

Friday, May 14. 2010

## **Solar Power**

My new solar panel. Installation instructions were in finish, so maybe I put it the wrong side up. Solar Power on the roof! The roof is not the ideal place, because I can't angle the panel 90° to the sun. But I don't want the panel on the frame at the back, because I would feel obliged to keep it aligned to the sun perfectly all day. What a bother. And the roof is the 2nd best place. It's a rather small panel too - only 45 Watts of rated output. But it should be just enough to balance the power consumption of the navionics equipment and the stereo. The rule of thumb is that on a sunny day you need 3x your power consumption in rated panel output. To cover the Ultrasonic Antifouling, Autopilot and Radar I would need another five panels of the same size. But as Jens pointed out to me, I should run my engine anyway every couple of days for an hour under load to make sure it stays in shape. Which also charges up the batteries. And the solar panel together with the wind-generator should nicely cover for the time in between. The good thing about my panel however is that it has 36 cells. This is important, because the voltage output of a panel is proportional to the number of cells. And unfortunately the voltage also depends on the temperature inside the panel. On any day in the tropics, or very hot days elsewhere, the temperature inside the panel can easily reach 50°C. Then the output voltage of the 30- and 33-cell panels drop below what is necessary to charge the batteries. I learned that from my beloved book, the "Boatowners Electrical and Mechanical Manual", 2nd edition. If you can only take one technical book on a cruise, take that. It covers everything in exactly the right detail. I have a couple of others that also got five stars on Amazon, but Calder's is the only one I use.

Posted by Axel Busch in Vespina at 04:02