

## 1 Variables

## 2 root

	var	symbol	documentation	type	units	tokens	eqs
13	$F_{N,A}$	<b>F</b>	directed graph incidence matrix	network		[]	
1	$t_N$	<b>t</b>	time	frame	$s$	[]	
3	$to_N$	<b>to</b>	starting time	frame	$s$	[]	1
4	$te_N$	<b>te</b>	end time	frame	$s$	[]	2
2	$value$	<b>value</b>	numerical value	constant		[]	

## 3 System

	var	symbol	documentation	type	units	tokens	eqs
5	$x_N$	<b>x</b>	state - length	state	$m$	[]	
11	$pi_{aN}$	<b>pi_a</b>	effort a	state	$m$	[]	7
12	$pi_{bN}$	<b>pi_b</b>	effort b	state	$m$	[]	8
14	$fx_{aN}$	<b>fx_a</b>	flow of x mechanism a	state	$ms^{-1}$	[]	9
15	$fx_{bN}$	<b>fx_b</b>	flow of x mechanism b	state	$ms^{-1}$	[]	10
16	$dx_N$	<b>dx</b>	differential state	state	$ms^{-1}$	[]	11
7	$K_N$	<b>K</b>	frequency a	constant	$s^{-1}$	[]	3
8	$L_N$	<b>L</b>	frequency b	constant	$s^{-1}$	[]	4
9	$M$	<b>M</b>	gain a	constant		[]	5
10	$N$	<b>N</b>	gain b	constant		[]	6

## 4 Properties

	var	symbol	documentation	type	units	tokens	eqs
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## 5 Control

	var	symbol	documentation	type	units	tokens	eqs
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## 6 System-Properties

	var	symbol	documentation	type	units	tokens	eqs
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## 7 Properties-System

	var	symbol	documentation	type	units	tokens	eqs
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## 8 System-Control

	var	symbol	documentation	type	units	tokens	eqs
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## 9 Control-System

	var	symbol	documentation	type	units	tokens	eqs
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## 10 Properties-Control

	var	symbol	documentation	type	units	tokens	eqs
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# 11 Control-Properties

	var	symbol	documentation	type	units	tokens	eqs
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## 12 Equations

### 12.1 Model equations

no	equation	documentation	layer
1	$to_N := Set(t_N, value)$	starting time	root
2	$te_N := Set(t_N, value)$	end time	root
3	$K_N := Set((t_N)^{-1}, value)$	frequency a	System
4	$L_N := Set((t_N)^{-1}, value)$	frequency b	System
5	$M := Set(value, value)$	gain a	System
6	$N := Set(value, value)$	gain b	System
7	$pi_{aN} := M . x_N$	effort a	System
8	$pi_{bN} := N . x_N$	effort b	System
9	$fx_{aN} := F_{N,A} \overset{A}{\star} \left( K_N . F_{N,A} \overset{N}{\star} pi_{aN} \right)$	flow of x mechanism a	System
10	$fx_{bN} := F_{N,A} \overset{A}{\star} \left( L_N . F_{N,A} \overset{N}{\star} pi_{bN} \right)$	flow of x mechanism b	System
11	$dx_N := fx_{aN} + fx_{bN}$	differential state	System