PV Technical Sales Corrections (corrections in red)

- Question \#21 from the 70-question exam:


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To size a breaker, you have to find out the current of the inverter and multiply by acorrection factor of 1.25 and then round up to the next common overcurrent protection device size.
To calculate the current of the device we will use the equation:

$$
\text { watts }=\text { volts } \times \mathrm{amps}
$$

Then solve for amps:
amps = watts / volts

Since the volts for a single-family dwelling are 240 V and the power in watts of a 7 kW inverter is 7000 W , then:

$$
\mathrm{amps}=7000 \mathrm{~W} / 240 \mathrm{~V}=29.2 \mathrm{~A}
$$

Now we round up 29.2A to the next common breaker size.
Common overcurrent protection device sizes above 15 A increase by increments of 5 A until 50 A , and then increase by 10 A to $110 \mathrm{~A}(15,20,25,30,35,40,45,50$, $60,70,80,90,100,110$ ).
Some breakers, such as a 25 A breaker, are difficult to find and in the field inspectors have been known to let people use a 30A breaker in place of a 25A breaker.
29.2A rounds up to 30A, so we would use a 30A breaker for a 7 kW inverter on a house.

Here is the correct calculation:

For a 7 kW inverter at 240 V
7000/240=29.17A
$29.17 \mathrm{~A} \times 1.25=36.5 \mathrm{~A}$ so round up to 40A breaker

