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ANTI-ICING HEATERS FOR VECTOR WIND SENSORS Part Numbers HE-1 and HE-2



The A100 Series Anemometers and W200 Series Windvanes can be fitted with anti-icing heaters, HE-1 and HE-2 (either during manufacture or as a retro-fit kit) to alleviate problems caused by icing conditions. There is a small effect on the accuracy/calibration of anemometers when a heater is fitted to them.

If fitting an anti-icing heater, the calibration should be done with the heater fitted for the wind direction expected; this is because asymmetry of the heater causes wind speed calibration to vary by approx. 1% according to wind direction.

These heaters are fitted to the instrument extension tube ("stem") and dissipate approximately 6 Watts each when connected a 12V (**HE-1**) or 24V (**HE-2**) power supply with some sort of thermostat/controller. Power is supplied to each heater via an additional cable (not via the standard instrument cable).

6 watts per instrument is sufficient to keep the shaft/bearings free from ice under most conditions, however extreme conditions can result in a build-up of ice/snow on the rotor cups which will affect accuracy/calibration (or could even stop the rotor in extreme cases).

Anti-icing heaters are not usually practical if the installation is battery or solar powered due to the high power requirements. The heaters are rated at **6 Watts per instrument**, that is to say an anemometer and windvane pair which are both fitted with heaters will consume around 12 Watts (1 Amp with 12V/HE-1 or 500mA with 24V/HE-2).

The resistance of long cables will be significant compared to the heater resistance (HE-1 is around 24 Ohms, HE-2 is around 96 Ohms) - the use of the HE-2 heaters with a 24V supply is advisable if long cables are involved in an installation.

There is no controller/thermostat built-in to these heaters, however many applications involve the use of a data logger (such as the Skye DataHog or MiniMet logger) or PLC which have relays capable of switching these heaters on/off as required. Skye can offer an air temperature probe with radiation screen suitable for such a data-logger/PLC to gauge the need for heating.