Eddy Current Dyno Controller Setup Screen

Click here to load typical default values after choosing Eddy Current RPM Feedback

Set default settings, then click on the Tune button to send to controller (send settings via USB to controller).

Click here to find which com ports your controller could be connected to.

When you click the Tune button to load these settings into the controller, the steps are shown here. Also shown is the version of the firmware (program) in the controller, like 1.51.

Controller Settings

Tune

Test Ramp

Controller Settings

Controller On	Yes	Defaults
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	10	
Display On (No)	Yes	
Pulses Per Rev for RPM	1	
Max RPM To Control	6000	

Notes:
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 | Print

Choose Eddy Current here first to set up other settings correctly on this screen.

Enter a number to change the rate at which RPM is changed when you start recording data for a test. NOTE: A higher number means a slower ramp rate.
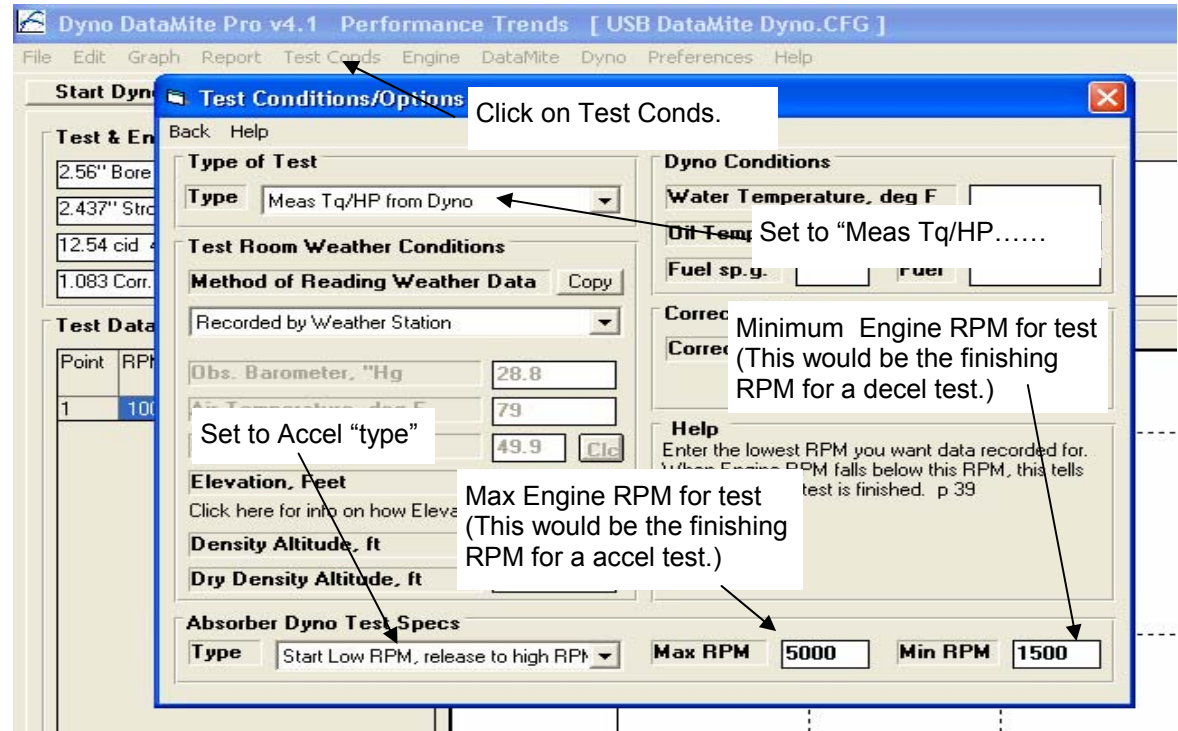
Enter a number to indicate how often the controller should update. Firmware v1.51 or later can both update the display and provide good control at a Control Loop of 10 mSec or faster.

Prior to v1.51 firmware, you would have to turn the Display Off to have good, fast control. With v1.51 firmware or later, you can always have the Display On with a PID Control Loop, mSec of about 10 mSec.

Enter the pulses per revolution (typically number of magnets) for the RPM signal, which is typically the same as the Dyno Wheel RPM in DataMite Specs.

Enter the highest RPM you think the Dyno Wheel will ever see. Do not enter a number higher than needed as it can reduce controller accuracy.

**Prototype Eddy Current Dyno
Speed Controller Screens**
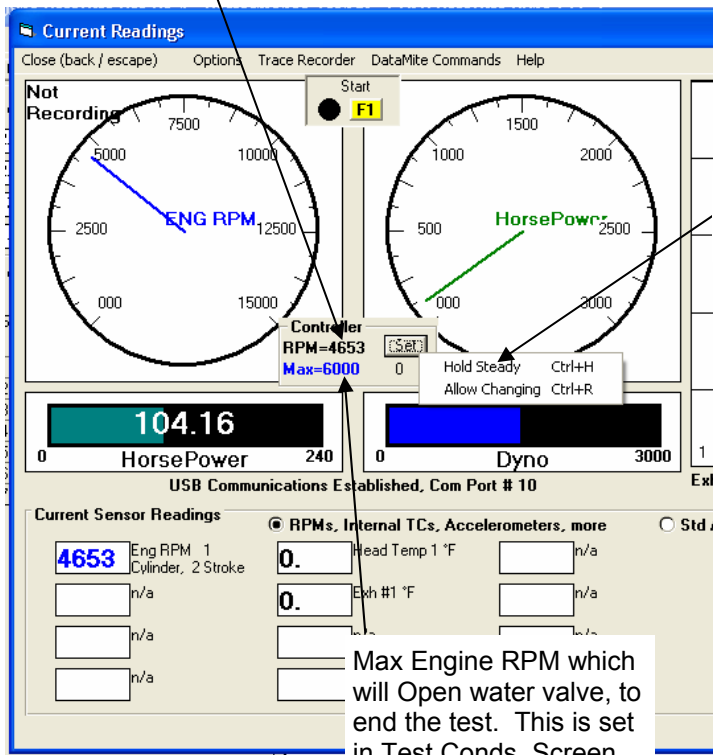
Data Mite Specs

Back File DataMite USB Options Current Readings Weather

Type of
Sampling

> Prototype Dyno Controller Settings
> Prototype Auxillary Controller Settings
>
> Read Firmware Version
> Reset Fan Cycling
> Reset Accelerometer Calibrations
> Thermocouple Calibrations (easy)

Controller Options in
DataMIte Screen
(see separate sheet)
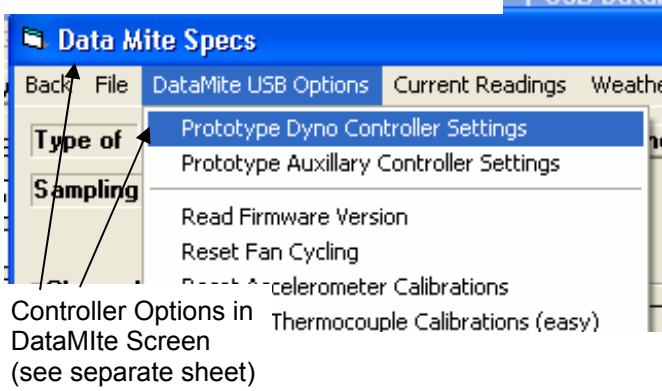
Current Engine RPM as seen by controller.

Current Readings

Close (back / escape) Options Trace Recorder DataMite Commands Help

Not Recording

Start
● F1

ENG RPM

HorsePower

Controller
RPM=4653 Set
Max=6000   0

Hold Steady   Ctrl+H
Allow Changing   Ctrl+R

104.16

0   HorsePower   240   0   Dyno   3000

USB Communications Established, Com Port # 10

Current Sensor Readings   ● RPMs, Internal TCs, Accelerometers, more   ○ Std A

4653   Eng RPM 1
Cylinder, 2 Stroke   0.   Head Temp 1 °F   n/a

n/a   0.   Exh #1 °F   n/a

n/a   n/a

n/a

Max Engine RPM which
will Open water valve, to
end the test. This is set
in Test Conds. Screen,
shown at upper right.

Dyno DataMite Pro v4.1   Performance Trends   [USB DataMite Dyno.CFG]

File Edit Graph Report Test Conds Engine DataMite Dyno Preferences Help

Start Dyno

Test & En

2.56" Bore

2.437" Stro

12.54 cid

1.083 Corr.

Test Data

Point RPM

1   100

Test Conditions/Options

Back Help

Click on Test Conds.

Type of Test

Type   Meas Tq/HP from Dyno

Test Room Weather Conditions

Method of Reading Weather Data   Copy

Recorded by Weather Station

Obs. Barometer, "Hg   28.8
Air Temperature, deg F   79
49.9   Clc

Elevation, Feet
Click here for info on how Eleva

Density Altitude, ft
Dry Density Altitude, ft

Absorber Dyno Test Specs

Type   Start Low RPM, release to high RPM

Dyno Conditions

Water Temperature, deg F

Oil Temp
Fuel sp.g.   Fuel

Corre
Corre

Set to "Meas Tq/HP……

Minimum Engine RPM for test
(This would be the finishing
RPM for a decel test.)

Help
Enter the lowest RPM you want data recorded for.
When Engine RPM falls below this RPM, this tells
...test is finished. p 39

Set to Accel "type"

Max Engine RPM for test
(This would be the finishing
RPM for a accel test.)

Max RPM   5000   Min RPM   1500

Hold Steady adds the integral term to the PID. This is typically only recommended if you are trying
to hold RPM constant. For most all other testing, choose Allow Changing (which is the default).

Basic Test Procedure:

- Warm up engine and hold RPM low with manual knob.
- Go full throttle and controller should hold RPM relatively low.
- Press F1 to start test and recording will start and controller should allow engine or vehicle to accelerate at a steady rate.
- Then RPM gets to the "Max" shown on screen (set in Test Conditions), recording will stop and controller will ramp the engine down to the approximate starting RPM.
- Control should then be returned to the manual control knob.

NOTES:

- IMPORTANT: You need some alternative method to shut off the engine should something fail in this prototype controller.
- If you move the manual control knob when computer has control, the control reverts back to the knob. This lets you manually override the computer control should something go wrong.
- Later versions of the software rlet you do either an accelerating or decelerating type of test.