TACH-ADAPT v3.2

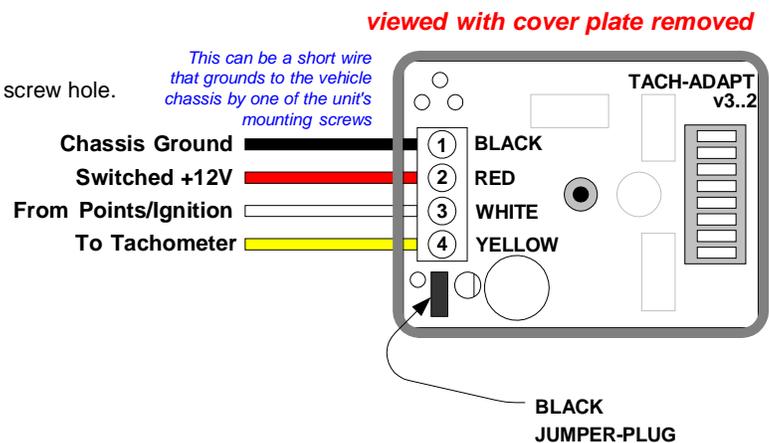## INSTALLATION INSTRUCTIONS

1. INTRODUCTION

Tach-Adapt receives the pulse stream coming from the distributor points or electronic ignition, performs a mathematical conversion and outputs the rate needed by the particular tachometer being used. In this way, a tachometer designed for (example) a 4-cylinder engine will read correctly on a 6 or 8-cylinder engine.   Tach-Adapt outputs a regenerated output at the correct rate. This output can be a low-voltage square-wave (for driving newer tachometers), or it can replicate the high-voltage pulse that older tachs typically need.

2. GETTING STARTED

a. Determine your desired mounting location. Choose a place that avoids extreme engine heat and possible wet areas. Typically, under or near the instrument panel is best because most needed signals and power are generally nearby.
b. Wiring: Obtain enough *stranded*, insulated automotive grade wire to make connections based on your mounting location. Small gauge wire is adequate as power consumption is very low. For easy handling, recommended size is #20. (Terminal Block will accept #16 through #24.) **Colored wire makes it easier to keep track of your connections.**

3. TACH-ADAPT CONNECTIONS

a. Remove screw and lift Rear Cover from unit via the screw hole.
b. Orient the unit as shown in the illustration at right.:
c. Back-out Terminal block screws.
d. Strip-back insulation ~1/4" to make connections to Block.
e. Pass each wire through individual holes in housing to fully engage into terminal block.
f. Snug-down the screws to capture wires.

viewed with cover plate removed

This can be a short wire that grounds to the vehicle chassis by one of the unit's mounting screws

Chassis Ground	① BLACK
Switched +12V	② RED
From Points/Ignition	③ WHITE
To Tachometer	④ YELLOW

TACH-ADAPT v3..2

BLACK JUMPER-PLUG

4. SWITCH and JUMPER-PLUG SETTINGS

a. Set switches according to the following table

ENGINE CYLINDERS	TACH CYLINDERS	SWITCHES ON	OUTPUT RATE
4	8	2 & 5	X2.0
4	6	3 & 6	X1.5
6	8	4 & 7	X1.33
6	4	2 & 7	X0.66
8	6	3 & 8	X0.75
8	4	1 & 6	X0.5
NOTE 1	NOTE 1	1 & 5	X1.0

NOTE 1: When using Tach-Adapt only to regenerate output pulse and no change in rate is required, set switches 1 and 5 to "ON".

b. Output Level Selection: There is a small Jumper-Plug slid over 2-pins located near the Terminal Block. When these 2 pins are connected by the plug, Tach-Adapt outputs a low-voltage tachometer output signal. Older tachs typically require a a high-voltage pulse. This is provided by REMOVING the Jumper Plug. If in doubt about whether your tach requires a high-voltage pulse, leave this Jumper Plug in place and see if your tachometer reads correctly with the low-voltage output. If your tach does not respond, or if you are already sure your tach needs a high-voltage pulse, then remove the plug.
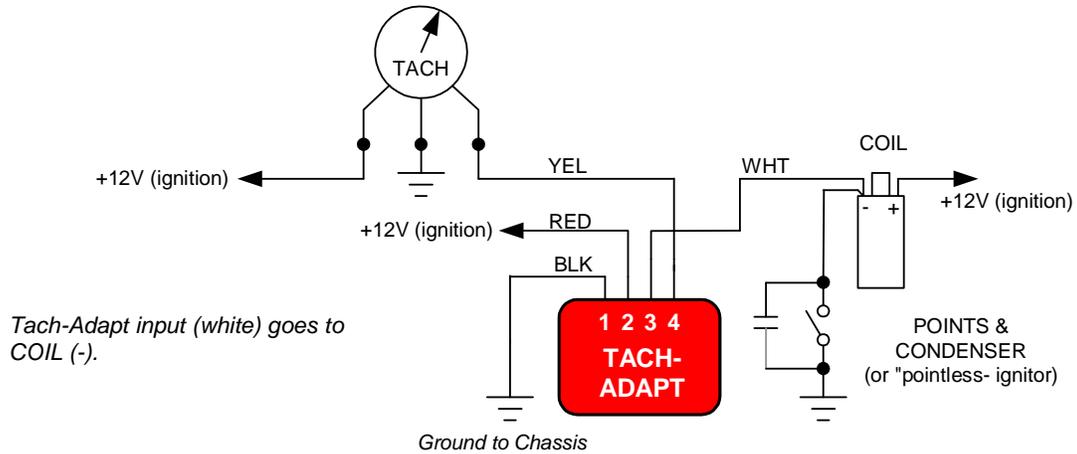
5. VEHICLE CONNECTIONS

BEFORE mounting TACH-ADAPT, finish connecting the 4 wires to vehicle power and signals according to the diagram that applies to your vehicle ignition system configuration on the following pages. For Porsche 911 vehicles '69 thru '71, pay particular attention to disconnect wiring to the "Ballast Unit" (if still present on car), as detailed in drawings.

Once you verify the operation of the unit, restore the Cover Plate and permanently mount unit to the vehicle.
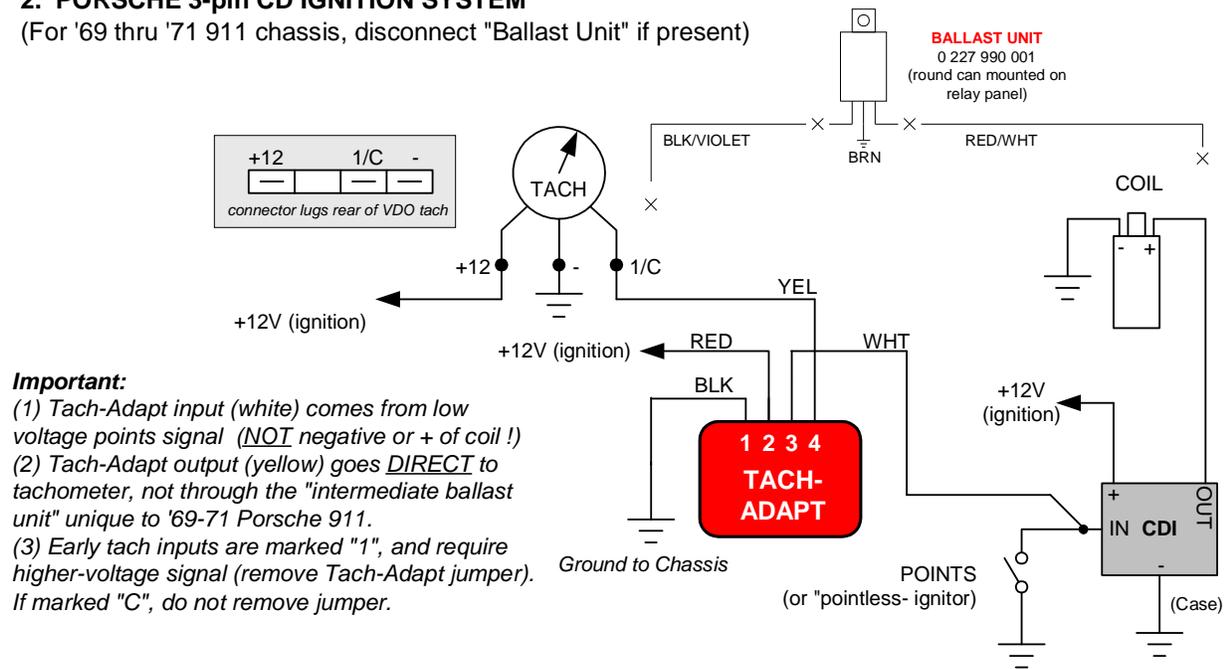
TYPICAL VEHICLE CONNECTIONS

1. TRADITIONAL (KETTERING) IGNITION SYSTEM
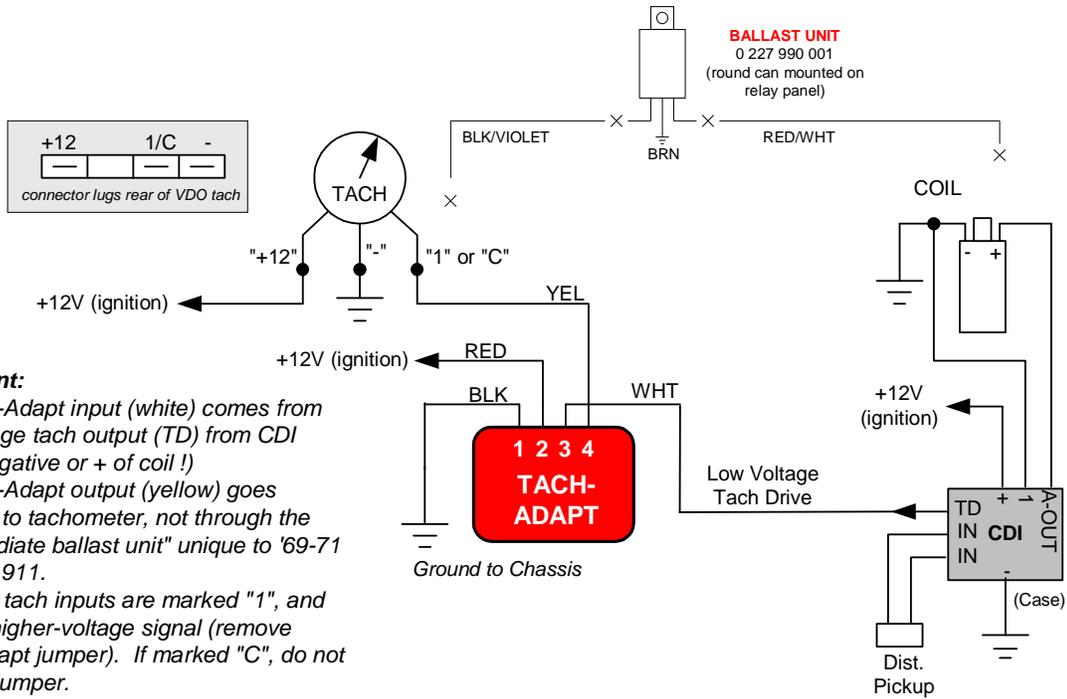(Points and Condenser or Electronic Ignitor)

Tach-Adapt input (white) goes to COIL (-).

TACH

+12V (ignition)

+12V (ignition)

YEL

RED

BLK

WHT

COIL

- +

+12V (ignition)

1 2 3 4 TACH-ADAPT

POINTS & CONDENSER (or "pointless- ignitor)

Ground to Chassis

2. PORSCHE 3-pin CD IGNITION SYSTEM
(For '69 thru '71 911 chassis, disconnect "Ballast Unit" if present)

BALLAST UNIT
0 227 990 001
(round can mounted on relay panel)

BLK/VIOLET

BRN

RED/WHT

+12	1/C	-

connector lugs rear of VDO tach

TACH

+12

-

1/C

+12V (ignition)

+12V (ignition)

YEL

RED

WHT

BLK

COIL

- +

+12V (ignition)

1 2 3 4 TACH-ADAPT

Ground to Chassis

POINTS (or "pointless- ignitor)

IN **CDI** OUT

+

-

(Case)

Important:
(1) Tach-Adapt input (white) comes from low voltage points signal (NOT negative or + of coil !)
(2) Tach-Adapt output (yellow) goes DIRECT to tachometer, not through the "intermediate ballast unit" unique to '69-71 Porsche 911.
(3) Early tach inputs are marked "1", and require higher-voltage signal (remove Tach-Adapt jumper). If marked "C", do not remove jumper.
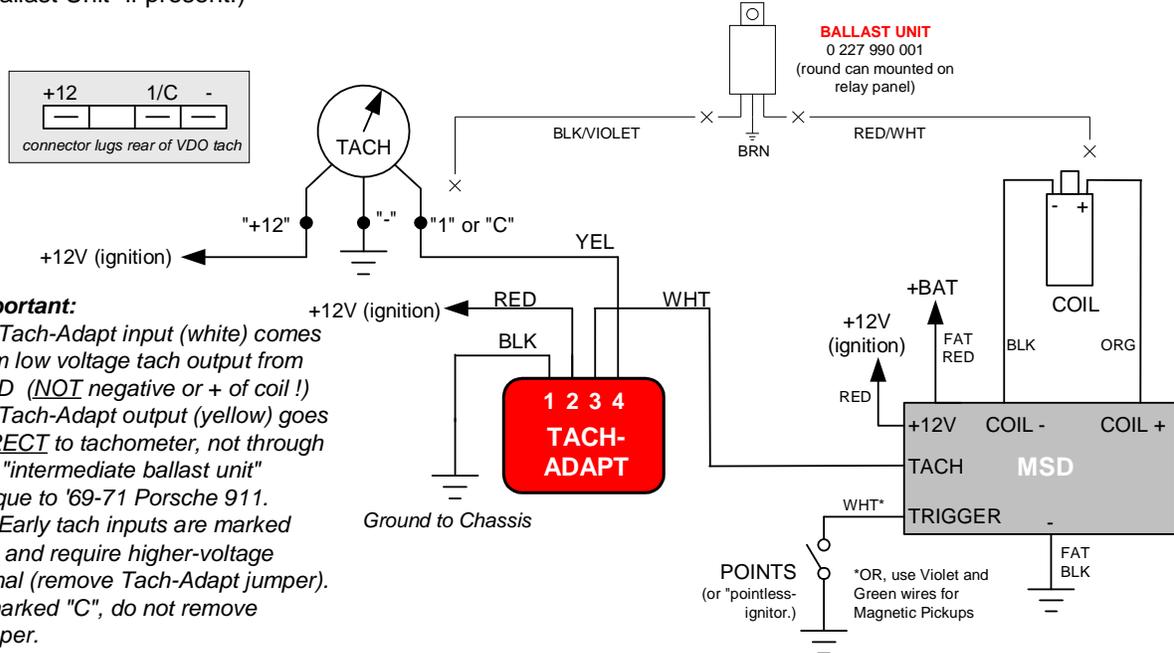
3. PORSCHE "6-PIN" CD IGNITION SYSTEM (for '69 thru '71 911 chassis, disconnect "Ballast Unit" if present!)

BALLAST UNIT
0 227 990 001
(round can mounted on relay panel)

BLK/VIOLET   BRN   RED/WHT

COIL

+12   1/C   -

connector lugs rear of VDO tach

TACH

"+12"   "-"   "1" or "C"

+12V (ignition)

YEL

+12V (ignition)   RED

BLK   WHT

1 2 3 4
TACH-ADAPT

Ground to Chassis

+12V (ignition)

Low Voltage Tach Drive

TD IN IN   + ↑ A-OUT
CDI
-
(Case)

Dist. Pickup

Important:
(1) Tach-Adapt input (white) comes from low voltage tach output (TD) from CDI (NOT negative or + of coil !)
(2) Tach-Adapt output (yellow) goes DIRECT to tachometer, not through the "intermediate ballast unit" unique to '69-71 Porsche 911.
(3) Early tach inputs are marked "1", and require higher-voltage signal (remove Tach-Adapt jumper). If marked "C", do not remove jumper.

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4. MSD CDI ApplicationS (for '69 thru '71 Porsche 911 chassis, disconnect "Ballast Unit" if present!)

BALLAST UNIT
0 227 990 001
(round can mounted on relay panel)

BLK/VIOLET   BRN   RED/WHT

+12   1/C   -

connector lugs rear of VDO tach

TACH

"+12"   "-"   "1" or "C"

+12V (ignition)

YEL

+12V (ignition)   RED

BLK   WHT

1 2 3 4
TACH-ADAPT

Ground to Chassis

+BAT

+12V (ignition)

FAT RED

RED

COIL

BLK   ORG

+12V   COIL -   COIL +
MSD
TACH
WHT*   TRIGGER   -

FAT BLK

POINTS
(or "pointless-ignitor.)

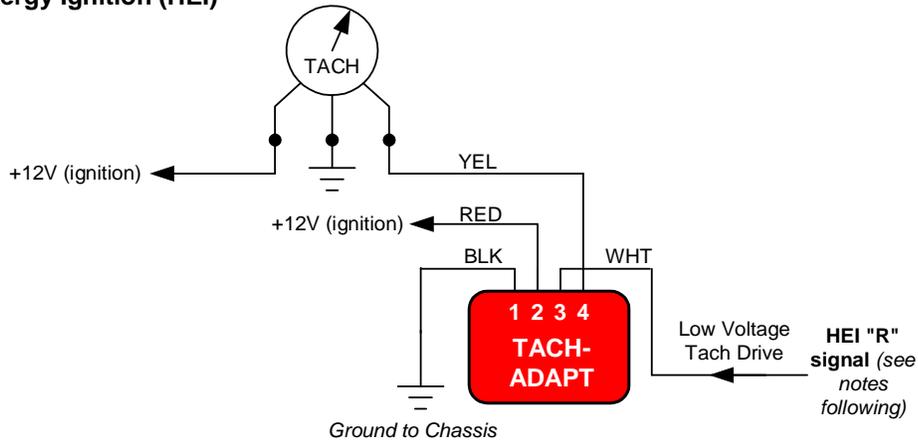*OR, use Violet and Green wires for Magnetic Pickups*

Important:
(1) Tach-Adapt input (white) comes from low voltage tach output from MSD (NOT negative or + of coil !)
(2) Tach-Adapt output (yellow) goes DIRECT to tachometer, not through the "intermediate ballast unit" unique to '69-71 Porsche 911.
(3) Early tach inputs are marked "1", and require higher-voltage signal (remove Tach-Adapt jumper). If marked "C", do not remove jumper.

5. GM High Energy Ignition (HEI)

TACH

+12V (ignition)

YEL

+12V (ignition)

RED

BLK

WHT

1 2 3 4
TACH-ADAPT

Low Voltage
Tach Drive

HEI "R" signal *(see notes following)*

Ground to Chassis

NOTES
Most desireable: Tach-Adapt input (white) goes to low level Tach Drive output from Distributor amplifier module. Typically, this is the "R" pin on the 7-pin HEI amplifier module in coil-in-Distributor units, and the 8-pin amplifier module for external-coil Distributors. The "R" signal is typically accessible in the distributor harness. Although not as desirable, it is possible to use the signal at "pin-C" on the external coil. (This is the equivalent of a "coil-minus" signal in a conventional ignition.)

6. GM Engine Control Unit (ECU) or Powertrain Control Module (PCM) *(generic example)*

TACH

COIL(S)

+12V (ignition)

YEL

+12V (ignition)

RED

BLK

WHT

1 2 3 4
TACH-ADAPT
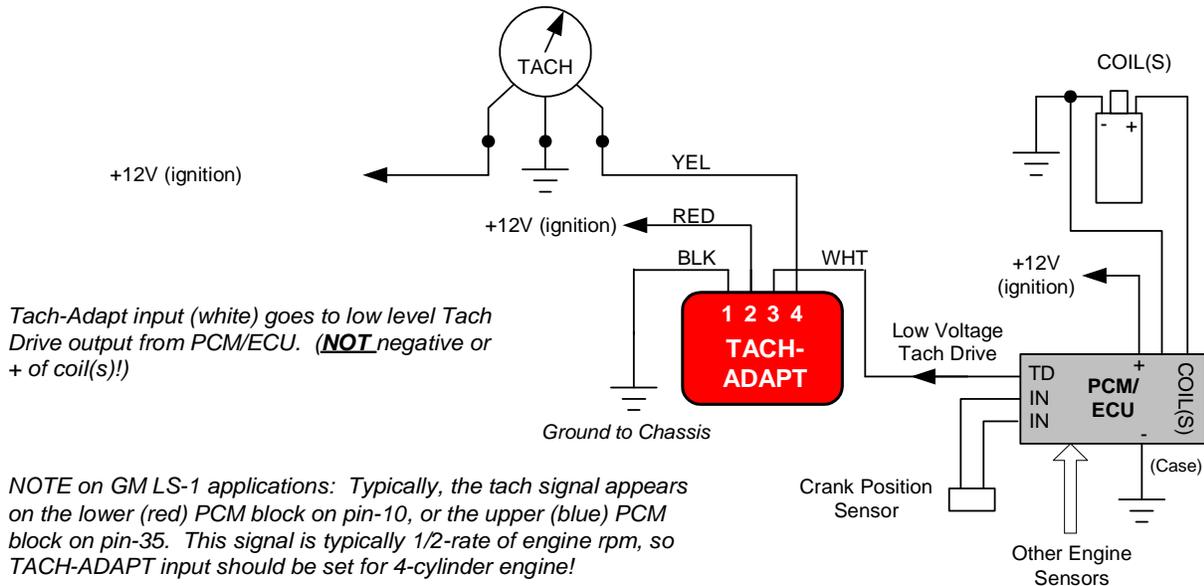
*Tach-Adapt input (white) goes to low level Tach Drive output from PCM/ECU. (**NOT** negative or + of coil(s)!)*

Ground to Chassis

+12V (ignition)

Low Voltage
Tach Drive

TD IN IN

PCM/ECU

COIL(S)

(Case)

Crank Position Sensor

Other Engine Sensors

NOTE on GM LS-1 applications: Typically, the tach signal appears on the lower (red) PCM block on pin-10, or the upper (blue) PCM block on pin-35. This signal is typically 1/2-rate of engine rpm, so TACH-ADAPT input should be set for 4-cylinder engine!