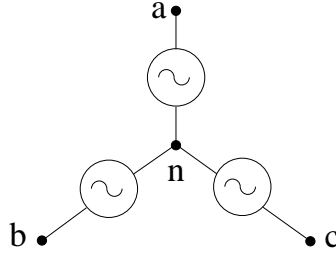


vsrccac3_ramp.ece



Attributes

```

mainnodes: a b c n
outvar:
+ i_a=cur(n)_of_v_a
+ i_b=cur(n)_of_v_b
+ i_c=cur(n)_of_v_c
rparms:
+ v_a=0
+ v_b=0
+ v_c=0
+ f_hz=1
+ phi_a=0
+ phi_b=-120
+ phi_c=-240
+ t0=0
+ t_start_ramp=0
+ t_end_ramp=1

```

Description

vsrccac3_ramp.ece is a ramped 3-phase AC voltage source connected as shown in the figure.

The real parameters, `v_a`, `v_b`, `v_c`, `phi_a`, `phi_b`, `phi_c`, `f_hz`, and `t0` represent \hat{V}_a , \hat{V}_b , \hat{V}_c , ϕ_a , ϕ_b , ϕ_c , f , and t_0 , respectively, in the following equations for the voltages:

$$\begin{aligned}
 V_{an}(t) &= g(t) \times \left[\hat{V}_a \sin(2\pi f(t - t_0) + \phi_a) \right], \\
 V_{bn}(t) &= g(t) \times \left[\hat{V}_b \sin(2\pi f(t - t_0) + \phi_b) \right], \\
 V_{cn}(t) &= g(t) \times \left[\hat{V}_c \sin(2\pi f(t - t_0) + \phi_c) \right].
 \end{aligned}
 \tag{1}$$

The function $g(t)$ is 0 for $t < \text{t_start_ramp}$, 1 for $t > \text{t_end_ramp}$, and varies linearly in between.

Note that the values of `phi_a`, `phi_b`, `phi_c` need to be supplied in degrees. They are internally converted to radians.

AC behaviour is not implemented.