'CropCool'
Differential Temperature Controller

Basic operating Instructions:

1. First find a suitable location for the controller near your single phase supply and plug in, but do not turn on. Do not plug the controller into an extension lead.
2. Plug one of the 4m sensors into the black cable marked 'Air Sensor' and place the other end of this cable in a place you feel is most suitable for measuring Air temperature. Avoid placing this sensor in an area where it may be exposed to excessive moisture or rain.
3. Next plug in the other 4m sensor and locate the end of the cable in a place that best represents the crop temperature e.g. inside a pedestal or buried in the crop. (There is a 20m. extension cable that can be used here to extend this sensor if required).
4. Plug in your fan(s) into the socket(s) provided. (Max. power 1.1kW each)
5. You can now turn on the controller and you are ready to go!

NOTES:

The factory setting for the differential temperature is 6°C and the fans will run continuously provided the Air temperature is at least 6°C below that of the crop. When the measured differential temperature reaches or exceeds the set amount the sockets are activated. There is a built in 10 second delay between the two sockets to protect from surges that can occur when a motor is first turned on. When the difference between the crop and the air temperature is less than the set differential temperature the sockets will turn off.
After this has occurred there is a built in *minimum shut off period of 5 minutes*. This is to protect the motors from being continuously turned on and off.

The installer must ensure a suitable 230V single phase power supply capable of delivering up to 13A is used to power this controller. Any extension leads plugged into the sockets on the controller must use 2.5mm 3 core wire for runs upto 25m. For runs over 25m. please refer to factory. If in doubt consult a qualified electrician.
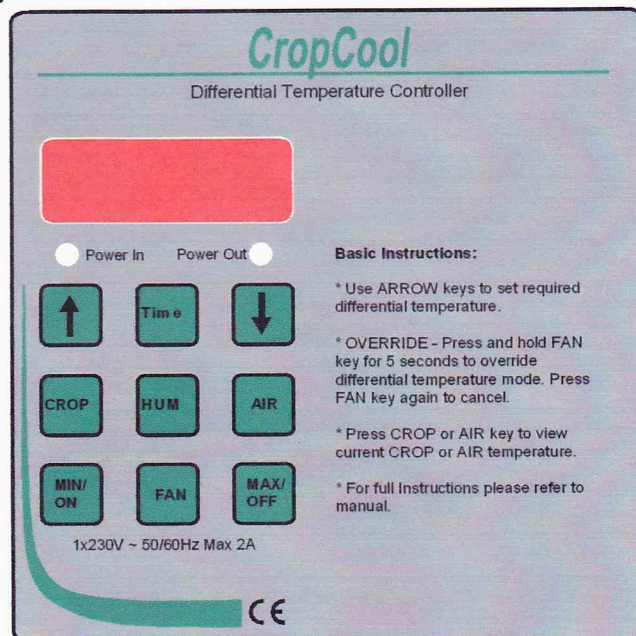
Picture

In addition to the display there are 2 **LED**'s which indicate when there is power going to the controller and when the sockets are switched on.

Additional features.

1. The Differential temperature mode can be by-passed. Simply press and hold the Fan key for 5 seconds and the fans will run continuously regardless of the differential temperature. Press the fan key again to return to the normal mode of operation.
2. The controller has a built in 24hr clock and can be set to only run between certain hours e.g. only at night. The factory setting is to run 24hrs a day If required.
3. The controller can also protect against excessive moisture in the air. By adding a Relative Humidity Transmitter (not supplied) the controller will turn off if the relative humidity goes above a set value.
4. Minimum and Maximum air temperatures are stored as well as total run time for fan(s)
5. If the relative humidity sensor is present the minimum and maximum values for this are also stored.
6. In the event of a power cut the controller has an internal battery back up which stores the users set values for up to 10 years.
7. The controller can be returned to the factory setting.
8. At first switch on the controller displays the total number of times it has been turned on.

Keys etc

CropCool
Differential Temperature Controller

Power In   Power Out

↑   Time   ↓

CROP   HUM   AIR

MIN/ON   FAN   MAX/OFF

1x230V ~ 50/60Hz Max 2A

Basic Instructions:

* Use ARROW keys to set required differential temperature.

* OVERRIDE - Press and hold FAN key for 5 seconds to override differential temperature mode. Press FAN key again to cancel.

* Press CROP or AIR key to view current CROP or AIR temperature.

* For full Instructions please refer to manual.

Programming of 'CropCool'

Key (s)	Description	Display	Factory
[↓] [↑]	Set **Differential Temperature**	1.0 -> 15.0ºC Returns to previous display in 5 sec	6ºC
[Time] [↓] [↑]	Set Clock	00:00 - 23:59	
[MIN/ON] [↓] [↑]	Set Start time	00:00 - 23:59 (setting PERIOD ON and PERIOD OFF to 00:00 will run the controller 24hrs / day.)	00:00
[MAX/OFF] [↓] [↑]	Set Finish time	00:00 - 23:59	00:00
[Time]	Show Clock	00:00 - 23:59	
[CROP]	Press and release to show **current Crop Temperature**	MEASURE -30 -> +70 ºC	
[CROP] [↓] [↑]	Press and Hold to show the minimum set temperature for the grain. Adjust with arrow keys.	Set range –20 to + 20ºC	+5ºC
[HUM]	Show Humidity	MEASURE 1.0-99.9% RH "----" indicates "No sensor present"	
[AIR]	**Show Air Temperature**	MEASURE -30 -> +70 ºC	
[CROP] [MIN/ON]	SHOW Minimum measured crop temp since last reset	-30 -> +70 ºC Press both keys for 5 seconds to set to current value.	
[CROP] [MAX/OFF]	SHOW Maximum measured crop temp since last reset	-30 -> +70 ºC Press both keys for 5 seconds to set to current value.	
[HUM] [MIN/ON]	SHOW Minimum measured humidity since last reset	0 -> 99.9% RH Press both keys for 5 seconds to set to current value.	
[HUM] [MAX/OFF]	SHOW Maximum measured humidity since last reset	0 -> 99.9% RH Press both keys for 5 seconds to set to current value.	
[AIR] [MIN/ON]	SHOW Minimum measured air temp since last reset	-30 -> +70 ºC Press both keys for 5 seconds to set to current value.	
[AIR] [MAX/OFF]	Show Maximum measured air temp since last reset	-30 -> +70 ºC Press both keys for 5 seconds to set to current value.	
[FAN]	Show fan´s active hours since first applied. (Non volatile memory)	0 -> 9999 hours	0
[FAN] [MIN/ON] [↓] [↑]	Setting of minimum ON time for fans in seconds Press & Hold to Scroll quickly	0 -> 9999 sec	10 sec
[FAN] [MAX/OFF] [↓] [↑]	Setting of maximum ON time for fans in seconds Security for faulty sensors	0 Seconds = continuous or 1 to 9999 sec	0 sec
[FAN]	**Override** – press and hold for 5 secs. Can only be cancelled by pressing fan again,	On	
[HUM] [↓] [↑]	Set Relative Humidity (RH) level. Fans will switch off if the measured RH is above this value.	00 -> 99	50 %
[MIN/ON] [FAN] [MAX/OFF]	**FACTORY SETTING** Hold in 10 seconds to reset to original factory settings !	FS 9-8-7-6-5-4-3-2-1-0 (count)	