PresentTime - OldTimeLim) >= TCLDELAY then begin
      - StateInKCLT = ITCLIMITER2
      - OldTimeLim = -999
    -End
  -End
-End
-If MagVregOtherBusIn < ITCLIMITER1 then begin
  -if (StateInKCLT = ITCLIMITER2 ) and (OldTimeLim > -1) then
    OldTimeLim = -999
-End

-If MagVregOtherBusIn >= ITCLIMITER1 then begin
  -if StateInKCLT = ITCLIMITER2 then begin
    -if OldTimeLim < -1 then -OldTimeLim = PresentTime
    -if (PresentTime - OldTimeLim) >= TCLDELAY then begin
      - StateInKCLT = ITCLIMITER1
      - OldTimeLim = -999
    -End
  -End
-End
-If (StateInKCLT = ITCLIMITER1 ) and (OldTimeLim > -1) then
  OldTimeLim = -999
  
```

States:

- 1 – StateTA
- 2 – StateTB
- 3 – StateKIT
- 4 – StateKB1A
- 5 – StateKB1B
- 6 – StateTV
- 7 – StateKCLT
- 8 – StateFOTIn
- 9 – StateFOT
- 10 – StateDTETAT1
- 11 – StateDTETAT2

Switched Shunt SVSMO1_AK_B

-TSC and TSR monitoring During Voltage Depressions:

Also TV is Initialize to TS then is modified below.

if (BLOCK_TSC= 0) and (LIMIT_TSR= 0) then begin

```
D1:= Old_D1 = 0;
D2:= Old_D2 = 0;
D3:= Old_D3 = 0;
D4:= Old_D4 = 0;
F1:= Old_F1 = -999;
F2:= Old_F2 = -999;
F3:= Old_F3 = -999;
F4:= Old_F4 = -999;
T1:= Old_T1 = -999;
T2:= Old_T2 = -999;
T3:= Old_T3 = -999;
T4:= Old_T4 = -999;
```

If (VregMag < 0.5) then begin // if Vreg < 0.5

If ((BTSCMAX = BFILTER) or (BTSCMAX_Output > BFILTER)) then begin // BTSCMAX=BFILTER or BTSC +BFILTER

If ((F1 = 0) and (F2 = 0) and (F3 = 0) and (F4 = 0)) and ((T1 < -1) and (T2 < -1) and (T3 < -1) and (T4 < -1)) then begin

```
F3 := 1;
T3 := PresentTime;
```

end;

IF (F1 = 0) and (F2 = 0) and (T1 < -1) and (T2 < -1) and (F3 = 1) and (F4 = 0) and (T4 < -1) and ((PresentTime - T3) >= D3) then begin

```
BTSCMAX_Global := 0;
```

```
F3 := 0;
```

```
T3 := -999;
```

end;

end; // If (BTSCMAX = BFILTER) or (VarL_5_Output > BFILTER)) then begin

IF (BTSCMAX = 0) then begin //BTSCMAX=0.

IF (F1 = 0) and (F2 = 0) and (T1 < -1) and (T2 < -1) and (F3 = 0) and (F4 = 1) and (T3 < -1) and ((PresentTime - T4) < D4) then begin F3 := 1;

```
F4 := 0;
```

```
T3 := PresentTime;
```

```
T4 := -999;
```

end;

end;

end; // If ((VregMag < 0.5)) then begin

If ((VregMag >= 0.5) and (VregMag < 0.75)) then begin // 0.5 <= V < 0.75

If (BTSCMAX = BFILTER) then begin// BTSCMAX=BFILTER

If (F1 = 0) and (F2 = 0) and (T1 < -1) and (T2 < -1) and (F4 = 0) and (F3 = 1) and (T4 < -1) and ((PresentTime - T3) < D3) then begin

```
F3 := 0;
```

```
T3 := -999;
```

```

    end;
end;
If (BTSCMAX = 0) then begin // BTSCMAX=0.
    If ((F1 = 0) and (F2 = 0) and (F3 = 0) and (F4 = 0)) and ((T1 < -1) and (T2 < -1) and (T3 < -1) and (T4 < -1)) then begin
        F4 := 1;
        T4 := PresentTime;
    end;
    if (F1 = 0) and (F2 = 0) and (T1 < -1) and (T2 < -1) and (F3 = 0) and (F4 = 1) and (T3 < -1) and ((PresentTime - T4) >= D4) then begin
        BTSCMAX_Global := BFILTER;
        F4 := 0;
        T4 := -999;
    end;
end;
end;
end;

If (VregMag < 0.75) then begin // V<0.75
    if (BTSCMAX > BFILTER) and (BTSC > 0) then begin
        if ((F1 = 0) and (F2 = 0) and (T1 < -1) and (T2 < -1)) then begin
            F1 := 1;
            T1 := PresentTime;
        end;
        if (F1 = 1) and (F2 = 0) and (T2 < -1) and ((PresentTime - T1) >= D1) then begin
            F1 := 0;
            T1 := -999;
            BTSCMAX_Global := BFILTER;
            TV := 0;
        end;
    end; // if (BTSCMAX > BFILTER) and (BTSC > 0) then begin
    if (BTSCMAX = BFILTER) and (fcon16 > 0) then begin // BTSCMAX=BFILTER
        if (F1 = 0) and (F2 = 1) and (T1 < -1) and ((PresentTime - T2) < D2) then begin
            F1 := 1;
            F2 := 0;
            T1 := PresentTime;
            T2 := -999;
        end;
        if (F1 = 1) and (F2 = 0) and ((PresentTime - T1) < D1) and (T2 < -1) then begin
            F1 := 0;
            T1 := -999;
        end;
    end; // if (BTSCMAX = BFILTER) and (BTSC > 0)
end; // If (VregMag < 0.75) then begin

If (VregMag >= 0.75) then begin // V>=0.75
    if ((BTSCMAX = BFILTER) or (BTSCMAX > BFILTER)) then begin // BTSCMAX=BFILTER+ BTSC:
        if (F1 = 1) and (F2 = 0) and (T2 < -1) and ((PresentTime - T1) < D1) then begin

```

```

    F1 := 0;
    T1 := -999;
end;
end;
If (BTSCMAX = BFILTER) then begin // BTSCMAX=BFILTER
    if (F1 = 0) and (F2 = 0) and (T1 < -1) and (T2 < -1) and (BTSC > 0) then begin
        F2 := 1;
        T2 := PresentTime;
    end;
    if (F1 = 0) and (F2 = 1) and (T1 < -1) and ((PresentTime - T2) >= D2) then begin
        BTSCMAX_Global := BFILTER + BTSC;
        F2 := 0;
        T2 := -999;
        TV := TS;
    end;
end; // If (BTSCMAX = fcon15)
IF (BTSCMAX = 0) then begin // BTSCMAX=0.
    if (F1 = 0) and (F2 = 0) and (T1 < -1) and (T2 < -1) and (F3 = 0) and (F4 = 0) and (T3 < -1) and (T4 < -1) then begin
        F4 := 1;
        T4 := PresentTime;
    end;
    if (F1 = 0) and (F2 = 0) and (T1 < -1) and (T2 < -1) and (F3 = 0) and (F4 = 1) and (T3 < -1) and ((PresentTime - T4) < D4) then begin
        F2 := 1;
        T2 := PresentTime;
    end;
    if (F1 = 0) and (F2 = 1) and (T1 < -1) and (F3 = 0) and (F4 = 1) and (T3 < -1) and ((PresentTime - T4) >= D4) then begin
        BTSCMAX_Global := BFILTER;
        F4 := 0;
        T4 := -999;
    end;
end; // IF (BTSCMAX = 0) then begin
end; // If (VregMag >= 0.75)
end; //if (BLOCK_TSC= 0) and (LIMIT_TSR= 0) then begin
Then:
    Old_D1:= D1;
    Old_D2:= D2;
    Old_D3:= D3;
    Old_D4:= D4;
    Old_F1:= F1;
    Old_F2:= F2;
    Old_F3:= F3;
    Old_F4:= F4;
    Old_T1:= T1;
    Old_T2:= T2;
    Old_T3:= T3;

```

```
Old_T4:= T4;  
// Manual monitoring  
if (BLOCK_TSC = 1) then BTSCMAX_Global := BFILTER;  
if (LIMIT_TSR = 1) then BTSCMAX_Global := 0;
```