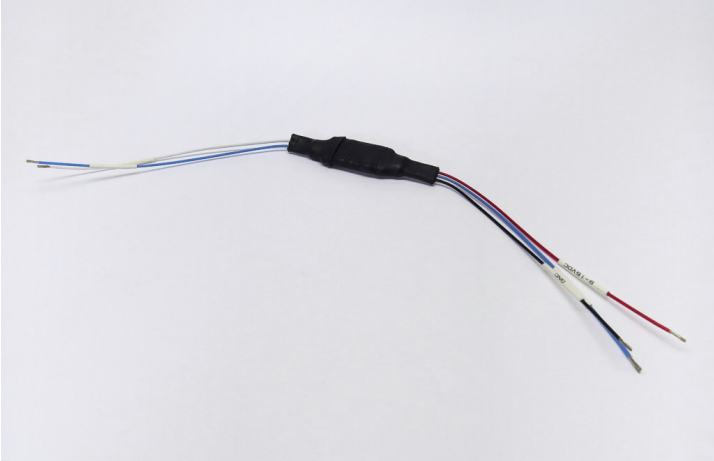
AiM Infotech

RPM-ECU Coil adapter – ARP03

Release 1.04



This datasheet explains how to connect RPM-ECU coil adapter and sample RPM signal. The adapter is useful for ECU without CAN output.

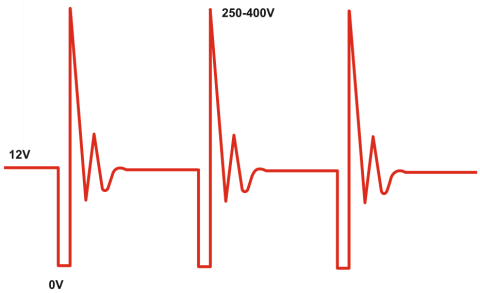
Adapter **part number** is: **X05ADRPMM30**

1 Introduction

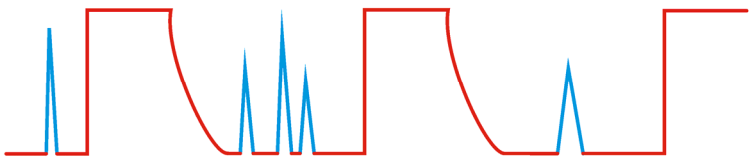
RPM ECU coil adapter AiM is a filter that allows to sample RPM signal from the coil and the ECU avoiding possible signal instabilities or wrong sampling due to electrical interferences – that lead to voltage peaks – or to an RPM signal whose square wave is not perfect. AiM adapter cleans the signal from undesired peaks and squares the signal wave form.

1.1 RPM signal

RPM signal can be sampled from the coil of from the vehicle ECU. Images below shows the signal coming from the coil ("**A**"), the ECU with a not square waveform ("**B**") and filtered by AiM adapter ("**C**").



A

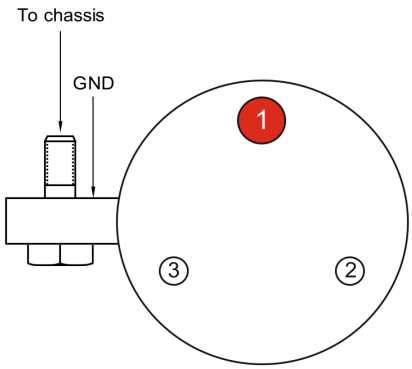


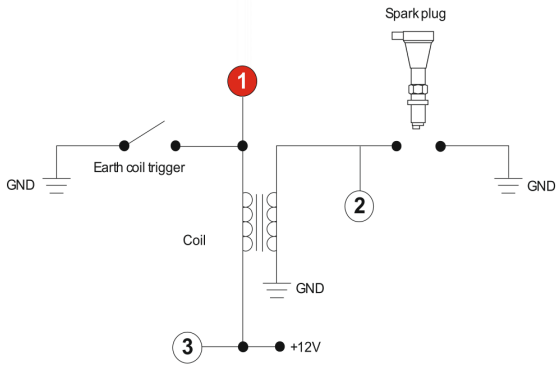
B

C

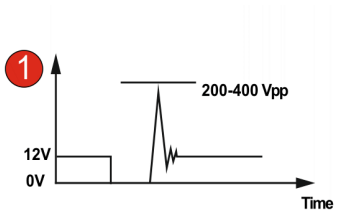
1.2
The coil

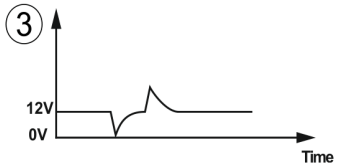
The coil, shown here below on the left, is a black cylinder with three out coming wires: RPM earth trigger (**1**), spark plug connection (**2**) and battery positive pole connection (**3**). The coil is usually put to ground with the vehicle chassis as indicated in the image on the left. The image on the right shows the electrical scheme the coil is in.





The graphs here below show the voltage output measured on the three points indicated above.





2
Installing AiM RPM ECU coil adapter

AiM ECU coil adapter allows to sample RPM signal from both coil and ECU. Here follow instruction on how to install it.

2.1
Installation to sample the signal from coil

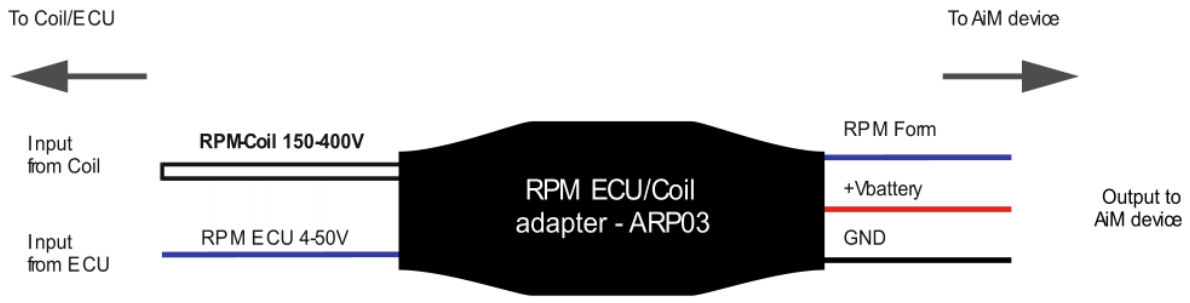
To sample RPM signal from the coil follow these instruction:

- connect the white cable labelled "RPM COIL 150-400V" to the coil earth trigger output (**1**);
- connect the blue cable labelled "RPM form" to "RPM" output of AiM device;
- connect the red cable labelled "V battery" to a switched 12V supply;
- connect the black cable labelled "GND" to a reference GND of the vehicle.

Please refer to each AiM device pinout to know the pins to use.

Warning: do not connect anything to the coil spark plug connection (**2**) not to damage the device.

Here below is connection scheme.



2.2
Installing to sample the signal from the ECU

To sample RPM signal from the ECU follow these installation instruction:

- connect the blue cable labelled “RPM ECU 4-50V” to the ECU RPM output;
- connect the blue cable labelled “RPM form” to AiM device “RPM” input;
- connect the red cable labelled “V battery” to a switched 12V supply (**3**);
- connect the black cable labelled “GND” to a reference GND of the vehicle.

Please refer to each AiM device pinout to know the pins to use.

Warning: do not connect anything to the coil spark plug connection (**2**) not to damage the device.

Here below is connection scheme.