

Perancangan listrik energi surya 300VA, 220V, 50Hz untuk rumah tangga sederhana

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Abstrak

To product electric emergy for simply house the system can supply seven unit lamps that are 3W or 7 unit lamps 7W. In this research we use three unit solar panel each 50Wp, 12V, 1.5 A, solar panel in parallel connection, the output voltage solar panel 12V and the putput of current is 4,5A. The moment sun is bright, the current income to charge controller and the to the battery, charge controller must be to flow to the battery, so we chose the 15A charge controller. If the sun is bright in a day we take the data start at 09.00 until 15.00 WIB, about sic hours, so in the battery has 27Ah, so we need 12V 45Ah battery for three unit solar panel 12V. the meaning only for lighting only, the power is 300W. If loads in the output inverter 1,36A and the input current in inverter is 25A, energy in the battery for six hours is 27Ah, so energy in the battery can for 1,3 hours, for operating in 2,6 hours we must have six solar panels, with charge controller 15A, 500W. For loads seven lamps each 3W so all 21W, current per lamp 0,014A so the output inverter 0,09A, the output voltage inverter 220V, the input voltage inverter 12V, the input current 1,75A, electrical energy ini battery 27Ah, the capability system to supply 15 hours, if we use 7W lamps so the total power 49W we need input current 4A, so can supply for 6,5 hours.