

# Shadow 8 Wiring Harness Specification

SPECIFICATION

Rev 1.1



SHADOW 8

**EMtron**  
Australia

## Contents

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|   |    |
|---|----|
| 1.0 Introduction .....                              | 2  |
| 2.0 Connector A .....                               | 3  |
| 2.1 Connector A Wire Colours.....                   | 4  |
| 3.0 Connector B.....                                | 6  |
| 3.1 Connector B Wire Colours.....                   | 7  |
| 3.2 Pin A4 Sensor Ground Branched Connections ..... | 8  |
| 3.3 Pin A3 5V Supply Branched Connections .....     | 9  |
| 3.4 Crank and Sync Shielded Cable Connections ..... | 9  |
| 3.5 Knock Shielded Cable Connections .....          | 10 |
| Appendix A – Shadow 8 ECU Pinout Drawing.....       | 11 |
| Appendix B – Shadow Series ECU Wiring .....         | 12 |

## 1.0 Introduction

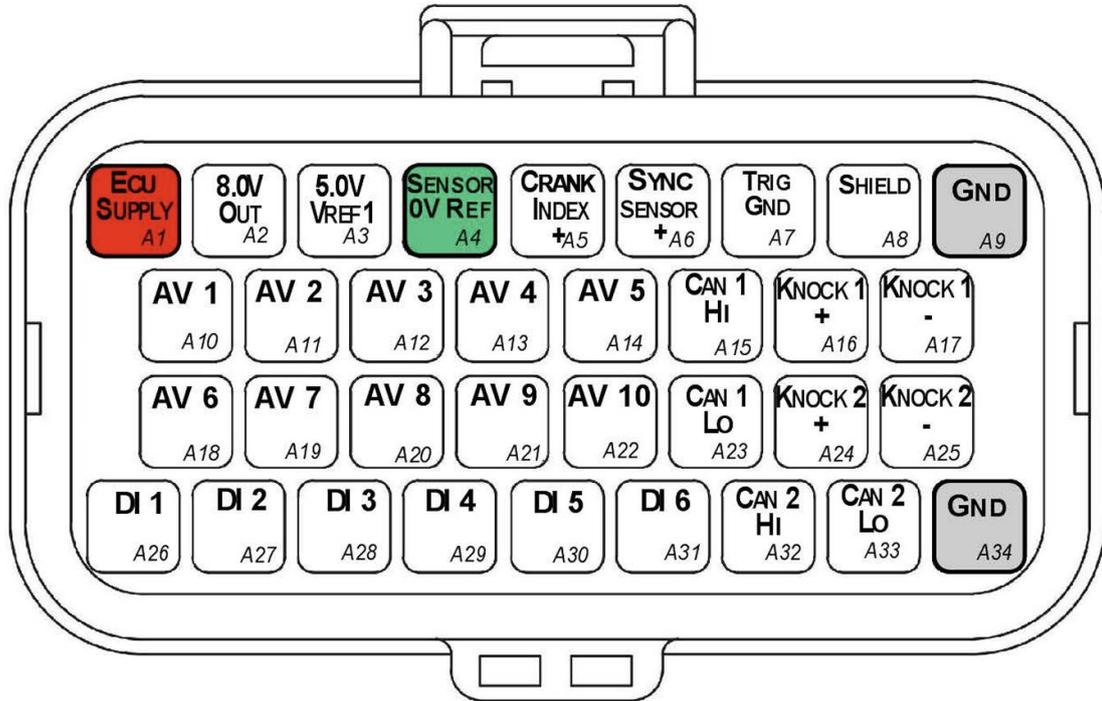
The document contains the specification for the Emtron Shadow 8 ECU wiring harness.

Loom Length = 2.5 meters.

Wire Type = AVSS.

Any unused pins **MUST** have blanking bungs fitted to the connector to keep the plug rated at its IP standard.

## 2.0 Connector A



Name: Superseal

Manufacturers: TE

Description: 34 Way/Key 1

Part Number: 4-1437290-0

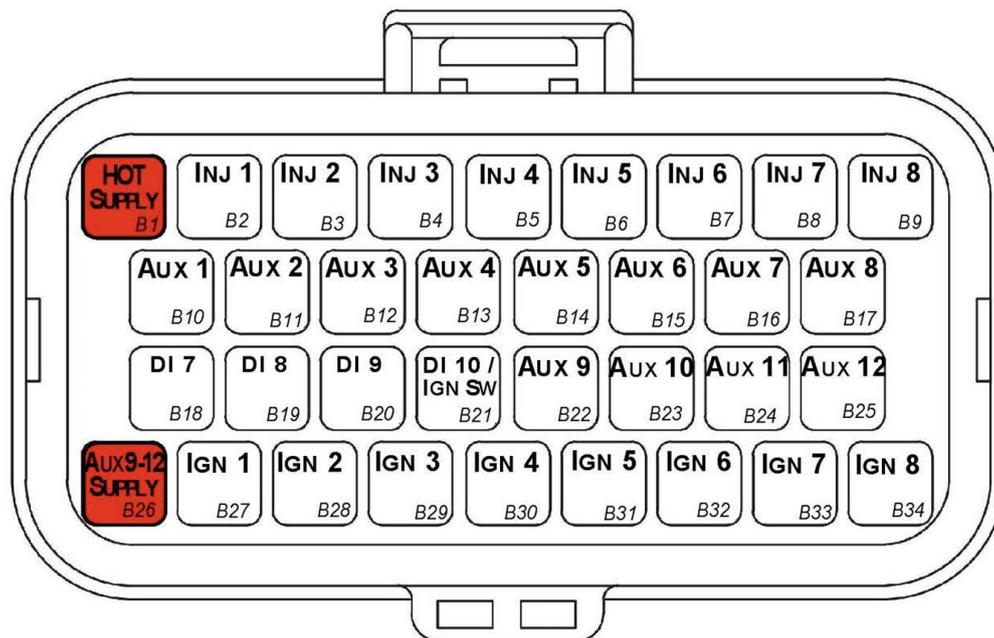
## 2.1 Connector A Wire Colours

| Pin Name      | Pin Number | Description                                   | Colour                                    | Wire Size (sq mm) |
|---------------|------------|---|---|-------------------|
| ECU SUPPLY    | A1         | ECU Supply                                    | Red                                       | 0.85              |
| 8.0V OUT      | A2         | 8V Cas Supply                                 | Blue                                      | 0.50              |
| 5.0V VREF1    | A3         | Main 5V engine sensor supply (Branched Cable) | Orange                                    | 0.50              |
| SENSOR OV REF | A4         | Sensor Ground (Branched Cable)                | Black                                     | 0.50              |
| CRANK INDEX + | A5         | Crank Index position sensor Positive          | 2 core Shielded Cable shared with Pin A7  |                   |
| SYNC SENSOR + | A6         | Crank Index position sensor Positive          | 2 core Shielded Cable shared with Pin A7  |                   |
| TRIG GND      | A7         | Trigger Ground (Branched Cable)               | (Black 70mm)                              | 0.50              |
| SHIELD        | A8         | Knock/Trigger Shield                          | (White 70mm)                              | 0.50              |
| AV1           | A10        | Analog Voltage CH 1                           | White                                     | 0.50              |
| AV2           | A11        | Analog Voltage CH 2                           | White                                     | 0.50              |
| AV3           | A12        | Analog Voltage CH 3                           | White                                     | 0.50              |
| AV4           | A13        | Analog Voltage CH 4                           | White                                     | 0.50              |
| AV5           | A14        | Analog Voltage CH 5                           | White                                     | 0.50              |
| AV6           | A18        | Analog Voltage CH 6                           | White                                     | 0.50              |
| AV7           | A19        | Analog Voltage CH 7                           | White                                     | 0.50              |
| AV8           | A20        | Analog Voltage CH 8                           | White                                     | 0.50              |
| AV9           | A21        | Analog Voltage CH 9                           | White                                     | 0.50              |
| AV10          | A22        | Analog Voltage CH 10                          | White                                     | 0.50              |
| CAN 1 HI      | A15        | Main Engine CAN                               | White                                     | 0.50              |
| CAN 1 LO      | A23        | Main Engine CAN                               | Green                                     | 0.50              |
| CAN 2 HI      | A32        | Auxiliary CAN                                 | White                                     | 0.50              |
| CAN 2 LO      | A33        | Auxiliary CAN                                 | Green                                     | 0.50              |
| KNK 1 +       | A16        | Knock Sensor 1 +                              | 2 core Shielded Cable shared with Pin A17 | KNK 1 +           |
| KNK 1 -       | A17        | Knock Sensor 1 -                              | 2 core Shielded Cable shared with Pin A16 | KNK 1 -           |

|                |     |                  |   |         |
|----------------|-----|------------------|---|---------|
| <b>KNK 2 +</b> | A24 | Knock Sensor 2 + | 2 core Shielded Cable shared with Pin A25 | KNK 2 + |
| <b>KNK 2 -</b> | A25 | Knock Sensor 2 - | 2 core Shielded Cable shared with Pin A24 | KNK 2 - |

| Pin Name    | Pin Number | Description        | Colour | Wire Size (sq mm) |
|-------------|------------|--------------------|--------|-------------------|
| <b>DI 1</b> | A26        | Digital Input CH 1 | White  | 0.50              |
| <b>DI 2</b> | A27        | Digital Input CH 2 | White  | 0.50              |
| <b>DI 3</b> | A28        | Digital Input CH 3 | White  | 0.50              |
| <b>DI 4</b> | A29        | Digital Input CH 4 | White  | 0.50              |
| <b>DI 5</b> | A30        | Digital Input CH 5 | White  | 0.50              |
| <b>DI 6</b> | A31        | Digital Input CH 6 | White  | 0.50              |
| <b>GND</b>  | A9         | Power Ground       | Black  | 0.85              |
| <b>GND</b>  | A34        | Power Ground       | Black  | 0.85              |

### 3.0 Connector B



Name: Superseal

Manufacturers: TE

Description: 34 Way/Key 2

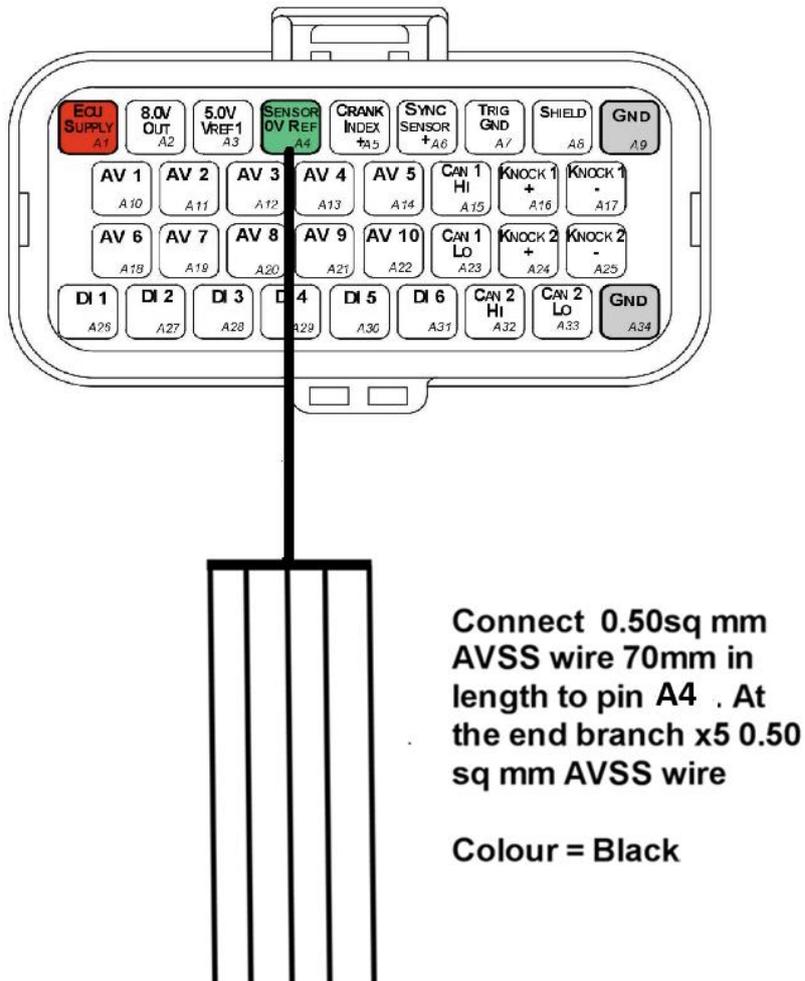
Part Number: 4-1437290-1

### 3.1 Connector B Wire Colours

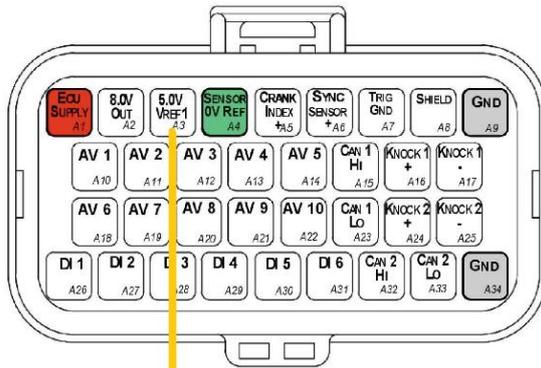
| Pin Name         | Pin Number | Description          | Colour | Wire Size (sq mm) |
|------------------|------------|----------------------|--------|-------------------|
| <b>INJ 1</b>     | B2         | Injector Channel 1   | Blue   | 0.50              |
| <b>INJ 2</b>     | B3         | Injector Channel 2   | Blue   | 0.50              |
| <b>INJ 3</b>     | B4         | Injector Channel 3   | Blue   | 0.50              |
| <b>INJ 4</b>     | B5         | Injector Channel 4   | Blue   | 0.50              |
| <b>INJ 5</b>     | B6         | Injector Channel 5   | Blue   | 0.50              |
| <b>INJ 6</b>     | B7         | Injector Channel 6   | Blue   | 0.50              |
| <b>INJ 7</b>     | B8         | Injector Channel 7   | Blue   | 0.50              |
| <b>INJ 8</b>     | B9         | Injector Channel 8   | Blue   | 0.50              |
| <b>AUX 1</b>     | B10        | Auxiliary Channel 1  | Grey   | 0.50              |
| <b>AUX 2</b>     | B11        | Auxiliary Channel 2  | Grey   | 0.50              |
| <b>AUX 3</b>     | B12        | Auxiliary Channel 3  | Grey   | 0.50              |
| <b>AUX 4</b>     | B13        | Auxiliary Channel 4  | Grey   | 0.50              |
| <b>AUX 5</b>     | B14        | Auxiliary Channel 5  | Grey   | 0.50              |
| <b>AUX 6</b>     | B15        | Auxiliary Channel 6  | Grey   | 0.50              |
| <b>AUX 7</b>     | B16        | Auxiliary Channel 7  | Grey   | 0.50              |
| <b>AUX 8</b>     | B17        | Auxiliary Channel 8  | Grey   | 0.50              |
| <b>AUX 9</b>     | B22        | Auxiliary Channel 9  | Grey   | 0.50              |
| <b>AUX 10</b>    | B23        | Auxiliary Channel 10 | Grey   | 0.50              |
| <b>AUX 11</b>    | B24        | Auxiliary Channel 11 | Grey   | 0.50              |
| <b>AUX 12</b>    | B25        | Auxiliary Channel 12 | Grey   | 0.50              |
| <b>DI 7</b>      | B18        | Digital Input CH 7   | White  | 0.50              |
| <b>DI 8</b>      | B19        | Digital Input CH 8   | White  | 0.50              |
| <b>DI 9</b>      | B20        | Digital Input CH 9   | White  | 0.50              |
| <b>DI 10/IGN</b> | B21        | Digital Input CH 10  | White  | 0.50              |
| <b>IGN 1</b>     | B27        | Ignition Channel 1   | Yellow | 0.50              |
| <b>IGN 2</b>     | B28        | Ignition Channel 2   | Yellow | 0.50              |
| <b>IGN 3</b>     | B29        | Ignition Channel 3   | Yellow | 0.50              |
| <b>IGN 4</b>     | B30        | Ignition Channel 4   | Yellow | 0.50              |

|                        |     |                     |        |      |
|------------------------|-----|---------------------|--------|------|
| <b>IGN 5</b>           | B31 | Ignition Channel 5  | Yellow | 0.50 |
| <b>IGN 6</b>           | B32 | Ignition Channel 6  | Yellow | 0.50 |
| <b>IGN 7</b>           | B33 | Ignition Channel 7  | Yellow | 0.50 |
| <b>IGN 8</b>           | B34 | Ignition Channel 8  | Yellow | 0.50 |
| <b>HOT</b>             | B1  | ECU +12V Constant   | Red    | 0.85 |
| <b>AUX 9-12 SUPPLY</b> | B26 | Aux 9-12 Aux Supply | Red    | 0.85 |

### 3.2 Pin A4 Sensor Ground Branched Connections



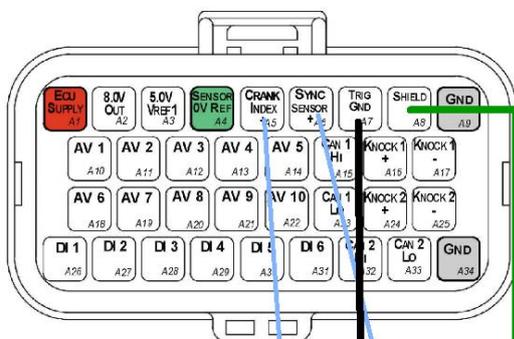
### 3.3 Pin A3 5V Supply Branched Connections



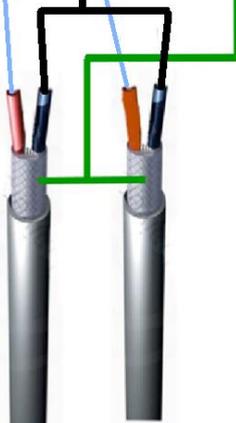
Connect 0.50sq mm AVSS wire 70mm in length to pin A3 . At the end branch x3 0.50 sq mm AVSS wire

Colour = Orange

### 3.4 Crank and Sync Shielded Cable Connections

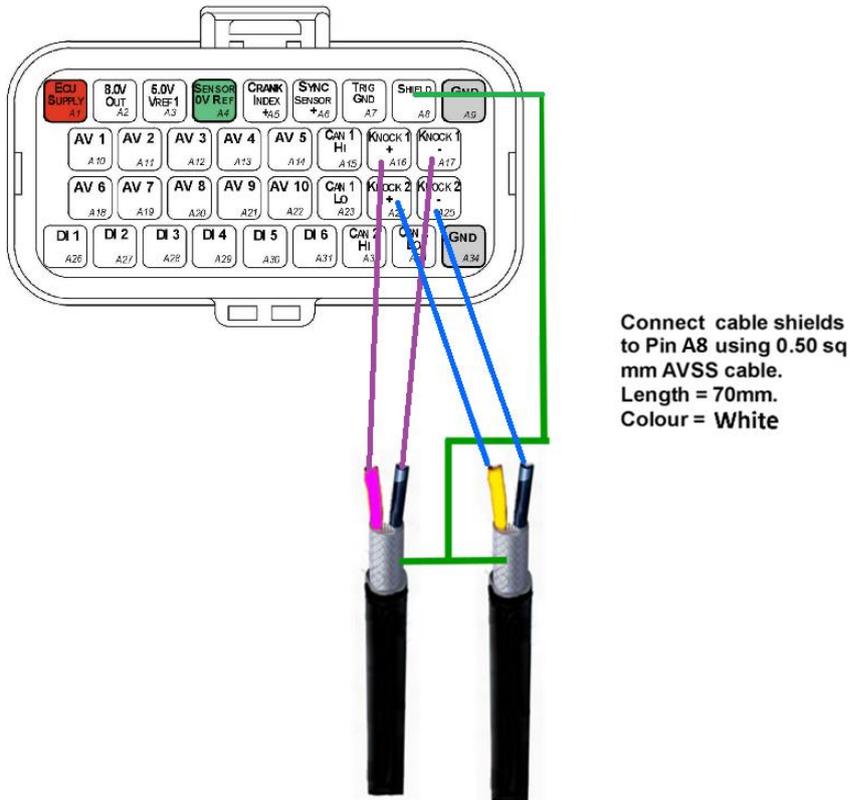


Connect cable shields to Pin A8 using 0.30 - 0.50 sq mm AVSS cable. Length = 70mm. Colour = White



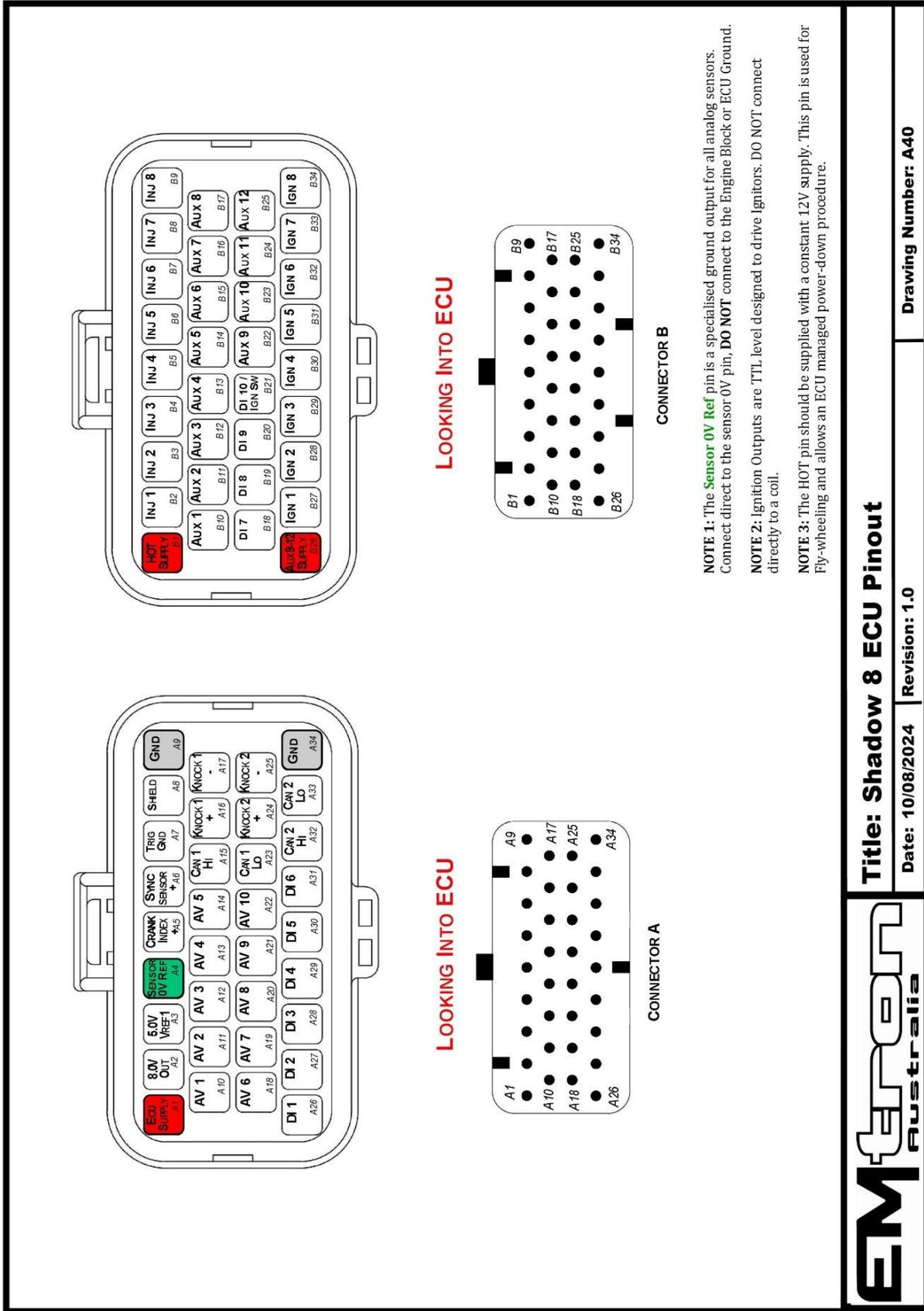
### 3.5 Knock Shielded Cable Connections

- Use x1 2-core shielded cable for Pins A16 and A17
- Use x1 2-core shielded cable for Pins A24 and A25



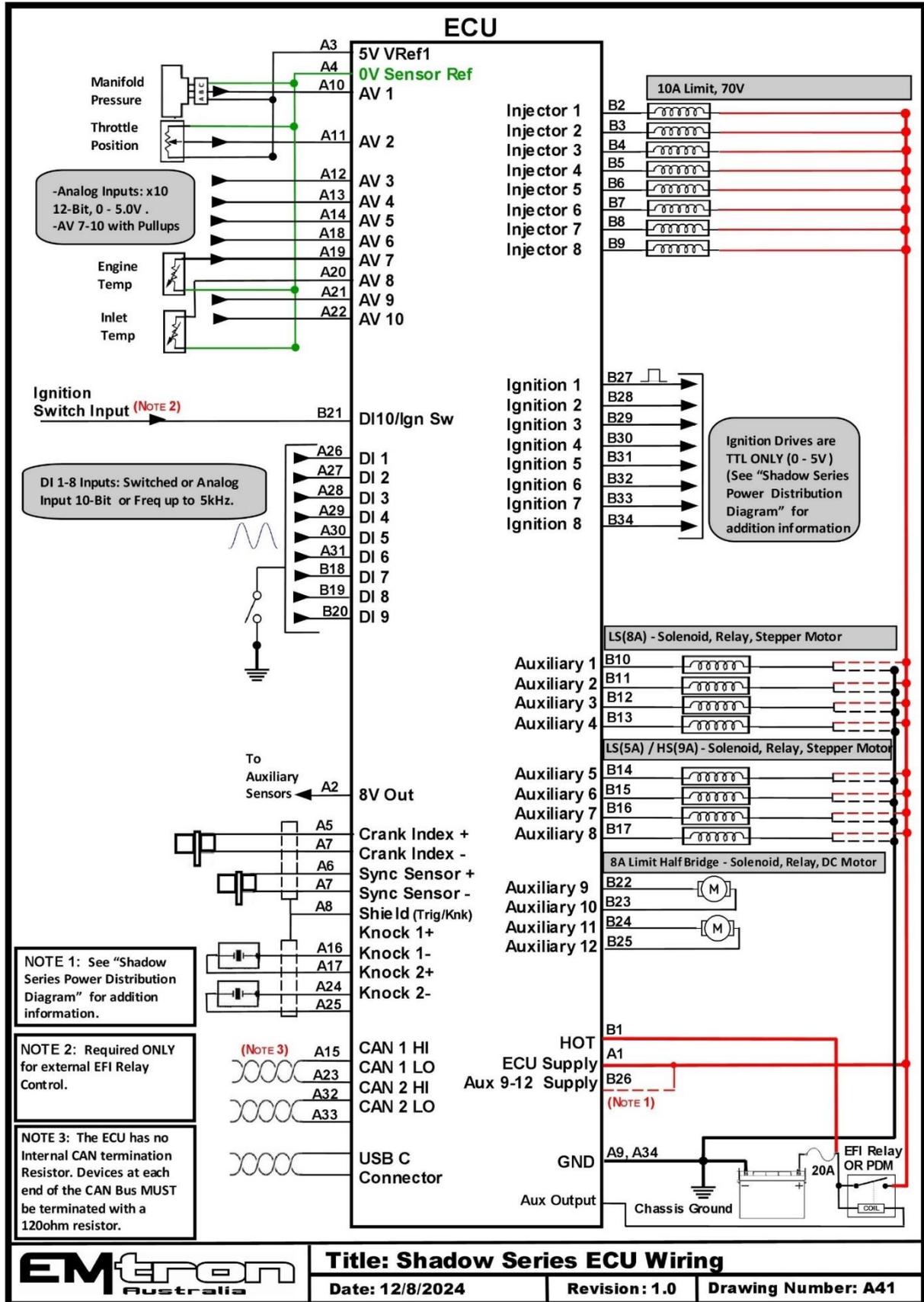
**\*\* NOTE:** The individual core colours are not specified but there MUST be at least one different core colour between the KNK 1 cable and KNK 2 cable i.e. the exact same cables cannot be used for both connections. Ideally these core colours should be different to those used in section 3.4.

## Appendix A – Shadow 8 ECU Pinout Drawing



**Title: Shadow 8 ECU Pinout**  
**Date: 10/08/2024** | **Revision: 1.0**  
**Drawing Number: A40**

## Appendix B – Shadow Series ECU Wiring



Title: Shadow Series ECU Wiring

Date: 12/8/2024

Revision: 1.0

Drawing Number: A41