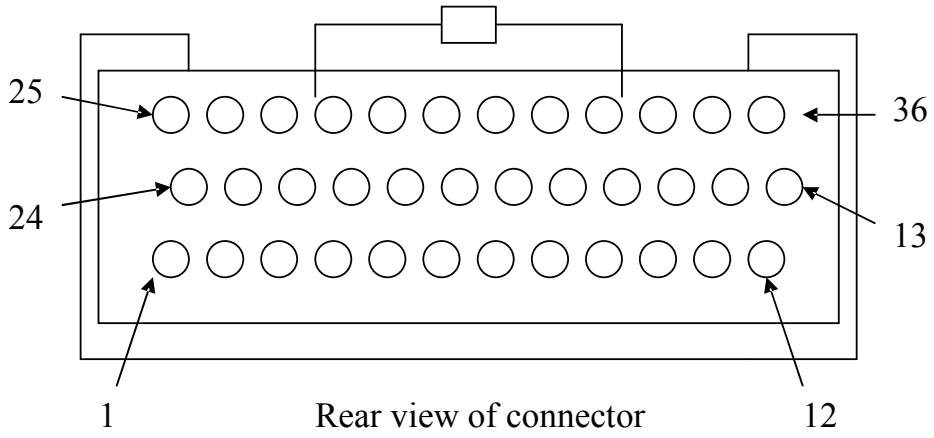
K6 part loom wiring details

36-way ECU connector

Digital Crank and Inductive Cam Sensors



Part loom – ECU pin out table with wire colour convention

ECU pin	Wire colour	Connection	Comments
1	Yellow/black, 0.5mm^2	Injector driver 4	Injector driver or AuxOut1
2	Orange/Blue, 0.5mm^2	IACV2	IACV driver or AuxOut2
3	Orange/Green, 0.5mm^2	IACV1	IACV driver or AuxOut3
4	Green/Yellow, 0.5mm^2	Ignition driver 3	Ignition driver or main relay driver Note: If not configured as an ignition driver this output will default to a main relay driver
5	Green/Black, 0.5mm^2	Ignition driver 2	Ignition driver or AuxOut5
6	Blue/Yellow, 0.5mm^2	Cooling fan relay control	
7	White/Pink, 0.5mm^2	AuxIn7	O2 sensor 1 signal input
8	Green, 0.5mm^2	Throttle pot signal input	0-5v input
9	Red, 0.5mm^2	+5v out	5v output, 100mA max
10	White/Yellow, 0.5mm^2	AuxIn10	0-5v input. This input has an internal pull-up resistor (1KΩ to +5v) that can be enabled via ECU configuration settings
11	Red/Black, 0.5mm^2	Ignition sense input	+12v supply via ignition switch
12	Yellow, 0.5mm^2	Tacho output signal	12v pulsed output (open collector driver with internal 2.2KΩ pull-up to +12v)
13	White/Green, 0.5mm^2	Immobilisor input	Aux digital input
14	Blue/Red, 0.5mm^2	AuxIn14 / AuxOut14	
15	Red, 0.5mm^2	Cam sync signal	Only required for sequential injection
16	White, 0.5mm^2	Air temp signal	
17	Yellow/Pink, 0.5mm^2	Injector driver 5	Injector driver or AuxOut17
18	White/Black, 0.5mm^2	Oxygen sensor signal earth	
19	Blue/White, 0.5mm^2	Ignition driver 4 / Shift-light driver	The function of this output depends on the ECU configuration settings

20	Brown, 0.5mm^2	Fuel pump relay driver	Switches to ground when activated
21	Yellow/Orange, 0.5mm^2	Injector driver 6	Injector driver or AuxOut21
22	Orange/Pink, 0.5mm^2	IACV3	IACV driver or AuxOut22
23	Yellow/Red, 0.5mm^2	Injector driver 2	Injector driver only
24	Yellow/Brown, 0.5mm^2	Injector driver 1	Injector driver only
25	Green/White, 0.5mm^2	Ignition driver 1	Ignition driver only
26	Yellow/White, 0.5mm^2	Injector driver 3	Injector driver or AuxOut26
27	Orange/Slate, 0.5mm^2	IACV4	IACV driver or AuxOut27
28	Red, 0.5mm^2	+12v Ignition supply	Supply from main relay or common with pin 11
29	Black, 1.0mm^2	ECU ground	Good ground (e.g. direct to battery)
30	Black, 0.5mm^2	Sensor ground	Ground return for sensors. Note: This must not be connected to battery or chassis ground – only to ECU related sensors.
31	Black, 0.5mm^2	Main trigger signal input	Crank sensor signal
32	Crank Shield spliced with CAM Black, 0.5mm2	Main & Sync trigger sensor ground	Signal ground for Crank/Cam sensors
33	Blue, 0.5mm^2	Coolant temp signal input	
34	Purple, 0.5mm^2	AuxIn34	0-5v input, commonly used for reading the MAP sensor signal
35	White/Red, 0.5mm^2	AuxIn35	0-5v input. This input has an internal pull-up resistor (1KΩ to +5v) that can be enabled via ECU configuration settings
36	Blue/Black, 0.5mm^2	AuxIn36 / AuxOut36	0-5v input or switched ground output depending on ECU configuration settings.

Note:
Ignition outputs are green+tracer wires
Injector outputs are yellow+tracer wires
IACV outputs are orange+tracer wires
Aux inputs are white+tracer wires
Aux outputs are blue+tracer wires

The part loom is supplied with the following cables already fitted to the 36-way connector

- Supply
  - Red/black, ECU pin 11, +12v from ignition switch.
  - Red, ECU pin 28, +12v from main relay.
  - Thick black, ECU pin 29, ground to battery.

Note: For most applications the red/black and red power wires can be joined and wired to an ignition controlled +12v supply. For applications that require ECU controlled shutdown, e.g. stepper motor resync' and/or cooling fan control after key-off, wire the red/black cable to ignition switched supply and the red cable to the ECU controlled main relay.

- Main trigger cables (shielded cable)
  - Digital crank sensor
    Red, +5v sensor supply (joined with wire at ECU pin 9)
    Black, sensor signal, ECU pin 31.
    Shield, Crank sensor earth (joined with wire at ECU pin 32)
  - Inductive cam sensor
    Red, sensor signal +, ECU pin 15.
    Black, sensor signal, (joined with wire at ECU pin 32)
    Shield, Cam trigger shield (joined with wire at ECU pin 30)

- Air temperature sensor (white/black twisted pair cable)
  - White, ECU pin 16, air temperature sensor signal.
  - Black, ECU pin 30, sensor ground.

- Coolant temperature sensor (blue/black twisted pair cable)
  - Blue, ECU pin 33, coolant temperature sensor signal.
  - Black, ECU pin 30, sensor ground.

- Throttle Position Sensor (red/green/black twisted cable)
  - Red, +5v sensor supply, ECU pin 9.
  - Green, sensor signal, ECU pin 8.
  - Black, sensor ground, ECU pin 30.

- MAP sensor (red/purple/black twisted cable)
  - Red, +5v sensor supply, ECU pin 9.
  - Purple, sensor signal, ECU pin 34.
  - Black, sensor ground, ECU pin 30.

- Tacho signal
  - Yellow, tacho signal, ECU pin 12.

- Fuel pump control

- Brown, switched ground fuel pump control, ECU pin 20.

- Shift light
  - Blue/white, switched ground lamp control, ECU pin 19.

Cables for other ECU functions are included. Select the cable colour according to the colour codes shown in the pin-out table.

Example 1.

A 4-cylinder engine with a firing order of 1-3-4-2. Use the part loom supplied with the following additional cables…

- Ignition coil
  - Single coil with distributor
    Coil negative terminal, green/white cable to ECU pin 25.
  - Distributorless (wasted spark) ignition
    Coil 1 for cylinders 1&4, green/white cable to ECU pin 25.
    Coil 2 for cylinders 2&3, green/black cable to ECU pin 5.
- Injectors
  - Injectors wired in pairs using 2 injector drivers
    Injectors 1&4, yellow/brown cable to ECU pin 24.
    Injectors 2&3, yellow/red cable to ECU pin 23.
  - Injectors wired individually to 4 injector drivers
    Injector 1, yellow/brown cable to ECU pin 24.
    Injector 3, yellow/red cable to ECU pin 23.
    Injector 4, yellow/white cable to ECU pin 26.
    Injector 2, yellow/black cable to ECU pin 1

Example 2.

A 6-cylinder engine with a firing order of 1-5-3-6-2-4. Use the part loom with the following additional cables…

- Ignition coil
  - Single coil with distributor
    Coil negative terminal, green/white cable to ECU pin 25.
  - Distributorless (wasted spark) ignition
    Coil 1 for cylinders 1&6, green/white cable to ECU pin 25.
    Coil 2 for cylinders 2&5, green/black cable to ECU pin 5.
    Coil 3 for cylinders 3&4, green/yellow cable to ECU pin 4.
- Injectors
  - Injectors wired in pairs using 3 injector drivers
    Injectors 1&6, yellow/brown cable to ECU pin 24.
    Injectors 2&5, yellow/red cable to ECU pin 23.
    Injectors 3&4, yellow/white cable to ECU pin 26.
  - Injectors wired individually to 6 injector drivers
    Injector 1, yellow/brown cable to ECU pin 24.
    Injector 5, yellow/red cable to ECU pin 23.
    Injector 3, yellow/white cable to ECU pin 26.

Injector 6, yellow/black cable to ECU pin 1.
Injector 2, yellow/pink cable to ECU pin 17.
Injector 4, yellow/orange cable to ECU pin 21.

Example 3.

An 8-cylinder engine with a firing order of 1-8-4-3-6-5-7-2. Use the part loom with the following additional cables…

- Ignition coil
  - Single coil with distributor
    Coil negative terminal, green/white cable to ECU pin 25.
  - Distributorless (wasted spark) ignition (ECU hardware v1.40 only)
    Coil 1 for cylinders 1&6, green/white cable to ECU pin 25.
    Coil 2 for cylinders 5&8, green/black cable to ECU pin 5.
    Coil 3 for cylinders 4&7, green/yellow cable to ECU pin 4.
    Coil 4 for cylinders 2&3, blue/white cable to ECU pin 19.
  - Injectors wired in pairs to 4 injector drivers
    Injectors 1&6, yellow/brown cable to ECU pin 24.
    Injectors 5&8, yellow/red cable to ECU pin 23.
    Injectors 4&7, yellow/white cable to ECU pin 26.
    Injectors 2&3, yellow/black cable to ECU pin 1.

Caution:
The ECUs ignition coil drivers have secondary uses. Ensure the ECU is correctly configured to suit your ignition system before the ignition coils are connected.