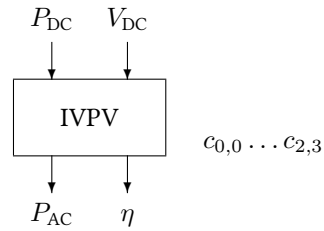


Block IVPV

The IVPV block simulates inverter losses as a function of DC power and voltage.



Name	IVPV
Function	se0029
Inputs	2
Outputs	2
Parameters	12
Strings	0
Group	S

Inputs

- 1 AC power P_{AC} / W
- 2 DC voltage V_{DC} / V

Outputs

- 1 AC Power output P_{AC} / W
- 2 Efficiency η

Parameters

- 1 Fit coefficient $c_{0,0}$ / W
- 2 Fit coefficient $c_{0,1}$ / A
- 3 Fit coefficient $c_{0,2}$ / A V⁻¹
- 4 Fit coefficient $c_{0,3}$ / A V⁻²
- 5 Fit coefficient $c_{1,0}$
- 6 Fit coefficient $c_{1,1}$ / V⁻¹
- 7 Fit coefficient $c_{1,2}$ / V⁻²
- 8 Fit coefficient $c_{1,3}$ / V⁻³
- 9 Fit coefficient $c_{2,0}$ / A⁻¹ V⁻¹
- 10 Fit coefficient $c_{2,1}$ / A⁻¹ V⁻²
- 11 Fit coefficient $c_{2,2}$ / A⁻¹ V⁻³

12 Fit coefficient $c_{2,3} / \text{A}^{-1} \text{V}^{-4}$

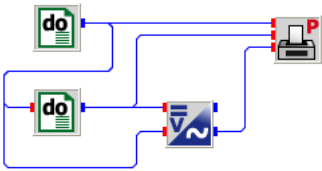
Strings

None

Description The efficiency of the inverter is calculated from the empirical equation

$$P_{\text{loss}} = c_{0,0} + c_{0,1}V + c_{0,2}V^2 + c_{0,3}V^3 + (c_{1,0} + c_{1,1}V + c_{1,2}V^2 + c_{1,3}V^3)P \\ + (c_{2,0} + c_{2,1}V + c_{2,2}V^2 + c_{2,3}V^3)P^2$$

ivpv.vseit



Two nested **DO** blocks vary voltage (outer block) from 300 to 600 V in steps of 100 V and DC power from 0 to 5000 W in steps of 10 W, respectively. The parameters of the **IVPV** block are taken from a publication of the 20th EUPVSEC for a SolarMax SM6000 inverter. The voltage-dependent efficiency curves are plotted by a parametric **PLOTP** block.

