

SUPPORT

PHOTOVOLTAIC CELL SIMULATOR

In a similar application to leadless remote sensing, modulation enables the power supply to emulate different sources: such as batteries, fuel cells, photovoltaic arrays, etc. To simulate a photovoltaic array, connect terminal 24 of JS1 to terminal 25 of JS1, set the modulation control parameter to voltage control, and set the modulation type to 0. Figure 1 illustrates the IV characteristics for a typical photovoltaic array and Table 1 defines the associated piece-wise linear modulation table to emulate that array. For this example, a PQD125-53 power supply was chosen for the power source.

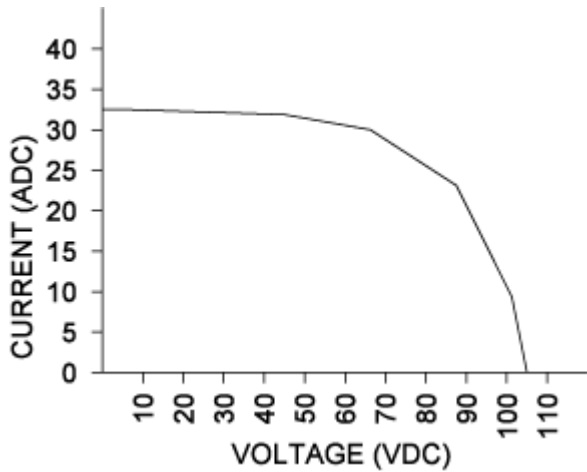


Figure 1. IV Characteristic for a Typical Photovoltaic Array

Row	VMOD (Vdc)	Mod	Vo (Vdc)	Io (Adc)
1	0.000	1.000	105	0.0
2	0.377	0.952	100	10.0
3	0.660	0.905	95	17.5
4	0.849	0.857	90	22.5
5	0.943	0.809	85	25.0
6	0.981	0.762	80	26.0
7	1.033	0.714	75	27.5
8	1.094	0.666	70	29.0
9	1.132	0.619	65	30.0
10	1.170	0.571	60	31.0
11	1.208	0.476	50	32.0
12	1.226	0.000	0	32.5
13	9999	0.000		

Note: Set the program voltage to 105V.

Table 1. Modulation Table for Emulation of a Photovoltaic Array (Type 0)