Q. Is *CoolSaver* a thermostat, or a speed controller?

A. *CoolSaver* is unique in that it is **both** a thermostat with a temperature display (thermometer) *and* a compressor speed controller that saves energy through running the compressor at optimum speed. In addition, it saves energy through "coasting"; an energy savings technique where cooling is stored when energy is plentiful and that same cooling is used to "coast" when energy is scarce. This is similar to the cold plate principal but more controlled and without the cost and complexity.

With *CoolSaver* you get all these benefits integrated into a controller that operates automatically without manual intervention and is fully configurable for your personal needs!

Q. It sounds like *CoolSaver* is very suitable for sailboats with limited charging resources. What about powerboats?

A. *CoolSaver* is ideal for sailboats **as well as** powerboats. Any time a boat is away from shore power it needs energy for refrigeration that is supplied by batteries which require recharging. Battery capacity is costly and recharging batteries via running engines or generators is very expensive, not only in terms of fuel but also in terms of the cost and maintenance of the main engine and generator. Of course, if the boat never leaves the dock and shore power is always available,   *CoolSaver* will still act as a digital thermostat and thermometer.

Q. If a refrigeration system already has the Danfoss AEO compressor controller, why would we need *CoolSaver*?

A. The AEO controller optimizes the compressor speed but does *not* take advantage of excess power that is available whenever the engine alternator, generator, wind generator or solar panels are generating excess energy. In fact, while excess energy is freely available, AEO will continue to conserve energy, which reduces the rate of cooling. This holds true when the engine or generator is running to charge batteries, causing the AEO to have a negative rather than positive affect   .

CoolSaver enables AEO when running from batteries and inhibits AEO when excess power is available. AEO is useful when power is not freely available but *CoolSaver's* features have a similar benefit.
CoolSaver
does not require AEO, but i
f you already have AEO,
CoolSaver
makes proper use of it.

Q. How is *CoolSaver* different from using holding plates and how is it effective if there is already a holding plate system?

A. *CoolSaver* is in some ways similar to a holding plate system in that it takes advantage of excess available power and uses "coasting". Yet it is different in that there isn't the expense and complexity of holding plates nor the limitation in how fast holding plates can absorb cold.
CoolSaver
can use food products, water or cold packs to absorb excess cold in a similar but more flexible way.

Holding plate systems do not have tight control of temperature whereas *CoolSaver* does tight temperature control at the user configured set point and setback temperature.

If there is already a cold plate system in place, adding *CoolSaver* will enhance performance by taking advantage of the cold plate capacity.

Q. How difficult is it to install *CoolSaver*?

A. *CoolSaver* is very simple to install. *CoolSaver* can be panel mounted or a box can be provided if required. The panel can be a thin plate or even a 2" bulkhead. With its adjustable clips, there are no ugly plates or screws to mar the looks of the navigation station or instrument panel. The thermistor temperature sensors are connected to the controller; one is located in the refrigeration space and an optional second one at the compressor. Separate power wiring is

not required. Existing mechanical thermostat wires that already go through the cooler wall can be re-used for the thermistor and the wiring to the compressor.

Q. Can *CoolSaver* be easily customized?

A. *CoolSaver* is supplied preprogrammed for most common usages with changes easily programmed through its front panel. "Hot keys" are available for resellers and installers who may want to quickly configure a quantity of *CoolSaver's* with particular settings or as a convenient way to store and restore settings.

Q. What happens if *CoolSaver* fails due to a nearby or direct lightning strike, or if a probe fails?

A. Depending on many factors but mainly bad luck, all or some of the electronics on a boat can and may be damaged by a direct or even nearby lightning strike. If *CoolSaver* receives no power or fails, a mechanical thermostat can be automatically enabled to take over controlling the refrigeration. This of course assumes that the actual refrigeration system was unaffected.

If only the thermistor probe fails, the controller probe alarm is activated and *CoolSaver* cycles the refrigeration at a configurable rate to prevent food loss.