

| Wire Colors  |              |              | Software Selectable |      |            | 8 Cyl Orion2 ECU Layout |                    |    |   |                 |                    | Software Selectable |          |              | Wire Colors |              |  |
|--------------|--------------|--------------|---------------------|------|------------|-------------------------|--------------------|----|---|-----------------|--------------------|---------------------|----------|--------------|-------------|--------------|--|
|              |              |              | Sim leds            | Pr 3 | Priority2  | Priority1               | P1 - 12 Way Input  |    |   | Priority1       | Priority2          | Pr 3                | Sim leds |              |             |              |  |
| E24          | E22          |              |                     |      |            |                         |                    |    |   |                 |                    |                     |          | E22          | E24         |              |  |
| Green        | Green        |              |                     |      |            |                         | Water Temp         | 7  | 1 | Air Temp        |                    |                     |          | Yellow       | Yellow      |              |  |
| Red          | Red          |              |                     |      |            |                         | Lambda             | 8  | 2 | TPS             |                    |                     |          | Blue         | Blue        |              |  |
| Red          | Red          |              |                     |      |            |                         | .+5 Volt Out       | 9  | 3 | MAP             |                    |                     |          | Blue         | Blue        |              |  |
| Red          | Red          |              |                     |      |            |                         | .+12 Volt Ign      | 10 | 4 | GND             |                    |                     |          | Black        | Black       |              |  |
| N/C          | Yellow       |              |                     |      |            |                         | TDC Sensor         | 11 | 5 | TDC Power       |                    |                     |          | Blue         | N/C         |              |  |
| Blue         | Green        |              |                     |      |            |                         | Crank Sensor       | 12 | 6 | Crank Power     |                    |                     |          | Red          | Red         |              |  |
|              |              |              |                     |      |            |                         | Internal           |    |   | 3Bar Alt Sensor | Altitude Sensor    | Map Sensor          |          |              |             |              |  |
| E33          | E32          | E31          |                     |      |            |                         | P2 - 10 Way Output |    |   |                 |                    |                     |          | E31          | E32         | E33          |  |
| Black/Red    | Black/Red    | Black/Red    | N5                  |      | Inj Drv 1  | Basic Coil Drv 1        | Coil Negative 1    | 6  | 1 | Coil Negative 2 | Basic Coil Drv 2   | Inj Drv 2           | N6       | Black/Purple | N/C         | Black/Purple |  |
| Black/Brown  | N/C          | Black/Brown  | N7                  |      | Inj Drv 3  | Basic Coil Drv 3        | Coil Negative 3    | 7  | 2 | Coil Negative 4 | Basic Coil Drv 4   | Inj Drv 4           | N8       | Black/Orange | N/C         | Black/Orange |  |
| Black/Yellow | Black/Yellow | Black/Yellow | N2                  | GP2  | Cam 1      | Inj Drv 2               | Negative 2         | 8  | 3 | Negative 1      | Inj Drv 1          | Cam 2               | GP1      | N1           | Black/White | Black/White  |  |
| Green        | Green        | Green        | RPM                 |      |            | RPM Out                 | Negative 4         | 9  | 4 | Negative 3      | Relay Out          |                     | Relay    | Blue/Black   | Blue        | Blue         |  |
| Blue/White   | Blue/White   | Blue/White   | N4                  | GP4  | Idle Vlave | Inj Drv 4               | Negative 6         | 10 | 5 | Negative 5      | Inj Drv 3          | Dual Idle           | GP3      | N3           | Blue/Orange | Blue/Orange  |  |
|              |              |              |                     |      |            |                         | P3 - 8 Way Output  |    |   |                 |                    |                     |          | E36          |             |              |  |
|              |              | Red/White    | P1                  | GP5  | Idle Vlave | Smart Coil Drv 1 T      | Positive 1         | 5  | 1 | Positive 2      | Smart Coil Drv 2 T | Micro Fuel          | GP6      | P2           | Red/Yellow  |              |  |
|              |              | Red/Orange   | P3                  | GP7  | Cam 1      | Smart Coil Drv 3 T      | Positive 3         | 6  | 2 | Positive 4      | Smart Coil Drv 4 T | Cam 2               | GP8      | P4           | Red/Green   |              |  |
|              |              | Red          |                     |      |            |                         | .+12 Volt In       | 7  | 3 | .+12 Volt In    |                    |                     |          |              | Red         |              |  |
|              |              | White        | GP1                 | GP9  | Anti-Lag   | Basic Coil Drv 5        | Coil Negative 5    | 8  | 4 | Coil Negative 6 | Basic Coil Drv 6   |                     | GP10     | GP2          | Blue        |              |  |
|              |              |              |                     |      |            |                         | P4 - 4 Way Serial  |    |   |                 |                    |                     |          |              |             |              |  |
|              |              |              |                     |      |            |                         | SDA                | 3  | 1 | SCL             |                    |                     |          |              |             |              |  |
|              |              |              |                     |      |            |                         | .+5 Volt Out       | 4  | 2 | GND             |                    |                     |          |              |             |              |  |
|              |              |              |                     |      |            |                         | 6 Way USB          |    |   |                 |                    |                     |          |              | USB         | P05-P3       |  |
|              | P05-P3       | USB          |                     |      |            |                         | Tuning Pot         | 4  | 1 | Dual Map Sw     |                    |                     |          |              | N/C         | Yellow       |  |
|              | Green        | N/C          |                     |      |            |                         | Receive            | 5  | 2 | Transmit        |                    |                     |          |              | Green       | Green        |  |
|              | Yellow       | Yellow       |                     |      |            |                         | .+5 Volt Out       | 6  | 3 | GND             |                    |                     |          |              | Blue        | Blue         |  |
|              | Red          | Red          |                     |      |            |                         |                    |    |   |                 |                    |                     |          |              |             |              |  |

**Note!! Coil and Injector numbers used here are firing phases from the ECU. It is not the firing order on your engine. Refer to the drawings for Phase to firing order comparison.**

Negative 1 to 6 = Negative drivers 41 Volt 19 Amp Drivers

Positive 1 to 4 = Positive Drivers 12 Volt 6 Amp current limit drivers

Coil Negative 1 to 6 = Negative Coil Drivers for Basic Coils 500 Volt 18 Amp Drivers

Tuning Pot and Coil Driver 6 share the same Micro Connection. Selection with Jumper J6 on board

Dual Map Switch and Coil Negative 5 share the same Micro Connection. Selection with Jumper J6 on board

An optional 3 Bar map sensor can be soldered onto board. It can be used as Altitude or MAP sensor. For an internal MAP sensor you need to make a hole in the lid for the pipe to come through.

Basic Coil = Coil without driver - 0.5 to 0.9 Ohm Primary winding - Charges with earth signal and discharges with open signal

Smart Coil = Coil with Built in driver - Charges with positive signal and discharges with earth signal which is provided by the driver and a pull down resistor

If you use the 3 Bar onboard sensor for MAP then you must use a 2.5 Bar external sensor for Altitude.

| Coil Phase | Fire Order Ex. 1 8 4 3 6 5 7 2 |
|------------|--------------------------------|
|            | <b>Wasted Spark</b>            |
| Coil Drv 1 | 1 - 6                          |
| Coil Drv 2 | 8 - 5                          |
| Coil Drv 3 | 4 - 7                          |
| Coil Drv 4 | 3 - 2                          |

| Inject Phase | Fire Order Ex. 1 8 4 3 6 5 7 2 |
|--------------|--------------------------------|
|              | <b>Split Seq</b>               |
| Inj Drv 1    | 1 - 6                          |
| Inj Drv 2    | 8 - 5                          |
| Inj Drv 3    | 4 - 7                          |
| Inj Drv 4    | 3 - 2                          |