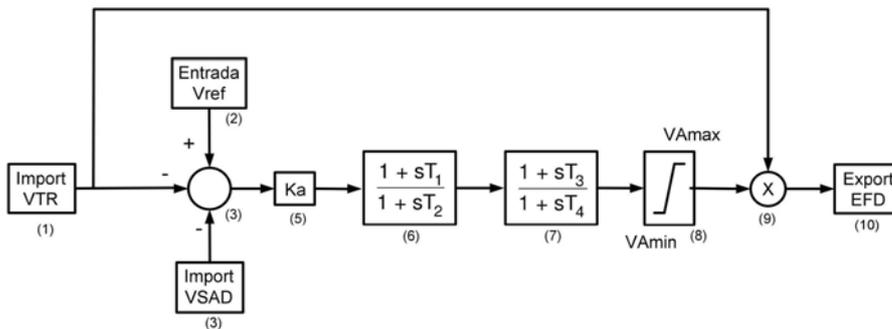


- Regulador de Tensão, Excitatriz e limitadores associados (sub e sobre-excitação, limitador Volt/Hertz, limitador de corrente de armadura, etc.);
- Regulador de velocidade, Turbina e limites associados;
- PSS e limites associados;
- Diagramas de blocos, no domínio da freqüência, através de suas funções de transferência das malhas de controle correspondentes;
- Parâmetros associados, valores e faixas de ajuste.

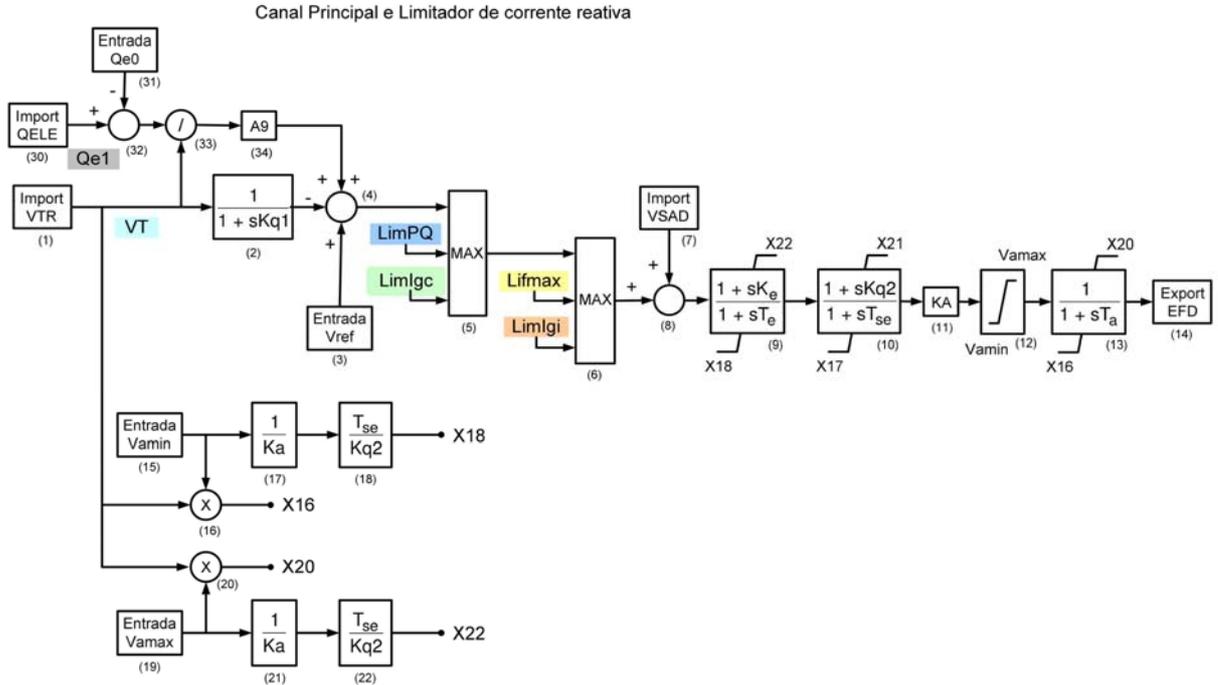
### A-5.9.1 Reguladores de Tensão

Usina: UHE Água Vermelha

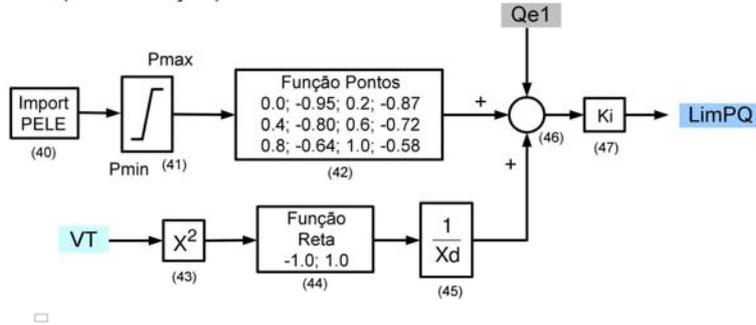


Parâmetros	Valor
Ka	400.0
T1	2.42
T2	23.13
T3	1.0
T4	1.0
VAmáx	5.74
VAmín	-5.3

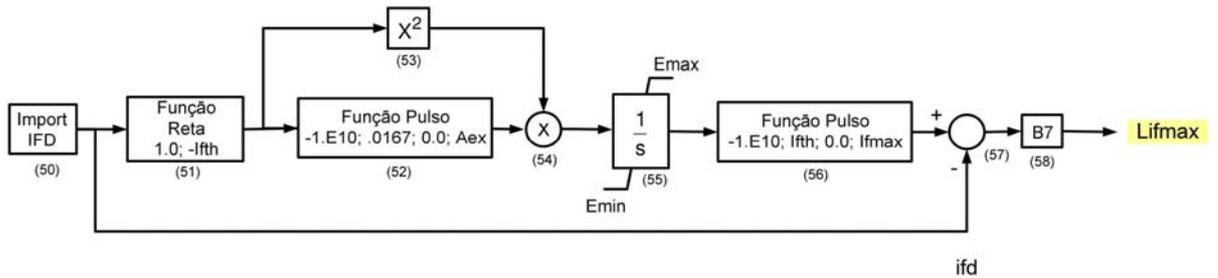
Usina: UHE Corumbá



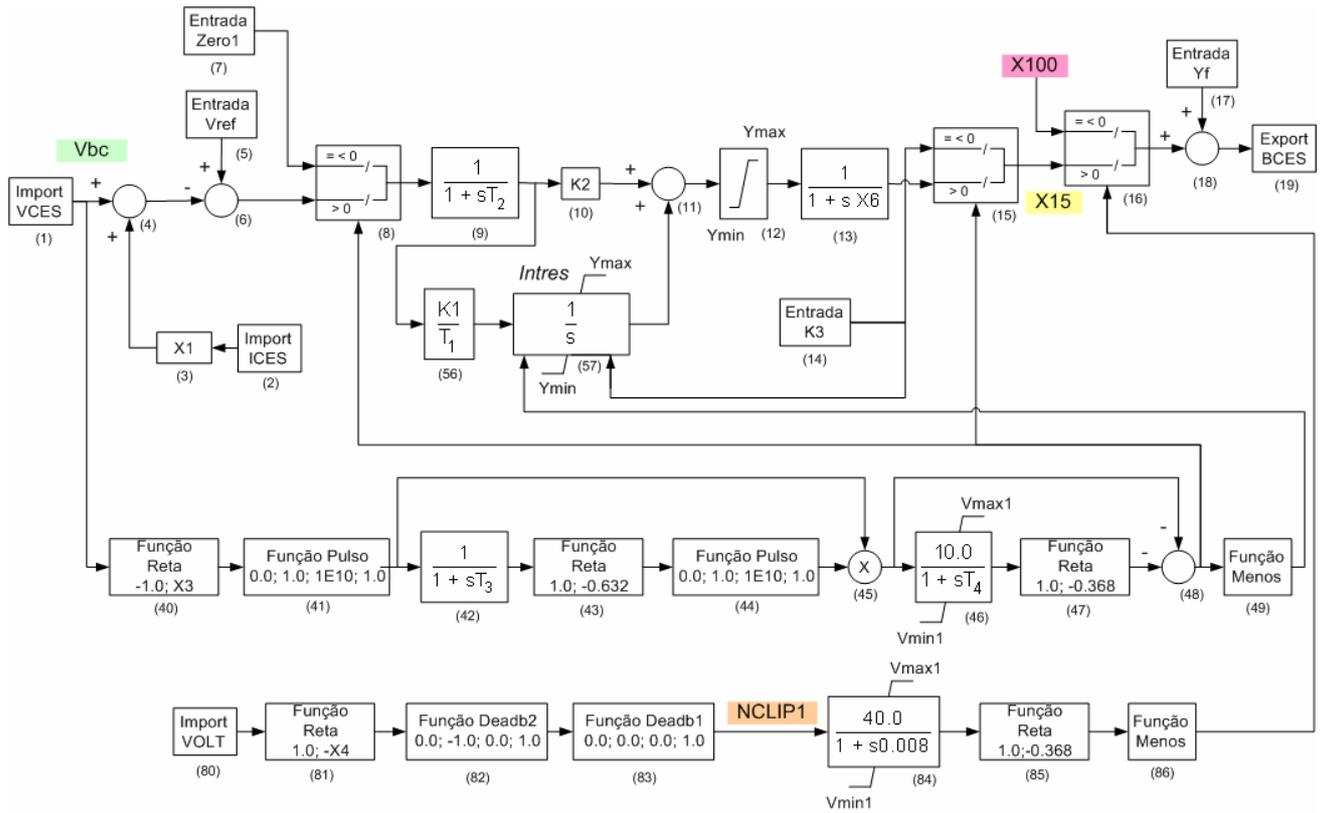
Limitador P/Q ( Sub-excitação )



Limitador de corrente de campo máxima ( Sobre-excitação )



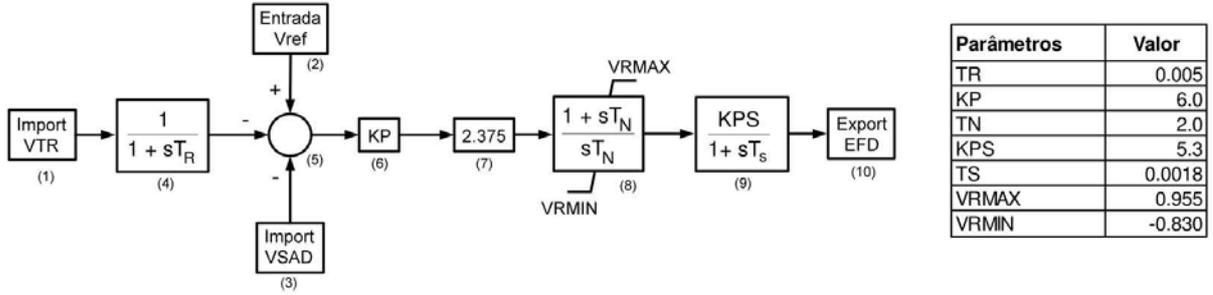




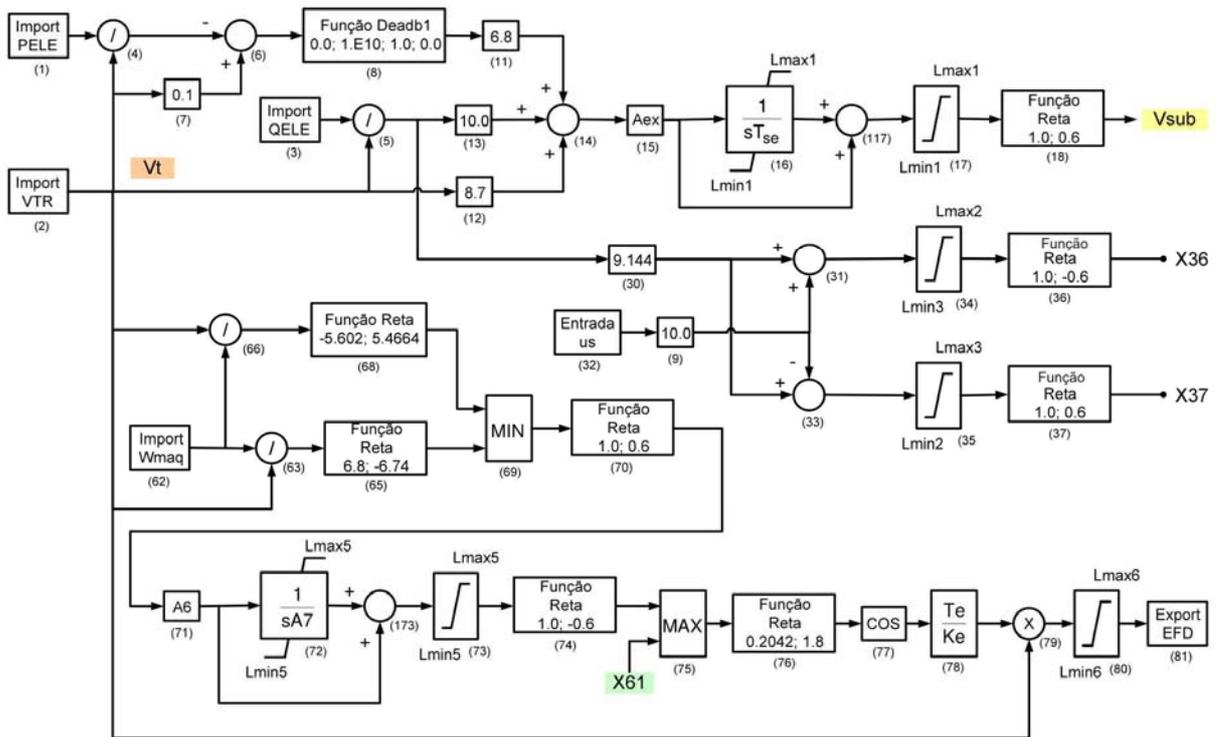
**Parâmetros**

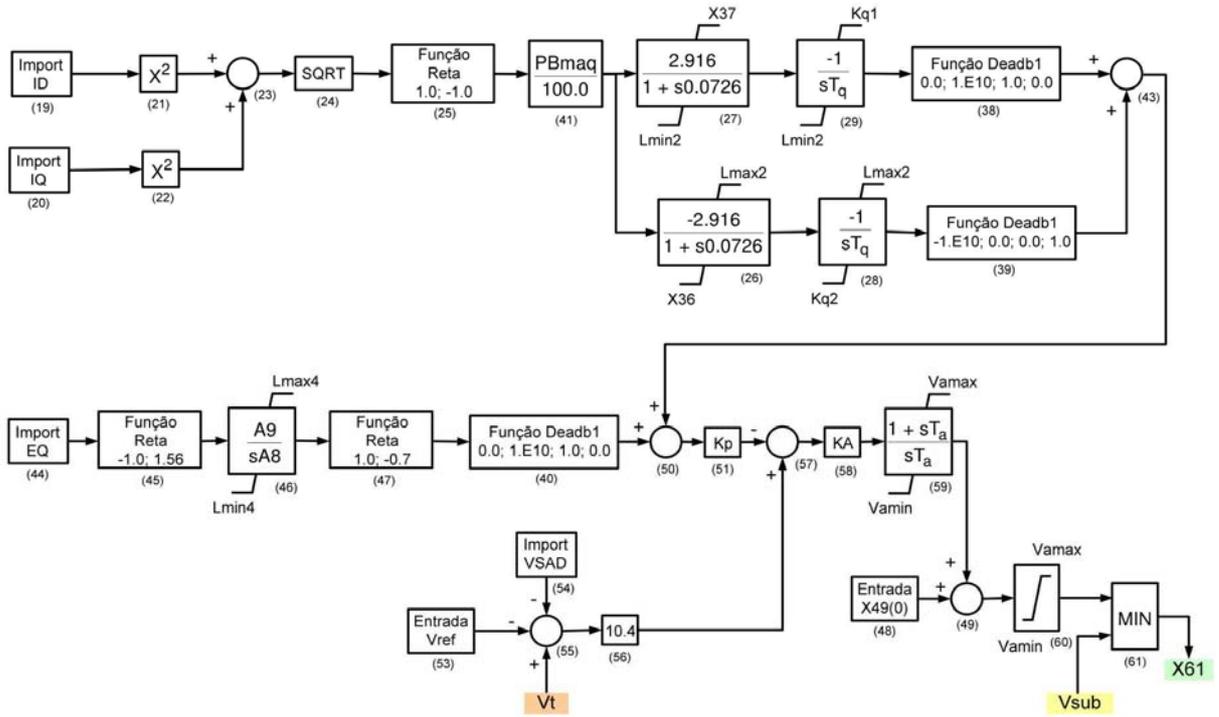
K1	2.23
K2	1.752
K3	-0.02
T1	0.01
T2	0.003
T3	0.02
T4	0.02
T5	0.016
Vmax1	1.0
Vmax2	0.01
Vmax3	0.001
Vmin1	0.0
Vmin2	-0.01
Vmin3	-0.01
X1	0.0
X3	0.50
X4	1.94
X6	0.007
Yf	0.0987
Ymax	0.5408
Ymin	-0.6438

Usina: UTE Cuiabá



Usina: UHE Emborcação



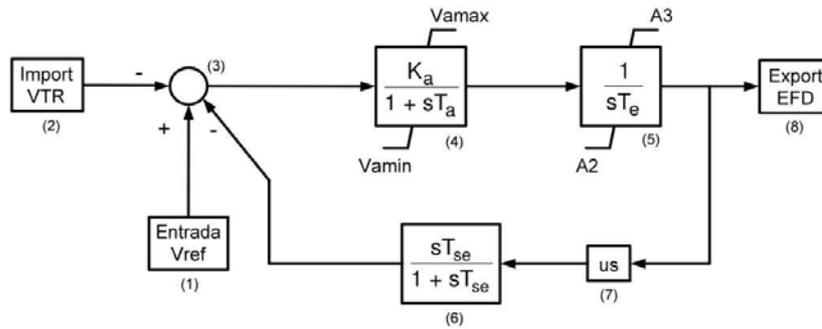


Parâmetros	Valor
A6	-4.2
A7	0.35
A8	1.4
A9	7.5
Aex	0.22
Ka	4.7
Ke	235.0
Kp	1.0
Kq1	5.01
Kq2	-5.0
PBmaq	313.6
Ta	1.0
Te	1890.0
Tq	1.71
Tse	0.64
us	0.1
Vamax	3.994
Vamin	-7.1171

DEFVAL	Valor
Kq1	Kq1
Kq2	Kq2
Lmax1	3.37
Lmax2	15.0
Lmax3	4.03
Lmax4	7.52
Lmax5	11.69
Lmax6	7.5575
Lmin1	-9.81
Lmin2	-15.0
Lmin3	-4.0
Lmin4	-10.0
Lmin5	-11.69
Lmin6	-6.965
us	us
Vamax	Vamax
Vamin	Vamin
X16	Lmax1

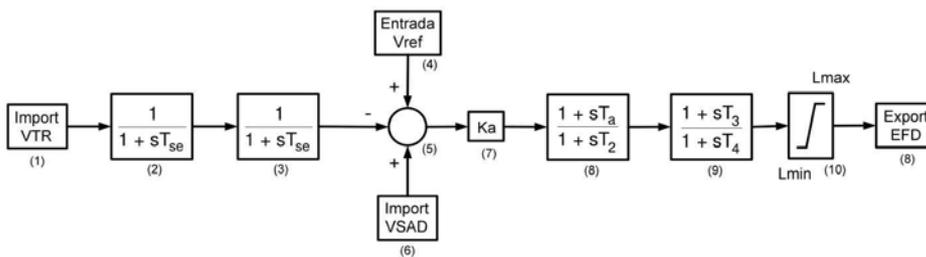
DEFVAL	Valor
X28	Kq2
X29	Kq1
X46	Lmax4
X49(0)	X49
X72	Lmin5

Usina: UHE Furnas



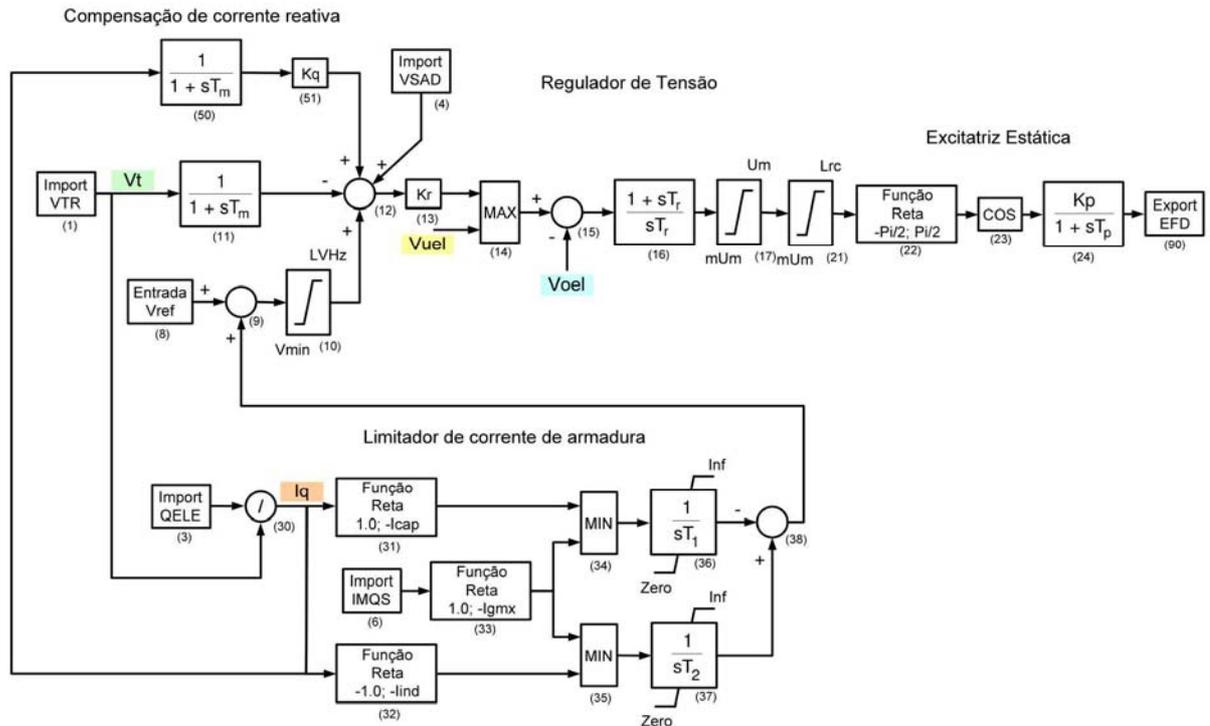
Parâmetros	
A2	-1000
A3	1000
Ka	20.0
Ta	0.08
Te	0.50
Tse	1.07
us	0.10
Vamax	1.80
Vamin	-1.80

Usina: UHE Governador Bento Munhoz

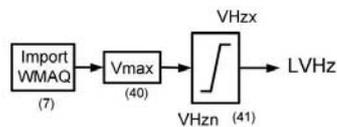


Parâmetros	Valor
Ka	190.8
Lmax	3.87
Lmin	-3.87
T2	12.0
T3	0.07
T4	0.013356
Ta	3.00
Tse	0.02

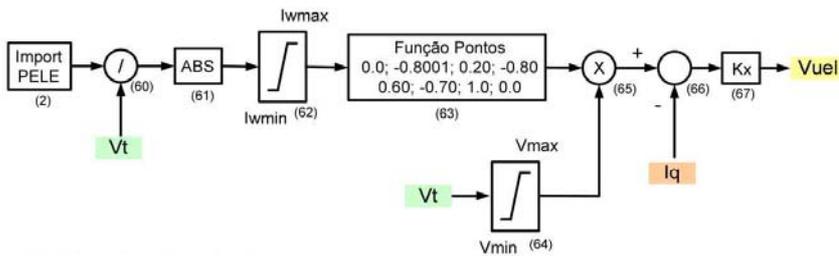
Usina: UHE Guaporé



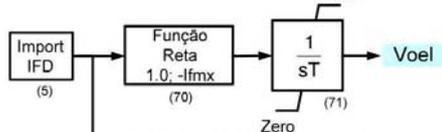
Limitador de enlace de fluxo



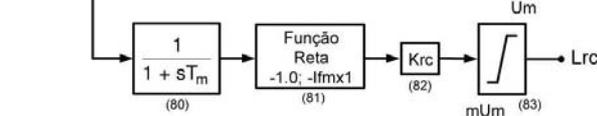
Limitador de subexcitação



Limitador de sobreexcitação



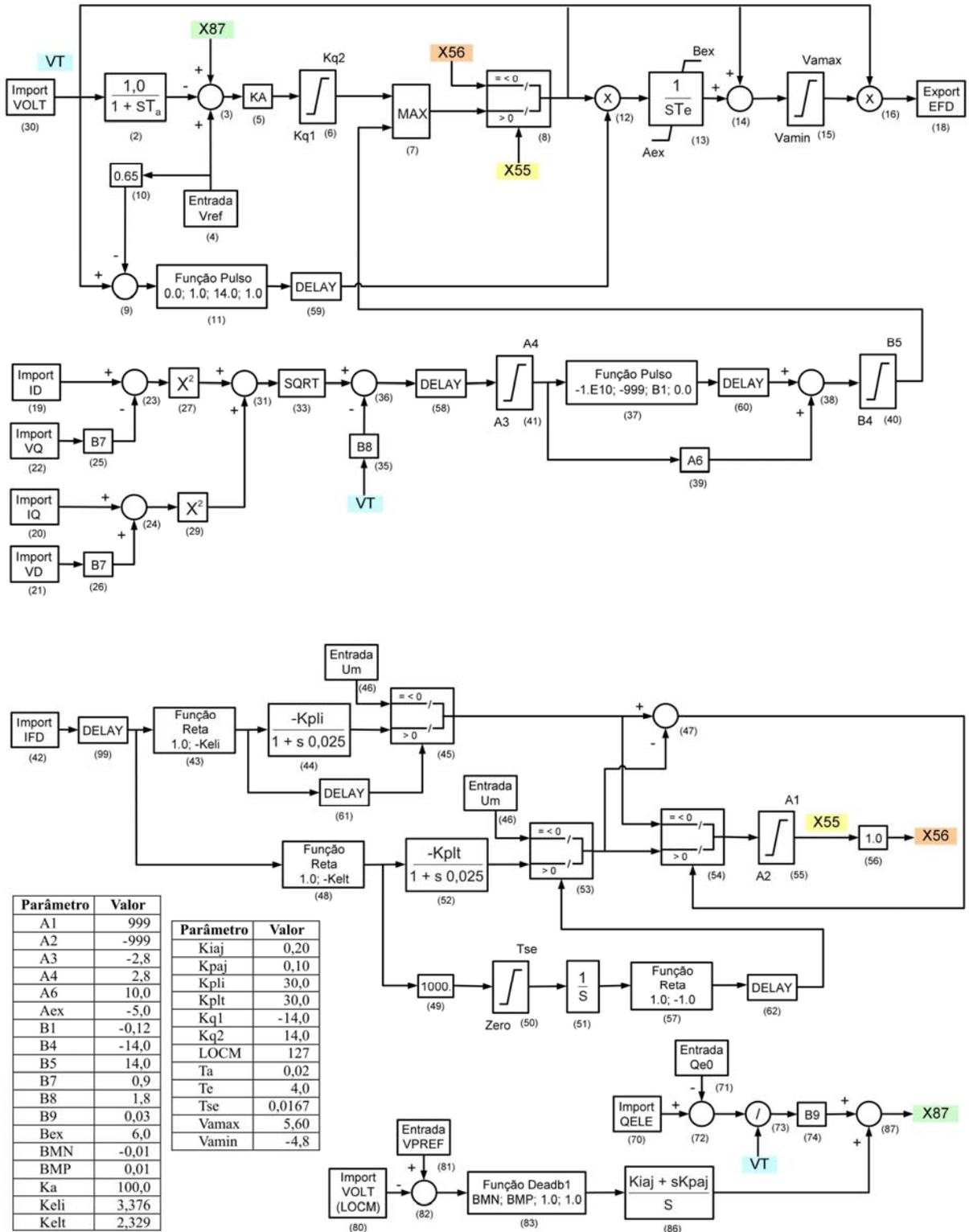
Limitador rápido de corrente de campo



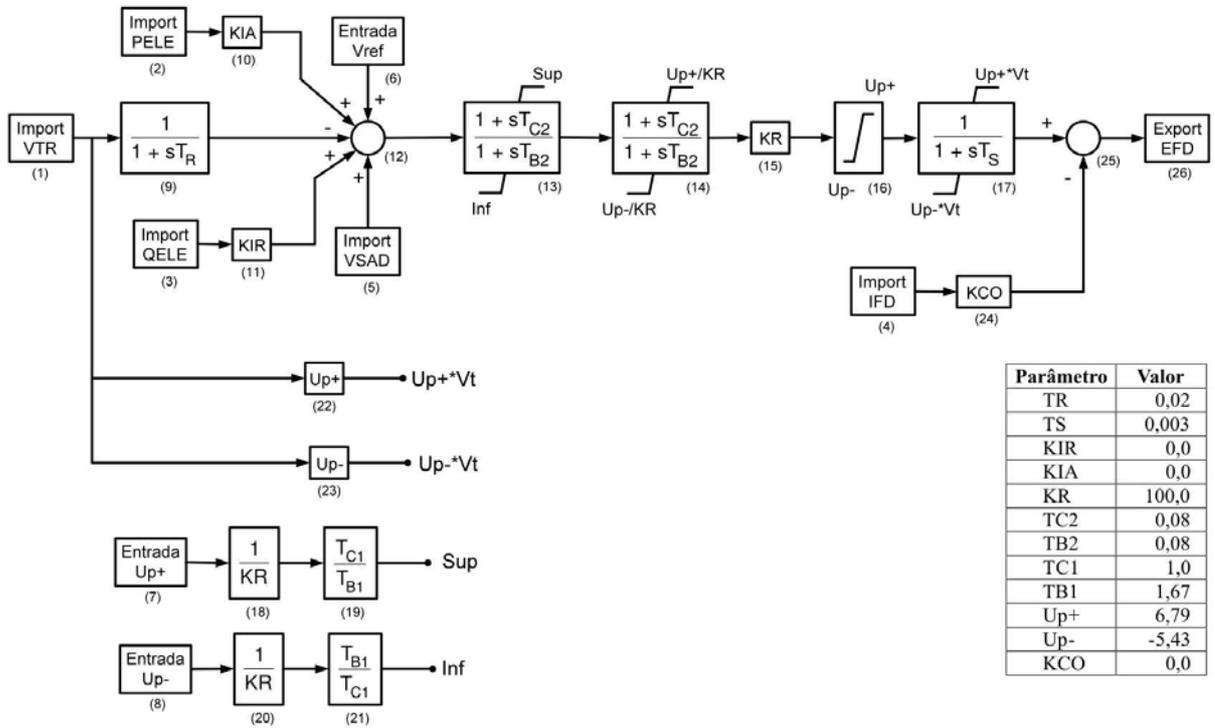
Parâmetros	Valor
Tm	0.02
Kr	10.0
Tr	0.4
Kp	5.08
Tp	0.0014
lfmx	2.02213
T	5.0
Kx	1.0
T1	33.0
T2	33.0
lgmx	1.10
lcap	0.10
lind	0.10
lfmx1	2.57362
Krc	100.0
Kq	0.0
Vmin	0.9
Vmax	1.1
VHzn	0.9
VHzx	1.08
Pi/2	1.5707963268

DEFVAL	Valor
Inf	9999
Voel	0.0
X36	0.0
X37	0.0
Iwmin	0.20
Iwmax	1.0

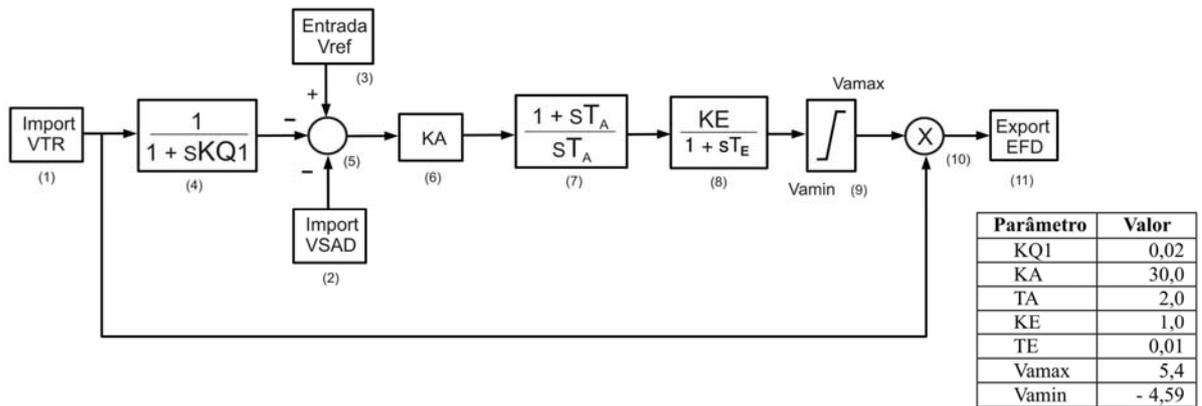
CS Ibiúna



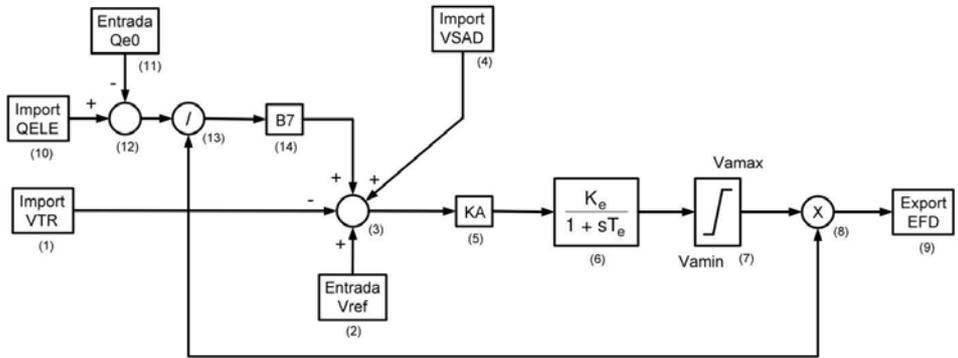
Usina: UHE Itá



Usina: UHE Itiquira

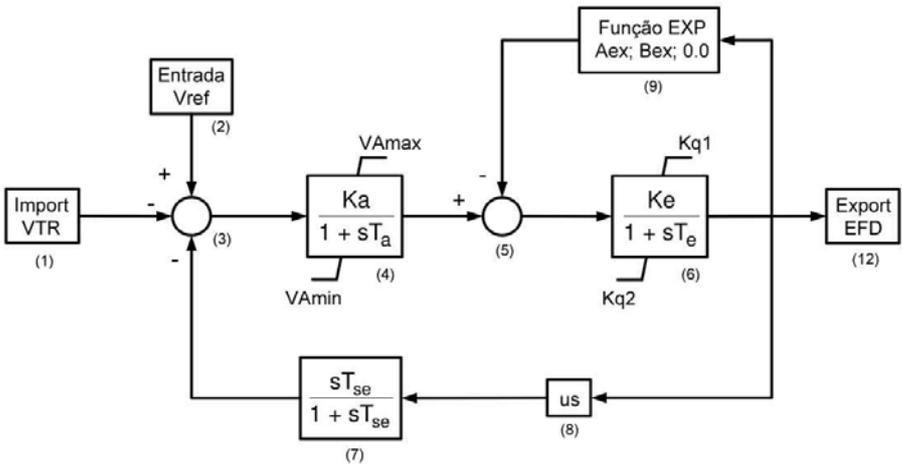


Usina: UHE Itumbiara



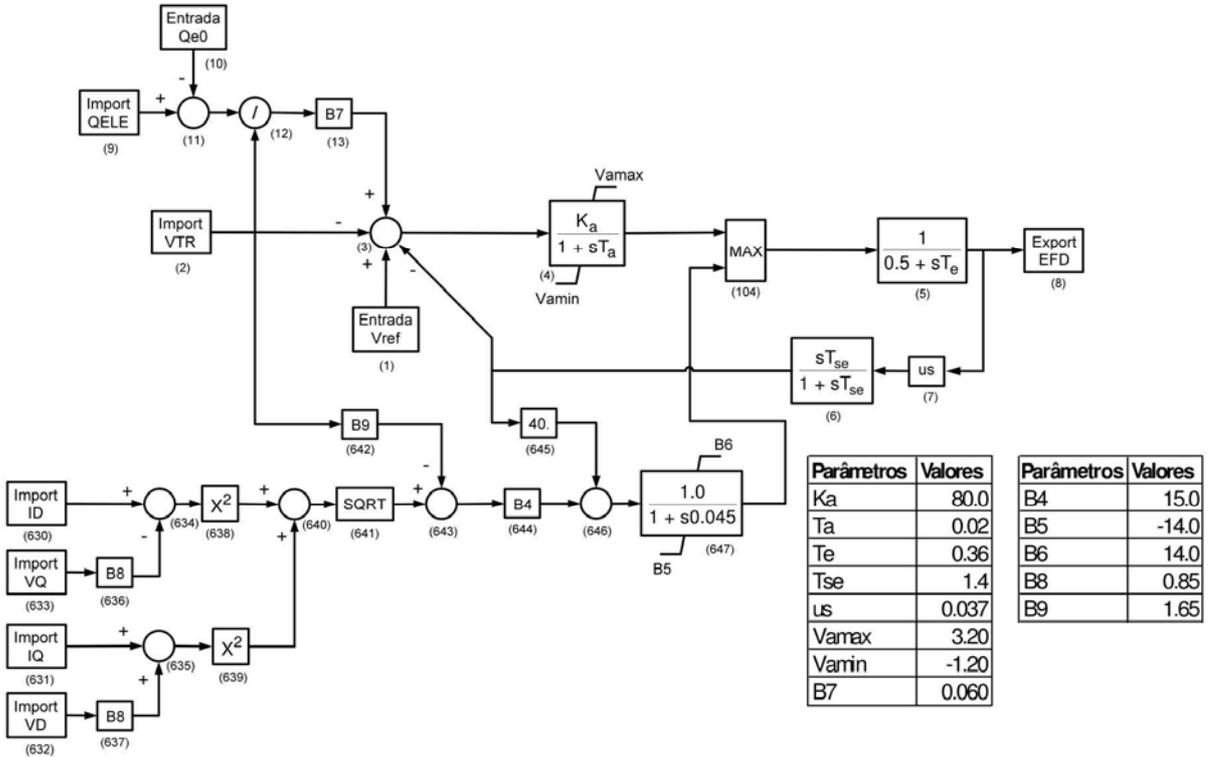
Parâmetros	
B7	0.05
Ka	50.0
Ke	1.0
Te	0.01
Vamax	4.0
Vamin	-4.0

Usina: UHE Jaguará

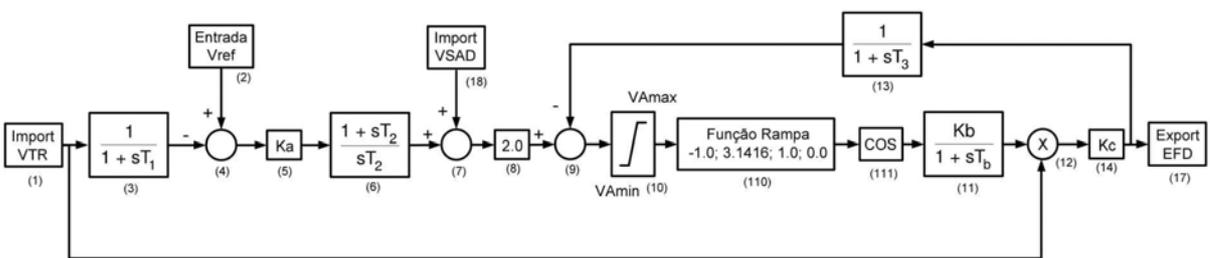


Parâmetros	Valores
Aex	0.00011
Bex	4.1467
Ka	50.29
Ke	1.72
Kq1	3.2
Kq2	-3.2
Ta	0.183
Te	0.33
Tse	0.47
us	0.049
VAmáx	4.83
VAmín	-0.667

Usina: UHE Luiz Carlos Barreto



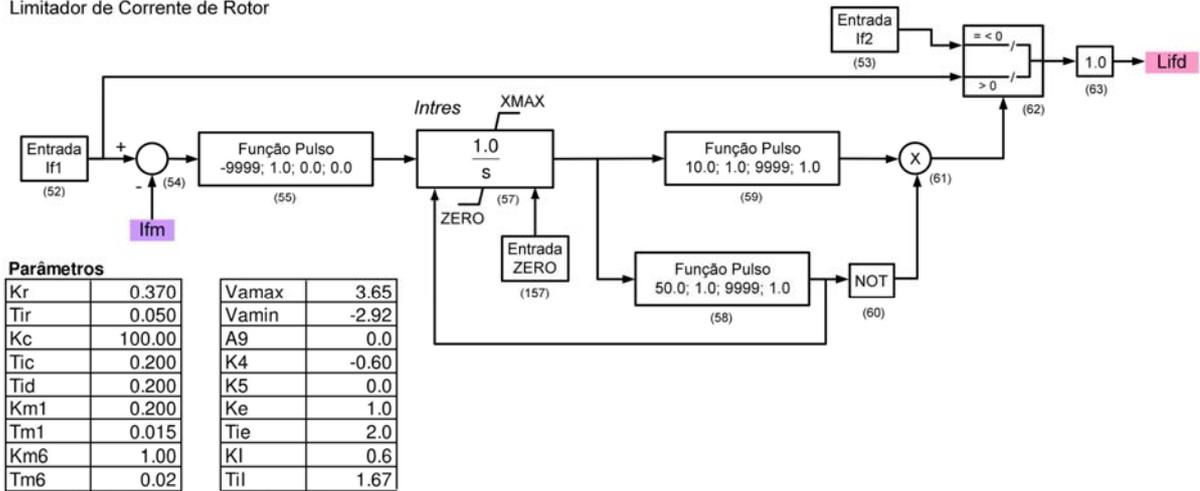
Usina: UHE Machadinho



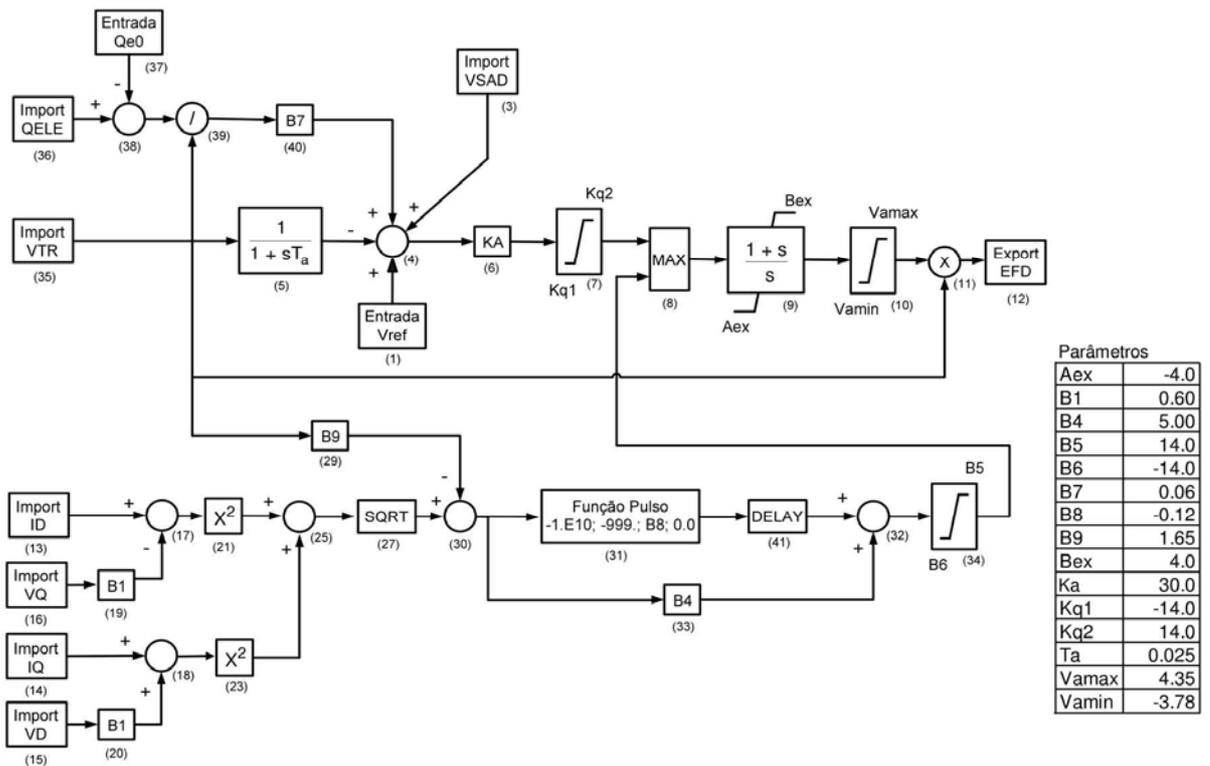
Parâmetros	Valores
Ka	10.0
Kb	3.0
Kc	1.0
T1	0.02
T2	0.50
T3	0.02
Tb	0.0014
VAmáx	1.00
VAmín	-1.00



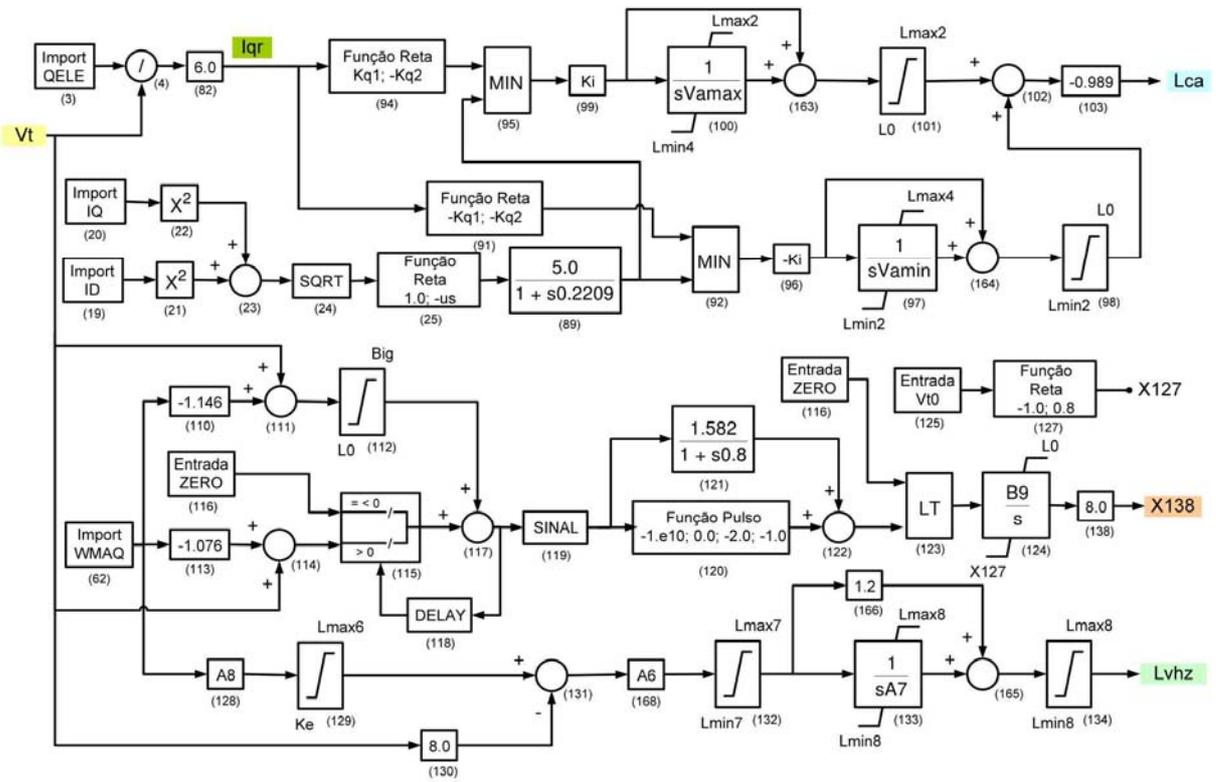
Limitador de Corrente de Rotor



Usina: UHE Marimbondo





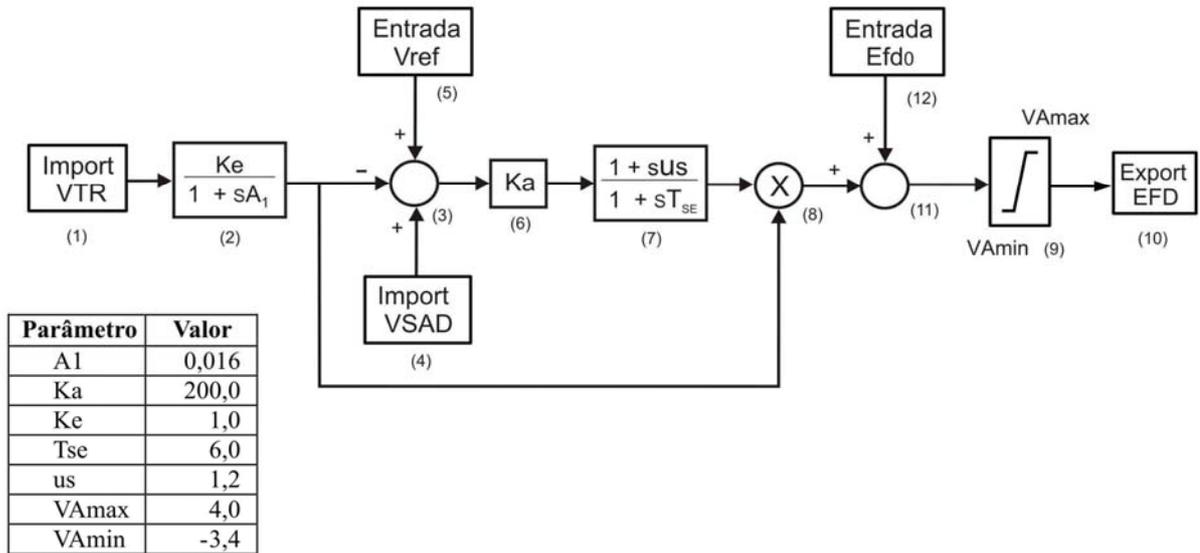


Parâmetros	Valor
A6	-10.0558
A7	1.3942
A8	8.8
A9	-5.0
Aex	7.04
B8	1.9613
B9	-0.007
Bex	4.097
Ka	-9.45
Ke	7.92
Ki	0.25
Kp	0.7981
Kq1	0.5152
Kq2	0.47
Ta	1.41
Te	0.025
Tq	3.0773
Tse	0.006
us	1.1
Vamax	1.731
Vamin	1.789

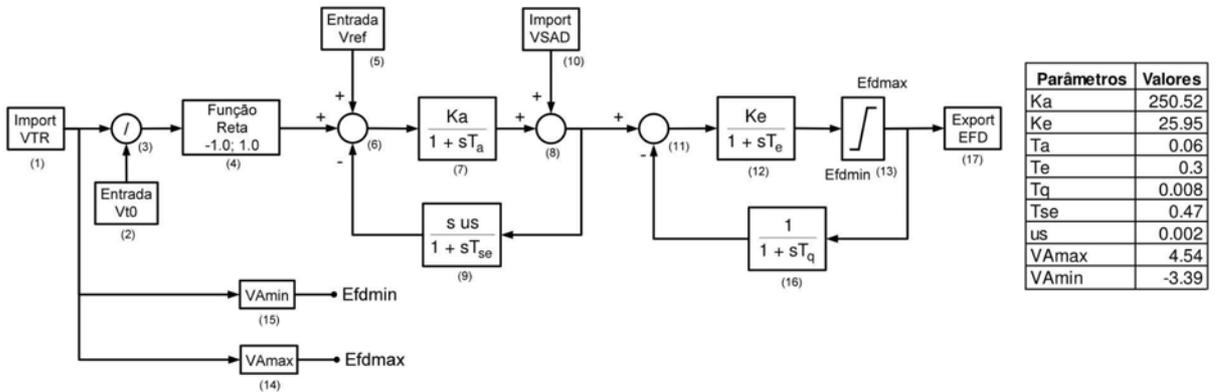
DEFVAL	Valor
A9	A9
Big	1.e10
Efdmax	4.16
Efdmin	-4.16
Ke	Ke
L0	0.0
Lma12	12.0
Lmax1	0.0
Lmax2	12.0
Lmax3	0.6
Lmax4	1.0
Lmax5	2.025
Lmax6	8.8
Lmax7	10.1
Lmax8	9.91
Lmax9	5.0
Lmi12	-12.0
Lmin1	-15.0
Lmin2	-12.0
Lmin4	-1.0
Lmin5	-6.75

DEFVAL	Valor
Lmin7	-10.1
Lmin8	-9.85
Lmin9	-7.0
Rvhz	0.0
Vref	Vt
Vt0	Vt
X100	Lmin4
X108	A9
X115	0.0
X133	Lmin8
X88	Lmax3
X97	Lmax4
Zero	0.0

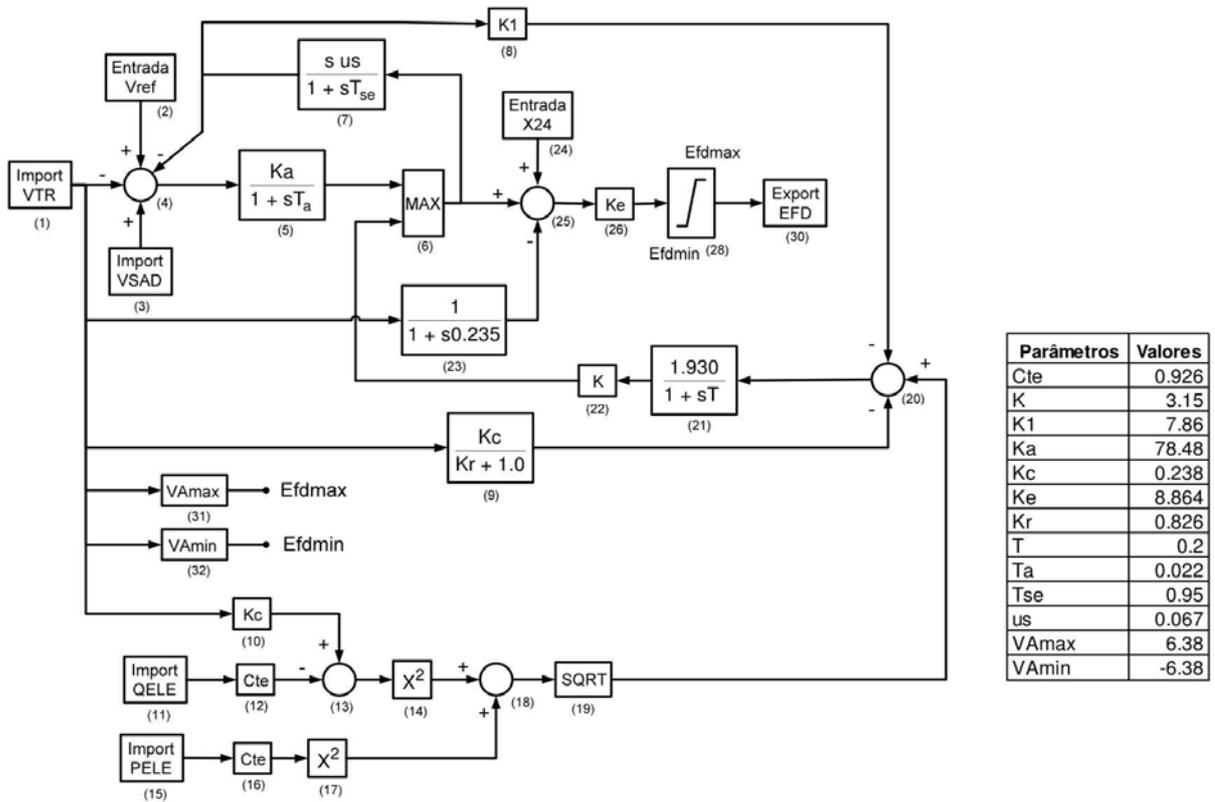
Usina: UHE Salto Caxias



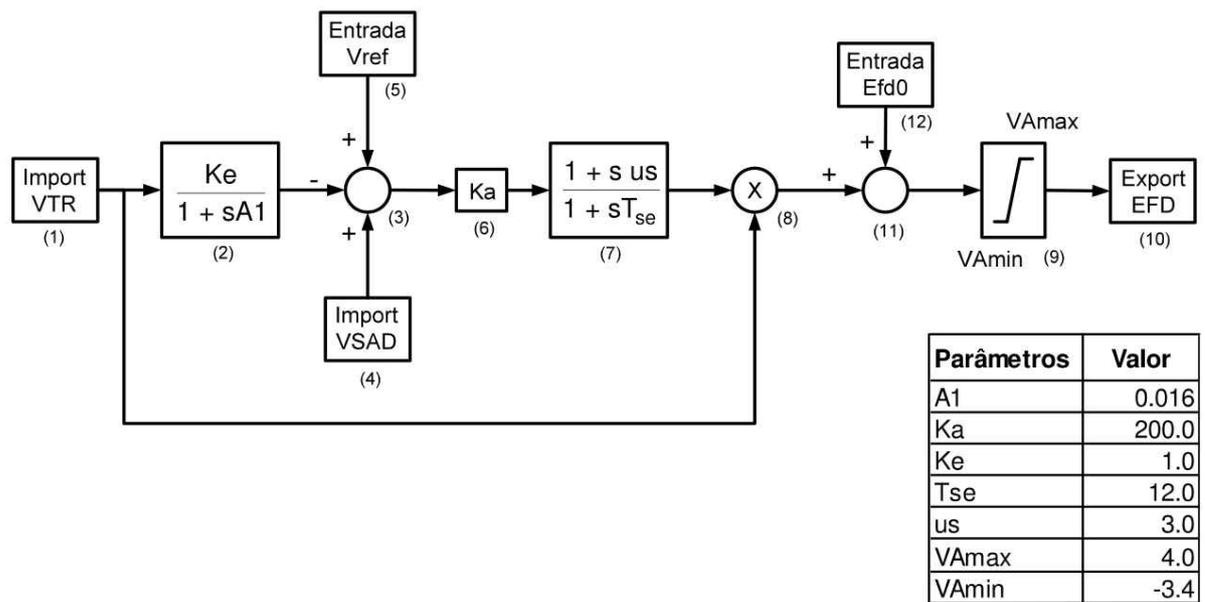
Usina: UHE Salto Osório



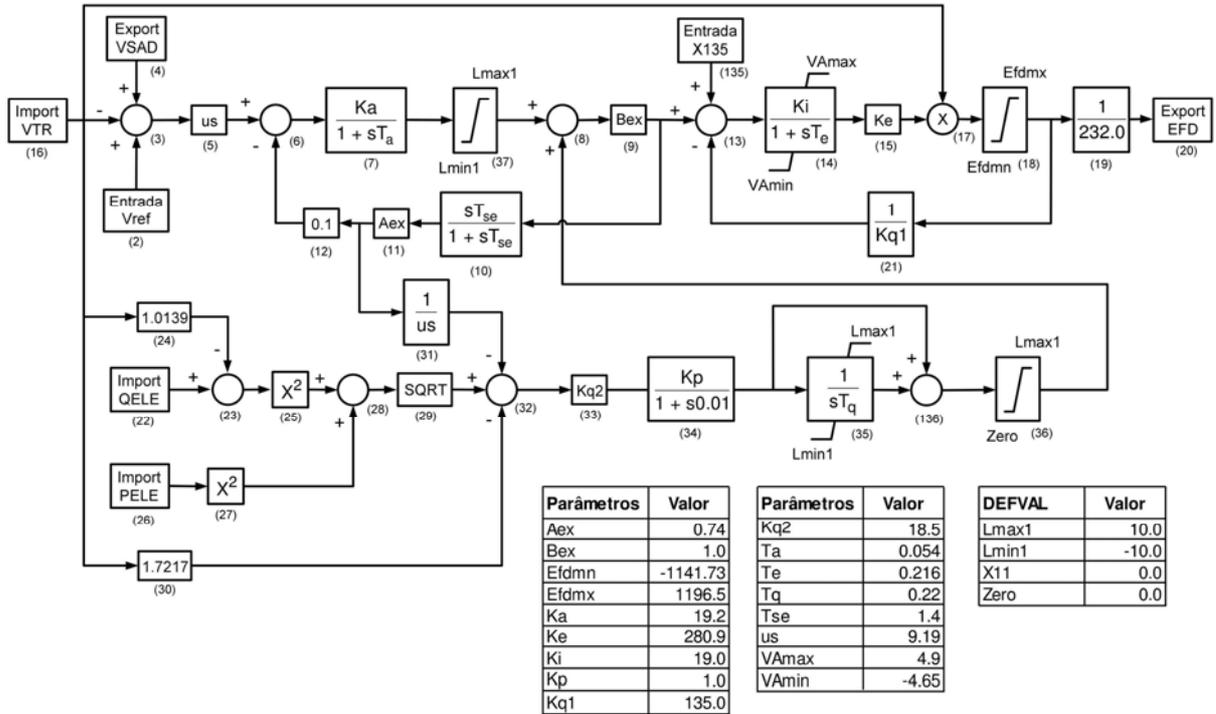
Usina: UHE Salto Santiago



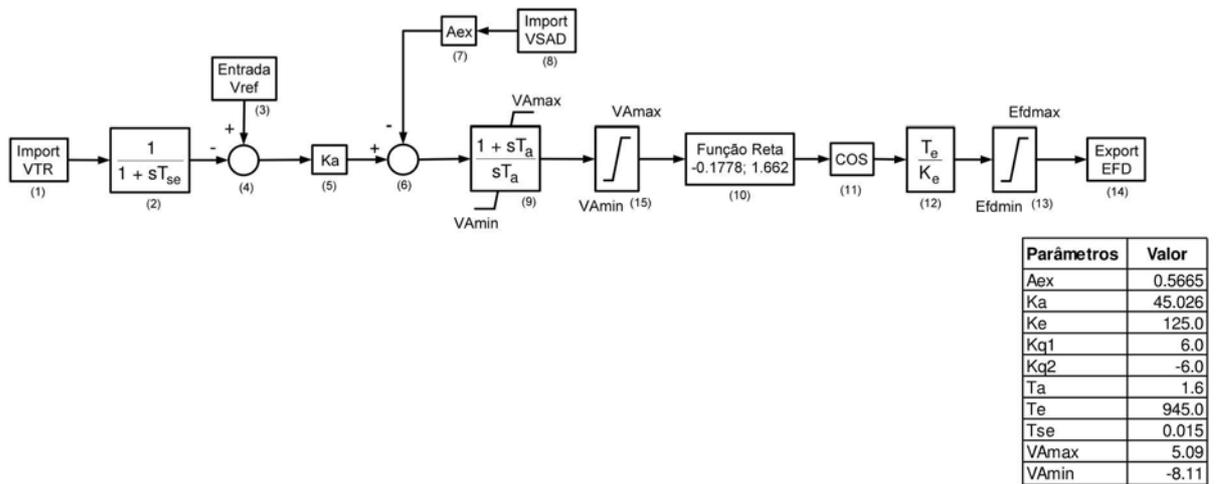
Usina: UHE Salto Segredo



Usina: UHE São Simão

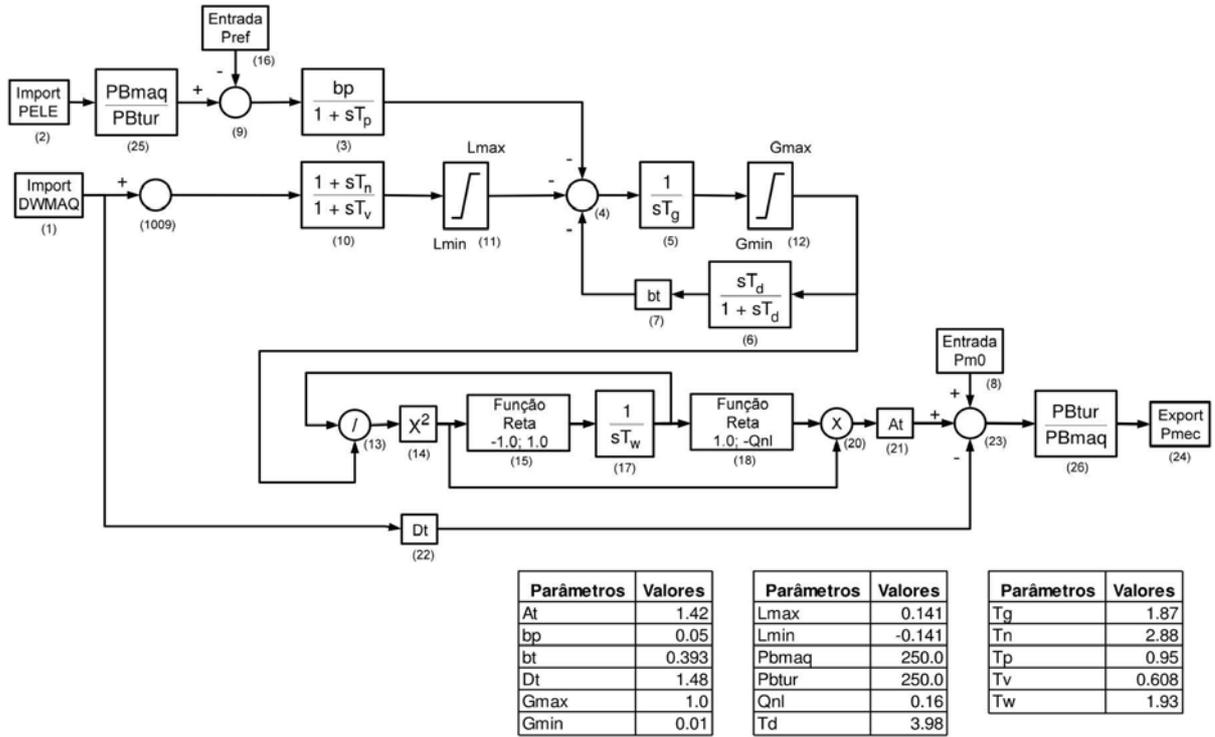


Usina: UHE Volta Grande

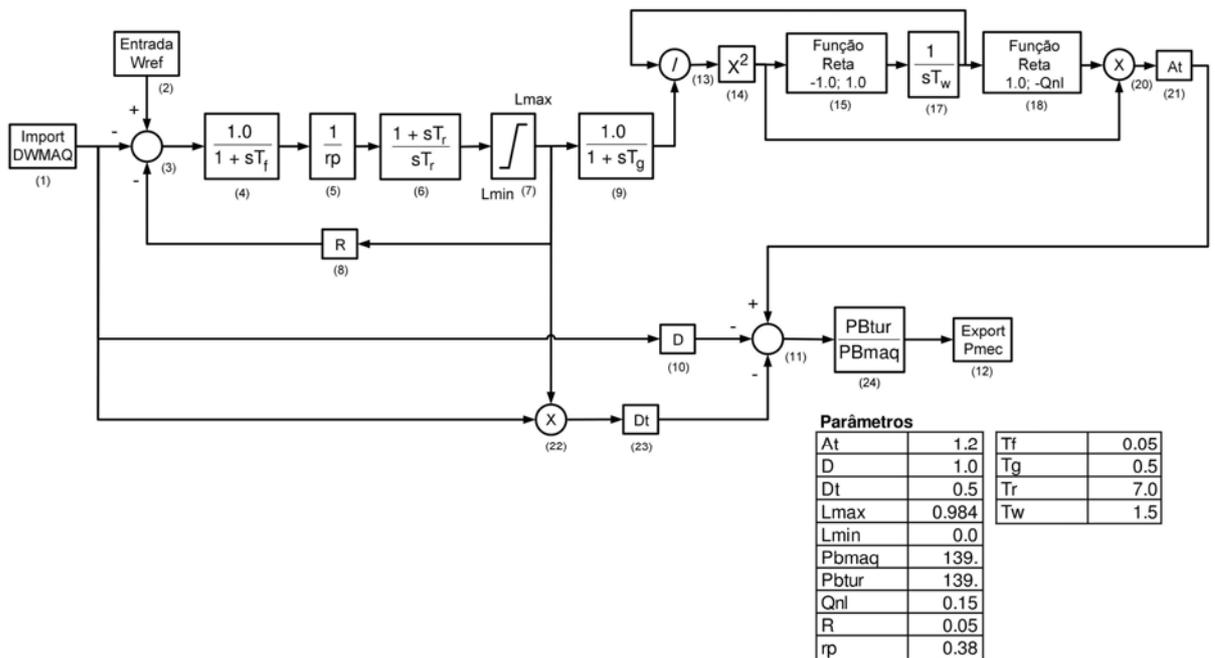


### A-5.9.2 Reguladores de Velocidade

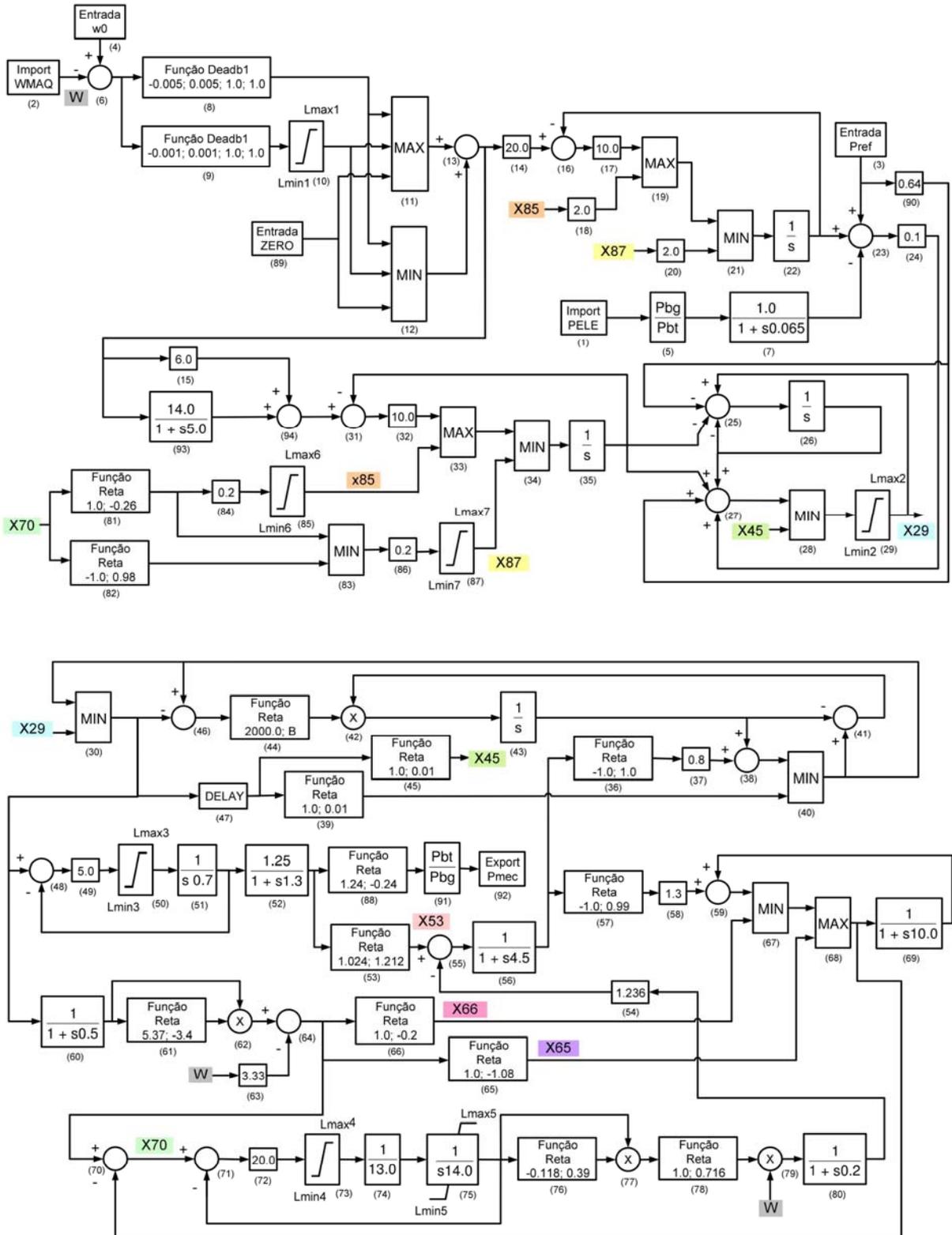
Usina: UHE Água Vermelha

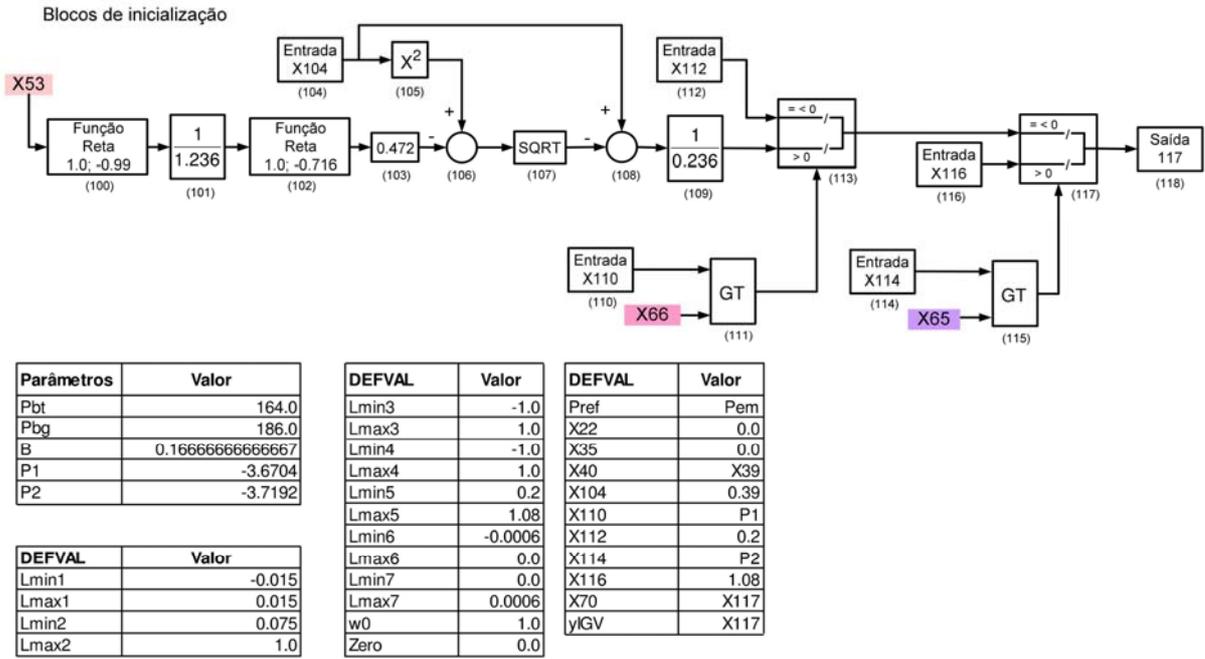


Usina: UHE Corumbá

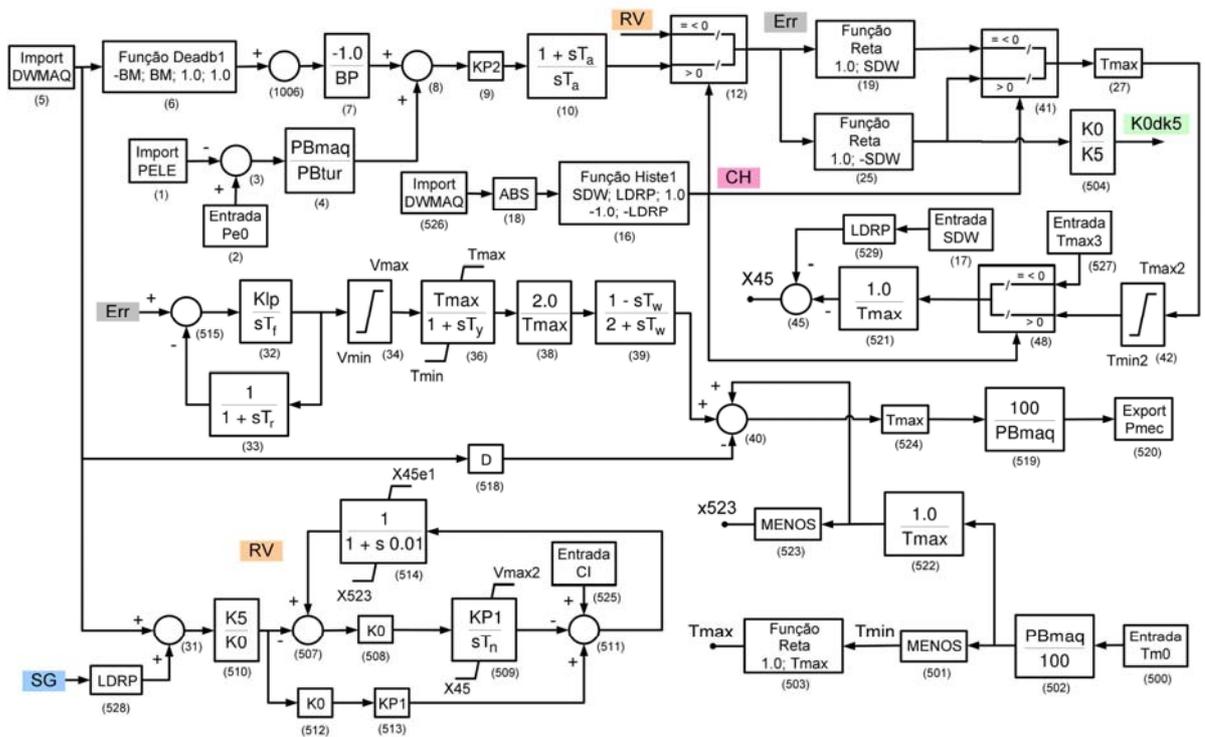


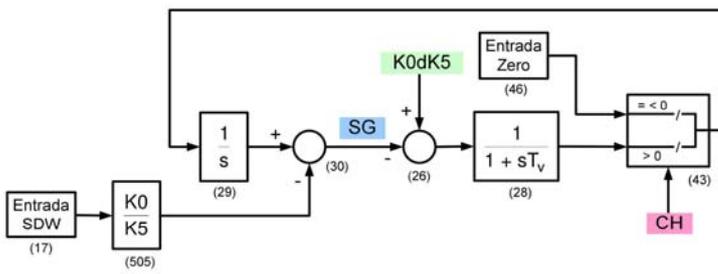
Usina: UTE Cuiabá





Usina: UHE Emborcação

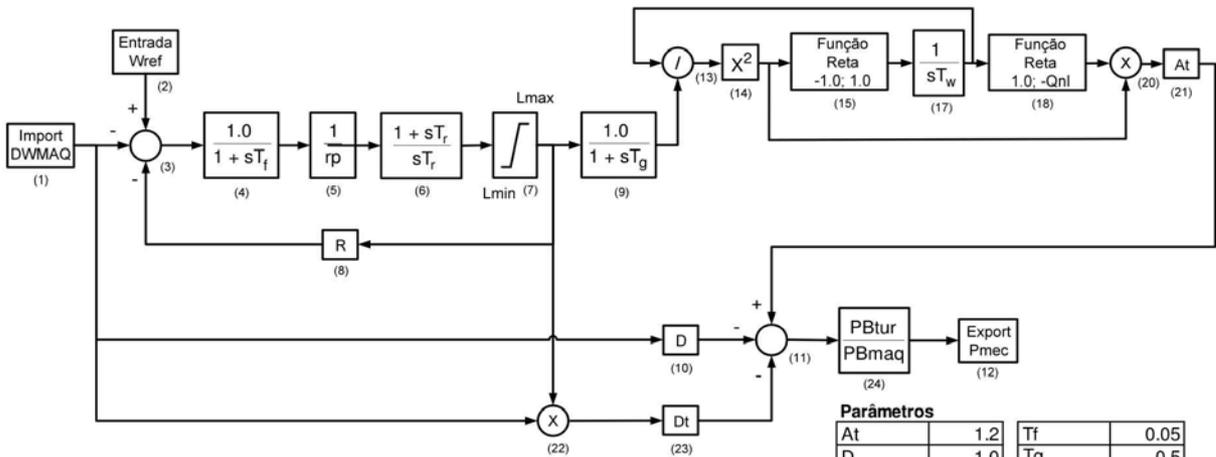




Parâmetros	Valores
BM	0.0008
BP	0.05
D	0.5
K0	0.25
K5	5.0
Klp	4.1
KP1	0.4046
KP2	0.2
LDRP	1.0
PBmaq	313.6
PBtur	270.0
SDW	0.02
Ta	1.1
Tf	0.7
Tmax	2.98
Tn	3.8
Tr	0.09
Tv	4.7

Parâmetros	Valores
Tw	1.55
Ty	0.25
Vmax	1.0
Vmin	-1.0

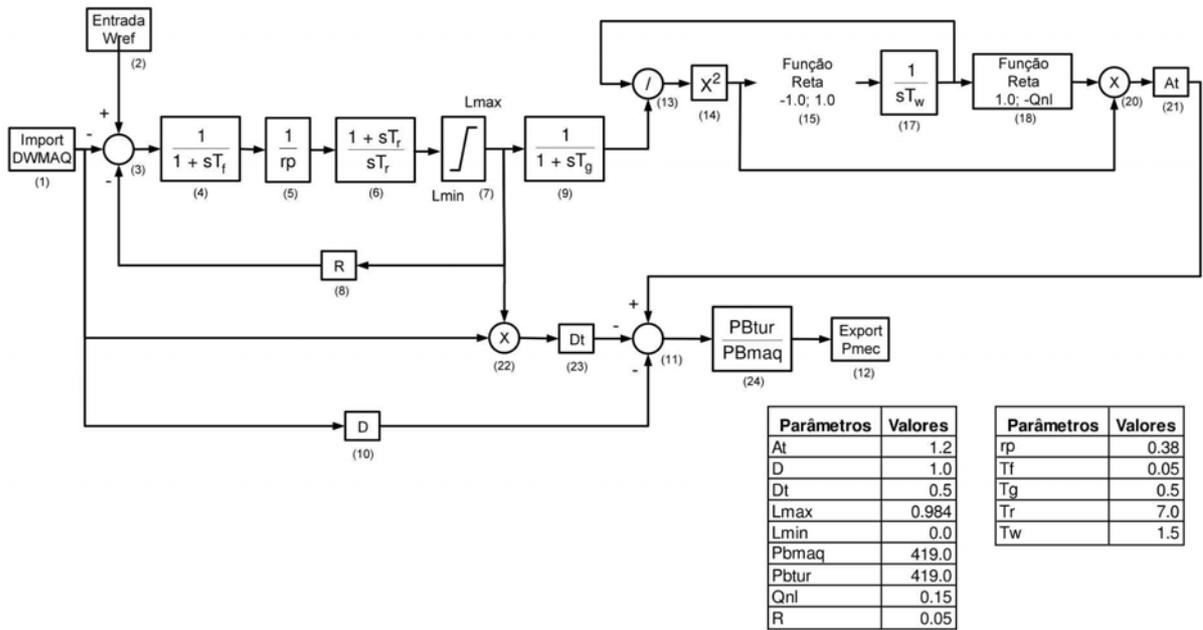
Usina: UHE Furnas



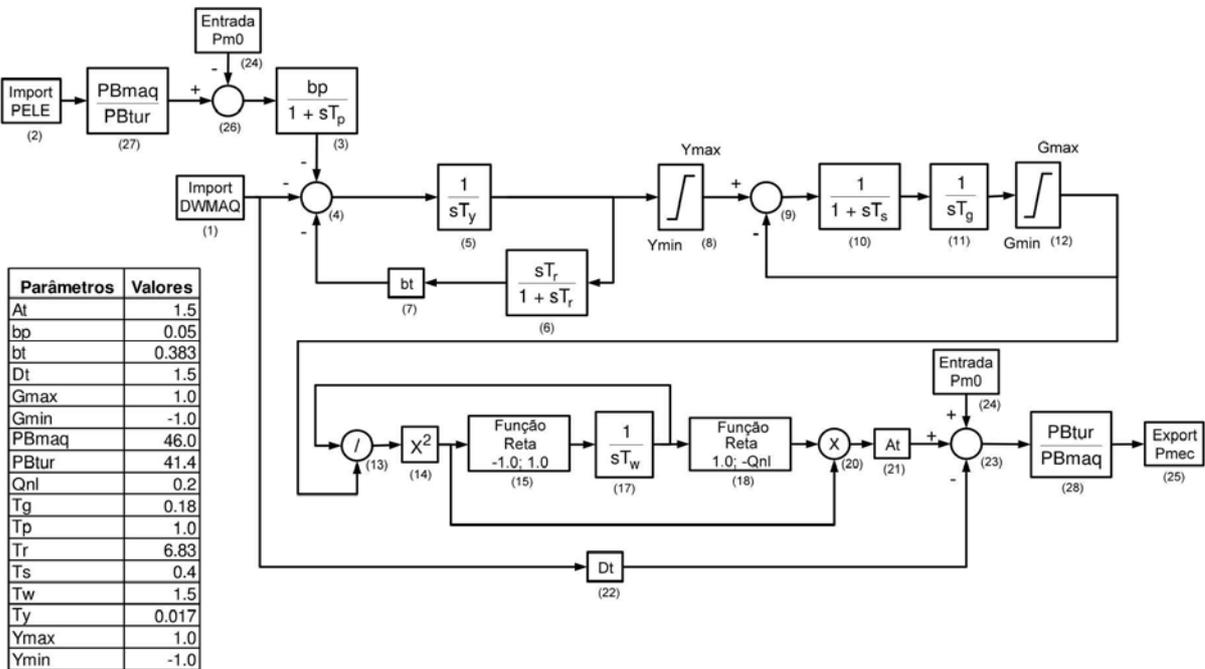
Parâmetros	Valores
At	1.2
D	1.0
Dt	0.5
Lmax	0.984
Lmin	0.0
Pbmaq	164
Pbtur	164
Qnl	0.15
R	0.05
rp	0.38

Tf	0.05
Tg	0.5
Tr	7.0
Tw	1.5

Usina: UHE Governador Bento Munhoz



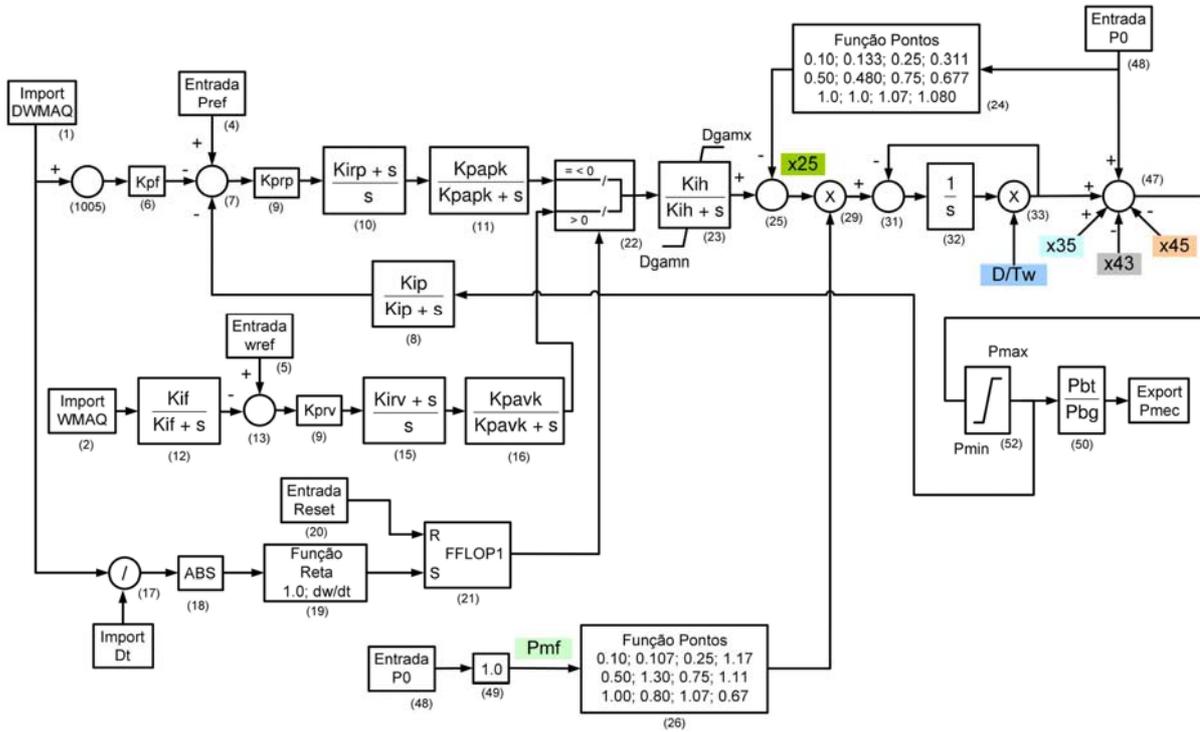
Usina: UHE Guaporé

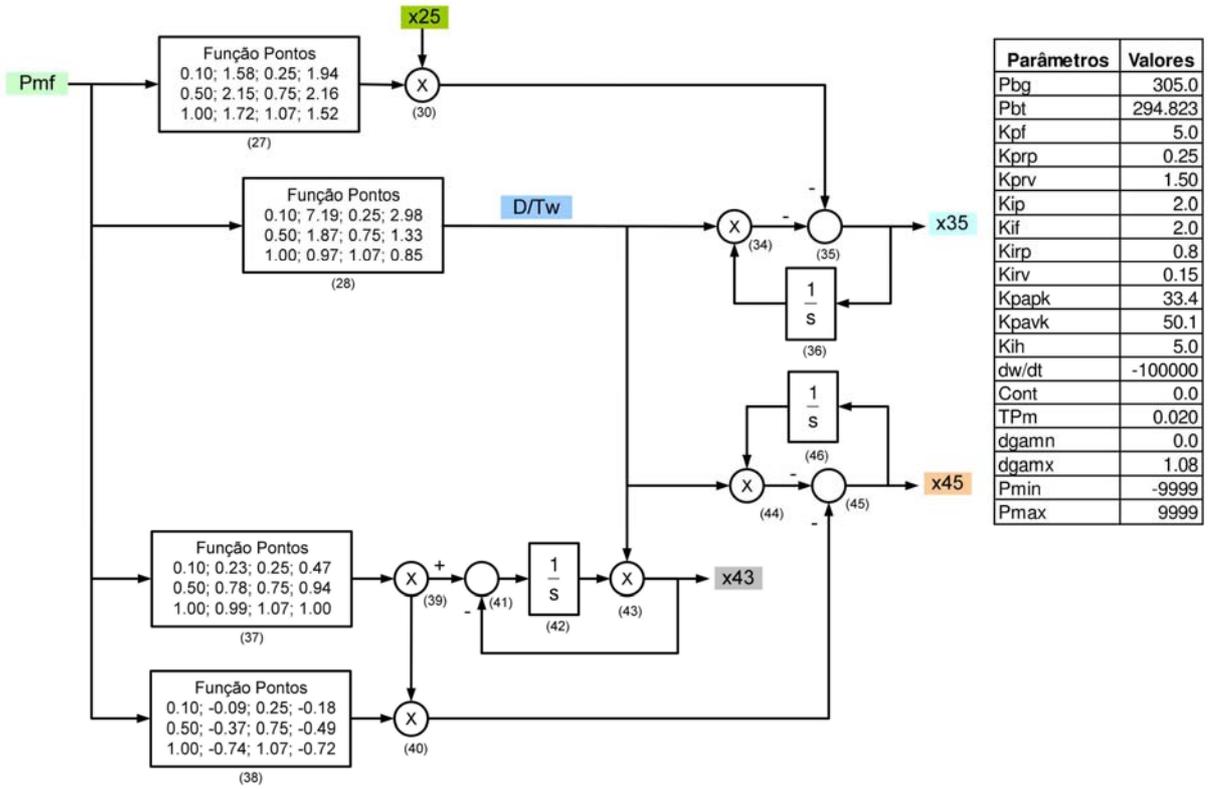


Usina: CS Ibiúna

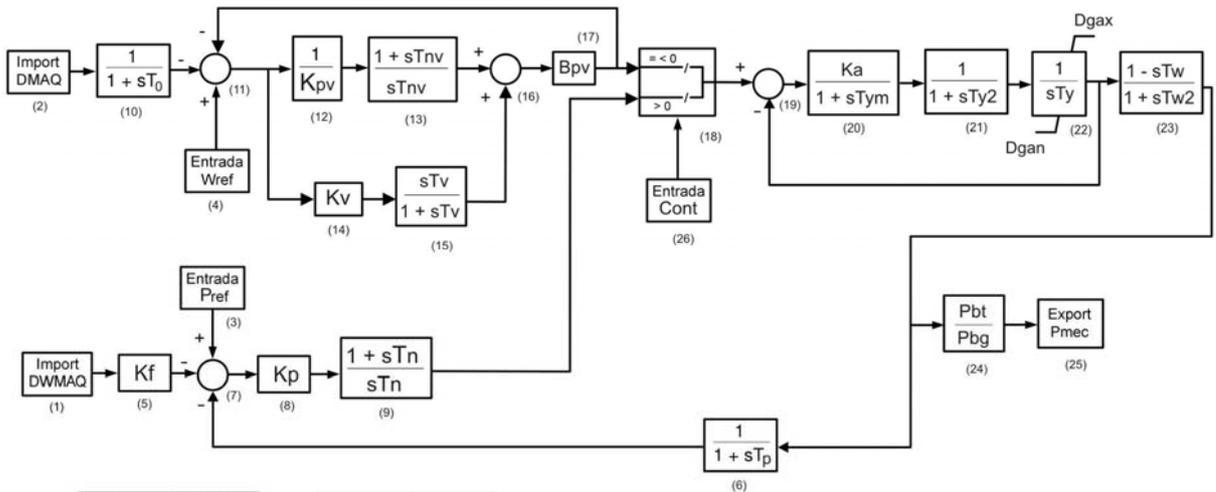
Nota: Este equipamento não possui regulador de velocidade.

Usina: UHE Itá





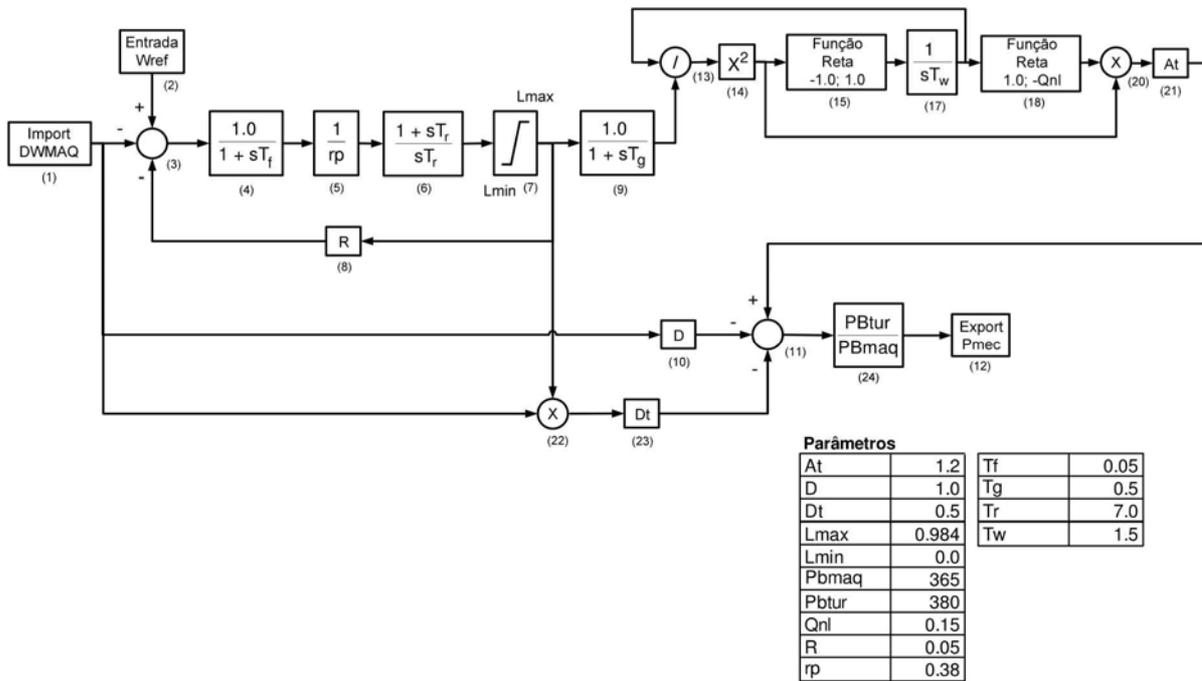
Usina: UHE Itiquira



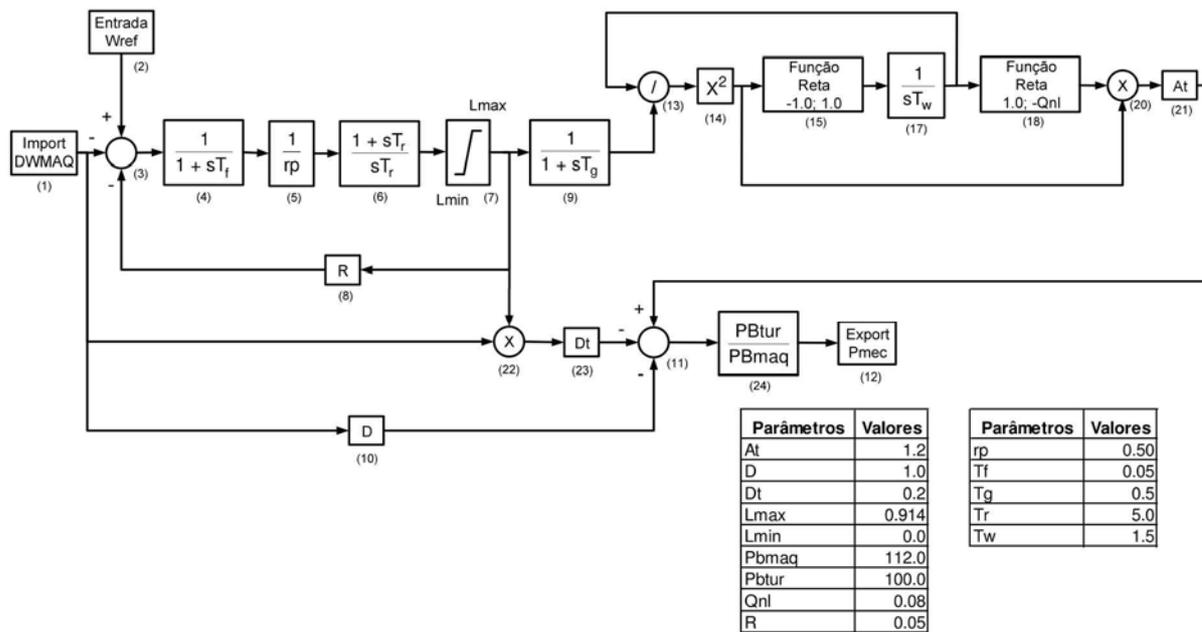
Parâmetro	Valor
Kf	20,0
bpv	0,05
Kp	0,22
Kpv	0,95
T0	0,05
Tp	0,05
Tn	5,0
Tv	1,0
Tnv	15,0
Ka	1,0

Parâmetro	Valor
Tym	0,05
Ty	0,2
Ty2	0,10
Kv	0,0
Cont	1,0
Pbq	33,8
Pbt	31,2
Tw	1,71
Tw2	0,855

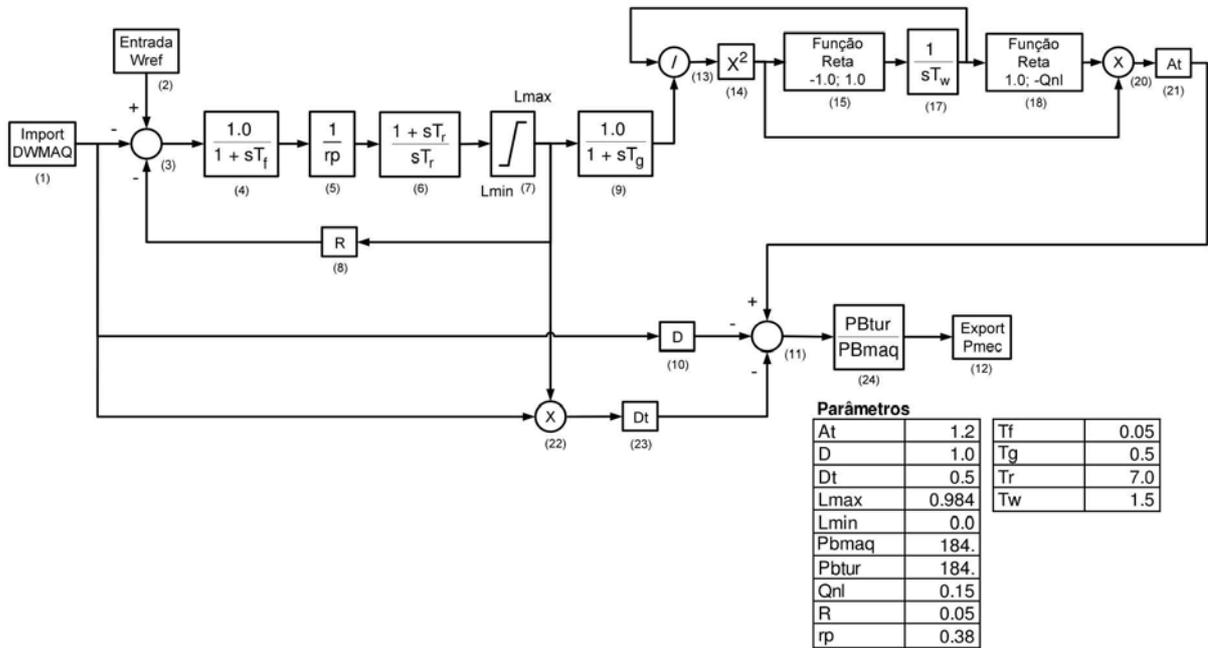
Usina: UHE Itumbiara



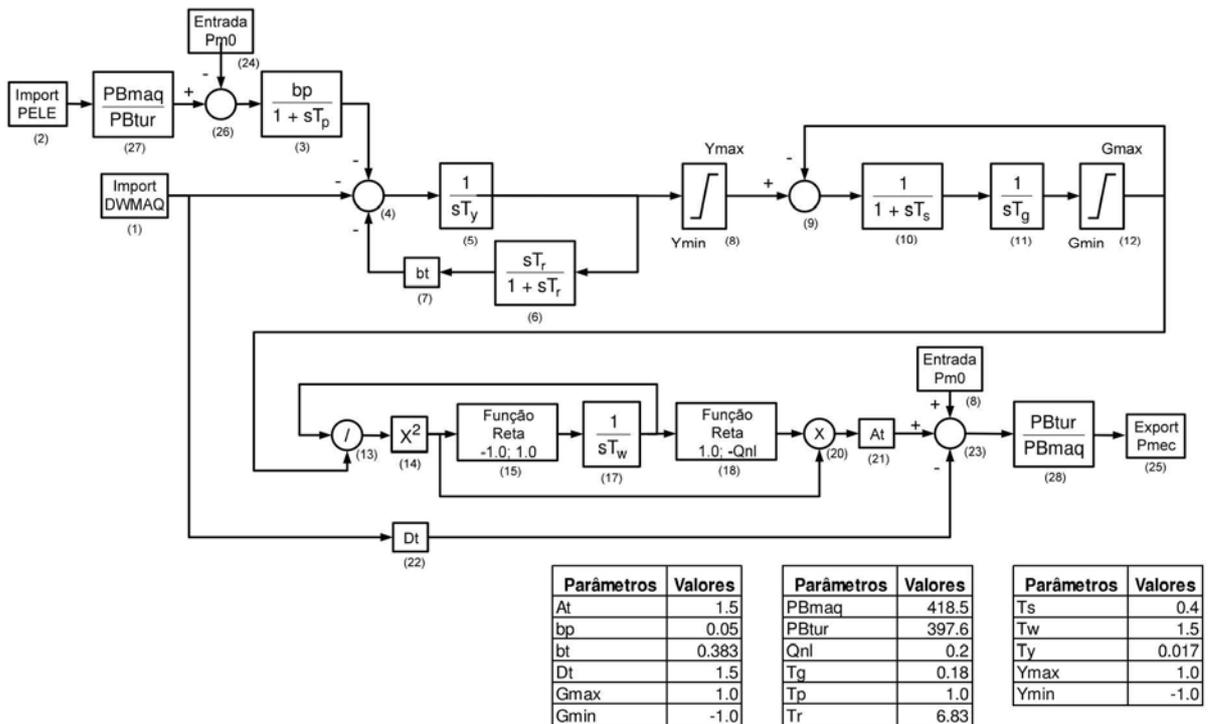
Usina: UHE Jaguará



Usina: UHE Luiz Carlos Barreto

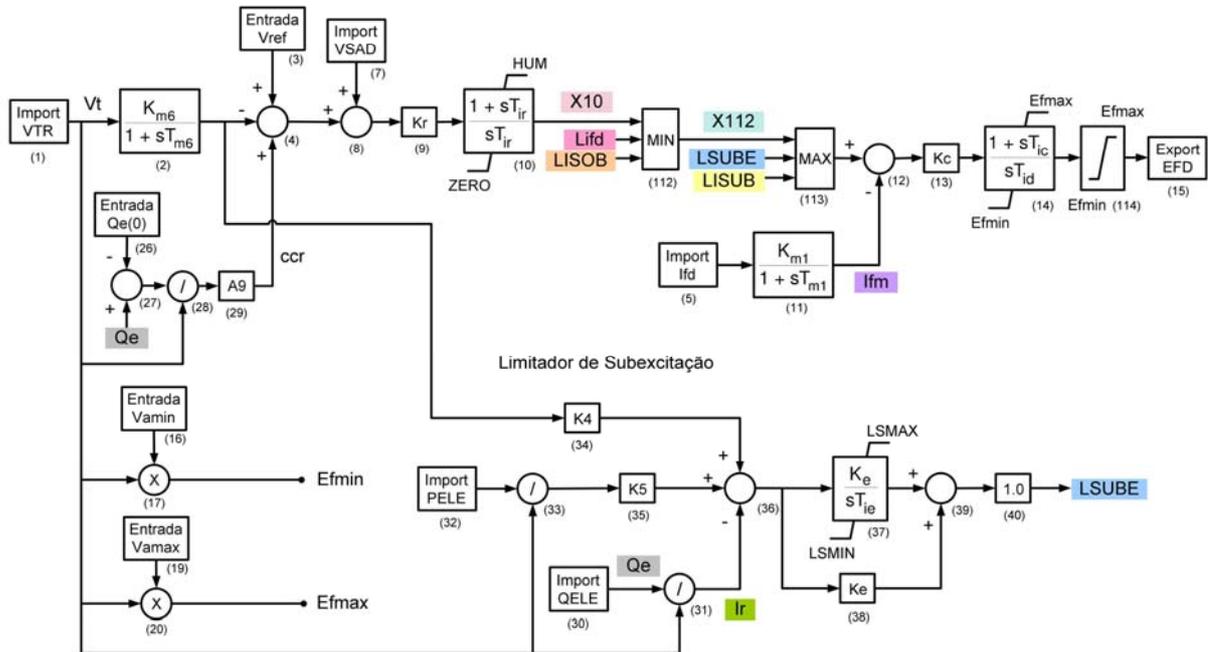


Usina: UHE Machadinho

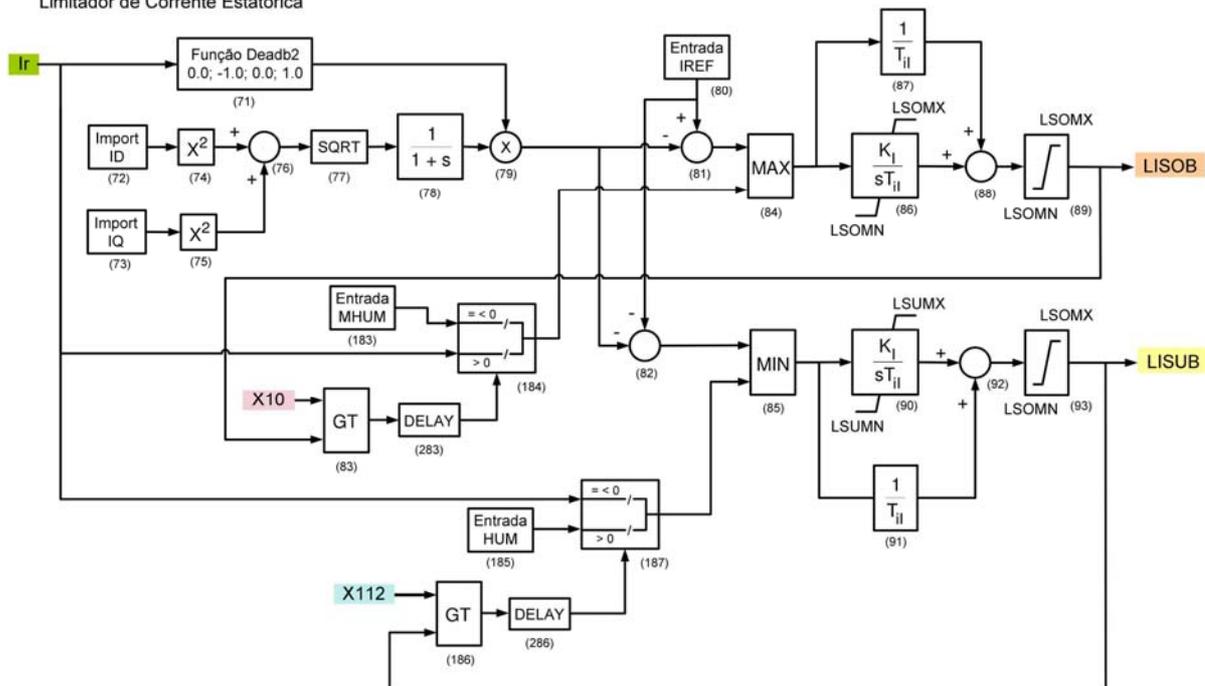


Usina: UHE Manso

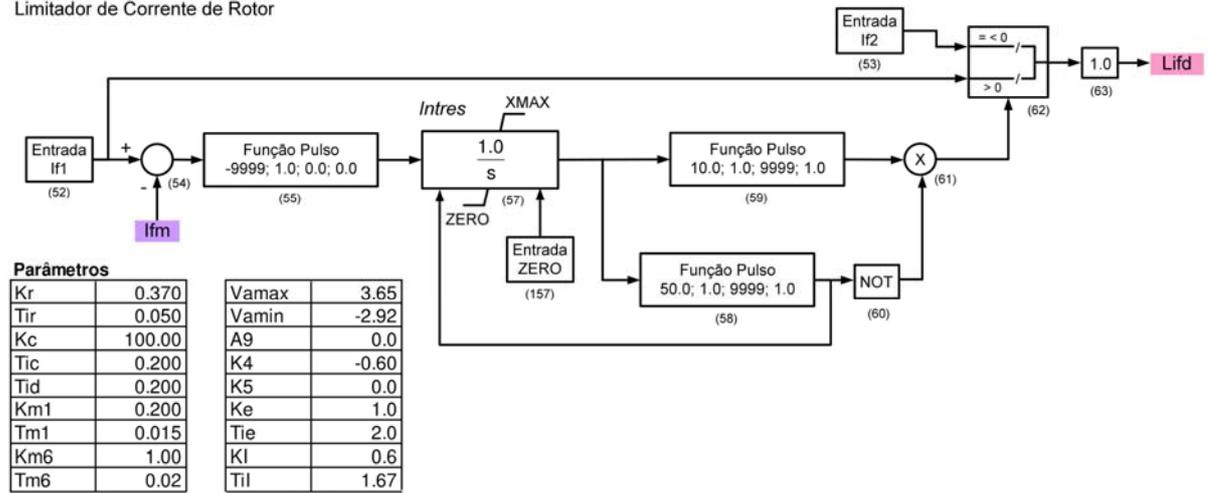
Canal Principal e Compensação de corrente reativa



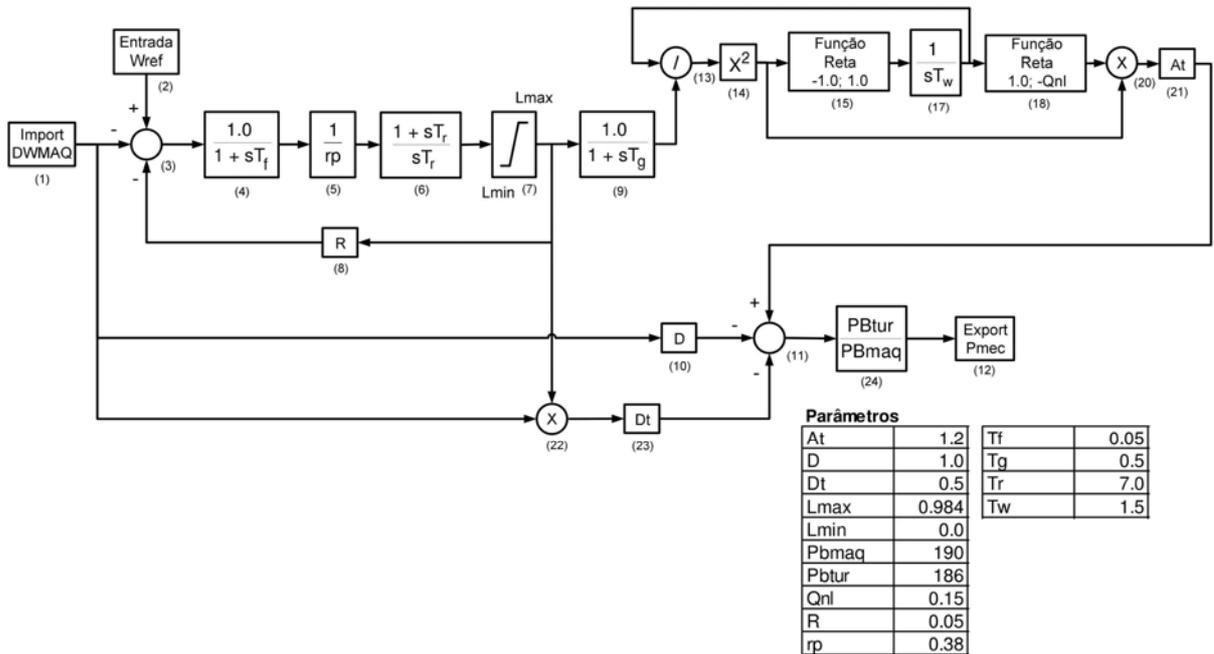
Limitador de Corrente Estática



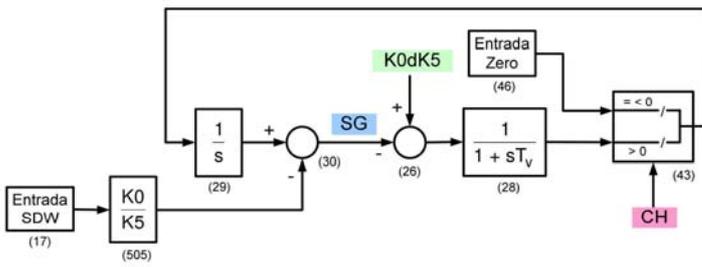
Limitador de Corrente de Rotor



Usina: UHE Marimbondo



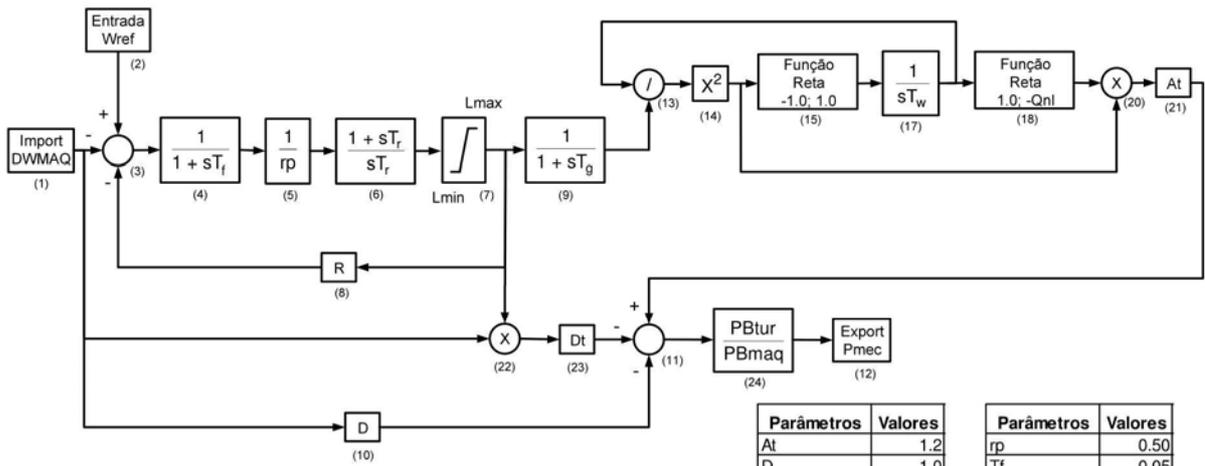




Parâmetros	Valores
BM	0.0008
BP	0.05
D	0.5
K0	0.25
K5	5.0
Klp	4.1
KP1	0.4046
KP2	0.2
LDRP	1.0
PBmaq	179.0
PBtur	170.0
SDW	0.02
Ta	1.1
Tf	0.7
Tmax	1.733
Tn	3.8
Tr	0.09
Tv	4.7

Parâmetros	Valores
Tw	2.40
Ty	0.25
Vmax	1.0
Vmin	-1.0

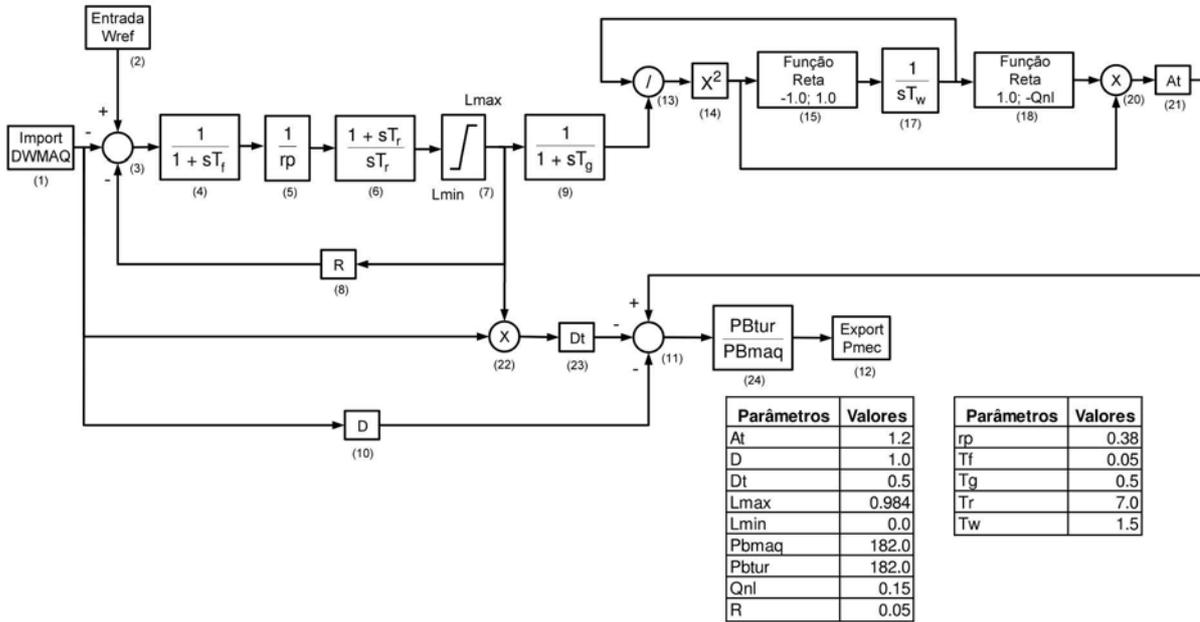
Usina: UHE Salto Caxias



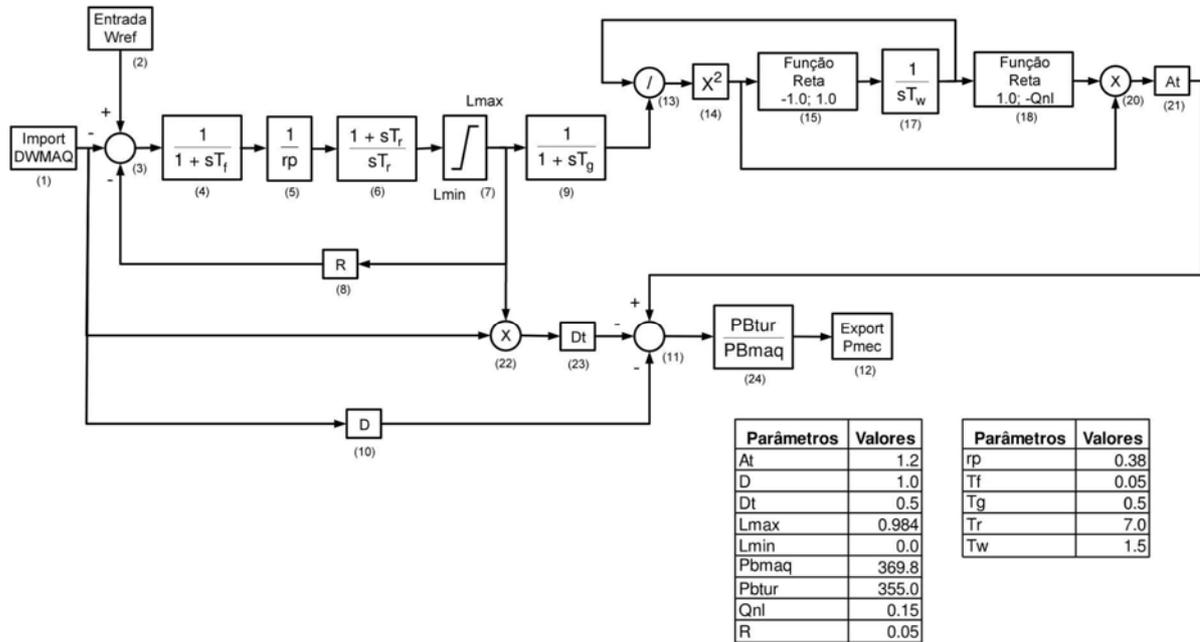
Parâmetros	Valores
At	1.2
D	1.0
Dt	0.5
Lmax	0.986
Lmin	0.0
Pbmaq	345.0
Pbtur	310.0
Qnl	0.15
R	0.05

Parâmetros	Valores
rp	0.50
Tf	0.05
Tg	0.5
Tr	7.0
Tw	1.5

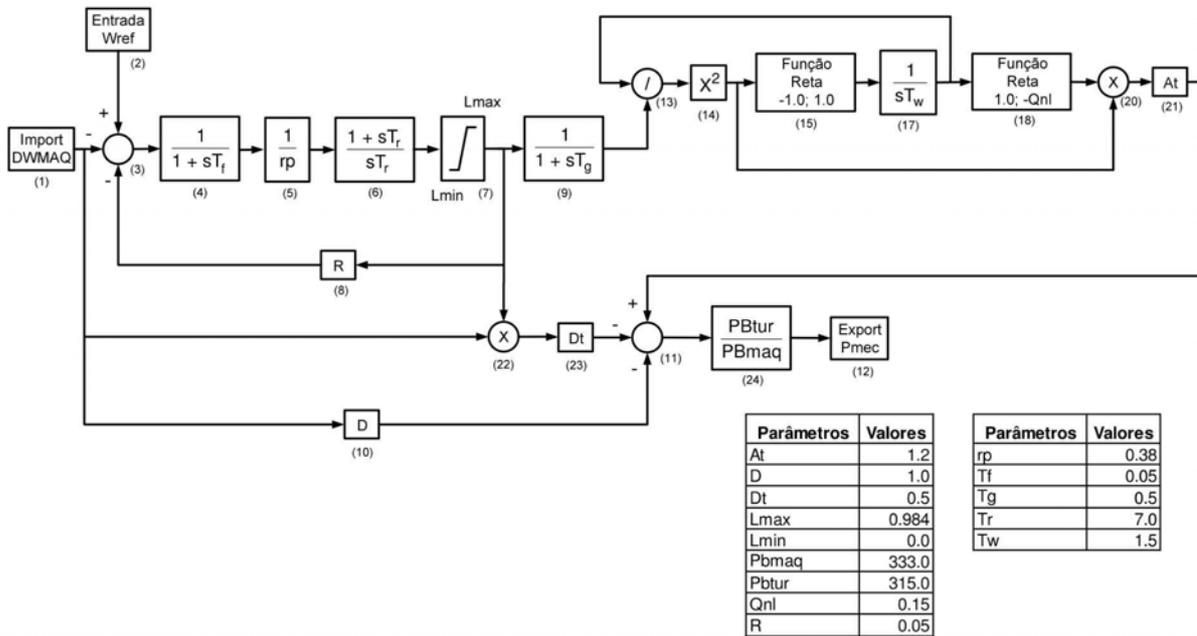
Usina: UHE Salto Osório



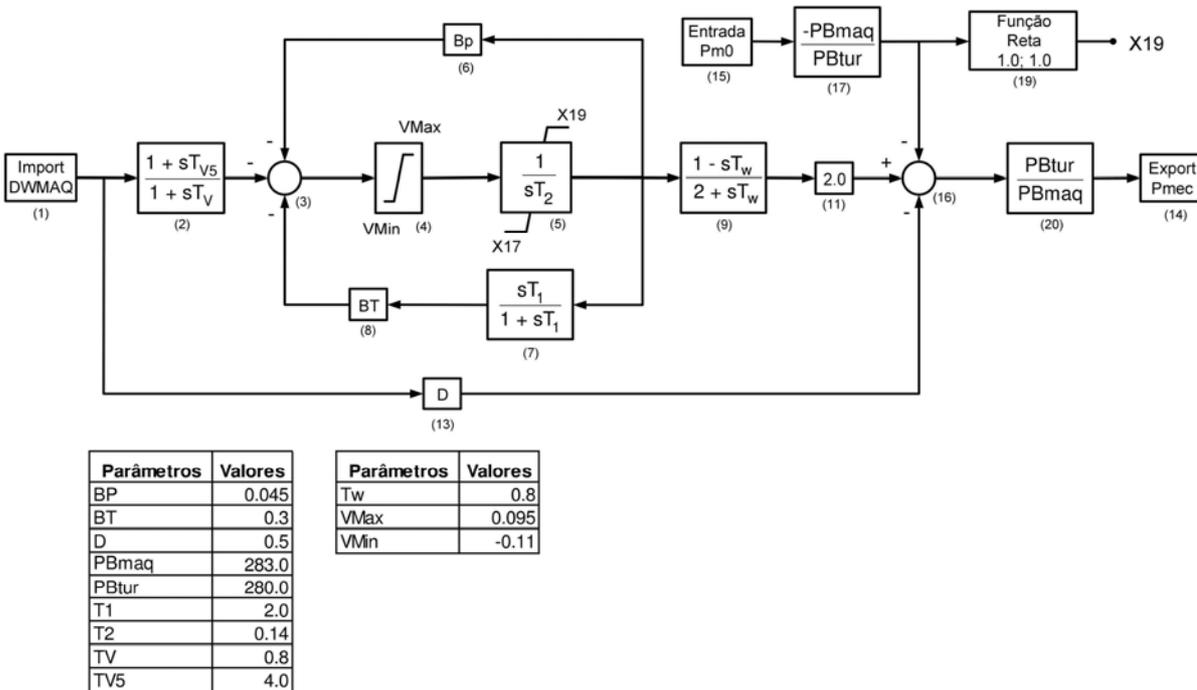
Usina: UHE Salto Santiago



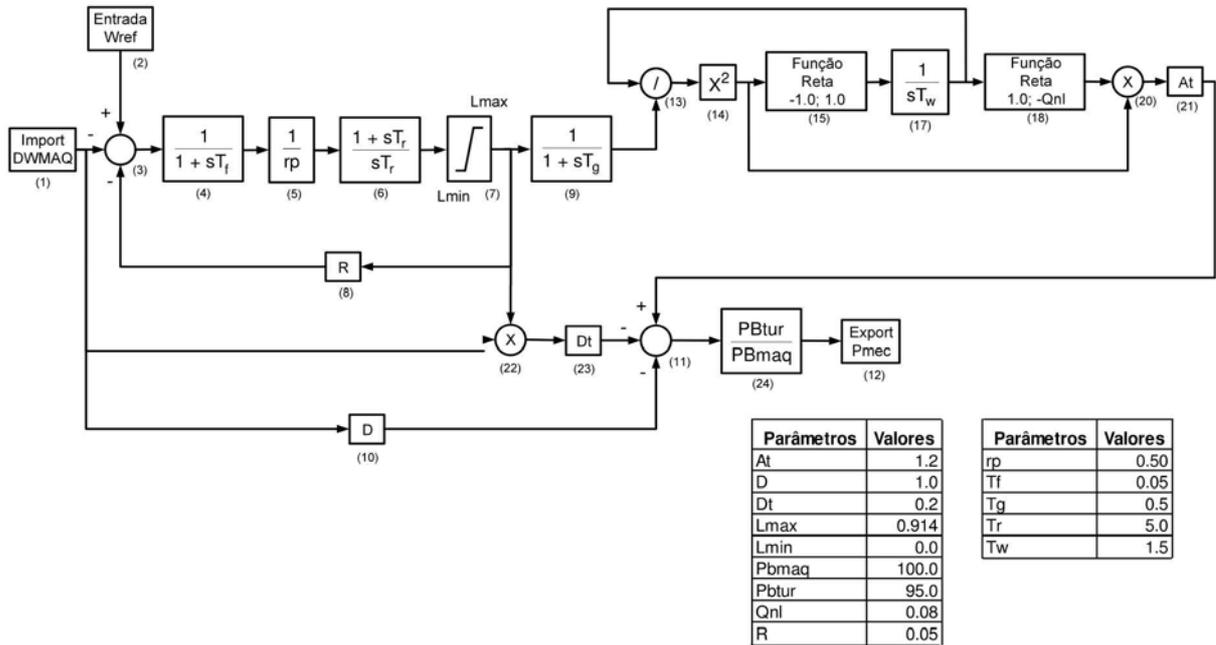
Usina: UHE Salto Segredo



Usina: UHE São Simão

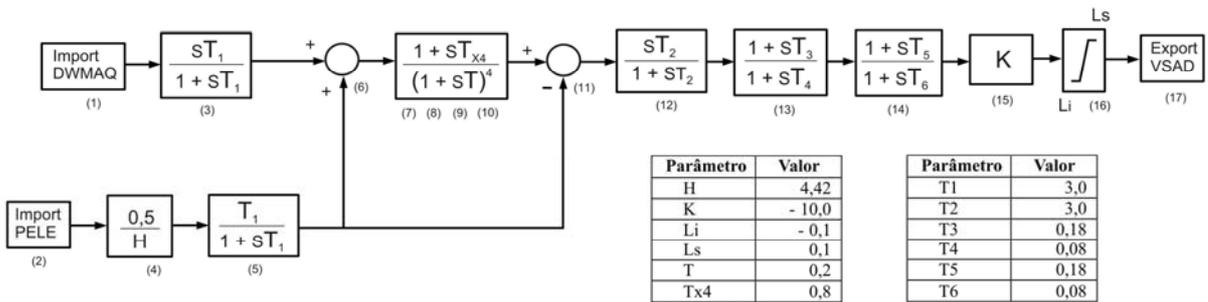


Usina: UHE Volta Grande

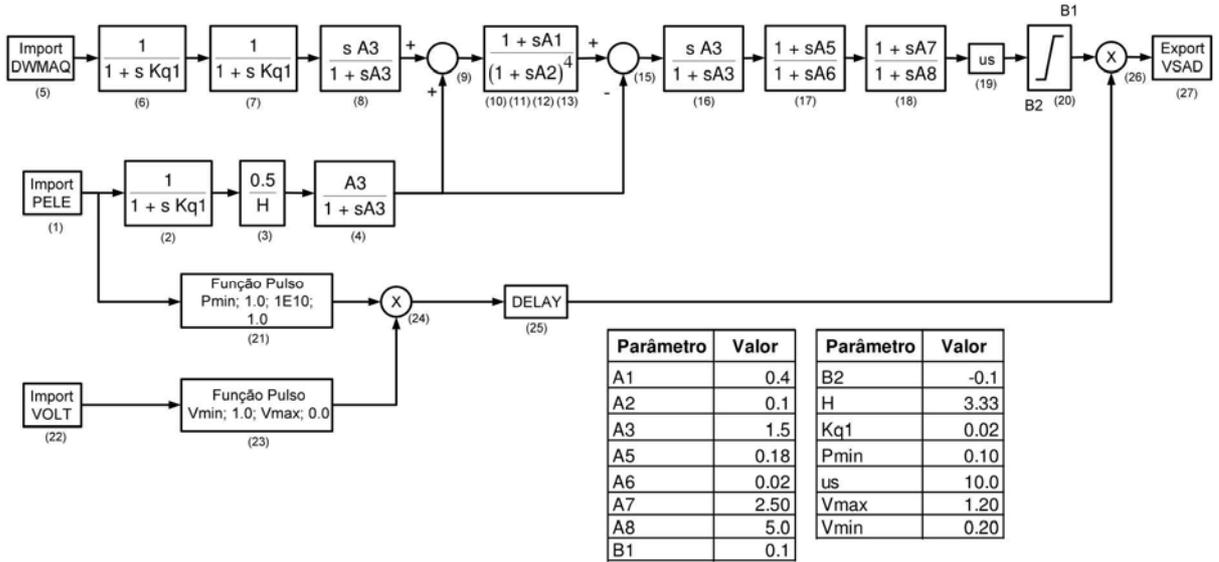


A-5.9.3 Estabilizadores

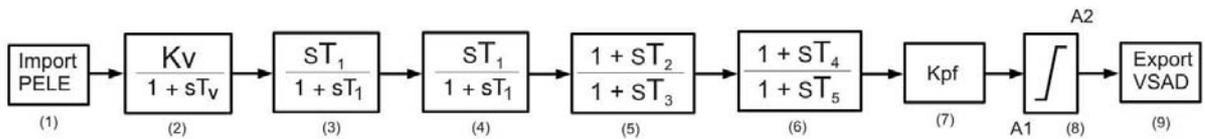
Usina: UHE Água Vermelha



Usina: UHE Corumbá



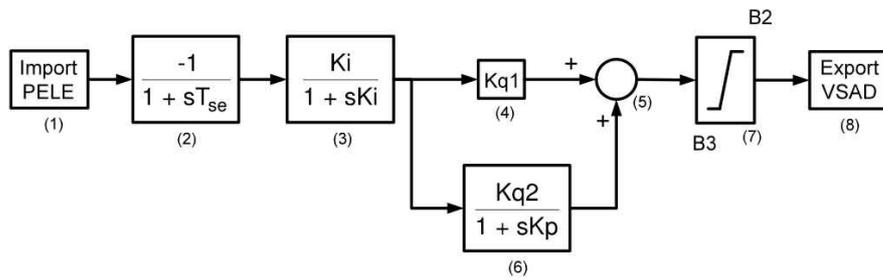
Usina: UTE Cuiabá



Parâmetro	Valor
Kv	0,980
Tv	0,028
T1	3,0
T2	0,08
T3	1,620
T4	0,15
T5	0,05
A1	-0,050
A2	0,050
Kpf	6,0

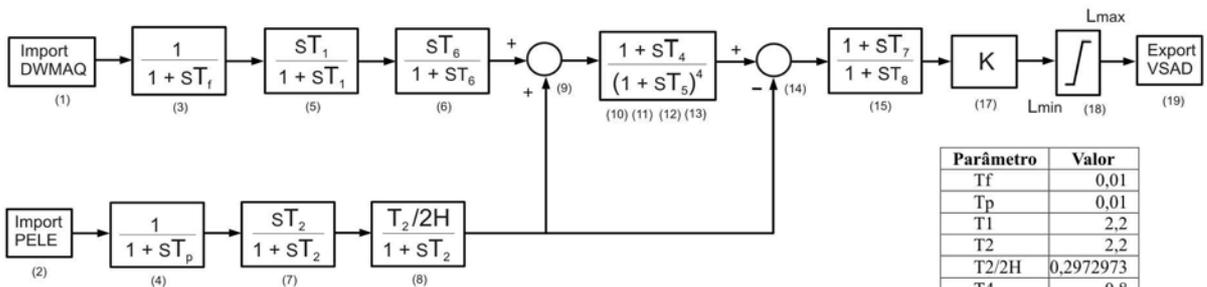


Usina: UHE Governador Bento Munhoz



Parâmetros	Valor
B2	0.05
B3	-0.05
Ki	1.50
Kp	12.0
Kq1	0.5
Kq2	20.0
Tse	0.02

Usina: UHE Guaporé

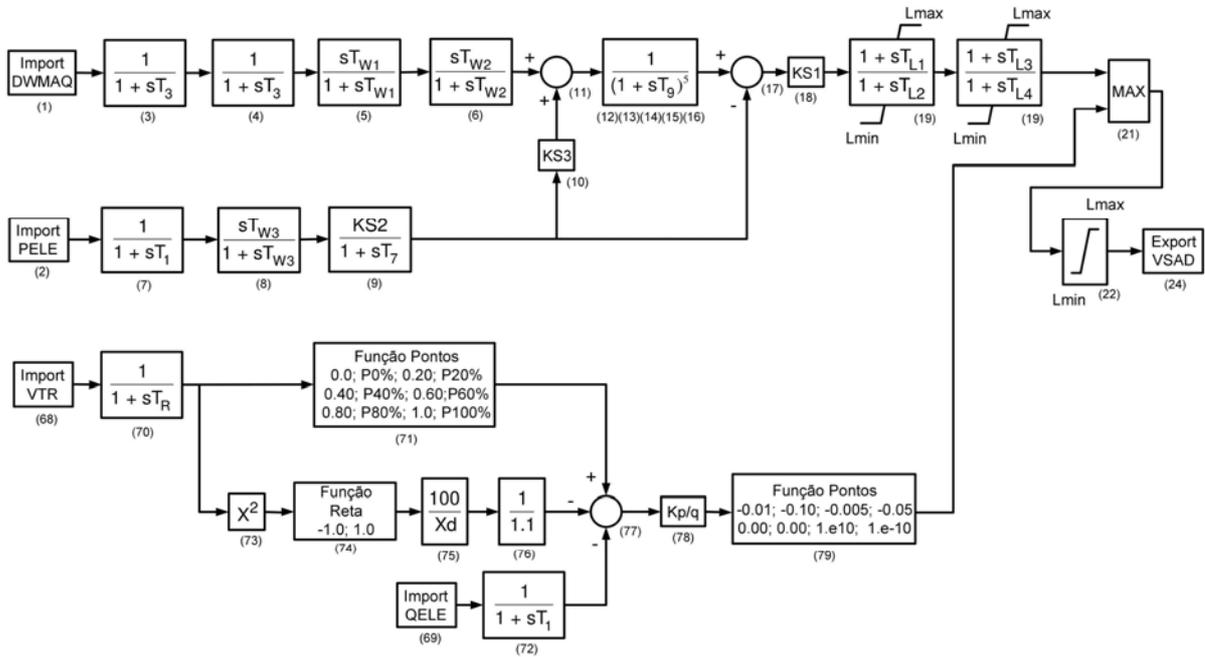


Parâmetro	Valor
Tf	0,01
Tp	0,01
T1	2,2
T2	2,2
T2/2H	0,2972973
T4	0,8
T5	0,2
T6	2,2
T7	0,3
T8	0,02
K1	8,0
Lmin	- 0,1
Lmax	0,1

Usina: CS Ibiúna

Nota: Este equipamento não possui estabilizador.

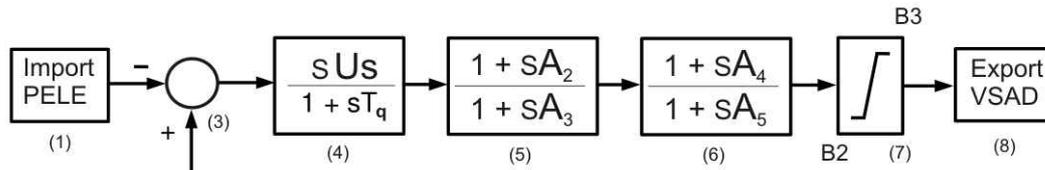
Usina: UHE Itá



Parâmetro	Valor
TR	0.02
T1	0.02
T3	0.02
T7	2.0
T9	0.1
TW1	2.0
TW2	2.0
TW3	2.0
TL1	0.20
TL2	0.04
TL3	0.36
TL4	0.12
KS1	4.0

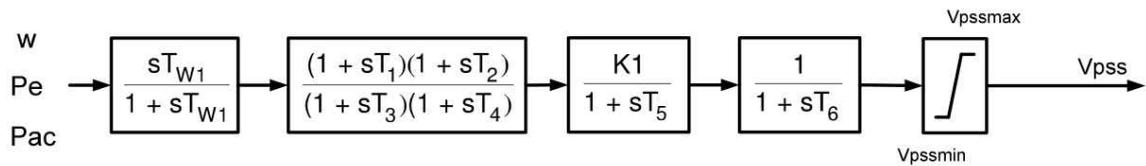
Parâmetro	Valor
KS2	0.2
KS3	1.0
Lmin	-0.1
Lmax	0.1
P0%	-0.85
P20%	-0.75
P40%	-0.65
P60%	-0.55
P80%	-0.46
P100%	-0.35
Kp/q	0.05
Xd	110.0

Usina: UHE Itiquira



Parâmetro	Valor
Us	8,0
Tq	1,5
A2	0,15
A3	0,5
A4	0,22
A5	0,39
B2	- 0,1
B3	0,1

Usina: UHE Itumbiara



Parâmetro	T1	T2	T3	T4	T5	T6	Tw	K1	Vpssmin	Vpssmax	Type
Valor	0.15	0.22	0.015	0.36	0.5	0.011	1.5	5.33	-0.1	0.1	2.0

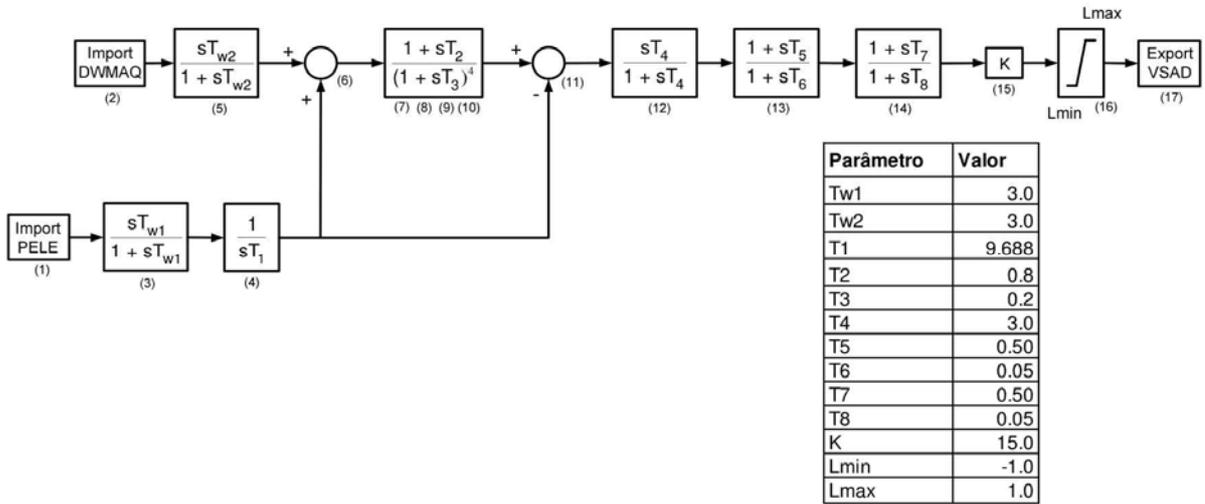
Usina: UHE Jaguará

Nota: Este equipamento não possui estabilizador.

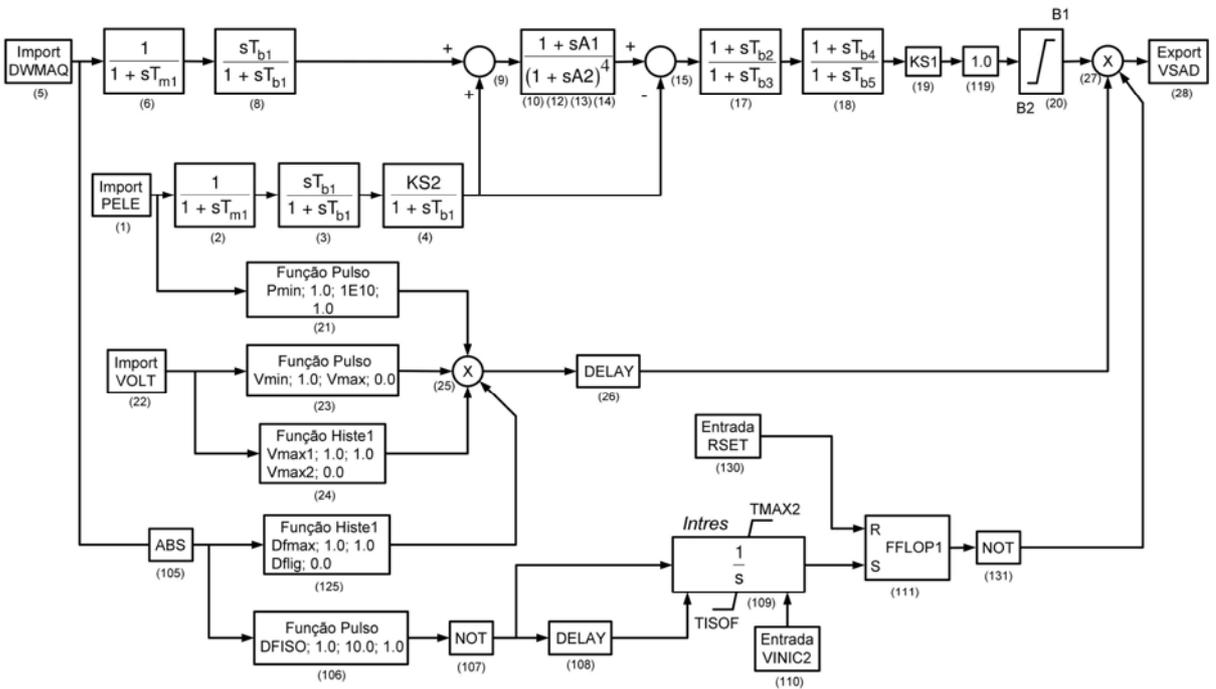
Usina: UHE Luiz Carlos Barreto

Nota: Este equipamento não possui estabilizador.

Usina: UHE Machadinho



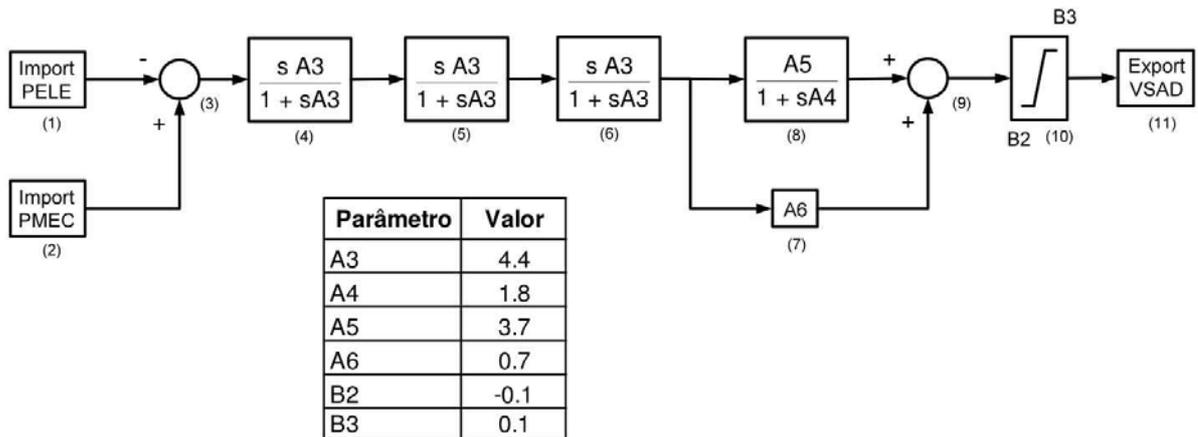
Usina: UHE Manso



Parâmetro	Valor
A1	0.4
A2	0.1
Tb1	2.0
Tb2	0.162
Tb3	0.054
Tb4	0.200
Tb5	0.066
B1	0.1
B2	-0.1
Tm1	0.02
Pmin	0.46

Parâmetro	Valor
KS1	10.0
KS2	0.370
Vmax	2.20
Vmax1	1.14
Vmax2	1.10
Vmin	0.02
Dfmax	0.010
Dflig	0.005
DFISO	0.0166
TISOF	-5.0

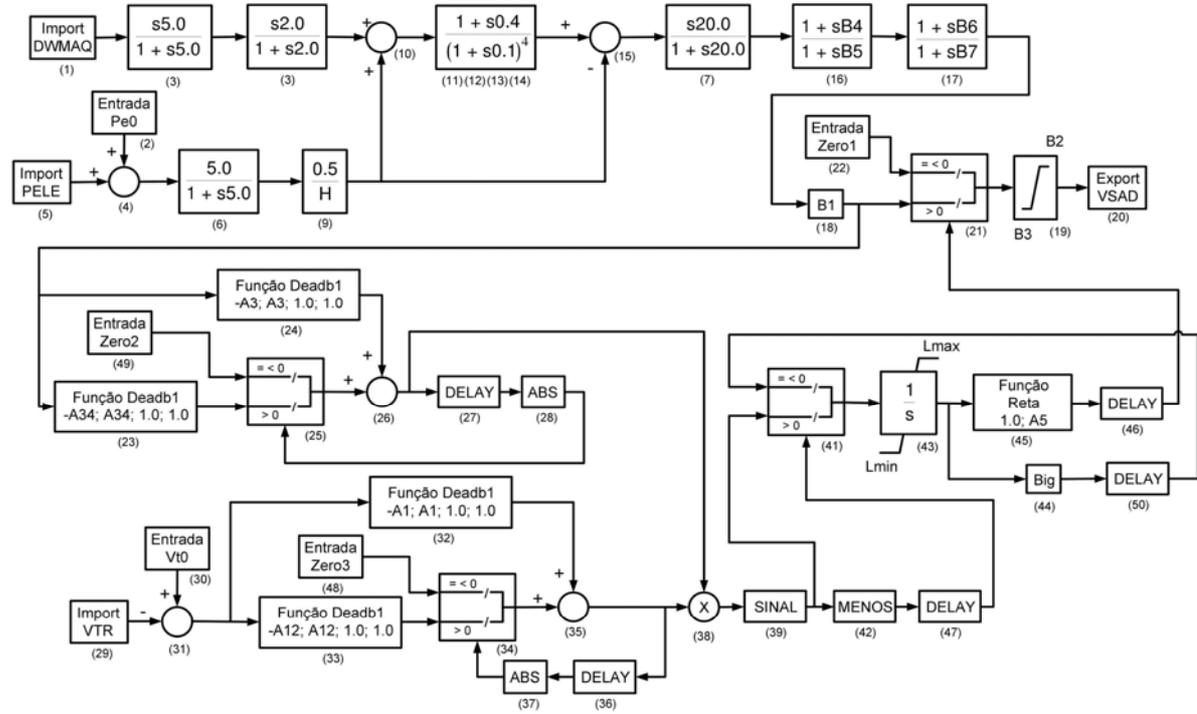
Usina: UHE Marimbondo



Usina: UHE Mascarenhas de Moraes

Nota: Este equipamento não possui estabilizador.

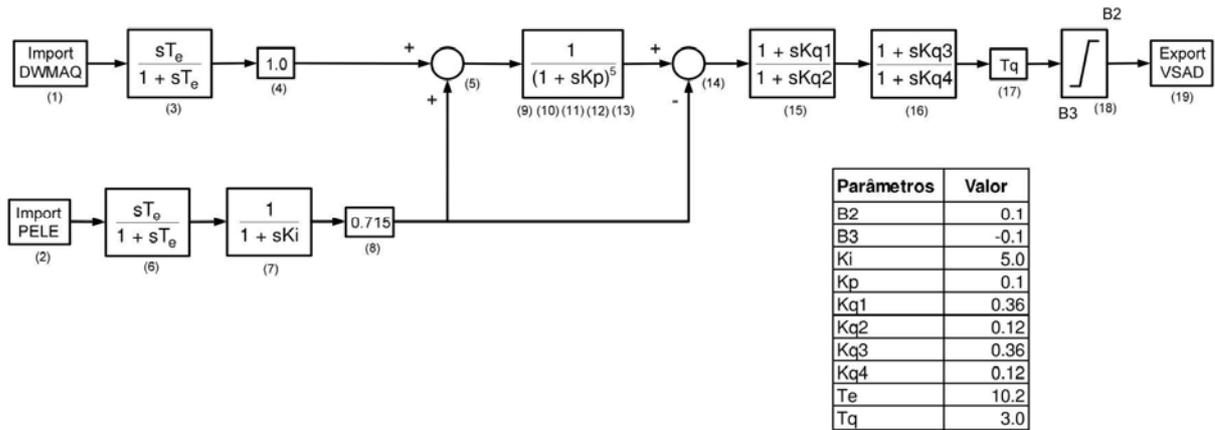
Usina: UHE Nova Ponte



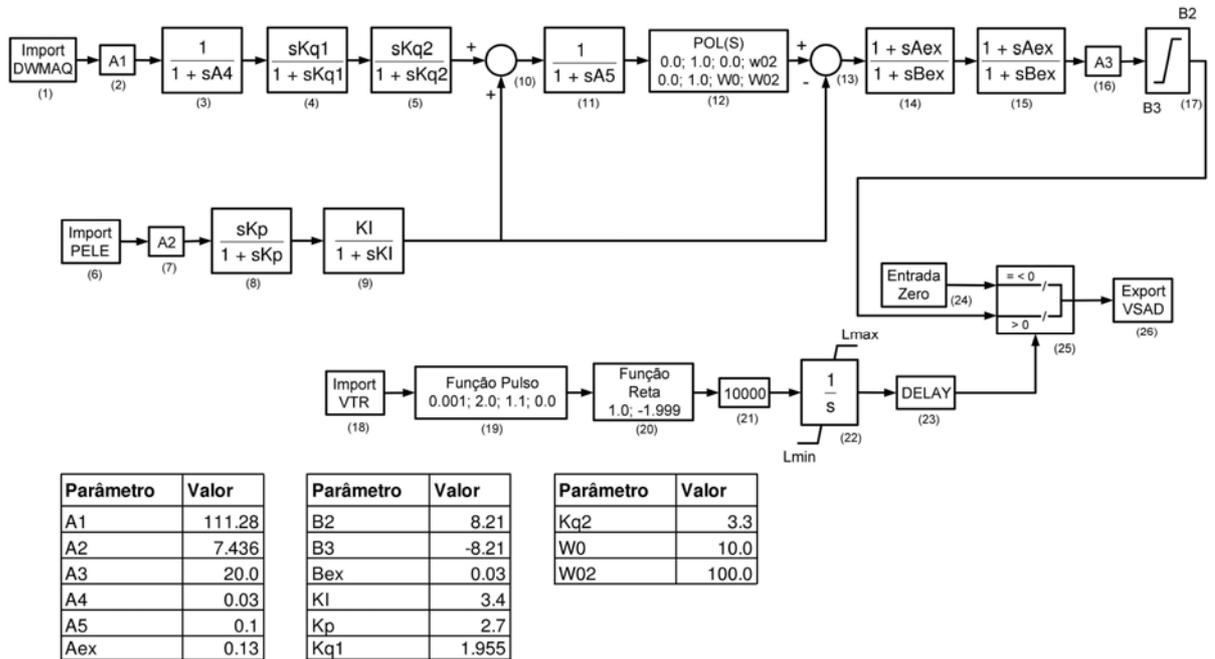
Parâmetros	Valor
A1	0.1
A12	0.09
A3	0.04
A34	0.02
A5	2.0
B1	-12.0
B2	0.1
B3	-0.1
B4	0.09
B5	0.03
B6	0.09
B7	0.03
Big	-1.0E+10
H	4.91

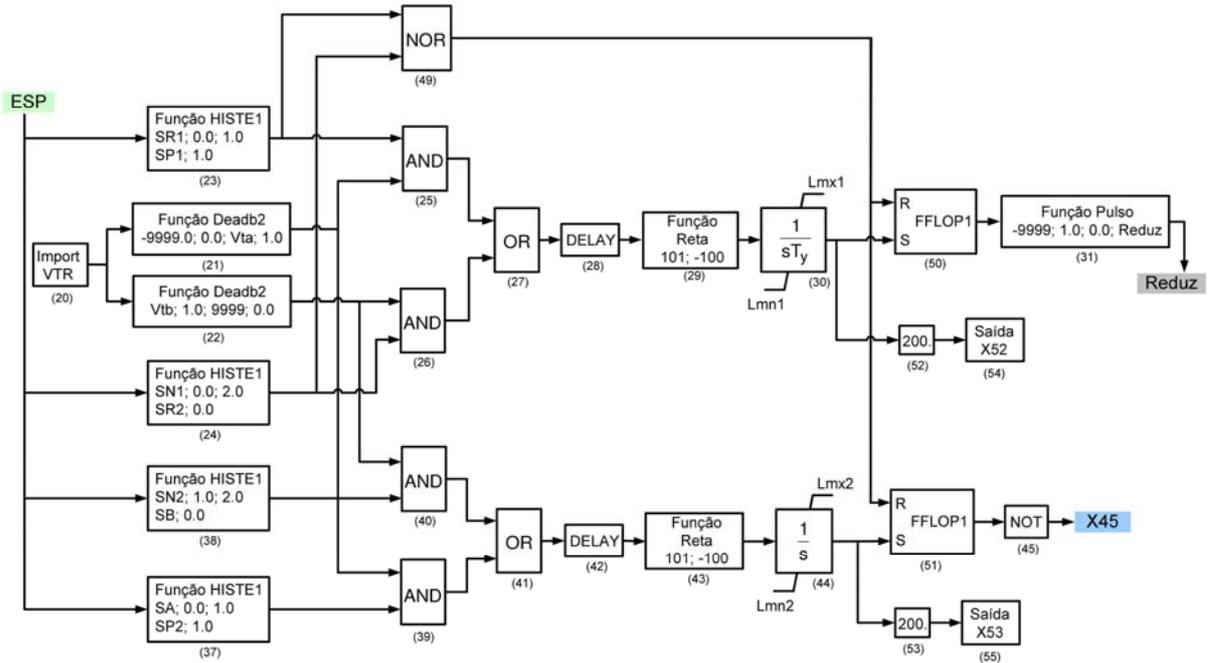
DEFVAL	
Lmax	0.0
Lmin	-3.0
X25	0.0
X34	0.0
Zero1	0.0
Zero2	0.0
Zero3	0.0

Usina: UHE Salto Caxias

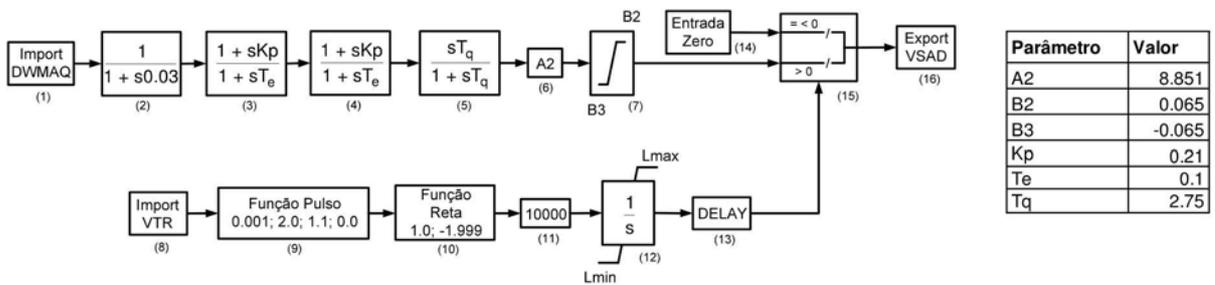


Usina: UHE Salto Osório

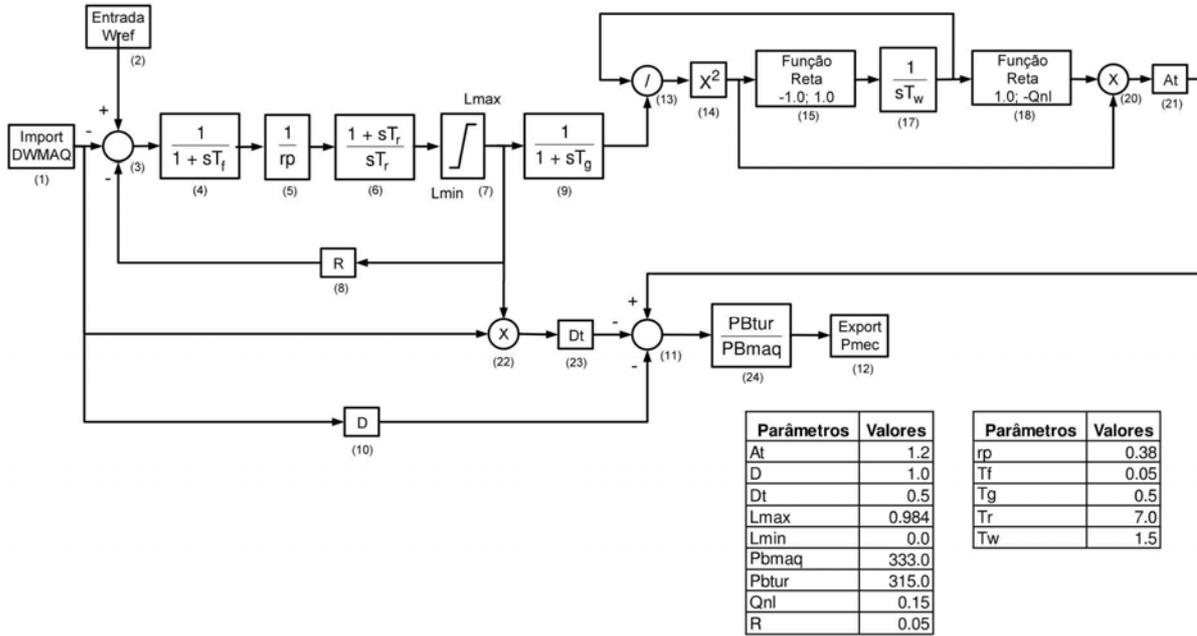




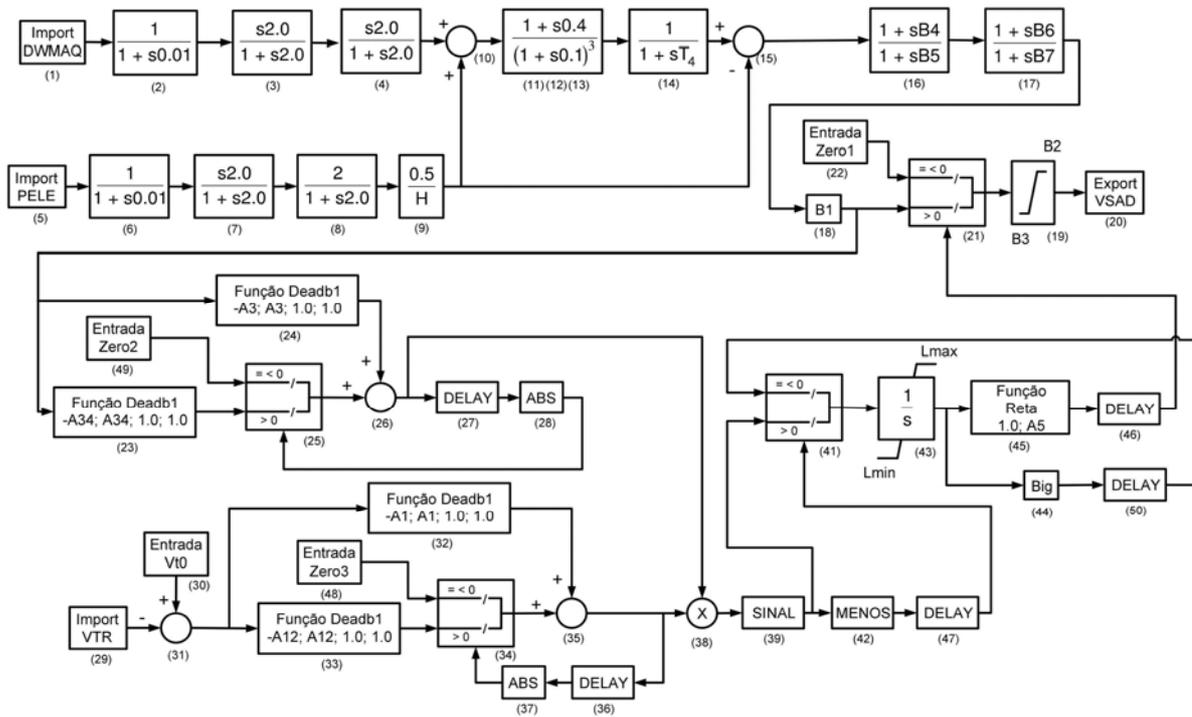
Usina: UHE Salto Santiago



Usina: UHE Salto Segredo



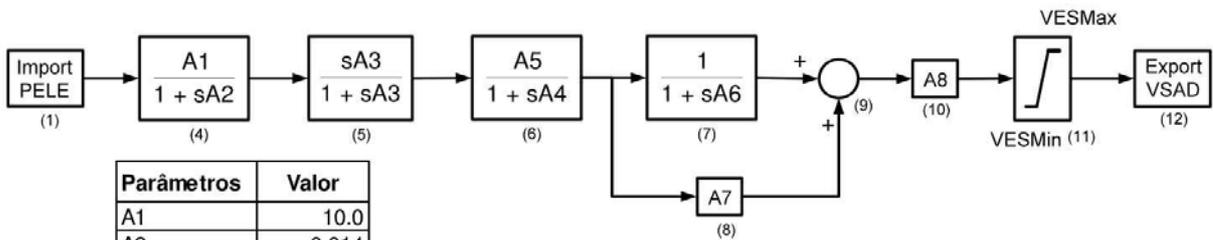
Usina: UHE São Simão



Parâmetros	Valor
A1	0.1
A12	0.09
A3	0.04
A34	0.02
A5	2.0
B1	21.2
B2	0.1
B3	-0.1
B4	0.086
B5	0.005
B6	0.086
B7	0.005
Big	-1.0E+10
H	6.228
T4	0.1

DEFVAL	
Lmax	0.0
Lmin	-3.0
X25	0.0
X34	0.0
Zero1	0.0
Zero2	0.0
Zero3	0.0

Usina: UHE Volta Grande



Parâmetros	Valor
A1	10.0
A2	0.014
A3	2.0
A4	0.01
A5	1.0
A6	0.57
A7	0.2
A8	5.0
B2	5.0
B3	-5.0

\* \* \*