1 Variables

2 root

	var	symbol	documentation	type	units	eqs
10	$F_{N,A}$	F	fundamental incidence matrix	network		
5	t	t	time	frame	s	
6	to	to	time zero	frame	s	4
7	te	te	time end	frame	s	5
8	dt_pulse	dt_pulse	pulse length	frame	s	6
9	$pulse$	pulse	pulse function	frame		7
1	$value$	value	numerical value	constant		
2	one	one	numerical value one	constant		1
3	$zero$	zero	numerical value zero	constant		2
4	$onehalf$	onehalf	numerical value one half	constant		3

3 physical

	var	symbol	documentation	type	units	eqs
11	r_{xN}	r_x	x-coordinate	frame	m	
12	r_{yN}	r_y	y-coordinate	frame	m	
13	r_{zN}	r_z	z-coordinate	frame	m	

4   control

	var	symbol	documentation	type	units	eqs

5   reactions

	var	symbol	documentation	type	units	eqs

6 material

	var	symbol	documentation	type	units	eqs

7 macroscopic

	var	symbol	documentation	type	units	eqs

8   solid

	var	symbol	documentation	type	units	eqs

9 fluid

	var	symbol	documentation	type	units	eqs

10 energy

	var	symbol	documentation	type	units	eqs

11 liquid

	var	symbol	documentation	type	units	eqs

12 gas

	var	symbol	documentation	type	units	eqs

13   control–control

	var	symbol	documentation	type	units	eqs

14 energy–gas

	var	symbol	documentation	type	units	eqs

15 energy–energy

	var	symbol	documentation	type	units	eqs

16 gas–gas

	var	symbol	documentation	type	units	eqs

17 energy–liquid

	var	symbol	documentation	type	units	eqs

18 liquid–liquid

	var	symbol	documentation	type	units	eqs

19   energy–solid

	var	symbol	documentation	type	units	eqs

20 solid–solid

	var	symbol	documentation	type	units	eqs

21 gas–liquid

	var	symbol	documentation	type	units	eqs

22 gas–solid

	var	symbol	documentation	type	units	eqs

23 liquid–solid

	var	symbol	documentation	type	units	eqs

24 material–material

	var	symbol	documentation	type	units	eqs

25 reactions–reactions

	var	symbol	documentation	type	units	eqs

26 control–reactions

	var	symbol	documentation	type	units	eqs

27 reactions–control

	var	symbol	documentation	type	units	eqs

28   control–material

	var	symbol	documentation	type	units	eqs

29   material–control

	var	symbol	documentation	type	units	eqs

30 control–macroscopic

	var	symbol	documentation	type	units	eqs

31 macroscopic–control

	var	symbol	documentation	type	units	eqs

32   reactions–material

	var	symbol	documentation	type	units	eqs

33 material–reactions

	var	symbol	documentation	type	units	eqs

34   reactions–macroscopic

	var	symbol	documentation	type	units	eqs

35 macroscopic–reactions

	var	symbol	documentation	type	units	eqs

36   material–macroscopic

	var	symbol	documentation	type	units	eqs

37   macroscopic–material

	var	symbol	documentation	type	units	eqs

38 Equations

39 Generic

no	equation	documentation	layer
1	$one := \text{Instantiate}(value, value)$	numerical value one	root
2	$zero := \text{Instantiate}(value, value)$	numerical value zero	root
3	$onehalf := \text{Instantiate}(value, value)$	numerical value one half	root
4	$to := \text{Instantiate}(t, value)$	time zero	root
5	$te := \text{Instantiate}(t, value)$	time end	root
6	$dt_pulse := \text{Instantiate}(t, value)$	pulse length	root
7	$pulse := \text{sign}(t - to) - \text{sign}(t - (to - dt_pulse))$	pulse function	root