



## Fan Speed Optimiser

The Guardian Controls Fan Speed Optimiser (FSO) has been specifically developed to reduce the direct and indirect energy used by single phase evaporator fan motors in cold and freezer rooms.

The FSO continually assesses the conditions within the room and optimises the fan speed accordingly without detriment to the product temperatures.

The optimisation delivers a direct energy saving, as less energy is consumed. There's also an indirect energy saving; as less residual heat from the motor enters the room, which would otherwise need additional cooling.

Verified average savings of 36% of the energy used by evaporator motors, both PSC/Shaded Pole and the more efficient EC motors.

For every 1 Kwh direct energy saved, there is an additional indirect saving of 0.8 Kwh for PSC/Shaded Pole and 0.35 Kwh for EC Motors.

Onboard energy and data logging accessed by integrated display.

Tri-state LED indicates current fan speed status.

Optional Ethernet comms for remote data logging.

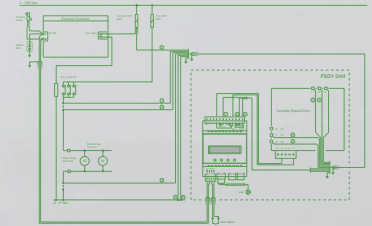
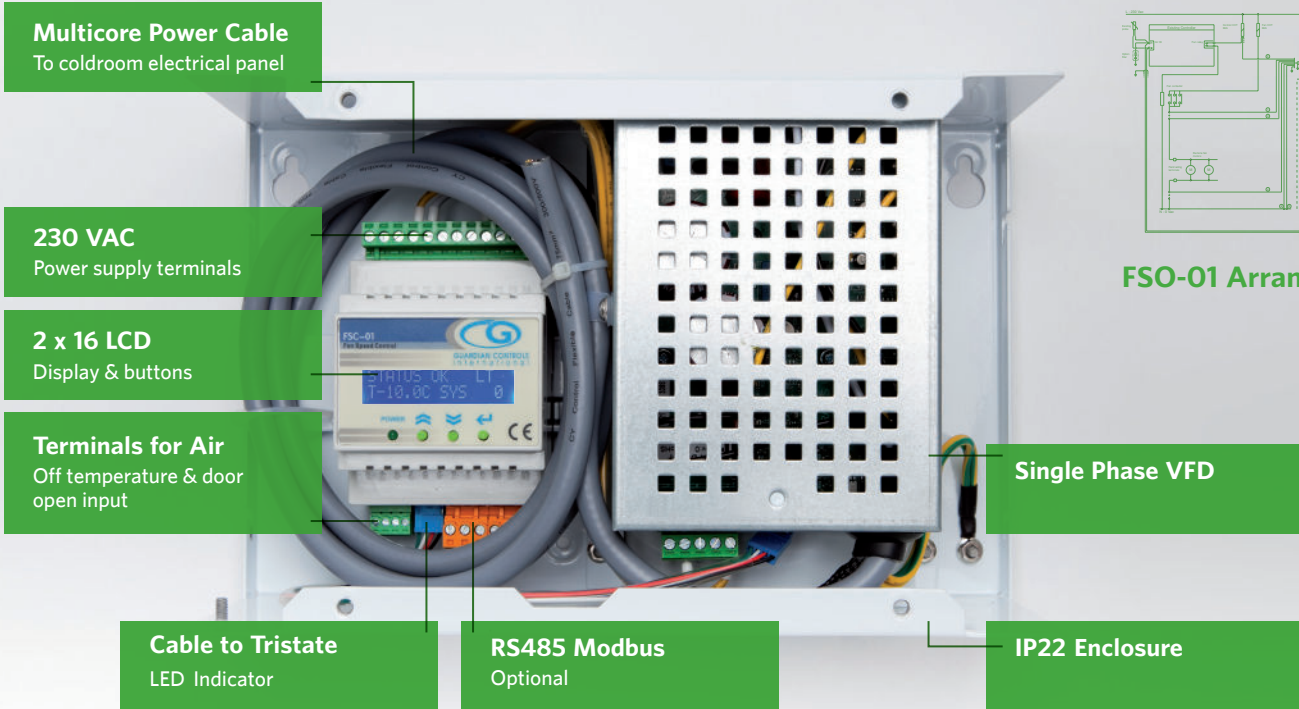
## Key Benefits

Successfully launched February 2014; 5000+ were installed with major supermarket groups during 2014 delivering the savings quoted.

Significant direct and indirect energy savings of 36% with a short payback.

- Compatible with both PSC/Shaded Pole and EC Motors.
- Quick and easy retrofit, less than an hour to install.
- Non-intrusive, no cold room access required.
- System independent and compatible with existing control equipment.
- Could the FSO save you energy and money?





FSO-01 Arrangement

### FSO-01 Fan Speed Optimiser Interior

### Use in conjunction with

The FSO works well in conjunction with Guardian Controls Door Sentry, whose primary aim is to install good door policy and save energy; delivering loud audio alarms when the door is left open unnecessarily. It has two additional inputs, currently allocated for 'man trapped button' and 'gas sensor'.

The FSO can take the door open signal from the Door Sentry and lower the speed of the fans for a pre-determined time to make it more comfortable for staff entering the room and to reduce the volume of warm moist air entering the room.

When the door is closed the FSO returns to its normal operation. Should the thermostat call for cooling when the door is open or at any point during optimisation the fans would return to full operational capacity.



### Options

#### FSO-01 Fan Speed Optimiser

Retrofit for PSC/Shaded Pole Motors

#### FSO-02 Fan Speed Optimiser

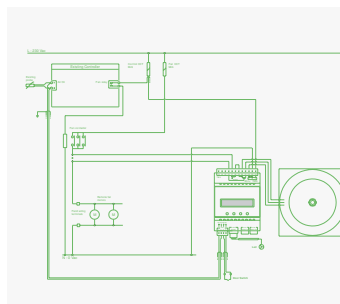
Panel Mount for EC Motors

#### FSO-03 Fan Speed Optimiser

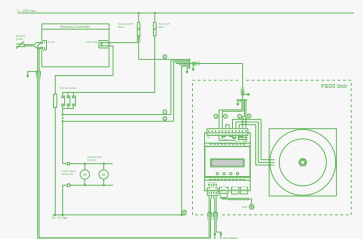
Retrofit for EC Motors

#### IPM-04

Optional Ethernet Communications



FSO-02 Arrangement



FSO-03 Arrangement