

Thank you for your purchase of the MD-107-TACH Bundle! This system can be used with your existing SmartTach RPM box to read RPM from primary and secondary sources using our 107 Capacitive Sensor and optional 107 Coil Wire Sensor. Unpack your new MD-107-TACH Bundle to make sure all items are present. Everything ships in a sturdy case which you can use for many years to protect your investment. You will have one (1) MD-107 Transmitter, one (1) 107 Capacitive sensor, one (1) Capacitive sensor cable, one (1) SmartTach adaption cable and one (1) CT probe with protective heat sleeve (if this option is purchased).



1. MD-107-TACH Transmitter

The 107 transmitter has an indicator light for power and one for signal. The BNC end connects to the 107 capacitive and/or 107 coil wire sensor and the opposite end with NMEA connects to the SmartTach via the SmartTach adapt cable.



2. 107 Capacitive Sensor

Ships loose. Connects to the Capacitive sensor cable. Sensor head for clamping onto a plug wire. Be sure to choose a plug wire that is not near others and avoid the sensor touching other wires.



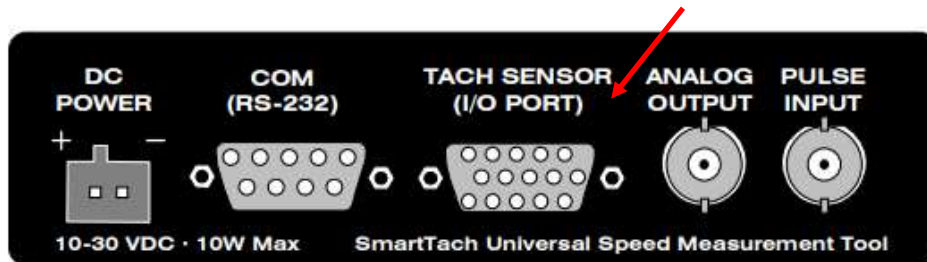
3. Capacitive Sensor Cable

This cable connects the 107 transmitter to the 107 Capacitive Sensor



4. SmartTach Adapt Cable

This cable connects to the “Tach Sensor I/O port” on the back of the SmartTach



5. 107 Coil Wire CT RPM Sensor

*This sensor is for primary ignition wires only. It is optional. It clamps onto the a positive +12 volt coil wire. It replaces the “TS:1” pick-up. It may work on other primary ignition wires and injector wires. **It cannot ever be used on a plug wire.** It is directional. If you do not get a reading flip the sensor around and/or try another wire.*



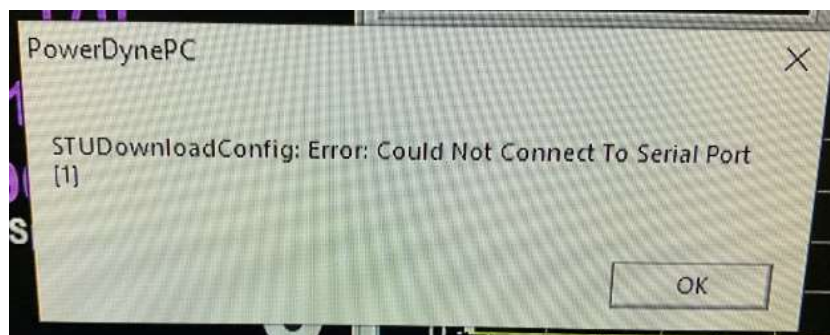
Configuring the SmartTach for the MD-107-TACH via Powerdyne Software

Step One – configuring the SmartTach input setting

The next step is to set up Powerdyne and the SmartTach to read RPM from your new MD-107-TACH. First make sure your SmartTach has power and is connected to the dynamometer per factory settings. This includes the serial connection to the PC as well as the analog output. Go to your Powerdyne Software and click on Calibrations and then click on Smarttach Set-up.

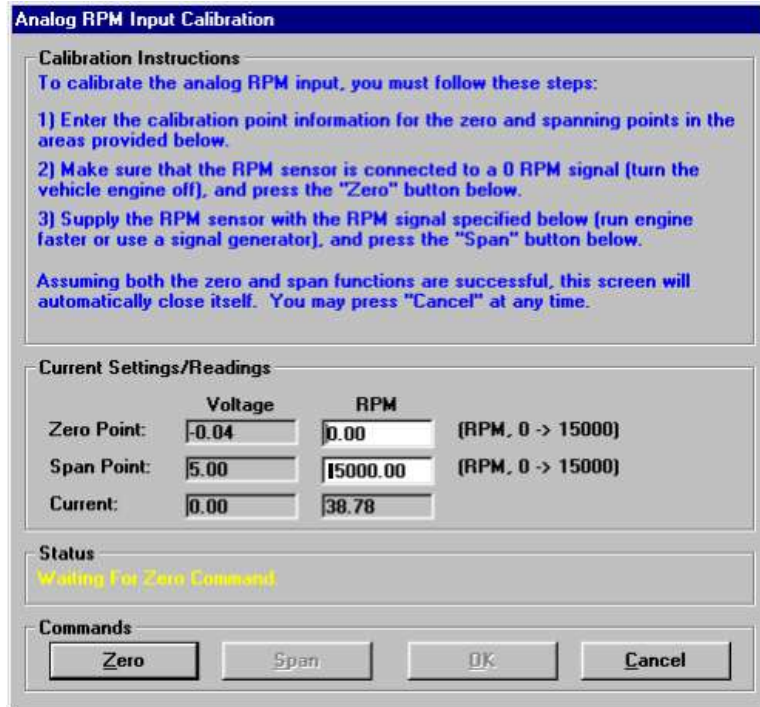


First, Download the TS:1 Configuration. Next set the “Set pulses/Rev” to 1. If these settings are accepted you can move on to the next step. However, if you are getting an error like the one shown below please check your communication port settings on your system. The next step requires you to make sure that your SmartTach is connected to the correct com port. You can check your device manager settings in Windows to determine which com port is being used by the SmartTach. The com port setting can be adjusted under SmartTach/”Configurations & Diagnostics”. Make sure the communication ports match.



Step Two – Calibrate the Analog RPM

Under Calibrations go to Analog RPM Input Calibration. Set the minimum RPM to 0 and the maximum RPM to 15,000. No sensors can be connected during this step. Make sure that the MD-107-TACH is not connected to the SmartTach box as there is always a chance the sensor will read background electrical noise when not connected to anything. With the sensor not connected, click “zero” to establish your zero point. Next, go to your SmartTach box and hit the “mode” button on the box. It will read 15000-RPM on the display. Go back to the Powerdyne Software and click “span” to establish your span reference. Your calibration is now complete. You can hit “mode” again on the SmartTach and it will revert to zero.



Step Three - Configuring the Dyno Parameters Settings to accept Analog for RPM

Go to Calibrations/Dyno Parameters and make sure "Analog" is selected as the RPM source. You are now ready to use your MD-107-TACH with your SmartTach. You will not likely need to make any changes to any settings. If your RPM reading from the Smarttach is higher than the Tachometer from the car you can adjust the reading under Dyno Parameters. The "RPM Adjuster" lets you change the RPM to align with your car's tach. If RPM is double that shown on the vehicle tachometer you simply enter 0.5; if it is reading half you enter 2.

The screenshot shows the 'Dyno Parameters' window with the following settings:

- Basic Properties:** Roll Diameter (Inches): 16.700; Equivalent Wt (Lbs): 2000.00; Parasitics Multiplier: 1.00; Start At Zero Speed: ; PAU Calibration Data: #1: 18,000; #2: 18,000; #3: 18,000; #4: 18,000; Cal Arm Length (Inches): 18,000; Cal Weight (Lbs): 50,000; Gear Ratio (PAU:Rolls): 1,000 :1; Asymmetric Cal Arm: Yes; Front Speed Follower Uses: Yes; Rear Speed Follower Uses: Yes; Use Absolute PAU Torque: ; PAU #1 is A Motor: ; Use PAU w/ Drag Brake: 25.0 % Output; Test Stop Rate (MPH/Sec): 10.0; PAU Enable Delay: 0.10; Maximum Testing Speed: 150.00.
- Engine RPM Input Source:** Analog; None; RP1210-1708; Pulses; RP1210-1939; Calculated From Roll Speed; From OBD-II Scan Tool; From Heavy Duty Scan Tool; Use Smart Filtering: ; Filter Value (0-99): 90.0.
- RPM Calibration:** Roll To Engine RPM Conversion: 1.000; RPM Adjuster: 1.000.
- Options:** Use Fan During Tests: ; Use Fan 2 During Tests: ; Allow Remote Test Start: ; Use Encoder Noise Mapping: ; Use Auto Speed Synch: .
- Filtering Values:** % Old Weight: 0; Max Change Sample: 3000; Avg Front/Rear Speeds: ; Front Speed Weight (0-1): 0.500.
- Maintenance Information:** Total Distance Travelled: 738.9 Miles; Total Running Hours: 1.8 Hours.

Buttons at the bottom: Clear E-Stop & ShutDown Codes, More Hardware Options, OK, Cancel.



1. Do not use the coil wire sensor on spark plug wires. It will damage the sensor. You can use the coil wire on 12v low voltage primary ignition wires. Only clamp on the positive wire. It is directional. If you do not get a reading flip the sensor around.



2. Use the heat sleeve provided with the coil wire sensor. You can leave it off until you find a suitable pick-up point for RPM but please slide the sensor into the protective sleeve before doing pulls. If there are spots where heat is not an issue you can leave the sleeve off. Just keep in mind that the plastic that makes up the sensor will warp if subjected to high temperatures. The sleeve will provide ample protection in these cases.
3. When using the capacitive sensor, clamp onto a spark plug wire that is away from other plug wires and/or other sources of electrical noise. A good spot is any “separated” plug wire - clip onto it about half-way between the distributor and the spark plug and do not allow any portion of the sensor assembly to make contact with another wire. Close the capacitive sensor clamp on smaller gauge plug wires. Check your RPM reading on the screen. If RPM is reading but does not match your tach, simply adjust this setting in Dyno Parameters under “RPM Adjuster”.



4. Do not use any third-party sensors with the MD-107-TACH other than those supported by Mustang Dynamometer. Before using any device not provided by Mustang please contact us at (330) 963-5400. Doing so may damage the MD-107 transmitter and void your warranty.
5. Background electrical noise – the MD-107-TACH is *very sensitive*. It will likely pick up back-ground electrical noise when not connected to a vehicle. Readings of thousands of RPM can occur from nearby electrical equipment like motors, blowers, welders, etc. This is normal. It will go away once the sensor is connected to a vehicle source.

If you have questions, please email us at sales@mustangdyne.com or call us at (330) 963-5400. Parts can be ordered on-line at www.mustangdyne.com. Click on products/accessories. Add required items to your basket and check out. We accept Visa and Mastercard. Most product ships in 1-2 business days.



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