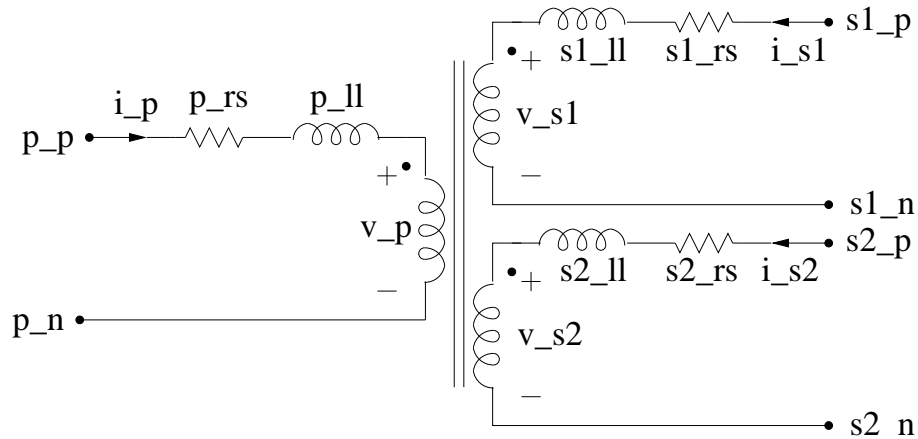


## xfmr\_level1\_1ph\_1\_2.ece



### Attributes

```

mainnodes:
+ p_p p_n
+ s1_p s1_n
+ s2_p s2_n
outvar:
+ v_p=v_p_of_x0
+ v_s1=v_s1_of_x0
+ v_s2=v_s2_of_x0
+ i_p=cur(p_p)_of_x0
+ i_s1=cur(s1_p)_of_x0
+ i_s2=cur(s2_p)_of_x0
rparms:
+ p_turns=1
+ s1_turns=1
+ s2_turns=1
+ p_rs=1m
+ p_ll=1n
+ s1_rs=1m
+ s1_ll=1n
+ s2_rs=1m
+ s2_ll=1n

```

### Description

xfmr\_level1\_1ph\_1\_2.ece is a transformer with one primary and two secondary windings (see figure). The model includes ideal transformer equations, with the coil series resistances and leakage inductances taken outside. p\_xxx, s1\_xxx, and s2\_xxx are used to denote node and

parameter names on the primary (**p**) and secondary (**s1** and **s2**) sides, respectively. Currents and voltages shown in the figure are made available as output variables. The model equations incorporated for the ideal transformers are:

$$\begin{aligned}\frac{V_p}{N_p} &= \frac{V_{s1}}{N_{s1}}, \\ \frac{V_p}{N_p} &= \frac{V_{s2}}{N_{s2}}, \\ N_p i_p + N_{s1} i_{s1} + N_{s2} i_{s2} &= 0.\end{aligned}$$

Note that, by assigning suitably small values to the coil series resistances and leakage inductances, this element can be used as an ideal transformer with one primary and two secondary sides.

As with other transformer elements, the user should make sure that there is a “dummy” connection between the secondary sides and the primary side so that all node voltages get defined with respect to the same reference node (see comments in the help file for `xfmr_level1_1ph.ece`, for example).

AC behaviour is not implemented.