



CROPSCAN 2 MK2



Operator Instructions



Crop Storage Equipment

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Instruction Code:
Temp/CS2MK2S/0501



CROPSCAN 2 MK2

GENERAL DESCRIPTION OF UNIT FUNCTION

The controller is a scanning thermostat capable of scanning up to 8 No. crop sensors. As these sensors are scanned the actual temperature of each crop sensor is displayed in turn on the Red LED display, in degrees C. The sensor **On Duty** is shown on the Green LED display (1-8). The unit spends approximately 5 seconds on each sensor.

Desired crop storage temperature can be pre- set by using the **Crop Set** dial on the front fascia of the unit. The low limit ambient cut off temperature **Frost Set** is in the same way.

Display of crop temperatures, ambient temperature, crop and frost est points can be selected using the **Display Selector** switch.

An in-built Offset (2 degrees C), ensures ambient temperature is cooler than the highest Crop Temperature sensor by at least, the offset level before cooling is initiated.

UNIT SETTING AND OPERATION

Select **Crop Set** on **Display Selector**. Adjust **Crop Set** dial to desired crop storage temperature on display.

Select **Frost Set** on **Display Selector**. Adjust **Frost Set**, dial to minimum acceptable cooling temperature on display.

Return display selector to **Crop Temp** position.

The unit will now control crop temperature based on these settings.

Readout only This selection will lock the display to readout of Crop Temperatures only. All relay output functions are disabled.



CROPSCAN 2 MK2 (continued)

OPERATION

When a Crop Sensor is found above **Crop Set** level, the temperature is compared with the ambient. If it is 2 degrees C or more above the ambient temperature cooling is initiated. Cooling is continued until this is reduced or the crop sensor/s is cooled below the set point.

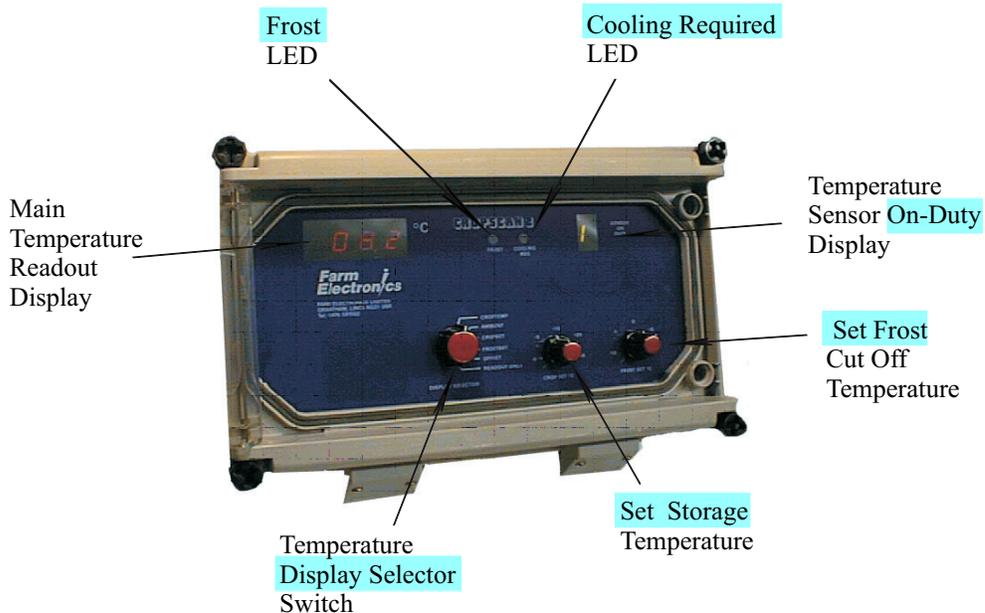
Hot sensors can be seen when scanned by the **Cooling Required** green LED, which will illuminate.

A twelve minute run on timer is initiated each time cooling required is called for.

If the ambient temperature falls below **Frost Set** level cooling will immediately cease, as the ambient temperature is now considered to be too low to safely use for crop cooling. When the ambient temperature rises up again cooling may re-start if a demand still exists.

Frost is indicated by the Red **Frost** LED.

KEY TO SETTINGS AND DISPLAYS



The Cropscan 2 has 2 small LED indicators to show operational details. Their meaning is described below.

- Frost -** Will illuminate when a Frost condition is detected.
- Cooling Req-** Will illuminate when a sensor requiring cooling is detected.
NB. This only indicates that there is a demand for cooling, not that cooling is possible or taking place.



CROPSCAN 2 MK2. (continued)

GENERAL POINTS TO NOTE

Ensure all crop sensors in use are always in the crop.

Unplugged sensors will be ignored for control purposes. The system can operate successfully on only one crop sensor if required.

At the end of the storage season always coil up sensors and store in a safe place. This will help prevent accidental damage to the cables etc..

Do not skewer potatoes etc. with sensors.

Either drop sensor down pre-positioned tubes in stack (bulk) or bury sensor under crop (box).

Always leave control unit switched on even when not in use. This will maintain the electronics in a sound dry condition. Select **Readout Only** when not in use.

The **Display Selector** switch would normally be left in the **Crop Temp** position when running system in automatic. This will show the temperature of each crop sensor in turn as it is scanned.



CROPSCAN 2 MK2 Single Live Output Version

INSTRUCTIONS FOR INSTALLATION

GENERAL

Screw Unit to a firm flat surface using external black brackets on casing.

Try to ensure unit is at operator eye-line height, to give ease of viewing readouts.

The Unit requires a 240 volt AC Hz power supply fused at 5 Amp (Max).

Output connections depend on the complexity of the installation. (see Terminal list).

NB. On installation using an FE motor starter control panel the Cropscan 2 will be pre-wired to this panel in our factory.

In principal however Cooling, Louvres Open and Louvres Close give a volt free contact output when the controller wishes to activate these functions.

The **Common** of these relay contacts can be linked to any voltage up to 240v AC maximum to suit application. (NORMALLY 240 VOLT AC 50hz)

An output is provided for an additional cut off if required (i.e. Remote Frost Stat). This cuts off the cooling control outputs if broken. If not required a permanent wire link should connect these two terminals.

Up to 8 Crop Sensors can be connected to the controller. This is via an 8-way or 2 x 4-way junction boxes, normally positioned centrally in the store and wired back to the controller with multi-core cable to the 15-way Dee socket on the side of the unit. Avoid running near mains cable.



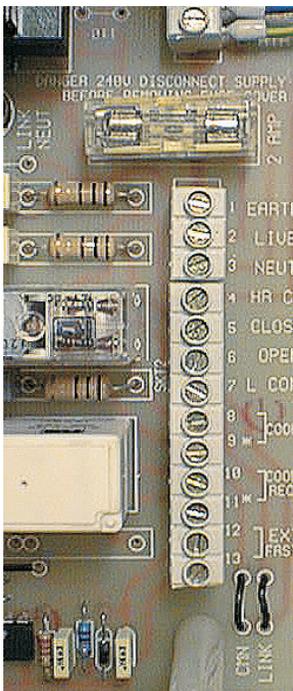
CROPSCAN 2 MK2

Installation Instructions (continued)

The Ambient (outside) sensor plugs into its own single blue socket on the side of the Cropscan 2 enclosure. This sensor would normally be positioned near the air intake point using the stand off bracket provided. Avoid fixing in a location which is subject to prolonged sunlight and would therefore cause the unit to see higher than average ambient air temperatures.

Terminal Connections - Unit Configured for Single Live Outputs.

(Mark 2 PSU)



- | | | |
|----|--|----------------------|
| 1 | Earth | } Mains Power Supply |
| 2 | 240 v ac | |
| 3 | Neutral | |
| 4 | Spare | |
| 5 | Louvres Close Output | |
| 6 | Louvres Open Output | |
| 7 | Relays Common Input (max 240 v ac) | |
| 8 | Spare | |
| 9 | Cooling Output | |
| 10 | Spare | |
| 11 | Spare | |
| 12 | External frost stat cut off Link (normally made) | |
| 13 | Break with external contacts to disable unit (Low voltage) | |

Notes:

Maximum Relay switching load = 1 Amp Resistive.

Relay contacts have Arc Suppressor networks fitted which may cause small control relays to hold in off load.

The relay coil loading needs to be greater than 20ma.

Output Voltage = Common Input Voltage on Terminal No 7



CROPSCAN 2 MK2

INSTALLATION INSTRUCTIONS

Mounting of Ambient Temperature Sensor Bracket

This bracket is provided for locating the Ambient Temperature Sensor. It spaces the sensor off the wall fabric of the building helping to obtain a more accurate ambient air temperature reading.

It is normally located on the same wall as the main air intake to the store.

East or West facing walls are less desirable, due to increased direct - sunlight.

