CALIBRATION

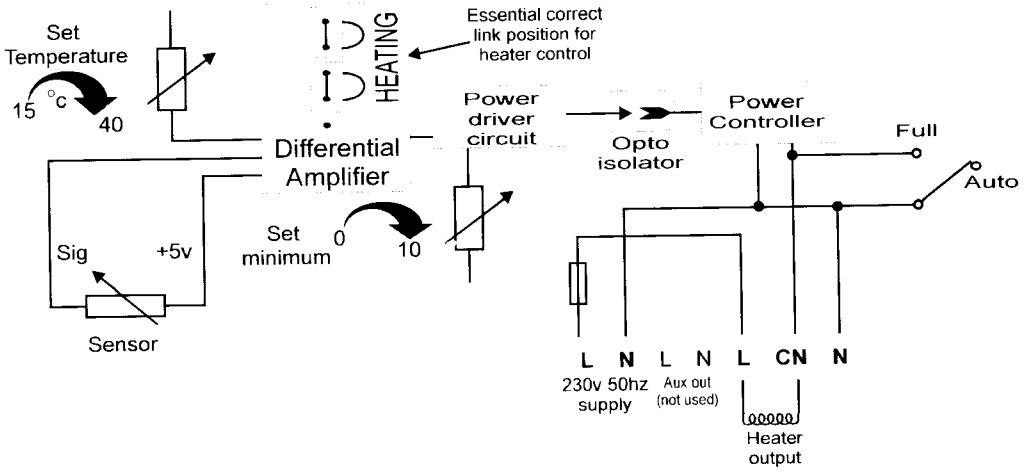
The *APC4* is factory calibrated and should not require adjustment but if recalibration is necessary replace the sensor with a2k2 1% resistor. Set the front panel set temperature potentiometer to 25.6°c and set the mimimum control potentiometer to zero.. Adjust the posistion of the preset potentiometer marked TCAL on the p.c.b. With a suitable smal screwdriver until the variable output voltage measured between L and CN is a minimum.

IDLE SPEED

WARNING IT IS ESSENTIAL THAT AT MINIMUM SPEED, THE FAN ROTATION IS FAST ENOUGH TO PROVIDE ADEQUATE COOLING OF THE FAN

The minimum output voltage (50v approx) from the APC4 is factory set and determines the idle speed of the ventilating fan when the front panel *set minimum* potentiometer is at the zero position.
If it is found that a different minimum speed (idle) is required, using a small screwdriver adjust the position of the pre-set potentiometer which is mounted on the printed circuit board and marked IDLE.

HEATING - BLOCK DIAGRAM and CONNECTIONS)



HEATING [auto mode]

The required environment temperature is maintained constant by the controller when operated with the front panel switch in AUTO position. Initially the required Set Temperature and Set Minimum heater output are set by adjustment of the calibrated front panel potentiometers.
If for example, the Set Temperature is 20°c and the ambient temperature is 20°c the heater will function at the Set minimum heater output power. When the temperature falls below 20°c, this is detected by the sensor and the controller increases the output voltage to the heater. This causes the heater output to increase, which in turn increases the ambient temperature of the environment being controlled in an attempt to return the temperature back to the set value.

HEATING [Full mode]

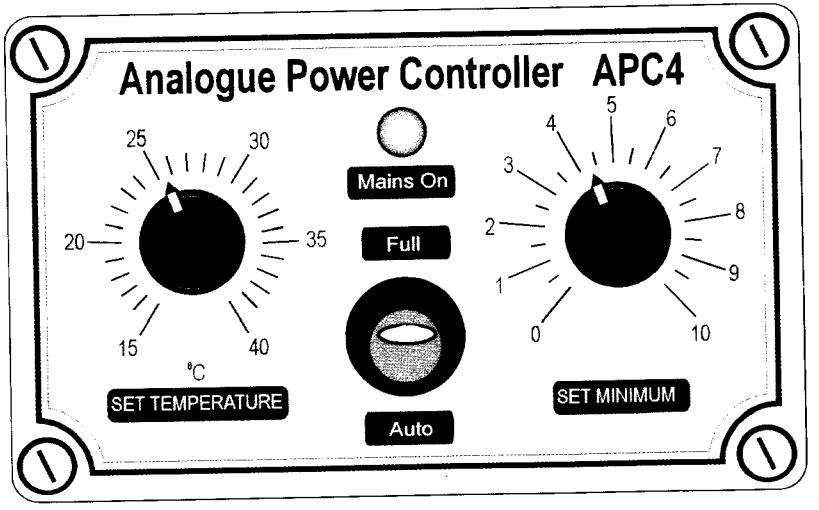
When maximum heat is required, the unit is switched to FULL mode , which supplies the full supply voltage to the heater hence increased ambient temperature conditions.

cf whaler ltd

Ventilation Engineers
and
Controlled Environment
Specialists

ANALOGUE POWER CONTROLLER APC4

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.

APC 4 ANALOGUE POWER CONTROLLER

Supply Input	230v 50Hz. +10%-6% 1kva
Minimum output	Adjustable 0 -100%.
Supply Input Fuse	5 Amp (Type T) Fuse
Supply output	0 - 230v 1kva
Maximum output current	4A
Output control	Full or Automatic
Sensor	"Whaler" Sensor
Cooling or Heating Application	Change of mode by internal Plug in links
Temperature Range/Scale Calibration	15-40°c scale calibrated in 1°c intervals

DESCRIPTION

The flexible APC4 Analogue power controller provides temperature control of an environment by either increasing or decreasing the ventilation rate [Fan Speed Control] or employed as a heating control whereby as the ambient temperature falls more output is obtained for the electrical heating source i.e. Infra red heater or black heat element. The control circuitry is optically isolated from the power semi-conductor which provides controlled variation of output voltage in both operational modes.

COOLING  WARNING

BEFORE SWITCHING ON THE UNIT , ENSURE THAT THE PLUG IN LINKS ARE IN THE CORRECT POSITION FOR COOLING

COOLING [auto mode]

The required environmental temperature is maintained constant by the controller when operated with the front panel switch in AUTO position. Initially the required Set Temperature and Set Minimum fan speed are set by adjustment of the suitably calibrated front panel potentiometers.

If for example, the Set Temperature is 20°c and the ambient temperature is20°c the fan will rotate at the set minimum speed [minimum ventilation]. When the temperature rises above 20°c, this is immediately detected by the sensor and the controller responds by increasing the output voltage to the main winding of the ventilating fan. This causes the fan to rotate faster, which increases the ventilation rate and results in the environment being cooled.

COOLING [Full mode]

When maximum ventilation is required, the unit is switched to FULL mode of operation, which supplies the full supply voltage to the main winding of the ventilating fan hence maximum fan speed. In the unlikely event of the APC4 unit failing to function correctly, it may be possible to maintain fan operation by operating the unit in this mode.

SET MINIMUM [Ventilating Fan Speed]

The front panel Set Minimum potentiometer, permits the user to set the minimum fan speed anr therefore minimum ventilation for all ambient temperature conditions, thus ensuring a specified amount of ventilation at all times when operating the APC4 unit in the AUTO mode.

COOLING - BLOCK DIAGRAM and CONNECTIONS) [Fan Controller]