

Boost fan 2 operates	24 C
Heat/Boost offset 2 set to +4 C. RELAY 2 C./ N/C contacts closed.	
Boost fan 1 operates	22 C
Heat/Boost offset 1 set to +2 C. RELAY 1 C./ N/C contacts closed.	
Set temperature	20 C
Heater 1 operates	18 C
Heater 2 operates	16 C

Note:- The Heat/Boost offset temperatures may be set either side of the set temperature by using either positive or negative values [maximum + or - 5 C].
 5..... Using the upper ADJUST touch pads, set the Heat/Boost offset required.

ENTERING HEAT / BOOST OFFSET 2

6..... Repeat operations 4 and 5 to set Heat / Boost offset 2

APPLICATIONS

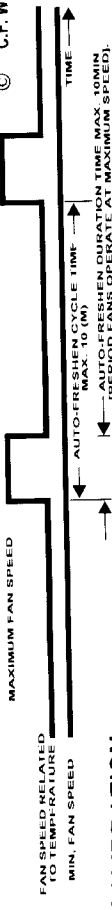
The UNICON MICRO unit may be used to operate two stages of ventilating fans, choosing positive Heat / Boost offset values or alternatively two stages of heating, if negative Heat / Boost offset values are selected. It is possible to operate one stage of ventilating fan and one stage of heating by setting positive and negative values for the to Heat / Boost offsets.
 The output contacts may be alternatively employed to operate an alarm should the temperature exceed the set offset limits about the set temperature.

ENTERING AUTO-FRESHEN CYCLE TIME (M)

7..... Select the auto-freshen cycle time (M) parameter using the SELECT touch pads.
 8..... Set the required auto-freshen cycle time (M) maximum 10 minutes using the ADJUST touch pads.

ENTERING AUTO-FRESHEN DURATION TIME (M)

9..... Select the auto-freshen duration time (M) parameter using the SELECT touch pads.
 10... Set the required auto-freshen duration time (M) maximum 10 minutes using the ADJUST touch pads. Note:- Auto-refreshen turned-off by setting the auto-freshen duration time to zero.



CALIBRATION

The UNICON MICRO is factory calibrated and should not require further adjustment. if however calibration is necessary, set the sensor temperature to approximately 25 C using a good quality mercury thermometer as a reference. Adjust resistor marked VR1(TCAL) until the digital display of the UNICON MICRO records the identical value of that indicated by the mercury thermometer. Once this is achieved the unit is calibrated for the full range of operating temperatures. On NO account should any other variable resistor be adjusted, since C.F. Whaler Ltd. will not accept responsibility for any damage caused.

SENSOR

The sensor input cable can be extended up to 100m without appreciable effect on the unit's performance, but it is strongly advised , particularly where the electrical environment tends to be noisy to use screened cable that is earthed at the controller end

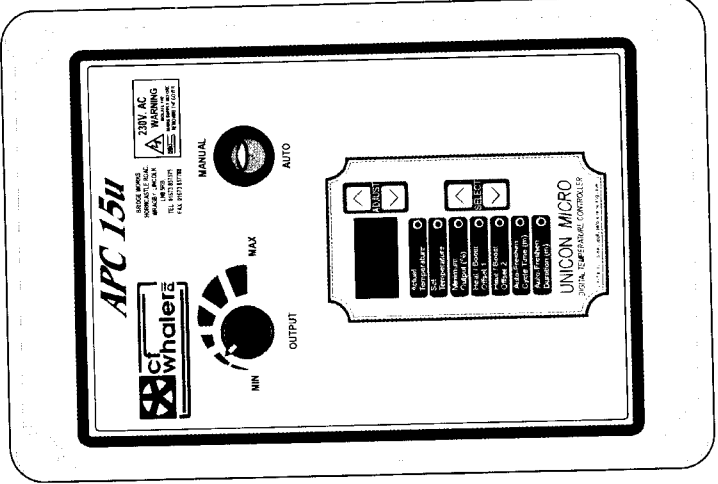


Ventilation Engineers
and
Controlled Environment
Specialists

Unicon micro
Digital temperature controller
operating an Apc15
Ventilating Fan Control System

APC 15u

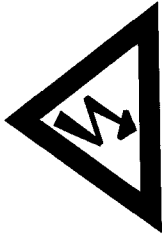
PLEASE READ IMPORTANT INFORMATION



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HEALTH AND SAFETY AT WORK



DANGER
ELECTRIC SHOCK RISK

ELECTRIC DEVICES CAN CONSTITUTE A SAFETY HAZARD

It is the responsibility of the user to ensure that the installation and maintenance of the product are carried out in strict compliance with any relevant instructions, regulations, codes of practice or bylaws in force.

This equipment should only be installed and commissioned by appropriately qualified personnel who have read and fully understood this users manual. If in doubt contact your supplier or C.F. Whaler Ltd. for technical advice.

Every care has been taken to ensure that the contents of this instruction booklet are accurate, however no liability is accepted for any consequence of its use. The manufacturers reserve the right to revise the product specification and other technical features resulting from improvement and continual development.

UNICON MICRO CONTROLLER SPECIFICATION FAN CONTROLLER VERSION

Supply Input	230v 50Hz. +10%-6% 10VA
Temperature range.....	0 - 40°C
Resolution.....	0.1°C
Heater/Boost Fan Offsets	-5°C to +5°C
Relay Contact Rating	8A 30vd.c/230va.c
Sensor.....	Whaler type B
Output to drive power unit apc15	0 - 5v Digital code
Minimum output.....	Adjustable 0 -100%.
Auto Freshen Cycle Time	Adjustable 0 - 10mins. In 6sec steps
Auto Freshen Duration Time	Adjustable 0 - 10mins. In 6sec steps
Parameter settings.....	Front panel touch buttons
Supply Input Fuse.....	16 Amp (Type T) Fuse

APC 15 ANALOGUE POWER CONTROLLER SPECIFICATION

Supply input.....	230v 50Hz. +10%-6% 2.8kVA
Supply output.....	0 - 230v 2.8kva
Maximum output current.....	12A
Input drive from unicon micro.....	0 - 5v Digital code
Output control.....	Variable or Maximum

DESCRIPTION

The Unicon Micro unit designed and manufactured by C.F. Whaler Ltd. is a multi task controller that is produced in a number of versions to satisfy all environment control requirements of the pig industry, i.e. flat decks, weaner houses, creepers etc. This version precisely controls the temperature by controlling the speed of ventilating fans and switches heaters as the environmental temperature increases above or falls below a simple touch-button programmable set temperature value.

The digital based microcomputer system converts analogue signals from a thermal detector into digital pulses that are employed to control the output of the associated power unit.

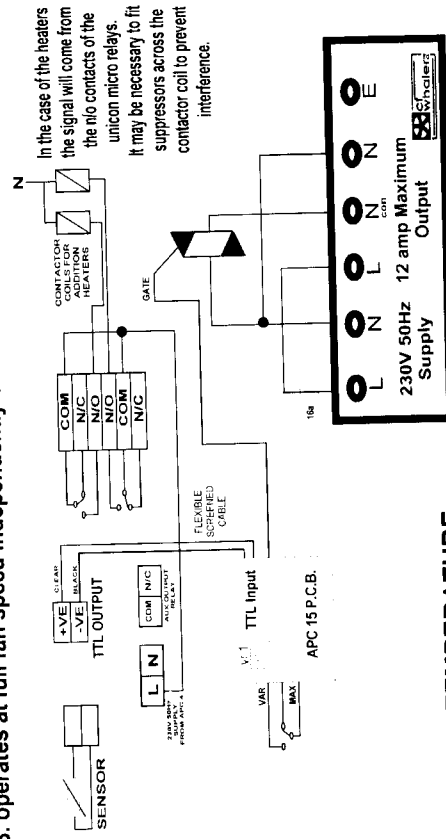
Touch-button controls set all operational parameters which are shown on the numeric display, e.g. Set Temperature, Minimum Output (fan speed), Heater or Boost Ventilating Fan Offset and Auto Freshen Cycle times.

The minimum output (Fan Speed) is adjustable from 10% to 100% of the maximum output available to ensure minimum ventilation related to stock age and density. To ensure a fixed minimum is pre-set by a manually adjustable pot marked [VR/Idle] within the APC 15 unit.

Two relay outputs providing N/O and N/C output contacts function at adjustable temperature offset and may be used to either operate additional ventilating fans or switch on heaters. The unit also provides automatic Refreshen of the environment that helps to prevent stale air build-up by operating the ventilating fans at full speed for a set regular interval during set time period.

Output signal from the Unicon Micro drives the power output board (APC 15) see diagram. This unit is switched to operate in two modes, either Automatic or manual. In manual the APC 15 P.C.B. operates at full fan speed independently of the Unicon Micro.

In the case of the heaters the signal will come from the triac contacts of the unicon micro relays. It may be necessary to fit suppressors across the contactor coil to prevent interference.



ENTERING SET TEMPERATURE

- Select the temperature by operating the lower touch pads marked SELECT until the appropriate LED indicator is illuminated.
- Using the upper touch pads marked ADJUST, set the set temperature required. Note:-the unit automatically returns to record actual temperature after a short delay.

ENTERING MINIMUM OUTPUT % [power / heat]

- Select the minimum output (%) parameter using the lower SELECT touch pads. Note the minimum output (%) LED is now illuminated. Value must be chosen to satisfy the minimum power (HEAT) requirements related to stock age and density. Manually set the minimum power [VR1 APC15 P.C.B.]

ENTERING HEATER/BOOST FAN OFFSET 1

- Select the Heater/Boost Fan Offset 1 Parameter using the SELECT lower touch pads. Note Heater/Boost Fan Offset 1 LED is now illuminated.