

Installation Instructions for CMS Pro Meter (with Breakout Box Type-A) for Yamaha V-Max 1700



- Notes: (1) For the remainder of this document, “Meter” is referring to the Motoscope Pro Meter which comes with of the Cannes Moto Services (CMS), Aluminum protection shield.
- (2) This document is intended for ALL Worldwide V-Max Models other than for any sections pertaining to the Immobilizer (which is not included within this document), in which case you need to obtain a copy of the document intended for the Non-USA/Non-Canadian Yamaha V-Max 1700 Models
- (3) If you are installing this kit on a Non-USA/Non-Canadian Model and would prefer to use your “Passing Light” Switch as the means to program and access meter functions, obtain the separate Installation Instructions intended for the Non-USA/Non-Canadian Yamaha V-Max 1700 Models.

So that your Meter provides you with the best results, carefully read over and follow the installation instructions and diagrams that we have prepared for you.

Take great care during installation, in order to achieve solid connections by always soldering and insulating your connections and not just twisting the connections together. This will ensure the best reliability and longevity.

Solder joints should all be insulated individually using shrink tubing.

Estimated Installation Time: 4 - 6 hours

Caution: This installation is not difficult but does involve extensive disassembly of some parts of the bike. There are also live +12VDC terminals, which if handled improperly, could lead to a short or other issues. Always disconnect the positive 12V terminal cable on the bike’s battery prior to commencing.

- 1 - Disconnect the positive 12V terminal cable on the bike’s battery.
- 2 - Unbolt and set aside, the Headlight Assembly from the bike.
- 3 - Mount a separately purchased single pole Momentary Contact push switch (SW1) on the bike in a location to your liking. Here is one from Motogadget, that will not only work but is very good looking and matches the aesthetics of the V-Max 1700.



Momentary Contact push switch

4 - Decision time. There are two ways to get the speed signal back to the Meter. One, is by installing the provided Speed Sensor and the other involves installing separately purchased components to construct a isolation protection circuit between the Meter and the bike's Main ECU and ABS ECU.

4A - CMS Provided Speed Sensor Method.

Since we did not install this sensor and only tested it along with a provided magnet by sticking the magnet onto the outer ridge of the rear rim and holding the speed sensor to the recommended 4mm distance from the magnet, set up the CIRC and impW settings within the meter's programming, to verify that this method works. For installation details and any other information, please refer to the CMS provided Installation Instructions and/or contact CMS for assistance.



CMS Provided Speed Sensor with Two Magnets

4B - Isolation Protection Circuit Method.

Note: We recommend that you use three different colored wires for this construction.

Constructing the Isolation Protection Circuit as follows;

4B1 - Solder the Emitter of Transistor Q1 to one end of the 100 Ohm Resistor R2.

4B2 - Solder the necessary length of “added wire” to the other end of the 100 Ohm Resistor R2.
Document the color of the “added wire” on the diagram.

4B3 - Put a piece of shrink tubing over Resistor R2 all the way to the plastic case of the Transistor.

4B4 - Solder the Base of Transistor Q1 to one end of the 10 Kohm Resistor R1.

4B5 - Solder the necessary length of “added wire” to the other end of the 10 Kohm Resistor R1.
Document the color of the “added wire” on the diagram.

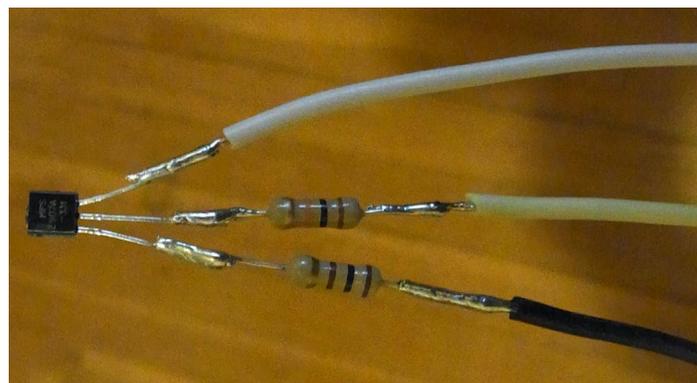
4B6 - Put a piece of shrink tubing over Resistor R1 all the way to the plastic case of the Transistor.

4B7 - Solder the necessary length of “added wire” to the Collector of Transistor Q1.
Document the color of the “added wire” on the diagram.

4B8 - Put a piece of shrink tubing over the “added wire” on the collector, all the way to the plastic case of the Transistor.

Again, verify that you have documented the color of each “added wire” on the diagram.

4B9 - Put a piece of shrink tubing over the entire Isolation Protection Circuit, only exposing the ends of the three “added wires” and set aside the constructed assembly.



Isolation Protection Circuit (As Wired)



Isolation Protection Circuit (with complete shrink tubing on)

5 - Cut the wires coming out of the OEM Tach/Speedometer Assembly to a uniform length of approximately 4 cm away from the OEM Tach/Speedometer Assembly (Refer to Picture below).

Note: This length is not critical and best if they are cut as you do the install and cut them individually to suit the install.



OEM Tach/Speedometer Assembly Cut Wires

6 – Unbolt and remove the OEM Tach/Speedometer Assembly from the bike and mount the Meter on the mounting bracket using the screws and spacers provided.



OEM Tach/Speedometer Assy



Meter

Caution: The two 3mm socket head bolts provided by CMS are not long enough to mount the Meter into the CMS housing. Two 10mm Socket Head bolts need to be purchased separately unless you contact CMS and see if they will ship you the required length bolts.

The CMS provided flat washers can be used as is but you will also need to purchase separately two lock or flat washers to make up the 1mm or so gap. The reason is that a 8mm bolt is not long enough and there is no such thing as a 9mm length bolt.



From left to right;

- 1 - CMS Provided 3mm Flat Washer
- 2 - Separately purchased 3mm lock washer
- 3 - Separately purchased Socket Head Hex 3mm-10 Bolt
- 4 - CMS Provided Button Head Hex 3mm-6 Bolt

7 - Connect the Brown (Br) wire coming out of the Meter to the previously cut Red/White (R/W) wire that was connected to the OEM Tach/Speedometer Assembly.

8 - Connect an installer selected color "added wire" from the point in step-7 above to the +12VDC Terminal on the Break Out Box (BOB).

9 - Connect the Green Wire coming out of the Meter to one side of Switch (SW1).

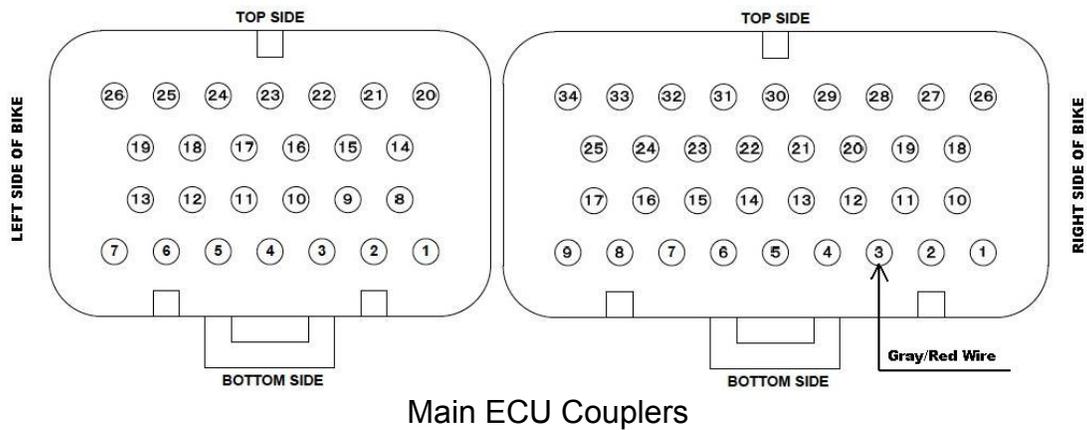
You should not have to extend the wires but depending on how you route the wires, it may be necessary.

10 - Connect the White (W) wire coming out of the Meter to the installer selected color (added wire) wire that is connected to the Collector of Transistor Q1.

11 - Remove the Faux tank cover, un-mount the Main ECU from the holding plate and disconnect the right hand coupler (34-Pin) from the ECU.

Locate the Gray/Red wire in the wire harness of the disconnected 34-Pin coupler.

Note: It is the third wire from the right on the bottom row.



Main ECU Couplers

(Note: This picture is looking at the pins on the Main ECU and NOT at the disconnected coupler)

Extend the Yellow wire coming from the Meter using an installer selected color “added wire” wire and route it to reach the Gray/Red wire above that runs from the Main ECU to Ignitor#2 and tap it into that Gray/Red wire.



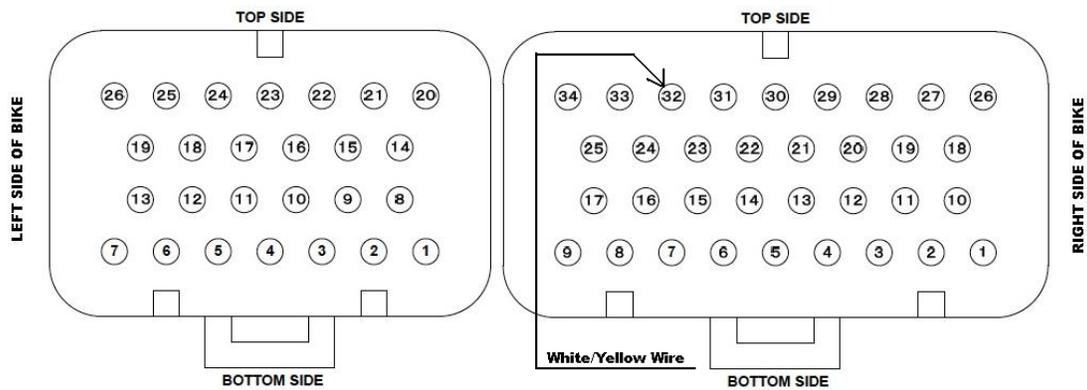
Tapped Gray/Red Wire on Main ECU 34-Pin Coupler

Dress up the wires and harness.

12 – Solder tap in the installer selected color “added wire” wire coming from the Base of Transistor Q1 to the White/Yellow wire running between the bike’s Main ECU and ABS ECU.

The White/Yellow wire is in the wire harness of the disconnected Main ECU 34-Pin coupler.

Note: It is the third wire from the left on the top row.



Main ECU Couplers

Note: This picture is looking at the pins on the Main ECU and NOT at the disconnected coupler.

Reconnect the coupler (34-Pin) and remount the Main ECU to the holding plate.

Dress up the wires and harness.

13 – Wiring up the Break-Out Box (BOB)

Wire up the Break-Out Box as follows, utilizing the following list, the picture below and the Diagram as references:

Break-Out Box (Terminals);

13A - FUEL - Fuel Sensor (To Ground)

Connect an installer selected color “added wire” wire to the Green/Black (G/B) wire in harness for OEM Instrument Panel Assembly going to the 16-Pin Coupler, Pin-15.

13B - OIL SW - Oil Pressure Switch (To Ground)

No connection (TBD)

13C - TURN R - Right Turn Signal (To +12VDC)

Connect an installer selected color “added wire” wire to the previously cut Green (G) wire that was connected to the OEM Tach/Speedometer Assembly.

13D - TURN L - Left Turn Signal (To +12VDC)

Connect an installer selected color “added wire” wire to the previously cut Brown (Br) wire that was connected to the OEM Tach/Speedometer Assembly.

13E - H. BEAM - High Beam Signal (To +12VDC)

Connect an installer selected color “added wire” wire to the previously cut Yellow (Y) wire that was connected to the OEM Tach/Speedometer Assembly.

13F - NEUTRAL - Neutral Gear Switch (To Ground)

Connect an installer selected color “added wire” wire to the previously cut Sky Blue (Sb) wire that was connected to the OEM Tach/Speedometer Assembly.

13G - ERROR – ABS Warning Error LED Lamp (To +12VDC)

Connect an installer selected color “added wire” wire to the previously cut Green/Red (G/R) wire that was connected to the OEM Tach/Speedometer Assembly.

Note: In the CMS provided Installation Instructions, they specify to connect the Immobilizer Warning Signal coming on the previously cut Blue (L) wire that was connected to the OEM Tach/Speedometer Assembly. Since CMS was not forthcoming on whether the Dark Blue wire that they were specifying was in fact the previously cut Blue (L), since the GEN2 V-Max has no such color code of Dark Blue. It only has Sky Blue (Sb) and Blue (L) wires and the fact that when connecting it up to that previously cut Blue (L) we were unable to get the Meter’s Error indicator LED to blink or light up as would be expected of the Immobilizer signal line. After several emails and phone calls to CMS, we were unable to get a reply to our simple inquiry on one, to clarify the wire color and two, what exactly we were suppose to be seeing as far as the error LED indication, we therefore decided to use that Error LED on the Meter for the ABS Warning Light.

In order to resolve the Immobilizer Signal issue once and for all, we had a French speaker call CMS and after two attempts, we finally received the answers that we wanted and as we suspected, it is the Blue (L) cut wire and the Motoscope Pro Meter’s Red Warning/Error LED will not “Blink” during the 30 sec to 24 hour period after the Ignition Key is turned OFF.

But when there IS a “Tamper” of the Immobilizer System, the LED will come ON constantly, to indicate a “Tamper”.

Remember the Immobilizer feature does NOT apply to the USA Models.

13H - BUS – Communications BUS between Break-Out Box and CMS Pro Meter (+12VDC)

Connect the Orange (O) wire coming out of Meter to this terminal. If necessary, use an installer selected color “added wire” wire to extend the Orange (O) wire.

13I - GND - Ground (To Ground)

Connect an installer selected color “added wire” wire to the common Ground wire which connects the Black (B) wire coming out of Meter, Resistor R2 which is connected to the Emitter of Transistor Q1, the opposite of Switch (SW1) and to the previously cut Black (B) wire that was connected to the OEM Tach/Speedometer Assembly.

Ensure that the Bike’s Ground is a solid Chassis Ground which eventually connects back to the Bike Battery’s Negative (-) Terminal.

If necessary, use an “Added Wire” to extend the Black (B) wire coming out of the Meter.

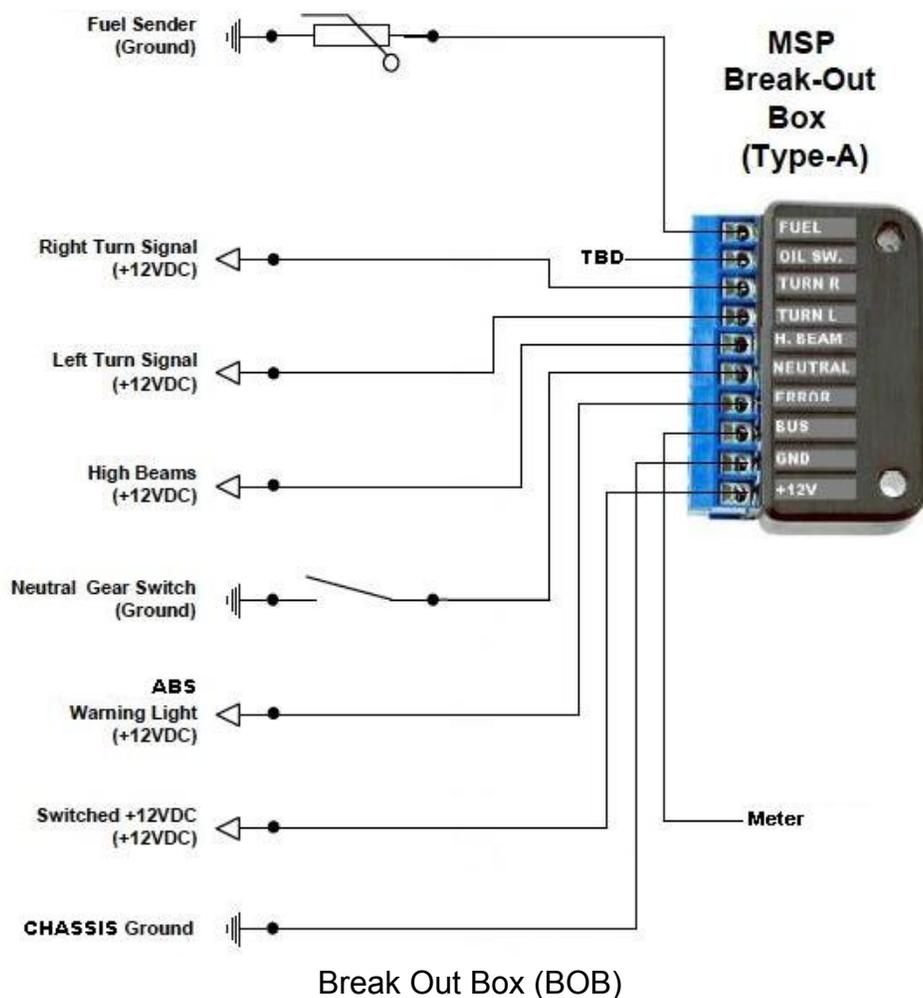
13J - +12V – Switched +12VDC Supply (To +12VDC)

Although this connection has already been done in Step-7 above, it is included here as a reference to what wires are terminated on the BOB.

Connect an installer selected color “added wire” wire to the Red/White (R/W) wire in harness for OEM Tach/Speedometer Assembly.

Insulate and dress up all of the wires, cables, harnesses, etc. that are not used.

Locate the BOB inside the Meter housing or under the Meter mounting plate area.



14 - Connect the Red (R) wire coming from the Meter to one side of the CMS provided Fuse Holder.

15 - Connect an installer selected color “added wire” wire to the other side of the Fuse Holder and connect it to one of the following points.

15A - Positive (+) side of the Battery.

15B – Red/Yellow (R/Y) wire in harness for OEM Instrument Panel Assembly going to the 16-Pin Coupler, Pin-15.

15C – Any other UnSwitched +12VDC Supply line.

Dress up all the wires, cables, harnesses, etc.

Install CMS provided 1 Amp fuse into Fuse Holder.

16 - Turn the ignition ON and check the operation of the unit and set the different functions of the Meter using the provided Motogadget Operating Manual.

17 - Re-Install the Headlight Assembly and the Faux Tank Cover.

The installation is now complete.