5kw solar system installation diagram

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Solar wiring is a critical process in rooftop solar installation for solar installers. To simplify it, we are going to explain how to install a 5kW hybrid solar system. In this blog, we try to keep important components and their specifications of the solar system.

For example, Shark 550W Monofacial Solar Panel, It"s Open Circuit Voltage (VoC) is 50.20V and Short Circuit Current (Isc) is 13.89A, then single solar panel produces maximum power = 50.20 x 13.89 = 697W when this solar panel works on load, then it will generate Maximum Power Voltage (Vmp) is 42.58V and Maximum Power Current (Imp) is 12.91A, then single solar panel produces maximum power = 42.58 x 12.91 = 550W. Generally, we consider Vmp and Imp during solar system commissioning.

After the solar panel mounting process, you can start wiring of solar panels. As per know in Step 2, it requires 60-115V dc input. In Step 1, we already know about single solar panel output. The 5kW solar system has 10 no. of solar panels (SHARK550W Monofacial). We need to make 5 strings of 2 solar panels. You can take reference of below image:

Here, you need 4 sq. mm. DC wire to extend wires solar panels to DCDB. The length of 4 sq. mm. dc wire depends on distance between solar panels and dcdb installation area. Here, you need 5 pairs of 1-in-1-out MC4 connectors to extend wiring. The benefits of using MC4 connectors are to connect tightly it will avoid sparking, loose connection, aesthetic looks and more.

An installation of DCDB happens safe areas from the moisture, dust, and temperature. DCDB installation is those areas where any person can easily shutdown during any fault in a solar power plant. A technical specification of DCDB will be 5-in-2-out.

After Solar Panel to DCDB Wiring, then we need to do DCDB to Solar Inverter Installation. First, we need 10 sq. mm. DC Wire pairs, wire thimbles and heat sink. The length of the dc wire depends on the distance between the dcdb and solar inverter. If you have Atlanta Solution, only 2 wires positives and 2 wires negative come near the solar inverter.

A solar inverter has 3 input sources such as Solar, Grid / Generator and Battery. A hybrid solar inverter has separate grid input from the main distribution board. To grid connectivity, we need 6 sq. mm. 3 Core AC wire.

When we connect all sources of inputs (solar/grid/battery) then we start connecting the solar inverter to the AC output. Here, we use a 32 Amp. change over between solar inverter and load distribution and 6 sq. mm., 3 core AC wire. The length of ac wire depends on the installation area of the inverter and load distribution box.

Hybrid solar inverter is a combination of hardware and software components. You need to configure some

important settings after starting the solar inverter. This process is done by technical engineers of solar inverter companies.

A 5kW solar system is an ideal solar system for residential consumers, such as homes, shops, schools, medical clinics, offices, hotels, restaurants, hostel, PG, banks, ATM, farmhouse, and more. After following the above steps, an expert electrician can install this type of solar system.

Dear Sir,I am inrtrested to start the installation business of solar systems. kindly I need to get yours advise to know the accorate installation procedure to 5KW,!0KW,KW ongrid / offgrid hi=ybrid system. Thanks & RegardsAli Asghar KiyaniIslamabad Pakistan

As a 6 year-old start-up based in Faridabad, Haryana, we manufacture solar panels, inverters, and lithium batteries. The company is ISO 9001 - 2015 certified and is a recognized startup by the Government of India. There are 150 employees, 10,000 resellers, 5 facilities, and 1 manufacturing facility across in India.

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