

Adjusting the PID setting for the Proteân motors

Each motor in the **Proteân** can be tuned for correct operation. The PID values are adjusted to get the best performance of the motor with its load and moment of inertia. Once these settings are set it should cope with different loads and only need tuning if something needs to be better. It is not an exact science but there balance to be struck between oscillation, move smoothness, accuracy and reaction speed.

P = Proportional

I = Integral

D = Differential

These are mathematical terms but refer to the way the drive voltage and current is delivered to the motor and are dependent on the demanded speed – ie the joystick position.

Proportional is the amount of the whole demanded speed that is transferred directly to the motor drive.

Integral is the integral or 'average over a period of time' of the motor speed. This tends to dampen the reaction to small sudden changes in speed.

Differential is a short peak demand which is usually greater than the demanded speed and helps to get the motor to speed quickly by 'over-driving' it for a short time.

In the **Proteân** the PID settings are 3 individual settings for each motor. Here are some alternative settings for the Tilt motor;

Tilt P = 008, 000

Tilt I = 000, 005

Tilt D = 027, 088

These are decimal numbers and equate to 16bit numbers in 'computer language'.

They can be sent to the **Proteân** using the hidden '**Function Generator**' menu in the **Multi Function Controller**.

First go to the '**Desk Settings**' page

Hold the '**Up**' button and then the '**Page >**' button

This will get you into the '**Function Generator**' page.



To adjust the settings in the Function Generator page, hold the button associated with the parameter you want to change and use the 'Up' and 'Down' buttons to change the numbers.

Set these values;

Head = 01

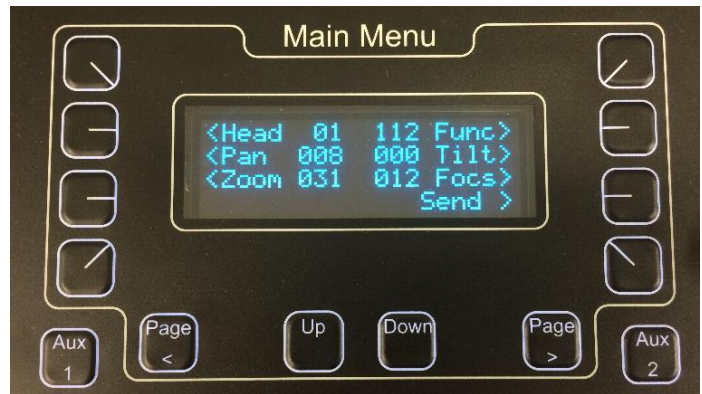
Func = 112

Pan = (See Above)

Tilt = (See Above)

Zoom = 031 (Tilt PID values)

Focus = 012(P), 014(I), 016(D)



When ALL the numbers are correct push the 'Send' button at the bottom right. This will send all the values to the remote head.

The page shown in the picture is set to send the Tilt P value of 008, 000

Once the settings have been sent to the **Proteân** you need to send 2 save commands, 1 for Pan and 1 for Tilt.

Head = 01

Func = 112

Pan = (don't care)

Tilt = (don't care)

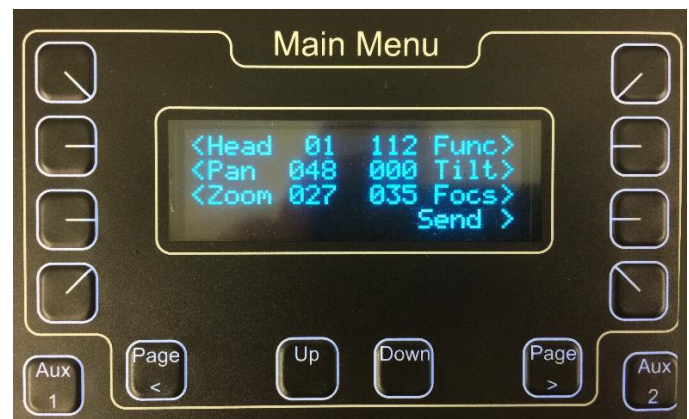
Zoom = **26** (Save Pan), **27**(Save Tilt)

Focus = 35 (Save Command)

This page is set to send 'Save Tilt PID values to EEPROM'

The Pan and Tilt values are irrelevant.

The motor should be re-booted after sending the 'Save' command.



Pushing either of the 'Page' buttons will exit from this menu.

There is a video showing the exact steps at: <https://youtu.be/QoxhS-o8UBo>

BR Remote Ltd.

Units 14 - 20, Setley Ridge Vineyard

Lymington Road

Brockenhurst

SO42 7UF

UK

www.br-remote.com