Document Number		DVIN0013	
Title		Subaru WRX9 2.5 Litre Installation Notes	
Approved By			
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Subaru WRX9

This Document refers to MoTeC M800 OEM installations to MY 2006 and MY 2007 2.5 Litre Subaru WRX and Sti Versions 9 using the WRX9 adaptor **(MoTeC Part No. 13011A)**. For all other applications please refer to the correct installation notes.

Contents

Introduction

The MoTeC M800 OEM is a MoTeC M800 ECU with an adaptor board that allows it to plug directly into the cars original wiring. ECU functionality is the same as the MoTeC M800 with the exception of peak and hold injector drive function which is not possible on the M800 OEM. Only high impedance injectors can be used with the M800 OEM.

The WRX9 M800 Adaptor is an interface that allows an M800 OEM to be mounted in the factory ECU case for a 2.5 Litre Subaru WRX or Sti version 9 (MY2006 &2007 – Denso ECU). It is not suitable for 2005 Vehicles as sold in USA (Hitachi ECU).

The Motec M800 OEM is supplied as an assembly which consists of the M800 OEM ECU and the adaptor board. The adaptor board is vehicle specific and there are links on the adaptor board to allow for variations in different models and functional requirements of the user. A start file is installed which should be sufficient to start the engine prior to tuning. To ensure that the correct adaptor board, link setup and start file is provided full details of the vehicle must be quoted when ordering. Details should include the factory ECU part number, year, model and version.

Not Functioning:

Cruise control

Tumble Valves – wired to fully open.

Secondary air pump – Emission control.

Important Note!

The M800 OEM has been made to the highest standards and will provide reliable performance but should not be dismantled in any way due to the risk of damage. If the Link setup needs to be changed this should only be done by an authorised MoTeC dealer with suitable equipment and soldering experience.

Parts Required

MoTeC Part No.	Description	Notes
13011A	ECU M800 OEM WRX9	MoTeC M800 OEM and WRX9 Adaptor board assembly
28116	Cam Control upgrade	Variable Camshaft Control
28112	Drive By Wire Upgrade	Electronic throttle control
61046	OEM-CAN Loom	For PC connection to the ECU. Connects to the Communications connector on the OEM adaptor board to provide an external CAN communications connection.

Optional

MoTeC Part No.	Description	Notes
61044	OEM to lambda loom	For lambda sensor connection to the Lambda 2 connector on the OEM adaptor board. One end has a connector which connects to the Lambda 2 connection on the OEM Board, the other end is terminated with a 6 pin female DTM connector. Length is 30 cm.
61051	Lambda extension loom	A 2.5 meter extension to connect between the OEM-Lambda loom and a Bosch LSU wideband lambda sensor. One end has a 6 pin male DTM connector to mate to 61044; the other end has a connector for a Bosch LSU wideband lambda sensor. (MoTeC Europe part no.61050 3.0 metre).
28102	M800 Wideband Lambda	ECU upgrade required to control a wideband lambda sensor (free for the first 8 hours of engine running time).
28101	Logging 1 Mb	ECU data logging (free for the first 8 hours of engine running time).
26105	Advanced functions	ECU upgrade to enable the following functions: Over-run boost (ORB), Launch Control, Traction Control, Gear Change Ignition Cut.
28117	Over-run boost	ECU upgrade to enable Over-run boost (ORB) only without other advanced functions.

Model Specific Information

TGV Control

The 2.5 Litre WRX and STI models are fitted with "TGV" valves. This device is a second butterfly in each intake runner between the plenum chamber and the cylinder heads. The TGV valves consist of a DC motor to open and close each pair of butterflies, and a potentiometer to measure the butterfly position.

Factory Operation

The factory ECU uses the TGV valves only during starting. The butterflies are closed during cranking and open as soon as the engine has started. These valves are used to reduce hydrocarbon emissions during starting to help meet more stringent emission laws.

M800 OEM Operation

The TGV valves are not controlled by the M800. The OEM adaptor is wired to simply hold the valves open at all times.

Wide band Lambda

The adaptor PCB has a lambda connector. This connector allows an external loom to be used to connect a lambda sensor directly to the Lambda 2 pins on the M800. Note that Lambda 2 can be used with a single Lambda enable, as long as Lambda 1 is set to OFF or narrowband. This option is selected by default.

Input / Output Test

It is important to carry out an output test and check that all sensors are working prior to starting the engine. If outputs are not functioning or sensors are not reading correctly refer to the setup information in the Pinout Diagram.

Subaru Diff Controller (SDC2)

The M800 OEM can communicate with the MoTeC SDC2 via half duplex RS232. Link15 and Link16 need to be closed to allow SDC2 communications. Refer to the SDC2 Manual for further information and configuration details. The SDC2 Manual is installed onto your computer with the SDC2 software and can be found in the folder C:\motec\SDC-v11.

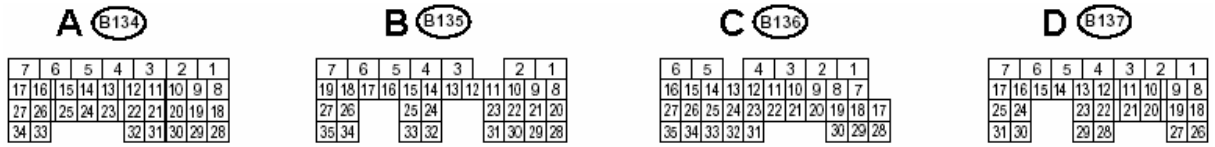
Using the Pinout Diagram

There are 2 Pinout sections in this document.

The M800 Pinout describes the function of each M800 pin with a reference to the OEM pin number it is connected to. There is a description of its function and optional function where applicable as well as notes on functional setup or calibration as necessary. Where there is one or more options for the pin the option is marked with a # or ##. The corresponding OEM Pin, function and setup notes refer to the parameters in M800 ECU Manager and are all marked with # or ## with any changes in link setup or vehicle modifications detailed.

The OEM ECU Pinout lists pins in order of the factory connector with corresponding MoTeC M800 pin and functional description.

M800 Pinout



M800 Pin	OEM Pin No.	Function	Optional Function	Notes
Power				
12V	C1 D15 D17 D12 D-22	12v Switched (ECU Relay)		
GND	D1 D2 D3 A5 D7 C14 C15 D13 D23 D26	ECU Earth	B137-6 &26 Ign GND	
8V ENG	INT	8V to TCK Module		
5V ENG	A19 B21	5V sensor supply		
0V ENG	A29 B29 A14 B34 A22 A24 A25 C6	OV sensor supply		
8V AUX	INT	8V to internal comms connector		
5V AUX	INT B22	5 V to internal barometer		
0V AUX	INT B30	0V to internal Comms Connector and Internal barometer		
Outputs				
INJ1	D8	Injector Cylinder 1		
INJ2	D10	Injector Cylinder 3		
INJ3	D11	Injector Cylinder 2		
INJ4	D9	Injector Cylinder 4		

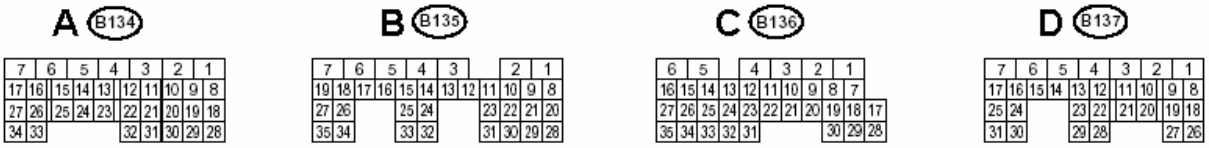
M800 Pin	OEM Pin No.	Function	Optional Function	Notes
INJ5	D27	Boost Control		**Function:** 1 Boost Control Parameters: Frequency 16 Polarity 0 Output Mode 0
INJ6	C2, C3 #C4 ## LA-2 (6)	C2, C3. Front Lambda Heater (For Narrow band only)	#C4. Rear Lambda Heater (For narrow band only ## LA2 Connector for wideband lambda	# Cut Link11 and Link12 ## Cut Link11, Link12 and Link13
INJ7	D29	Canister Purge		**Function:** 3 Aux Table
INJ8	C9	A/C Clutch relay		**Function:** 104 Air Conditioner Clutch
IGN1	D18	Ignition Cylinder 1		
IGN2	D20	Ignition Cylinder 3		
IGN3	D19	Ignition Cylinder 2		
IGN4	D21	Ignition Cylinder 4		
IGN5	C22	C22. Tacho		**Function:** 4 Tacho Signal Parameters: Calibration 2
IGN6	C10	C10. Alternator Control		
AUX1	D5	DBW +		**Function:** 5 Drive By Wire
AUX2	D4	DBW -		**Function:** 6 Drive By Wire Idle Speed Control
AUX3	D14	Cam Control (LH)		**Function:** 117 Cam Control 1 Parameters: Source Channel 3 Proportional Gain 1.05 Integral Gain 1 Derivative Gain 0.028 Dead Band 0.3 Aim Source 3 Frequency 300 Polarity 0 Lo Limit 78.0 Hi Limit 92.0

M800 Pin	OEM Pin No.	Function	Optional Function	Notes
AUX4	D16	Cam Control (RH)		**Function:** 117 Cam Control 1 Parameters: Source Channel 5 Proportional Gain 1.05 Integral Gain 1 Derivative Gain 0.028 Dead Band 0.3 Aim Source 3 Frequency 300 Polarity 0 Lo Limit 78.0 Hi Limit 92.0
AUX5	C29	Fan relay 2		**Function:** 103 Air Conditioner Fan On Temp 96 Off Temp 92
AUX6	C18	Thematic Fan (Fan relay 1)		**Function:** 102 Thematic Fan Parameters: On Temp 96 Off Temp 92
AUX7	C12 B33	C12. Fuel Pump B33. Not required Cut Link10 as default (to be revised)		**Function:** 101 Fuel Pump Parameters: Delay 5.0 Polarity 1 Output Mode 1
AUX8	C11,	C11. Driver Warning Light		**Function:** 108 Driver Warning

M800 Pin	OEM Pin No.	Function	Optional Function	Notes
Inputs				
REF	A13	Ref Sensor		Ref and sync to ref input
SYNC	A13	Sync Sensor		Ref and sync to ref input
AT1	B18	Air Temp		See Calibration Table
AT2	A34	Engine Temp		See Calibration Table
AT3	B19	Ignition Switch		
AT4	C24	C24. A/C Request		**Function:** 5. A/C Request Parameters: Logic Polarity 1 Set AT Levels Lo Level 6.0 Hi Level 8.0
AT5	B13 #A33 ##B14	B13. Cruise Control resume button. Can be used for B14 ORB Select or Multi Config map select	#A33. Power Steering Switch ##B14 Rear Defogger switch. Can be used for ORB Select or Multi Config map select	**#Function:** 18 Power Steering Parameters: Logic Polarity 0 Set AT Levels: Lo Level 2.0 Hi Level 3.0 Cut Link7, Join Link2 **#Function:** Cut Link7, Join Link1
AT6	B20 #B12	B20. Brake Light Switch	B12. Cruise Control main switch. Can be used ORB Select or Multi Config map select	**Function:** 10 Brake (status) Logic Polarity 0 Set AT Levels: Lo Level 5.0 Hi Level 6.0 **#Function:** Cut Link9, Join Link6
AV1	A18	TP1		Calibration #11 – Default 0
AV2	A6	MAP		See Calibration Table
AV3	B26	Mass Air Flow		Calibration #48
AV4	INT	Internal Barometer		Calibration #62
AV5	B23	TPD1		Calibration #11 – Default 100
AV6	B31	TPD2		Calibration #11 – Default 0
AV7	B4 ##K10	B4 Rear narrow band lambda	#B4 Thermocouple (user option) ##K10. Requires TCK module	#Join Link4 ##Cut Link3, Join Link20
AV8	A28	TP2		Calibration #11 – Default 100

M800 Pin	OEM Pin No.	Function	Optional Function	Notes
DIG1	A21	Cam Position (LH)		**Function:** 19 Cam Position Parameters: Edge 0 Offset 100 Channel 3 Teeth 4 Filter 2 Zero 0
DIG2	A11	Cam Position (RH)		**Function:** 19 Cam Position Parameters: Edge 0 Offset 77 Channel 5 Teeth 4 Filter 2 Zero 0
DIG3	C13	Speed Measure		**Function:** 1 Speed Measure Parameters: Measurement Type 1 Calibration 264 Active Edge 0
DIG4	C25 #C31	C25.Clutch Switch	C31#Neutral pos switch	**Function:** 12 Clutch (status) Logic Polarity 0 **#Function:** Cut Link17, Join Link18
LA1S	B9			
LA1P	B8			
LA2S	INT	Wide band lambda using internal lambda connector		Calibration: 38
LA2P	INT	Wide band lambda using internal lambda connector		
Communications				
RS232 TX	#C16		C16. #SDC2 Comms connection using Half Duplex Rs232	
RS232 RX	#C16		C16. #SDC2 Comms connection using Half Duplex Rs232	
CAN LO	Comms 2			
CAN HI	Comms 1			

OEM ECU Pinout



OEM Pin	M800 Pin	Function	Wire Colour
A1	K12	TC-	-
A2	K13	TC+	-
A3	#AT5	Rear window defog timer. Can be used for ORB Select with mod.	-
A4	O/C		-
A5	GND	GND	Green/white
A6	AV2	MAP Sensor	Yellow/black
A7	12V	Control Module power supply from EFI relay	Yellow
A8	O/C		-
A9	O/C		-
A10	O/C		-
A11	DIG2	Cam Position (RH)	Blue
A12	O/C		-
A13	REF & SYNC	Crank Sensor +	White
A14	0V	Ref sensor 0V	Black
A15	K1	Knock sensor signal TCK	Yellow
A16	O/C	LH Tumble valve (not used)	Blue
A17	O/C	Lighting switch (not used)	-
A18	AV1	TP1	White
A19	5V ENG	Sensor 5 volt (TP, TP2, MAP, TGV, SACV LH)	Blue
A20	O/C		-
A21	DIG1	Cam Position (LH)	Red/black dot
A22	0V	Cam sensor 0V LH &RH	Brown
A23	O/C	Main relay (earths relay coil) Not used	-
A24	0V	Crank Sensor shield	Grey
A25	GND	Knock sensor shield	Grey/red
A26	O/C	Tumble valve RH (not used)	Red
A27	O/C	Secondary air pipe pressure sensor (not used)	Blue/red
A28	AV8	TP2	Green
A29	0V ENG	Sensor 0V	Red/green
A30	O/C	Blow-by leak signal (USA Version) Not used	-
A31	O/C		-
A32	O/C		-
A33	#AT5	Power steering pressure switch	Orange/black
A34	AT2	Engine Temp	Black/yellow

OEM Pin	M800 Pin	Function	Wire Colour
B1	GND	Front & rear lambda shield	Yellow/blue
B2	12v	Control Module power supply from EFI relay	Yellow/black
B3	O/C	Cruise Control Set Indicator (USA)	-
B4	#AV7	Rear lambda sensor signal	White
B5	O/C	Constant 12 V	Black/red
B6	O/C	Cruise control main light	Blue/red
B7	O/C		-
B8	LA1-P	Front lambda -	Black
B9	LA1-S	Front lambda +	White
B10	O/C	Fuel Sub Level Sensor	Brown/white
B11	O/C		-
B12	#AT6	Cruise Control main switch	Green/red
B13	AT5	Resume/Acc switch	Red/white
B14	#AT5	Rear defogger switch	Blue/black
B15	O/C	Small light switch	Black/white
B16	O/C	Blower fan switch	Green/red
B17	O/C	Fuel temp sensor (USA Version)	-
B18	AT1	Air Temp	Blue/white
B19	AT3	Ignition Switch – 12V power	Green/red
B20	AT6	Brake switch 1	Yellow/red
B21	5V ENG	Sensor 5V	Blue/red
B22	5V AUX	Sensor 5V TPD2	Lt blue
B23	AV5	TPD1	Blue
B24	O/C	Set/Coast switch	Green/black
B25	O/C	Wiper switch	Green/yellow
B26	AV3	MAF Meter	Yellow/green
B27	O/C	Test mode connector	Orange
B28	O/C	Brake switch 2 (stop light)	White/black
B29	0V ENG	Sensor 0V	Orange
B30	0V AUX	Sensor 0V TPD2, rear lambda	Blue/black
B31	AV6	TPD2	White/blue
B32	O/C	Fuel Tank Pressure sensor (USA Version)	-
B33	#AUX7	Fuel Pump control unit pin9 (STI) pin5 (WRX)	Green/red
B34	0V ENG	Sensor 0V	Black
B35	O/C	MAF Shield	Grey

OEM Pin	M800 Pin	Function	Wire Colour
C1	O/C	DBW relay (not required)	Blue/white
C2	INJ6	Front lambda heater 1	Black/red
C3	INJ6	Front lambda heater 2	Black/red
C4	#INJ6	Rear lambda sensor heater	Red/white
C5	O/C		-
C6	GND	Shield	Green/white
C7			-
C8	O/C	Secondary air pump relay active low	Brown
C9	INJ8	Air con clutch relay	Brown/red
C10	IGN6	Alternator	Blue
C11	AUX8	Driver warning light	Red/white
C12	AUX7	Fuel pump control pin 8 (STI) Pin2 WRX	Green/black
C13	DIG3	Speed Measure	Green/yellow
C14	GND	GND	Green/white
C15	GND	GND	Green/white
C16	RS232	input to diff cont. Data link pin 10	Green/black
C17	O/C	Drain Valve (USA Version)	-
C18	AUX6	Fan relay 1 A/C Fan	White/blue
C19	O/C	Secondary air relay2 (USA Version)	-
C20	O/C		-
C21	O/C	DBW relay	Red/blue
C22	IGN5	Tacho / DCCS pin A6	Orange/white
C23	#AUX8	Main relay coil to GND (USA Version)	Green black
C24	AT4	A/C Request	Pink/black
C25	DIG4	Clutch Switch	Yellow/red
C26	O/C	IMM ECU	Yellow/black
C27	O/C		-
C28	O/C	Pressure valve (USA)	-
C29	AUX5	Fan relay 2 Thermo Fan	Green/red
C30	O/C	Secondary air combination valve relay	Brown/black
C31	DIG4	Neutral Pos Switch/ DCCD pin A15 (optional)	Green/red
C32	O/C	Cranking signal	White/red
C33	O/C		-
C34	O/C	IMM ECU	Red/yellow
C35	O/C		-

OEM Pin	M800 Pin	Function	Wire Colour
D1	GND	GND	Black/yellow
D2	GND	GND	Black/white/brown
D3	GND	GND	Red/white
D4	AUX2	DBW-	Blue/silver
D5	AUX1	DBW+	Brown/red/silver
D6	GND	Ignition GND	Black
D7	GND	GND	Black/white
D8	INJ1	Injector Cyl 1	Blue
D9	INJ4	Injector Cyl 4	Yellow/red
D10	INJ2	Injector Cyl 3	Yellow
D11	INJ3	Injector Cyl 2	Green/red
D12	12V	Tumble valve generator LH	Blue/red
D13	GND	Tumble valve generator LH	Blue/yellow
D14	AUX3	Cam Control LH (-ve)	Green/black
D15	12V	Cam Control LH	Red/white
D16	AUX4	Cam Control RH(-ve)	Green/white
D17	12V	Cam Control RH	Red/black
D18	IGN1	Ignition Cyl 1	Yellow/brown dot
D19	IGN3	Ignition Cyl 2	Yellow/black
D20	IGN2	Ignition Cyl 3	Yellow/red/brown
D21	IGN4	Ignition Cyl 4	Yellow/green/brown
D22	12V	Tumble valve generator RH	Yellow
D23	GND	Tumble valve generator RH	Yellow/green
D24	O/C		-
D25	O/C		-
D26	GND	Ignition GND	Black
D27	INJ5	Boost control solenoid	Black/white
D28	O/C		-
D29	INJ7	Purge canister	White/blue
D30	O/C		-
D31	O/C		-

Calibration Tables

Engine Temperature Sensor (AT2)

Degrees C 1 Decimal place

Temp	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70
Input(V)	5.468	5.322	5.175	4.980	4.672	4.321	3.955	3.569	3.071	2.597	2.080	1.660	1.352

Temp	80	90	100	110	120	130	140	150	160	170	180	190	200
Input(V)	1.137	1.005	0.834	0.693	0.610	0.556	0.502	0.449	0.400	0.356	0.322	0.283	0.244

Air Temp Sensor (AT1)

Degrees C 1 Decimal place

Temp	-10	0	10	20	30	40	50	60	70
Input(V)	5.371	4.589	3.896	3.315	2.988	2.430	2.148	1.801	1.469

Temp	80	90	100	110	120	130
Input(V)	1.215	0.960	0.707	0.453	0.199	0.100

MAP Sensor (AV2)

MAP kPa

MAP	0	20	40	60	80	100	120	140	160	180	200	220	240
Input(V)	0.859	1.098	1.367	1.674	1.909	2.260	2.548	2.846	3.139	3.413	3.710	4.008	4.296

Temp	260	280	300
Input(V)	4.575	4.785	5.058

Ref/Sync Setup

Parameter	Value	Notes
Ref/Sync Mode (REF)	38	
Crank Ref Teeth (CRT)	36	
Tooth Ratio	N/A	
Crank Index Position(CRIP)	550	
Ref Sensor Type	2	
Ref Sensor Polarity	0	
Sync Sensor Type	2	
Sync Sensor Polarity	0	

Ignition Setup

Parameter	Value	Notes
Ignition Type (IGN)	1	
Number of Coils (COIL)	4	
Ignition Delay Time	50	
Firing Order	1 3 2 4	

Fuel Setup

Parameter	Value	Notes
Injector Current	0	
Peak Hold Ratio	N/A	

Injector Battery Comp 3.0 Bar

Bat V	5	6	7	8	9	10	11	12	13	14	15
U sec	2500	2500	2320	2000	1660	1360	1160	1000	880	780	700

Injector Battery Comp 5.0 Bar

Bat V	5	6	7	8	9	10	11	12	13	14	15
U sec	2500	2500	2400	2400	2000	1800	1440	1200	1060	900	820

Ignition Dwell Table

Bat V	5	6	7	8	9	10
Dwell	15.3	11.3	6.6	4.9	3.9	3.3

Bat V	11	12	13	14	15
Dwell	2.9	2.5	2.3	2.0	1.9

Drive by Wire Throttle

The WRX9 and STI9 are fitted with a Drive by Wire Throttle (Electronic Throttle). For safety reasons the setup for the Drive by Wire throttle must be set up by a MoTeC dealer and must match the vehicle correctly.

Setup Parameters

The control parameters **must** be set up in accordance with the setup sheet for the particular DBW motor. See the relevant MoTeC drawing for details. When ECU Manager is in the parameter setup screen and RPM is zero and the Highs and Lows have been set the throttle will step from 10% to 90% and back at a 1Hz rate. Setup parameters are provided by MoTeC, these ***must not*** be altered.

The start file supplied with the ECU will have the correct settings already configured. The scaling for the throttle pedal and throttle positions will need to be set on each installation, if it is not set the throttle may not operate or may go in to error and stop working.

Setting the High and Low for TP & TP2

When setting the high & low TP (Adjust – Sensor Setup – Throttle Position Hi/Lo) values for the two pots on the Throttle Body (TP and TP2), the throttle must not move while setting the Lo value on each pot, and similarly for the Hi value. This is to ensure that both pots read the same - otherwise a diagnostic error may occur.

It is recommended that one or both of the Auxiliary output wires that control the BDW motor are disconnected whenever calibration is being carried out.

Using a feeler gauge of approx. 0.5mm press on the butterfly until it clamps the feeler gauge and then set the Lo position for TP and TP2. Then move the butterfly to full throttle, i.e. 90 degrees. Be sure not to close the throttle butterfly to its physical stop or open the butterfly past the fully open position as this will upset the control and cause the servo to draw excessive current.

Setting TPD & TPD2 High and Low

The TPD and TPD2 Hi and Lo positions (Adjust – Sensor Setup – Throttle Position Hi/Lo) are set using the foot pedal. Again ensure that the pedal doesn't move while setting the Lo (and Hi) position on each pot.

When setting the TPD and TPD2 Hi position make sure the pedal is fully depressed taking into account floor carpet and pedal flex. Any over travel during operation will cause an error.

Errors

If any error is detected then the power to the servo motor is shut off. This includes both the high and low side drivers so that a single short to 0V or +12V either in the wiring or the driver will not prevent the power from being shut off. When the power to the throttle body is removed springs will return it to a default position of about 10%. If the control loop has shut down the only way to restart it is to cycle the power (ECU re-start).

Note: during DBW shut-down, Engine RPM is limited to 2500 rpm regardless of throttle opening.

DBW Idle Control

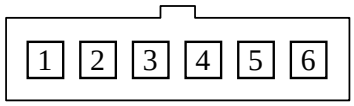
The DBW function also has an associated 'DBW Idle Speed' function which can be set up on Auxiliary Output 2. The idle speed is maintained by a PID control loop. Experience in this area is essential for determining the correct operating parameters

Link Table

Open Links	Closed Links	Function
1, 2, 8	7	*AT5 Cruse resume button
2, 7, 8	1	AT5 Rear window defog input
1, 7, 8,	2	AT5 Power steering input
1, 2, 7	8	AT5 Rear window defog timer
4, 20	3	* AV7 Rear narrow band lambda sensor
20	3, 4	AV7 EGT NTC sensor using rear lambda sensor wiring
3, 4	20	AV7 EGT Thermocouple input via TCK module
19	5	* LA1-S Narrow band lambda (front)
5	19	LA1-S Knock input via TCK module
6	9	* AT6 Brake switch input
9	6	AT6 Cruse control main switch
	10, 14	* AUX7 Fuel pump control default
13	11, 12	* INJ6 Front lambda heater 1
11, 12	13	INJ6 Rear lambda heater
11,12,13		INJ6 Lambda 2 heater
15, 16		*OEM Diff controller (DCCD)
	15, 16	MoTeC SDC2
18	17	*DIG4 Clutch switch
17	18	DIG4 Neutral Switch
	21	*CAN terminator on OEM PCB
21		no CAN terminator on OEM PCB

*** Denotes the default link setup**

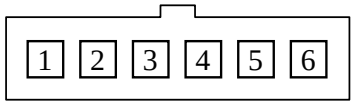
Lambda 2 Connector



Looking at pins on male plug (into connector)

OEM	M800	Function
La2-1	LA2-P	La2 header – Pump
La2-2	0V-AUX	La2 header – 0V to sensor
La2-3	LA2-S	La2 header – Sense
La2-4		
La2-5	VBAT	La2 header - +12 heater
La2-6	INJ6	La2 header – heater

Comms Connector



Looking at pins on male plug (into connector)

OEM	M800	Function
C-1	CAN-HI	to D9 pin 1 - CAN Hi
C-2	CAN-LO	to D9 pin 6 - CAN Lo
C-3	TX-232	to D9 pin 2 - Tx RS232
C-4	RX-232	to D9 pin 3 - Rx RS232
C-5	8V-AUX	to D9 pin 8 – 8V AUX
C-6	GND	to D9 pin 5 – 0V COMMS