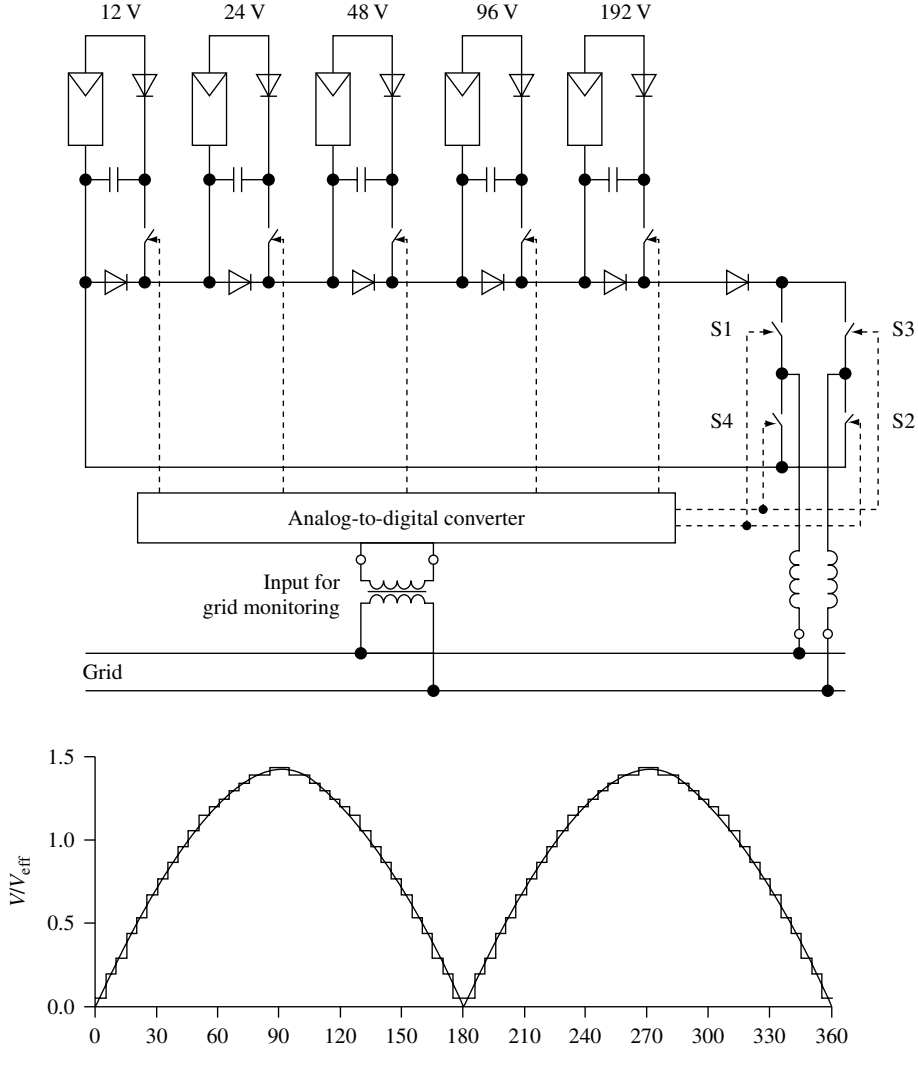

Figure 19.35 Digital waveform synthesis inverter

This concept provides extremely high efficiency since no induction coils or other magnetic elements are required (see Figure 19.35). One disadvantage that can be seen in the use of multiple voltage sources is the increase in cabling needs between the PV generator and the inverter.

In this concept the switches (transistors) S1 through S4 are needed to invert every second sine half-wave to arrive at AC. If using voltage sources with such voltages that they can sum up with the peak voltage of the desired AC output as

$$\sum_{i=1}^{n} V_i = 1.1\sqrt{2}V_{\mathrm{AC}} = 358 \text{ Volts} \quad \text{for 230 V AC (+10\% tolerance)}$$