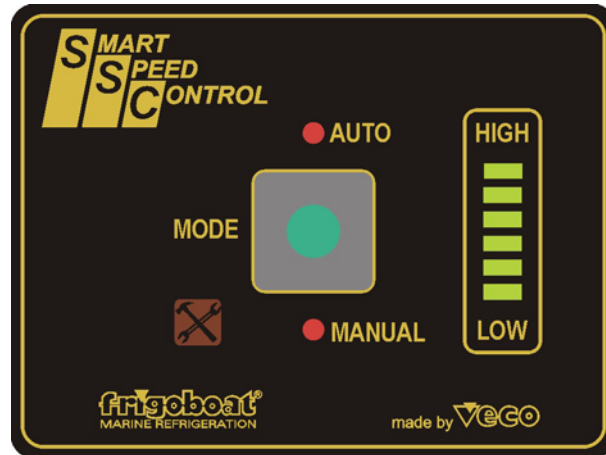


Smart Speed Control – SSC



Actual size

Efficiency

The latest generation Danfoss BD35 & BD50 variable-speed compressors are capable of being run at any speed between 2000 & 3500 RPM. The highest efficiency & lowest overall current draw are obtained by operating the compressor at the lowest possible speed for the longest possible time period. This results in the highest COP (Coefficient Of Performance). After several cycles in the “Auto” mode, the SSC will determine the most efficient operating speed from the six available. As conditions change, the speed will adjust automatically to ensure continued maximum efficiency. The SSC improves efficiency by approx. 20%.

Convenience

Some refrigeration system manufacturers set the compressor speed according to the type & size of evaporator it is being used with. While this helps to reduce component stress & keeps current draw to an acceptable level, it is not necessarily the most efficient speed for all conditions, & is not adjustable. All but the smallest Frigoboat BD35 systems are supplied with a user-adjustable speed selector that can be employed as a back-up, & which is also used in place of the SSC in pumped-water cooled units where pump run times need to be kept to a minimum. When stocking a box with warm goods the SSC can be used to manually select the maximum speed before resetting to “Auto”. LED’s on the panel show operating mode & change color to indicate whether the system is running or idle. Six green bar LED’s indicate operating speed.

Protection

Operating the BD50 compressor at high speed in warm conditions, i.e. initial start-up, results in excessive current draw & can lead to electronic component failure. On initial start-up, the SSC will operate the compressor at a medium speed for a pre-determined time period, gradually stepping up to maximum speed after the load has dropped to a safer level. After this initial start-up period the “Auto” feature will be activated to find the most efficient speed.

Diagnostics

The Danfoss compressor controller has the ability to display a fault code in the event of low voltage, excessive electronics temperature, motor lock-up, motor low RPM, & fan/pump overload. In the event of a malfunction the controller will cease compressor operation & a red LED on the SSC panel will flash the appropriate fault code.