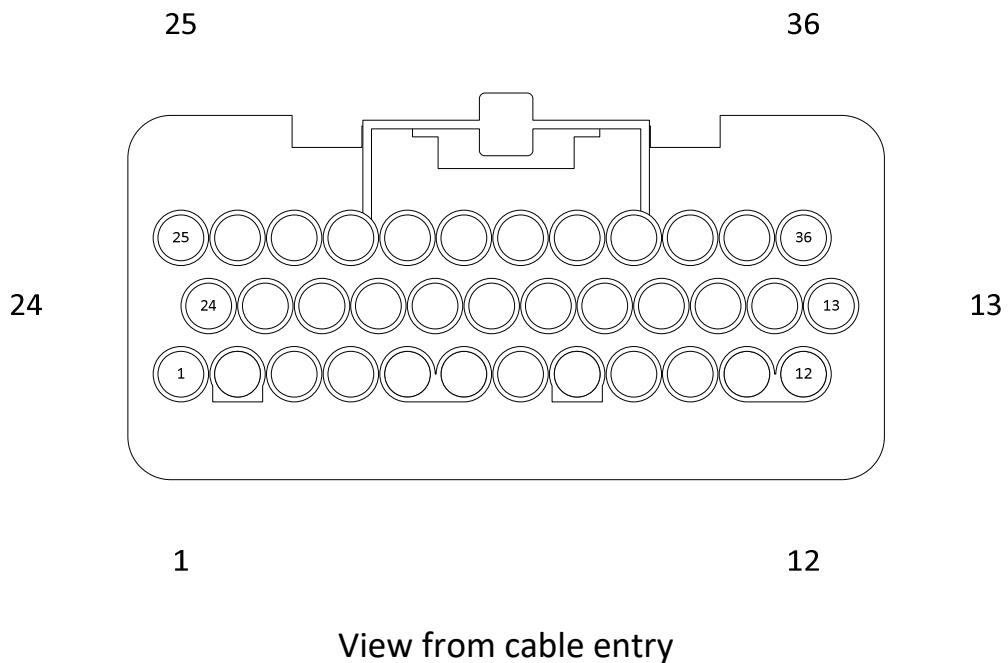


# K6 part loom wiring details


















## 36-way ECU connector

### Digital Crank and Inductive Cam Sensors (Drive by Wire)



## Part loom – ECU pin out table with wire colour convention

ECU pin	Wire colour	Connection	Comments
1	Yellow/black, 0.5mm <sup>2</sup>	Injector driver 4	Injector driver or AuxOut1
2	Orange/Blue, 0.5mm <sup>2</sup>	IACV2	Drive by Wire Motor (+)
3	Orange/Green, 0.5mm <sup>2</sup>	IACV1	Drive by Wire Motor (-)
4	Green/Yellow, 0.5mm <sup>2</sup>	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 <sup>2</sup>	Ignition driver 2	Ignition driver or AuxOut5
6	Blue/Yellow, 0.5mm <sup>2</sup>	Cooling fan relay control	
7	White/Pink, 0.5mm <sup>2</sup>	Throttle pot signal input, B	0-5v input
8	Green, 0.5mm <sup>2</sup>	Throttle pot signal input, A	0-5v input
9	Red, 0.5mm <sup>2</sup>	+5v out	5v output, 100mA max
10	White/Yellow, 0.5mm <sup>2</sup>	AuxIn10	0-5v input. This input has an internal pull-up resistor (1K $\Omega$ to +5v) that can be enabled via ECU configuration settings
11	Red/Black, 0.5mm <sup>2</sup>	Ignition sense input	+12v supply via ignition switch
12	Yellow, 0.5mm <sup>2</sup>	Tacho output signal	12v pulsed output (open collector driver with internal 2.2K $\Omega$ pull-up to +12v)
13	White/Green, 0.5mm <sup>2</sup>	Immobilisor input	Aux digital input
14	Blue/Red, 0.5mm <sup>2</sup>	AuxIn14 / AuxOut14	
15	Black, 0.5mm <sup>2</sup>	Cam sync signal	Only required for sequential injection
16	White, 0.5mm <sup>2</sup>	Air temp signal	
17	Yellow/Pink, 0.5mm <sup>2</sup>	Injector driver 5	Injector driver or AuxOut17
18	White/Black, 0.5mm <sup>2</sup>	Oxygen sensor signal earth	
19	Blue/White, 0.5mm <sup>2</sup>	Ignition driver 4 / Shift-light driver	The function of this output depends on the ECU configuration settings

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

**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 cable (shielded cable)
  - Digital crank/distributor sensor
    - **Red**, +5V, ECU pin 9.
    - **Black**, sensor signal, ECU pin 31.
    - **Shield (black)**, Crank sensor , ECU 32
  - Inductive Cam sensor
    - **Red**, sensor signal (+), ECU pin 15.
    - **Black**, sensor signal ground (-), ECU pin 32.
    - **Shield**, Crank 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/white-pink/black, twisted cable)
  - **Red**, +5v sensor supply, ECU pin 9.
  - **White/pink**, sensor signal 'B', ECU pin 7.
  - **Green**, sensor signal 'A', ECU pin 8.
  - **Black**, sensor ground, ECU pin 30.
- Drive by Wire Throttle Motor (orange-blue/ orange-black, twisted pair cable)
  - **Orange/blue**, Motor (+), ECU pin 2.
  - **Orange/green**, Motor (-), ECU pin 3.
- Pedal Position Sensor (red/white-red/blue-black/black, twisted)
  - **Red**, +5v sensor supply, ECU pin 9.
  - **White/red**, sensor signal 'A', ECU pin 35.
  - **Blue/black**, sensor signal 'B', ECU pin 36.
  - **Black**, sensor ground, ECU pin 30.
- **Black**, ECU pin 30, sensor ground.

- 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 ECU's ignition coil drivers have secondary uses. Ensure the ECU is correctly configured to suit your ignition system *before* the ignition coils are connected.