## Eddy Current Dyno Controller Settings, cont

Controller Settings

Tune	Test Ramp					
Controller Settings						
Controller On Yes 💌 D	efaults					
Com Port 12	Find					
Type Eddy Current RPM Feedback						
Higher Number Increases Load	No 💌					
Ramp Rate	5					
Proportional Setting	150					
Integral Setting	10					
Derivative Setting	400					
PID Control Loop, mSec	300					
Display On (No) Yes	•					
Pulses Per Rev for RPM	1 💌					
Max RPM To Control 7000						

Ν	o	t	e	s	:

Click the 'Defaults' button to load typical default values. Use 'Tune' button to check 'Higher Number Increases Load' and to see how fast the 'Ramp, count/mSec' setting moves the valve (the HIGHER the 'Ramp, count/mSec', the SLOWER the movement).

Keep Settings Help Cancel

Controller Settings, cont Show Man/Auto Button No Allow Any RPM Change No Max Allowed RPM Change 300 Max Allowed RPM from 0 RPM 300 -Use Abort Button No. • Limit Integral Error Yes Max Integral Error 100 Adjust Offset Voltage Yes Ŧ Offset Voltage 1

Note: Some settings here do not work on all controller firmware versions. 'Offset Voltage' should work on all firmwares. 'Man/Auto' and 'Max Allowed RPM Change' require v1.54 or later. All other settings require v1.75 or later.

Get Firmware Version

Many of the items mention here are further discussed on the PID explanation sheet.

Print

Several settings on the right side under "Controller Settings, cont" only work with certain levels of the controller firmware. Click on the Get Firmware Version button to find your version.

Settings on the left side are discussed on a separate sheet.

Choose Yes and the screen shows either Auto (control to RPM) or Man / (vary dyno absorption power directly) depending on pressing a button on the controller.

RPM readings are not always perfect. Choose No and the 2 RPM items below it become enabled, which tells the controller to ignore RPM signals which appear wrong.

This setting is how large a change in RPM should be assumed to be possible. If an RPM change is more than this, that new RPM is ignored. For example, on a system with lots of inertia like a chassis dyno, this could be a smaller number like 100-300 RPM or so, than on a low inertia, engine-only dyno.

This setting is how large a change in RPM should be assumed to be possible when starting from 0 RPM. Typically when starting from 0, the first RPM can quite large, like 300-500 RPM or so. So this typically needs to be larger than the setting above.

Choose a "Yes" option to enable the red button on the controller to bring the engine and dyno down to 0 RPM when running an accelerating test. Be sure to test this setting before assuming you understand how it works. Check PID instructions for more info.

Choose "Yes" and you can specify how large the Integral Error (correction) can be when using the "Hold" dyno control option to hold RPM more constant with the Ctrl-H command. Now the "Max Integral Error" input is enabled so you can change it. The smaller you make this number, the less effect the Integral part of the control has on holding RPM, but the less likely for the controller to start cycling RPM up and down.

Choose "Yes" and you can specify an Offset Voltage to the controller output. There are small difference in all electronics. With some combinations, say, 0.2 volts of output can apply lots of load to the dyno and with others it applies almost 0 load. If you want to fine tune the voltage output, set this to Yes. Then enter a voltage level you see on the PID screen which starts to apply significant load to the dyno. This may be found easier in Man mode. Turn the Control Knob all the way clockwise so it shows the highest Set Point RPM. Then press the button to produce Man mode where the controller outputs voltage to the controller directly. Start to slowly increase the voltage and note when the controller just starts to load up the engine or vehicle. Note this voltage on the PID screen. This would be the voltage you would enter for "Offset Voltage".