

# xfmr\_level0\_1ph.ebe

## Attributes

```
ebe name=xfmr_level0_1ph
#
# two-winding transformer
# n1,n2 model
# (No magnetizing inductance)
#
Jacobian: constant
nodes: p_p s_p p_n s_n
state_vars:
aux_vars: cur_p_p cur_s_p
aux_vars_startup:
x_vars:
iparms:
sparms:
rparms:
+ p_turns=1
+ s_turns=1
stparms:
+ ip0=0 is0=0
igparms:
outparms: ip is vp vs
```

## Description

xfmr\_level0\_1ph.ebe is the ideal transformer model without self and mutual coil inductances, coil resistances, and leakage inductances. It incorporates the following equations.

$$\frac{V_p}{N_p} = \frac{V_s}{N_s}, \quad (1)$$

$$N_p i_p + N_s i_s = 0, \quad (2)$$

where  $N_p$  and  $N_s$  are given by the real parameters p\_turns and s\_turns, respectively.

The currents  $i_p$ ,  $i_s$ , and voltages  $V_p$ ,  $V_s$  (see figure) are made available as output variables ip, is, vp, vs, respectively.

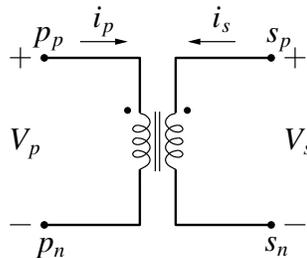


Figure 1: xfmr\_level0\_1ph model.