

Description of elements in the example .json file

Nodes.py			
Variable Name	Type	Description	Units
name	String	Name of the node	N/A
phase	String	Phase of the node	N/A

VoltageSources (Sinusoidal Voltage Sources)			
Variable Name	Type	Description	Units
name	String	Name of the node	N/A
vp_node	String	The node connection at the positive terminal of the voltage source.	N/A
vn_node	String	The node connection at the negative terminal of the voltage source.	N/A
amp_ph_ph_rms	Float	The phase-phase RMS amplitude.	Volts
phase_deg	Float	The phase angle	Degrees
frequency_hz	Float	The frequency	Hz

Resistors

Variable Name	Type	Description	Units
name	String	Name of the node	N/A
from_node	String	The node connection at the sending end of the circuit element.	N/A
to_node	String	The node connection at the receiving end of the circuit element.	N/A
r	Float	The resistance	Ω

Capacitors			
Variable Name	Type	Description	Units
name	String	Name of the node	N/A
from_node	String	The node connection at the sending end of the circuit element.	N/A
to_node	String	The node connection at the receiving end of the circuit element.	N/A
C	Float	The inductance	<i>Farads</i>

Inductors			
Variable Name	Type	Description	Units

name	String	Name of the node	N/A
from_node	String	The node connection at the sending end of the circuit element.	N/A
to_node	String	The node connection at the receiving end of the circuit element.	N/A
L	Float	The inductance	H

Switches			
Variable Name	Type	Description	Units
name	String	Name of the node	N/A
from_node	String	The node connection at the sending end of the circuit element.	N/A
to_node	String	The node connection at the receiving end of the circuit element.	N/A
t_open	Float	Time at which to open the switch	sec
t_close	Float	Time at which to close the switch	sec

Induction Motor			
Variable Name	Type	Description	Units
name	String	Name of the node	N/A
phase_a_node	String	The node that is connected to phase A of the induction motor.	N/A
phase_b_node	String	The node that is connected to phase B of the induction motor.	N/A
phase_c_node	Float	The node that is connected to phase C of the induction motor.	N/A
power_nom	Float	Time at which to close the switch	sec
v_nom	Float	Nominal voltage for the motor (RMS values)	<i>Volts</i>
f	Float	frequency	<i>Hz</i>
rs	Float	Stator resistance	Ω
lm	Float	Mutual inductance	<i>H</i>
rr	Float	Rotor resistance	Ω

l _s	Float	Stator leakage reactance	H
l _r	Float	Rotor leakage reactance	H
j	Float	Combined inertia of motor and load	kgm^2
t _m	Float	Mechanical Torque	Nm
d _{fric}	Float	Combined viscous friction of motor and load	$\frac{Nm}{rad}.s$
n _{pole_pairs}	Float	No. of pole pairs	N/A

