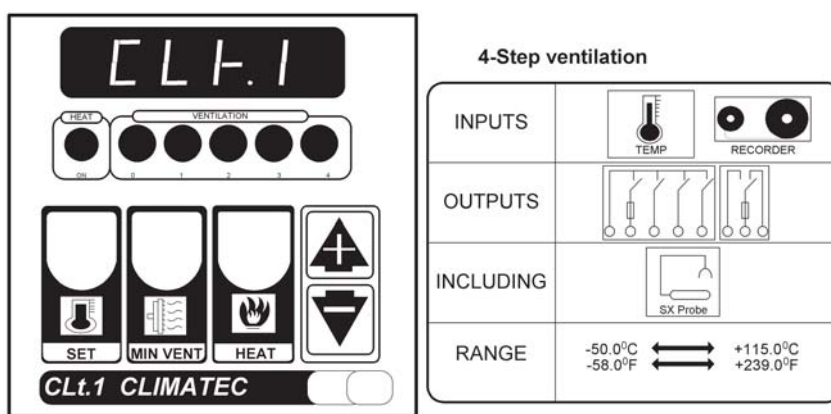# CLIMATEC

CLt.1

SL 2.3

FOUR STAGE THERMOSTAT

U S E R' S   H A N D B O O K

A simple to use ventilation control thermostat designed specifically with the Poultry Industry in mind.

The temperature is monitored by a remote sensor which allows the thermostat to be mounted in a clean area away from the livestock.

Temperature may be displayed in either Centigrade or Fahrenheit.

Fans are controlled over four sequential stages.

Minimum ventilation requirements are provided by an inbuilt cycle timer operating on the first stage, with easily adjustable on and off times.

One heating output relay is provided.

Available in both wall-mounting and panel-mounting versions.

The CLt.1 is ideally suited to new installations and simple upgrading replacement of existing four-stage capillary thermostat systems.

This thermostat is specifically designed for the agricultural and livestock industries and is just an example of our wide range.
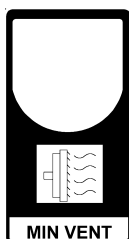
VENTILATION TEMPERATURE SETTING
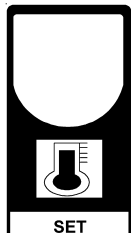
Press **SET**
This message will be displayed

`ɫ.FАn`

The present set ventilation temperature flashes
Press + or – to modify. Press **SET** to confirm
The measured temperature is now displayed

MINIMUM VENTILATION SETTING

Press **MIN VENT**
This message will be displayed

`S.P.__`

The present **MIN VENT** stage flashes

0 = Cycle Time
1 = 1st Stage locked on
2 = 2nd Stage locked on
3 = 3rd Stage locked on
4 = 4th Stage locked on

NOTE: If 1,2,3 or 4 is set, the measured temperature is now displayed and the locked on ventilation stage indication lamp will be on.

If the **MIN VENT** is set to 0, this message appears

`-on-`

The present **ON** time flashes
Press + or – to modify
Press **MIN VENT** to confirm
At this point, this message appears

`-oF-`

The present **OFF** time flashes
Press + or – to modify
Press **MIN VENT** to confirm
The measured temperature is now displayed
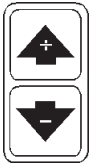
HEATING SETTING

Press **HEAT**
This message will be displayed
Press + or – to modify
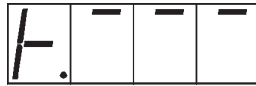Press **HEAT** to confirm
The measured temperature is now displayed
The temperature set here is the temperature at which the heating will turn off.
If the temperature falls by "**d.HEA**" below this temperature, the heating will turn on.

`HEAɫ`

VIEWING TEMPERATURE RECORDING

Press +: and hold for 1 sec | will be displayed followed by ^{0}Maximum temperature recording

Press -: and hold for 1 sec | will be displayed followed by ^{0}Minimum temperature recording

The recorded memory values are permanently stored – to clear the memory, keep the + key held down for more than 3 seconds until

CLEA   is displayed

The recorded temperatures have now been cleared
Release the + key
The measured temperature is now displayed

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CLIMATEC

INSTALLATION INSTRUCTIONS – VERSION 2.1

COSt PROGRAMMING (System Settings)

These settings refer to the mode of operation of the system and must be made on initial start-up.

Press – and + together for at least one second.
The message **C.O.S.t.** will be displayed.

Press **HEAT** repeatedly until the required message is displayed followed by the variable value.
(See table below).

Press + or – to set a new value and then **HEAT** to confirm.
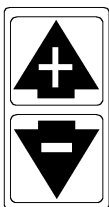The next system message will then be displayed.

Press **SET** to escape and return to the users mode.
The measured temperature will be displayed.

Mess	Preset Value	Your Value	Meaning	Note
ProP	3.0^0		^{0}C Ventilation proportional band	*1)
d.OFF	0.2^0		^{0}C VENT differential	*2)
dEL.F	1″		Ventilation step on delay seconds	
d.HEA	0.2^0		^{0}C HEAT differential	*3)
tENP	= 1		Temperature representation	*4)
Ad.tE	0.0^0		^{0}C Input sensor temperature correction	*5)

If you alter the preset values note your new value for future reference.

*1/(**ProP**)　　　Stage 1 ventilation switches on at the **SET** temperature **(T.FAN)**
　　　　　　　　Stage 2 ventilation switches on at the **SET** temperature **(T.FAN) + 1/3 of the ProP**
　　　　　　　　Stage 3 ventilation switches on at the **SET** temperature **(T.FAN) + 2/3 of the ProP**
　　　　　　　　Stage 4 ventilation switches on at the **SET** temperature **(T.FAN) + ProP**

*2/(**d.OFF**)　　　This sets the amount by which the temperature must fall before the stage switches off.

*3/(**d.HEA**)　　　This sets the amount by which the temperature must fall below the set heat temperature before the heating will switch on.
　　　　　　　　The heating will switch off at the set heat temperature.

*4/(**tENP**)　　　= 1: ^{0}C temperature range
　　　　　　　　= 2: ^{0}F temperature range

*5/(**Ad.te**)　　　You can correct the readings of the sensor (+ or -).

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INSTALLATION INSTRUCTIONS – VERSION 2.2

COSt PROGRAMMING (System Settings)

These settings refer to the mode of operation of the system and must be made on initial start-up

Press – and + together for at least one second.
The message **C.O.S.t.** will be displayed.

Press **HEAT** repeatedly until the required message is displayed followed by the variable value. (See table below).

Press + or – to set a new value and then **HEAT** to confirm.
The next system message will then be displayed.

Press **SET** to escape and return to the users mode.
The measured temperature will be displayed.

Mess.	Preset-Value	Your Value	Meaning	Note
ProP	3.0^0		0C Ventilation proportional band	*1)
rEL.2	1.0^0		Temp rise from Stage 1 to Stage 2	
rEL.3	1.0^0		Temp rise from Stage 2 to Stage 3	
rEL.4	1.0^0		Temp rise from Stage 3 to Stage 4	
d.Fan	0.2^0		^{0}C VENT differential (temp fall for stage off)	
dEL.F	1"		Ventilation step on delay seconds	
d.HEA	0.2^0		^{0}C HEAT differential	*2)
t.ENP	=1		Temperature representation	*3)
Ad.tE	0.0^0		^{0}C Input sensor temperature correction	*4)

If you alter the preset values note your new value for future reference.

Notes:

*1 (**ProP**) If **ProP**= 0 Thermostat will use **rEL.2** to **rEL.4** settings
        If **ProP**= Value, then thermostat will operate with 3 equal steps.
        Stage 1 ventilation switches on at the **SET** temperature **(T.FAN)**
        Stage 2 ventilation switches on at the **SET** temperature **(T.FAN) + 1/3 of the ProP**
        Stage 3 ventilation switches on at the **SET** temperature **(T.FAN) + 2/3 of the ProP**
        Stage 4 ventilation switches on at the **SET** temperature **(T.FAN) + ProP**

*2 (**d.HEA**) This sets the amount by which the temperature must fall before the heating will switch on. The heating will switch off at the heating set temperature.

*3 (**tENP**)   = 1: ^{0}C temperature range
         = 2: ^{0}F temperature range

*4 (**Ad.te**)   You can correct the readings on the sensor (+ or -).

STATUS INDICATION LAMPS

The lights situated at the bottom of the display show the state of the various relays as set out below.

Lamp	State	No Relay	Contacts
HEAT	HEAT ON	5	11-12
VENT 1	VENT 1 ON	1	3-4
VENT 2	VENT 2 ON	2	3-5
VENT 3	VENT 3 ON	3	3-6
VENT 4	VENT 4 ON	4	3-7

PRESET PROGRAM

On delivery the processor is preprogrammed with the following (variable) settings.

To return to these settings at any time:

Turn off the power to the processor.
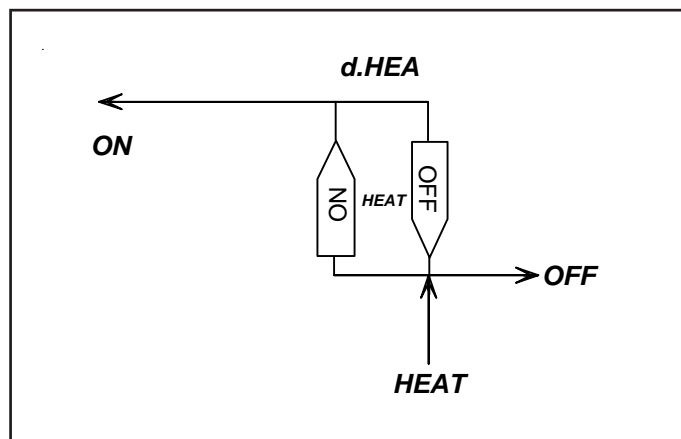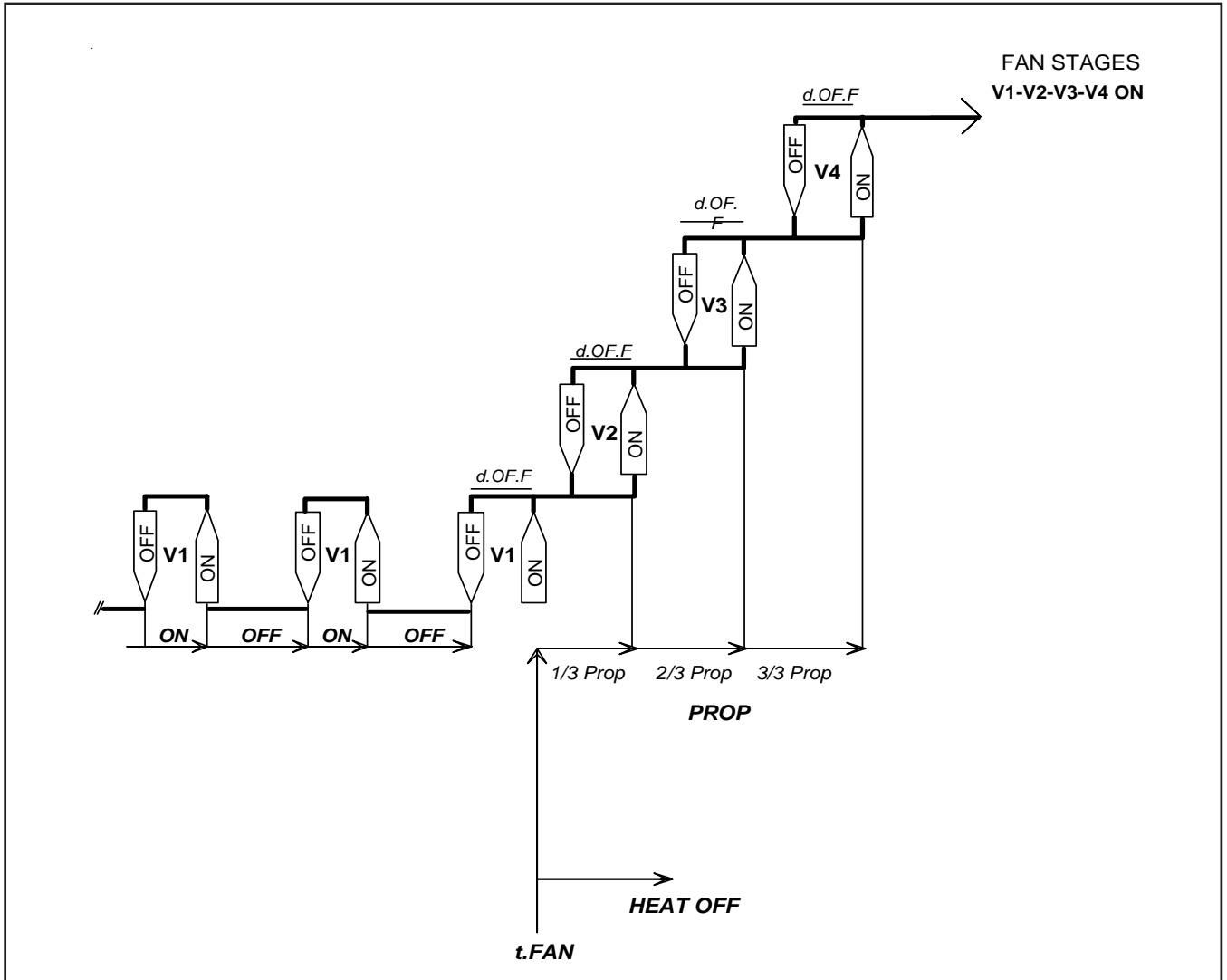Press **HEAT** key and keep it pressed down and switch on the power.
Boot message will be displayed (now release the **HEAT** key).

T.Fan = 25.0^0 **SP** = 0
-on- = 0″ **-oF-** = 0″ **HEAT** = 24.0^0

The **COSt** values as shown in **COSt** programming.

OPERATING DIAGRAM

FAN STAGES
V1-V2-V3-V4 ON

d.OF.F — V4 OFF/ON

d.OF.F — V3 OFF/ON

d.OF.F — V2 OFF/ON

d.OF.F — V1 OFF/ON

V1: OFF/ON — **ON OFF ON OFF**

1/3 Prop   2/3 Prop   3/3 Prop

PROP

HEAT OFF

t.FAN

d.HEA

ON

ON / OFF *HEAT*

OFF

HEAT

INSTALLATION

How to connect the Sensors

Connect the sensor provided as shown in the diagram. For remote connections use a screened 0.5mm square two core cable. Take care over the connections by insulating and sealing the joints carefully.

-O.C- is displayed when the temperature sensor wiring is open circuit.
**-S.C.-** is displayed when the temperature sensor wiring is short circuit.

Run sensor cable well away from load carrying mains cables.

Mains Supply

Connect 240 Volt supply to terminals L-N.

Output Contacts

Connect terminals 3-7/... 11-13 on the terminal block (contacts rated up to 4 Amp AC1).
This system has been designed and built to reduce electrical disturbance as far as possible. However, for better protection apply RC type filters – eg our model HCF1 in parallel to the inductive loads (contactor coils etc) controlled by the module relays.
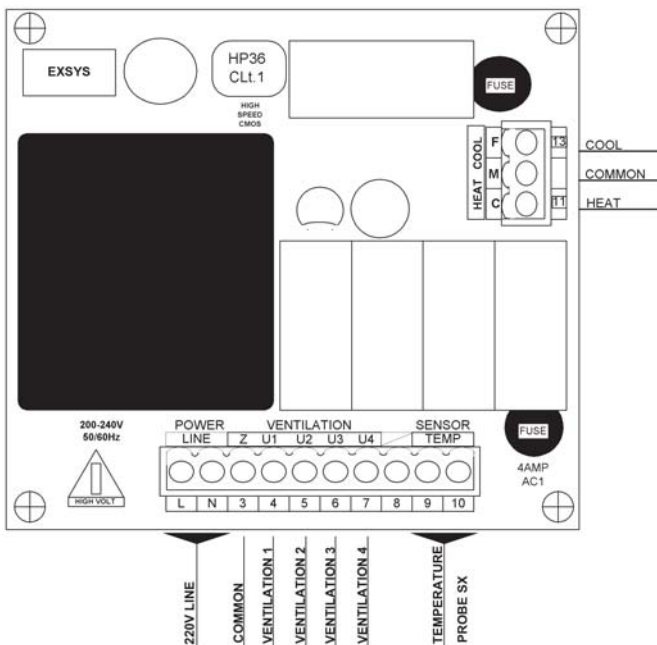

Ventilation contacts are progressive.

Output contacts are N.O.
(Normally open and voltage free).
Maximum total load 4 Amp AC1.
3-4 = **VENT 1** contact
3-5 = **VENT 2** contact
3-6 = **VENT 3** contact
3-7 = **VENT 4** contact
3-8 = Permanent Output
12-11 = **HEAT** contact
12-13 = **COOL** contact

If working with 240 volt relays or contactors, you must:

a) Ensure that common feed (terminal 3) is supplied via a 4 amp fuse.
b) A snubber network (supplied) is connected across at least 1 coil of each stage,
     (this includes unused stages) of ventilation and if applicable, heating.
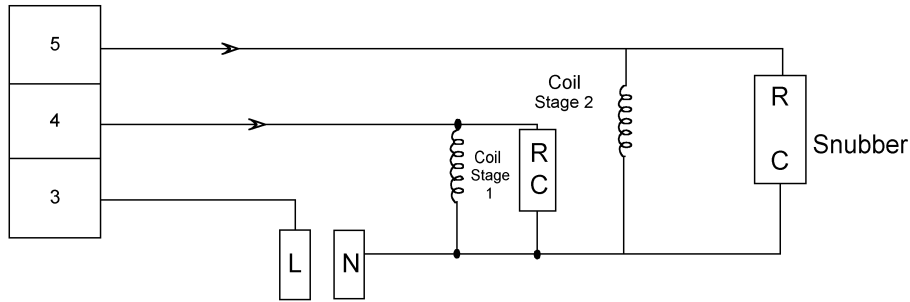
MAO5 FILTER PROTECTION
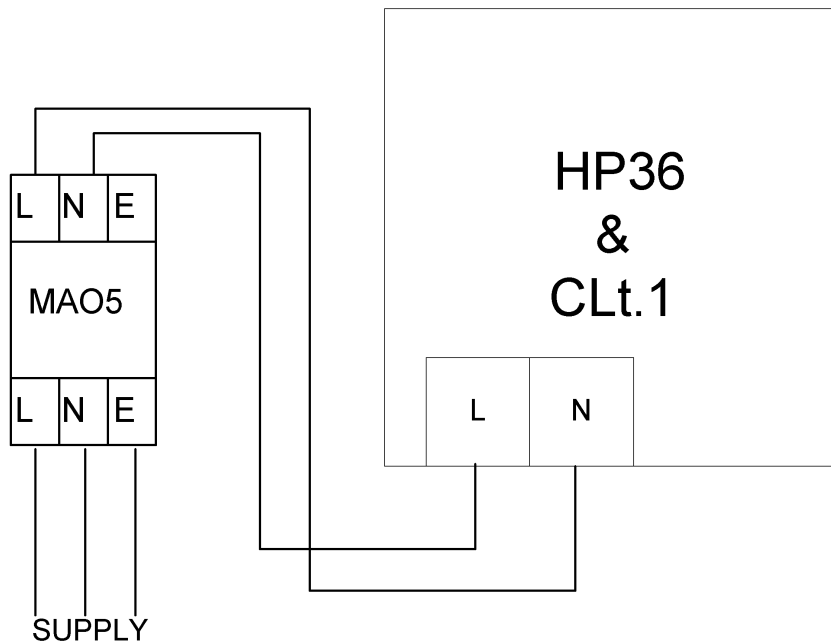
As it is company policy to continually improve the products, the Manufacturers reserve the right to make any modifications thereto without prior notice. They cannot be held liable for any damage due to malfunction.