

Venus3 Signal Converter



This product will generate crank and cam signal patterns for different engines. This is used mostly in conversions where another engine type is fitted in a car, and the original ECU requires the crank and cam sensors to keep the body computer or dash board alive, so that other functions are still operating. This is all done by electronics and there is no need to fit trigger wheels on the crank and cam plates. This product can be used with any management system.

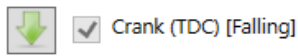
The signal converter uses the Venus3 hardware with reduced components. The firmware can also be loaded in a Venus3 ECU in Basic class or higher. Note that the reduced board will also be basic class although it will be priced lower due to reduced components. It can work with any combination RPM signal and generate a signal pattern for specific engine signals. Example, if you connect a 36-1 Ford signal to the signal converter it can generate a Jeep 6Cyl crank and cam signal pattern for their original ECU. This will then make the Tacho gauge working correctly.

The signal converter can except a magnetic or hall signal as an input. It will generate 2 open collector signals for the crank and cam signal. Should you require a square wave signal you may add a 1K pullup resistor to the output. I you require a magnetic output signal you may require a Capacitor and 2x1K pullup resistors per output. See the drawings for the modifications further below.

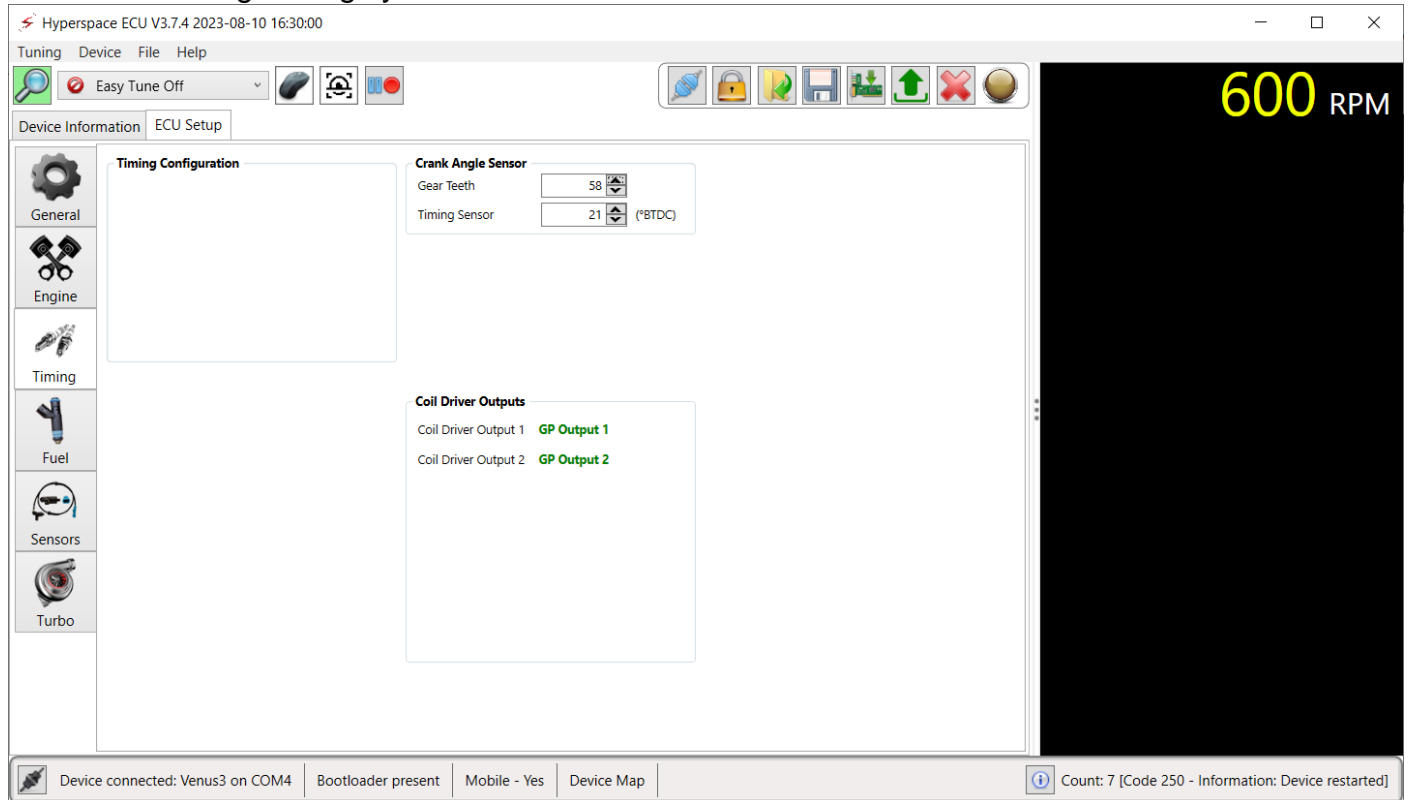
Setting up of the Venus3 Signal Converter

The setup part of the signal converter uses the Hyperspace ECU 3.7 Software.

Under the Sensors Tab you will see The Crank signal active. This is the only input to the Signal Converter. It can be edge selected in case the firmware requires it.



Under the Timing settings you will see this screen.



The only settings required are:

Crank Angle Sensor

Gear Teeth	58
Timing Sensor	21 (*BTDC)

Gear Teeth is the number of pulses per engine revolution. In this example is a 60-2 teeth gear. This means there are 58 pulses per revolution.

Timing Sensor is the program that is required. In this example program 21 is selected which is for the Nissan 350Z signals. See a list of completed signals below.

Program List

This list is popular signals that was requested before. Contact us if your pattern is not in the system. We may require scope signals on difficult types.

Program No Description

9	36-1 Crank Sensor
12	60-2 Crank Sensor
19	18-6 Crank Sensor + Cam Home Jeep 6Cyl (4-2, 4-2, 4-2)
21	36-6 Crank + Cam Nissan 350Z
23	60-4
31	24+TDC (24xCrank pulse and 2xCam pulse in 2 Revolutions)
45	36-6 Subaru (36-2-2-2)
50	20-4+1 Pajero PI-D Diesel
51	Jeep 4.7 V8 16pulse crank 16pulse cam
52	3,2 Pajero Triton Diesel
53	Jeep Liberty 4.7L 12 Crank 12 Cam
54	Amarok 2L TDI 4Cyl 60-1-1 Crank 5 pulse Cam
55	60-2 Jeep Wrangler (JK) 2007-2018 Engine code: ERB V6 3.6L
56	60-2 Ford Ranger 3.2 T6 2011 to 2022
57	60-2 Ford Ranger 2.2

Signal Outputs

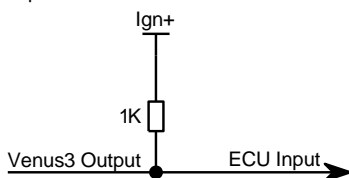
Coil Driver Outputs

Coil Driver Output 1 **GP Output 1**

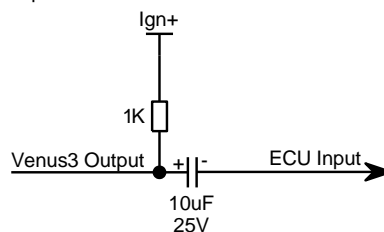
Coil Driver Output 2 **GP Output 2**

GP Output 1 is the crank signal pattern and GP Output 2 is the cam signal pattern. Below are different connection options if you do not get the OEM ECU to respond. Do this for both outputs of the Venus3. Option will convert the open collector signal to square wave. Option2 will convert the square wave to magnetic or reductor signal. Option3 will convert the magnetic signal level to the required level of the OEM ECU.

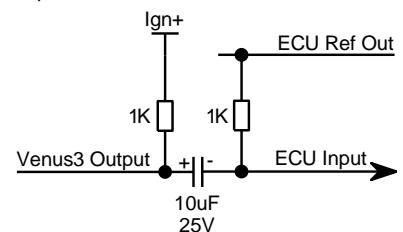
Option 1



Option 2



Option 3



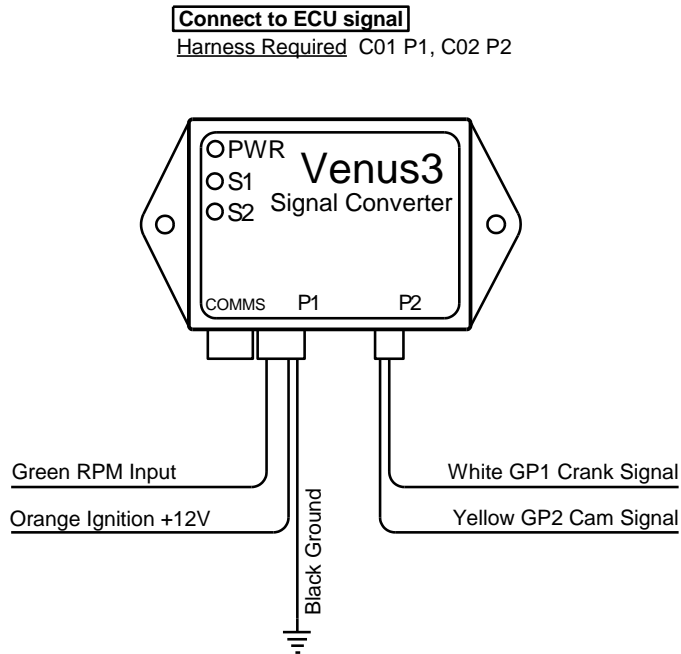
600 RPM

This is the RPM reading according to your pulse setting. Your dash should show the same RPM when it is connected.

Wiring

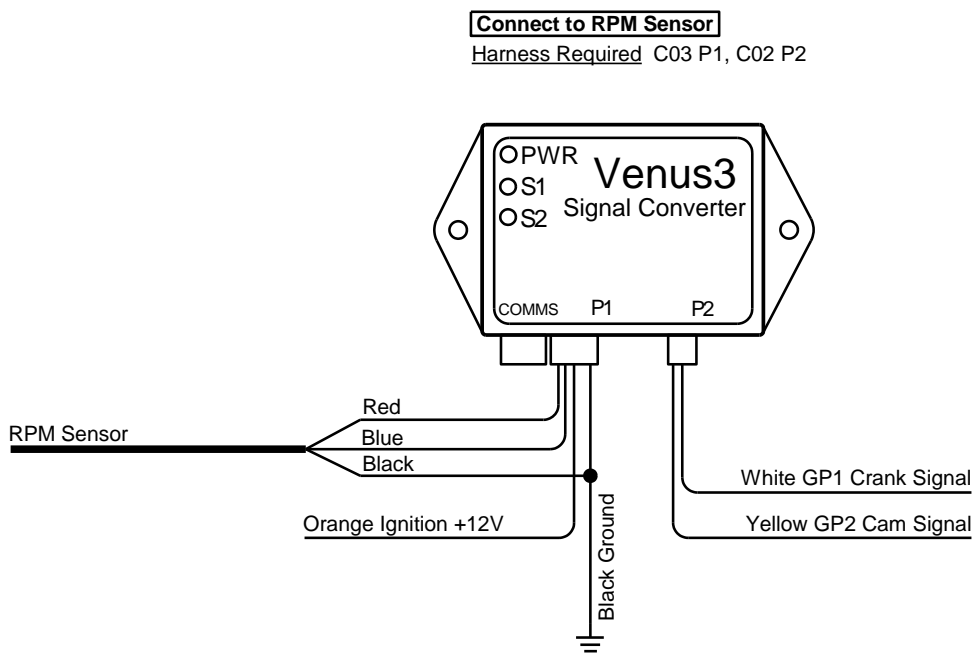
Connecting to an ECU setup

This option is using minimum wires. On Spitronics ECU's there is already a green output RPM signal wire that can connect to the Green RPM Input wire. You can tap into the orange Ignition wire.



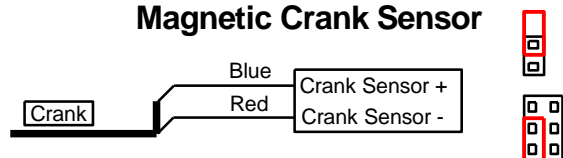
Connecting to an RPM sensor

This option is normally used where diesels and carburettor engines are used. It includes a screened wire into the engine bay that will supply power and ground to the sensor. Note that wiring differs between hall and magnetic sensors. Also ensure that the jumper settings are on the right positions.

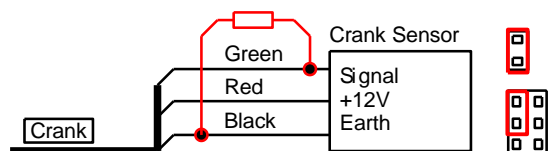


RPM Sensor Connection

Magnetic Crank Sensor



Hall Crank Sensor

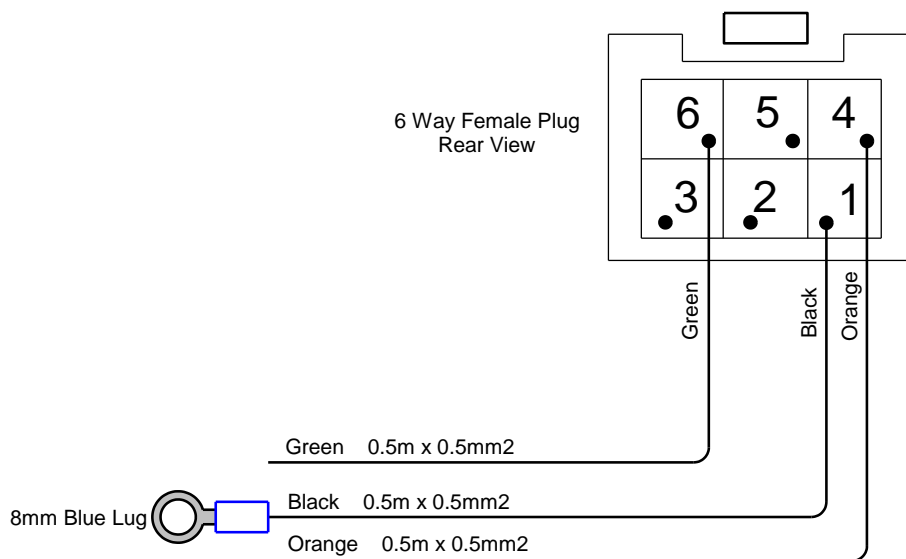


Note! Optional 1 K resistors from signal to earth will help prevent interference from the ECU supply voltage

Harnes Options

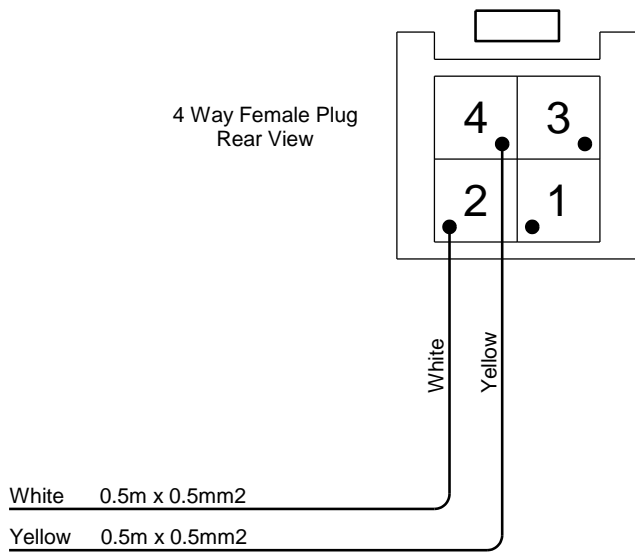
C01 P1 Input Harness – ECU Option

This harness is used when this product is used with an ECU where the rpm signal is found under the dashboard.



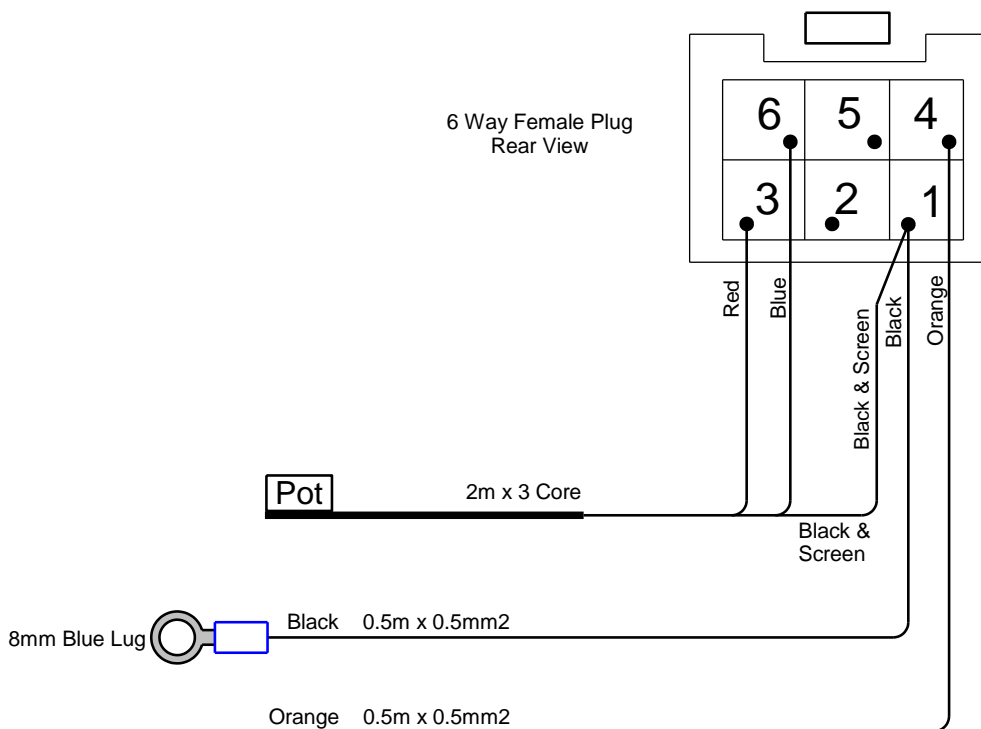
C02 P2 Output Harness

This is the output harness. Some ECU's require 1 signal and others may require 2 signals. Should there be more signals required the Venus3 Signal Converter can Output up to 4 patterns.



C03 P1 Input Harness – Standalone Option

This harness is used when this product is used without an ECU where the rpm signal is found in the engine bay on a sensor.



Venus3 Pin Layout

Signal Converter Board

Wire Colors			Connection	Venus3 Signal Converter			Connection		Wire Colors	
		Sim leds		Pin Name		Pin Name		Sim leds		
C03 P1	C01 P1			P1 - 6 Way Input					C01 P1	C03 P1
Orange	Orange			.+12 Volt Ign	4	1	GND		Black	Black
					5	2				
Blue	Green			Crank Sensor	6	3	Crank Power		N/C	Red
	C02 P2			P2 - 4 Way Output					C02 P2	
		RPM			3	1			Relay	
	Yellow	GP2	Cam Signal	GP Output 2	4	2	GP Output 1	Crank Signal	GP1	White
	USB			6 Way USB					USB	
	N/C			Tuning Pot	4	1	Dual Map Sw		N/C	
	Yellow			Receive	5	2	Transmit		Green	
	Red			.+5 Volt Out	6	3	GND		Blue	

Venus3 ECU as signal Converter

Wire Colors			Connection	Venus3 ECU Layout			Connection		Wire Colors	
		Sim leds		Pin Name		Pin Name		Sim leds		
				P1 - 12 Way Input						
					7	1				
					8	2				
					9	3				
				.+12 Volt Ign	10	4	GND			
					11	5				
				Crank Sensor	12	6	Crank Power			
				P2 - 10 Way Output						
					6	1				
					7	2				
					8	3				
		RPM			9	4			Relay	
		GP2	Cam Signal	GP Output 2	10	5	GP Output 1	Crank Signal	GP1	
	USB			6 Way USB					USB	
	N/C			Tuning Pot	4	1	Dual Map Sw		N/C	
	Yellow			Receive	5	2	Transmit		Green	
	Red			.+5 Volt Out	6	3	GND		Blue	

Venus3 Signal Converter Jumper Settings

Only 2 jumpers are used.

A 3way jumper pin for selection between 12V Hall sensors or 5V Magnetic reductor sensors.

A 2way jumper pin for selection for Pullup filter when Hall sensors are used.

