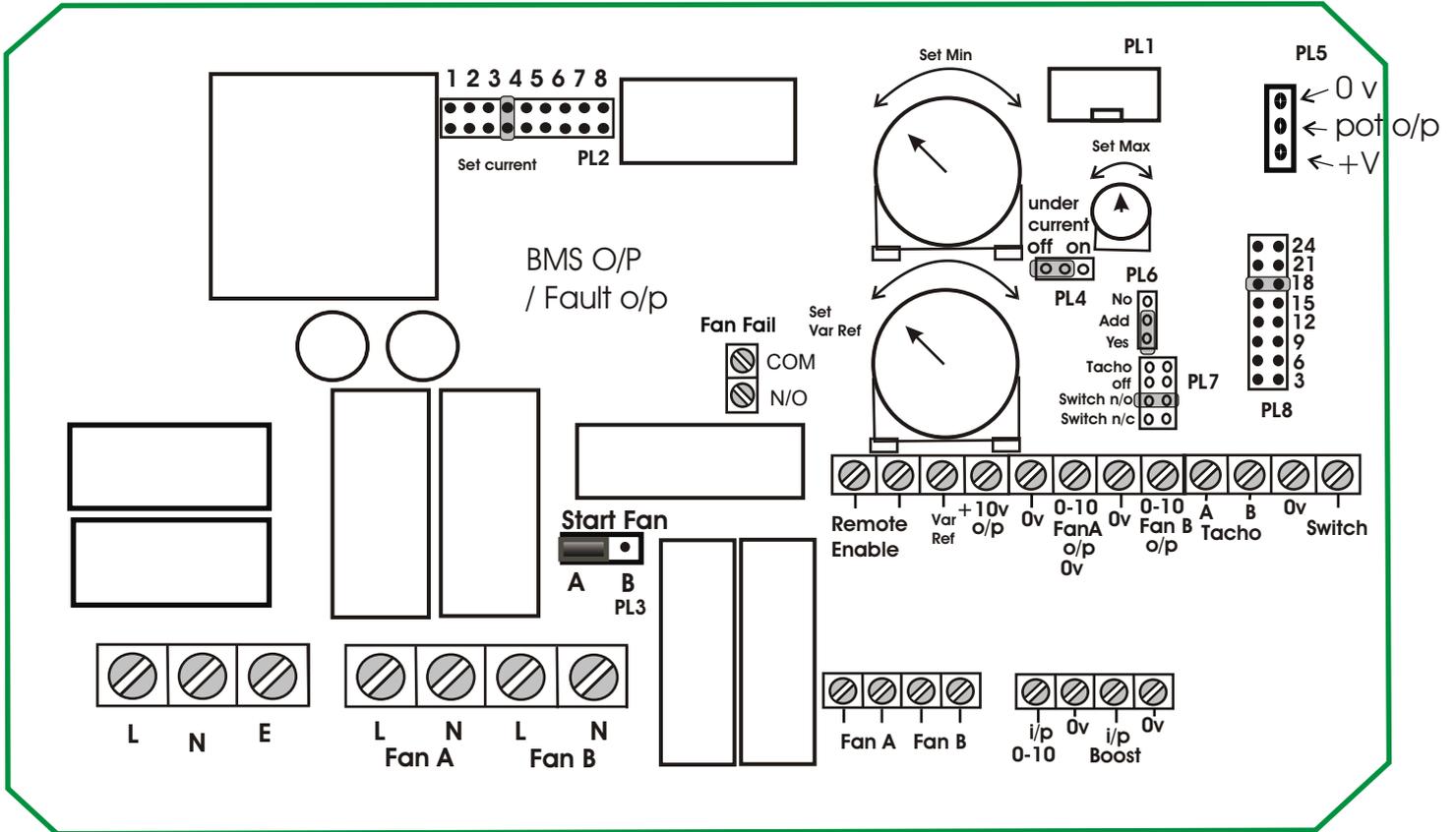


Fan Fail

Building Management System



FEATURES

Universal as it can be used on conventional AC Fans and DC Fans

Individual fused mains outputs to fans

Remote activation option by switching a low voltage / current by means of a set of external volt free contacts .

Adjustable current sensing from 1 to 8 Amps with the option of disabling by just leaving out the selection jumper.

Low current sensing to indicate an open circuit of a connection problem. This function is of particular importance in small motors where the line current rise is insignificant when the motor is stalled and the motors built in thermal protection is used .

Low current detection disabling via jumper for when a fan is also switched by a secondary source.

Individual volt free contacts for each fan that switch on with the alteration of the corresponding fan. This can be used for enabling low or high voltage up to 230 volts with a maximum current of 8 amps.

BMS output / remote fault indicated by an individual set of contacts capable of maximum controlling a load up to 230 volts at 8 Amps.

Manual speed control from the speed pot on the board or the option of a secondary control via the connector shown in the connection diagram. Whichever of these that have the highest setting takes priority.

Mixing low voltage signals from external sources applied to the Boost ,0 to 10 input along with min speed setting on the board or the signal applied via the pot input on the board.

Individual switching of the low voltage mixed signal to relevant fan that is activated

Duty sharing option selected by the set time jumper with time intervals from 3 hours to 24 hours in 3 hour steps. If this function is unwanted the jumper can be omitted and the selected start up fan will run till a fault occurs.

High limit to control voltage switched to fans by means of the preset marked set max

Tacho sensing on each fan

Tacho pull up resistor selectable for use where one is not incorporated in the fan

Switch input normally open or normally closed can trigger fault depending on PI7 setting DC Fan switched fault switch can be connected to switch input or air switch .

Deactivation / activation of n/o or n/c switch or tacho achieved by jumper setting on board.

Fan status shown on front of control box by means of an individual LED for each fan. If illuminated Green to indicate fan running , Red to show fault and unilluminated to show fan off.

Controlling input shown by use of illuminated green LED corresponding to the external input overriding the internally set speed or the other external input.

Start up fan selection by means of a jumper, this can also be used on installation to check the operation of both fans.

Front panel detachable via a plug and socket to aid installation

Time delay on fault detection on startup / fan switch over to allow current, switch input n/o or n/c, tacho levels to normalise

Variable voltage set by preset on board that can be used by external switching and fed into either the boost or signal inputs.

TERMINAL BLOCK CONNECTIONS

1. Supply in is the 230 volt, to power the unit and the fans connected to it.
2. This is the Supply voltage and switched to the designated fan via a fuse in the live line.
3. Remote enable , with this connection in the open circuit state the unit is disabled and all outputs are disabled . This is a low voltage control signal and must be only connected to a volt free switch
4. Var output, this is the voltage set by the set var voltage preset this can be used as a feedback signal and fed in to the boost or signal inputs..
5. 10V out is a reference voltage for use with peripheral sensors , maximum current drain 20 ma.
6. 0-10 A and 0-10 B are the control inputs to the fans, the activated fan has the control voltage present while the other remains at zero potential. The active output voltage is derived from the highest control signal this being either 0 -10 input , boost input, min speed pot or remote pot.
- 7 Tacho inputs come from a DC fan , There are two inputs marked A B respectively fans and share a common 0V.
8. Switch , this is a connection made to an air switch contact or a DC fan fail contacts , and can accommodate either normally open contact or normally closed, this is achieved by changing the jumper setting on PL7 .
The unit has a delay before tripping on this input so as to allow the Fans to be up and running before triggering a fault .
9. Fan A and Fan B , This connection goes to a volt free relay contact . The letter corresponds to the activated Fan, The relay can be utilised by switching a load up to 230 volts at 8 amps.
10. 0 to 10 and boost input are inputs , these can be connected to sensors , BMS systems, or any device giving a 0 to 10 volt output .

JUMPER AND PLUG CONNECTION

- PI1 This is a Plug and socket to allow the front panel be disconnected to allow a easy installation.
- PI2. This Jumper is used to select the trip current , if the jumper is omitted then the current trip is disabled.
- PI3 Start up Fan selector and can be used on installation to aid testing fans.
- PI4 Used to disable open circuit detection.
- PI5 Connection to an external / remote pot for speed control
- PI6 When using some DC fans the tacho requires a pull up resister , so this jumper has to be put in the required position for the fan used if a tacho is to be used.
- PI7. Allows the choice of using an switch input (selectable for normally open or closed)or tacho or neither
- PI8. Used to control the duty share time in 3 hour steps up to once a day , omission of the jumper disables the duty sharing .

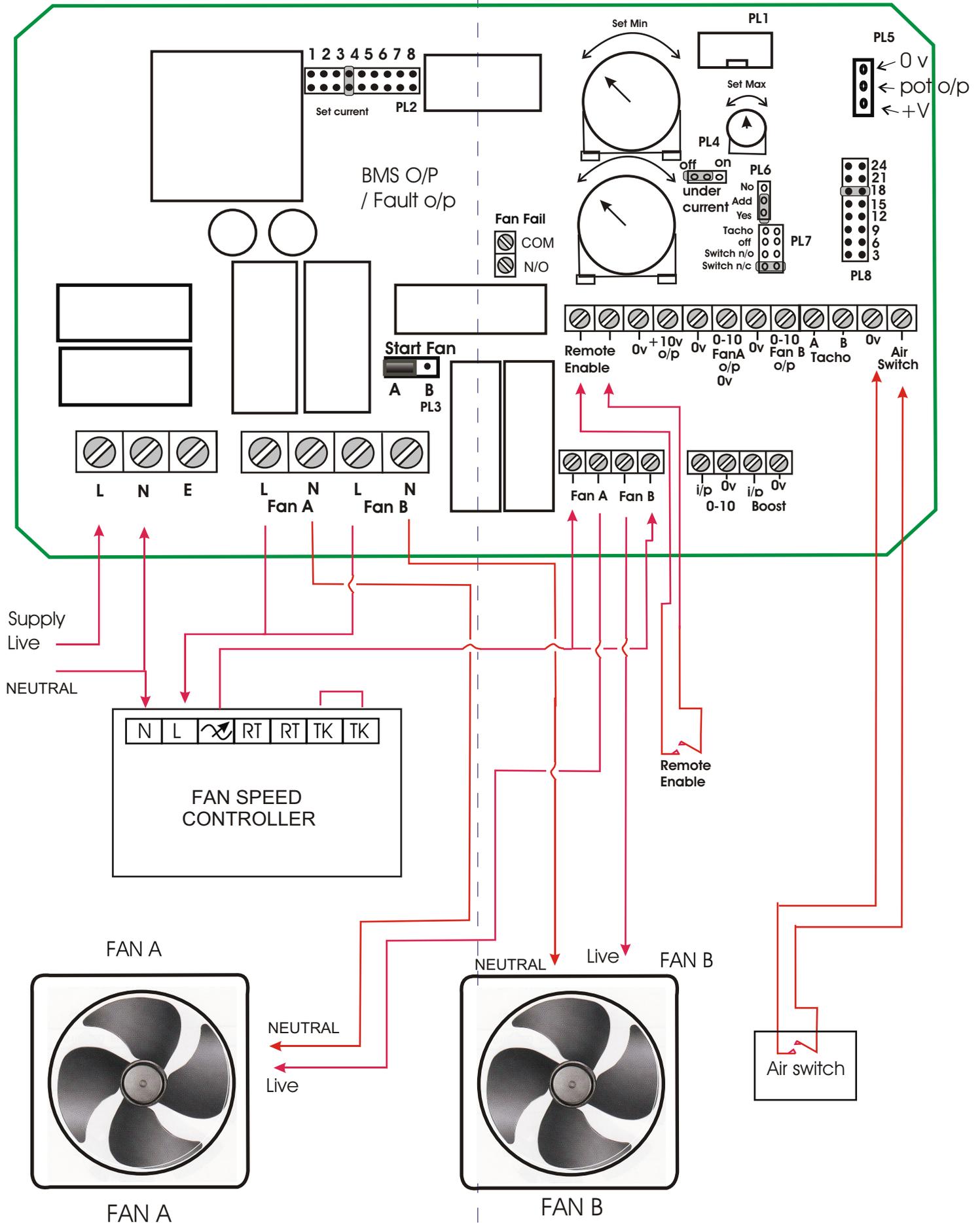
PCB PRESETS

Min speed preset controls the lowest voltage that the controlling 0 to 10 output will go down to. This adjustment will control down to zero when turned fully anticlockwise and up 10 volts fully clockwise if the limit has not been set to a lower level.

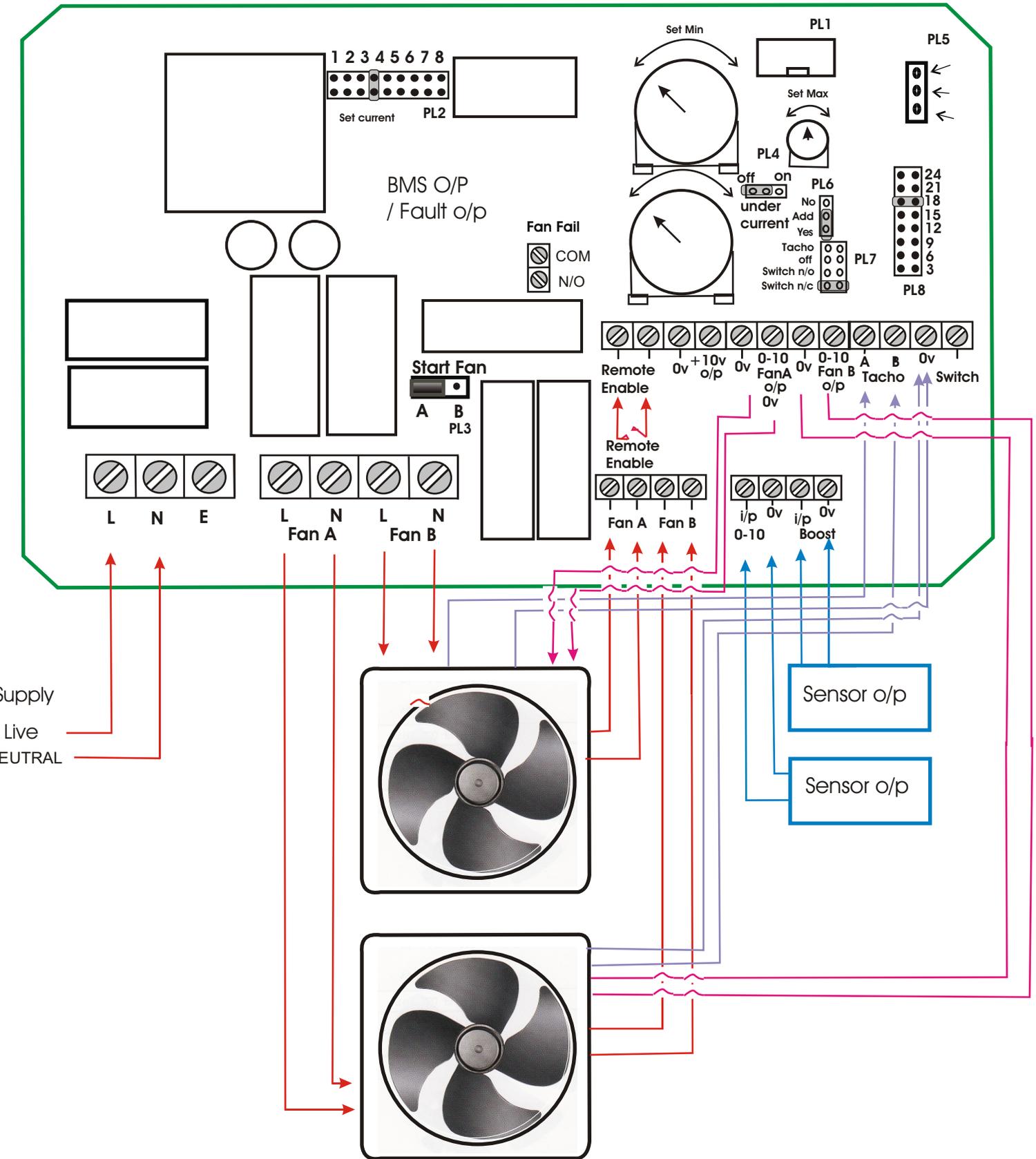
Limit preset limits the maximum voltage that the controlling 0 to ten output will go to . By turning anti clockwise will reduce the possible maximum voltage on the selected 0 to 10 output right down to 4 volts ..

Set variable voltage. This preset sets a voltage between zero to ten on the terminal var of the terminal block and used by remote switch like a PIR and fed into signal or boost input..

CONNECTIONS FOR CONTROLLING AN AC FAN USING TWO WIRE CONTROL WITH A SHARED CONTROLLER, WITH THE CONTROLLING OUTPUT IN THE LIVE FOR THE FANS

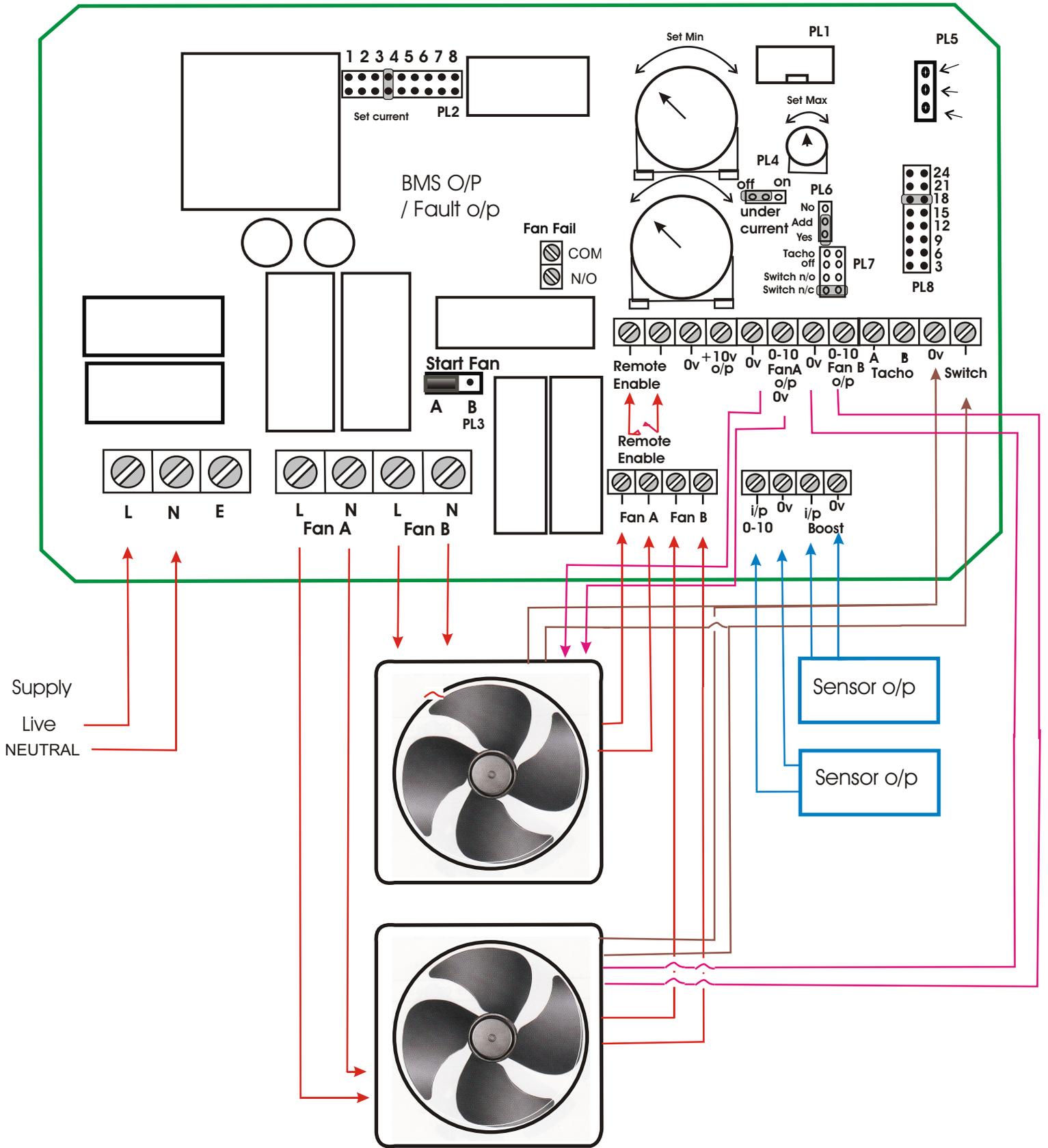


CONNECTIONS FOR CONTROLLING AN EC FAN USING A TACHO



This connection shows a DC fan connected up with a zero to ten control input along with an enable .

CONNECTIONS FOR CONTROLLING AN EC FAN USING FAN FAULT OUTPUT



This connection shows a DC fan connected up with a zero to ten control input along with an enable .