

PIN	Function	input/output
1	Power ground	Power ground
2	Power ground	Power ground
3	Main relay +12V	
4	2nd lambda heater	Internal WBO to CAN module
5	1st lambda heater	WBO heater
12	2nd lambda VGND	Internal WBO to CAN module VGND
13	2nd lambda VS	Internal WBO to CAN module VS
14	2nd lambda RCAL	Internal WBO to CAN module RCAL
15	2nd lambda IP	Internal WBO to CAN module IP
21	Ignition +12V	+12 ignition switch
22	Vacuum pump relay	H bridge 2#B
23	Main relay	AUX #6
26	Inatake air temperature	IAT
27	IAT Sensor ground	Sensor ground
33	PPS Sensor ground	Sensor ground
34	PPS inverted	Analog input 1
35	PPS positive	TPS in
36	PPS Sensor Ground	Sensor ground
37	A/C engine speed signal	H bridge
39	Clutch switch	Analog input 5
41	A/C signal	Analog input 6
44	Crankcase breather	AUX #4
51	1st Lambda VGND	WBO VGND
52	1st Lambda IP	WBO IP
55	Brake switch	Analog input 4
58	CAN Low	CAN Low
60	CAN High	CAN High
65	AUX relay Control	AUX #6
66	BUB radiator fan control	AUX #5
70	1st Lambda VS	WBO VS
71	1st Lambda RCAL	WBO Rcal
72	PPS +5V	+5V ref
73	PPS +5V	+5V ref
82	Cranksaft sensor	Primary trigger
83	DBW Sensor ground	Sensor ground
84	DBW position sensor	Analog #2
86	Camshaft sensor	Secondary trigger
87	Camshaft sensor	Cam #2
88	Injector 3	Injector 3
89	Injector 6	Injector 6
90	DBW Sensor ground	Sensor ground
91	DBW +5V	+5V ref
92	DBW position sensor inverted	Analog #3
93	Coolant temperature sensor	CLT
94	Ignition coil 3	Ignition coil 3
95	Ignition coil 6	Ignition coil 6

96	Injector 1	Injector 1
97	Injector 5	Injector 5
98	CAM sensors +5V	+5V ref
99	Knock sensors ground	Sensors ground
102	Ignition coil 1	Ignition coil 1
103	Ignition coil 5	Ignition coil 5
106	Knock sensor 1	Knock sensor 1
107	Knock sensor 2	Knock sensor 2
108	Crank, Coolant, Knock sensor ground	Sensor ground
110	Ignition coil 2	Ignition coil 2
111	Ignition coil 4	Ignition coil 4
112	Injector 2	Injector 2
113	Injector 4	Injector 4
115	Intake variable valve solenoid	AUX #2
117	DBW Motor -	H Bridge #1B
118	DBW Motor +	H Bridge #1A
120	Exhaust variable valve solenoid	AUX #1
121	Intake variable volume solenoid	AUX #3

## 11. Spare inputs / outputs

Some of the unused inputs / outputs of EMU BLACK are available on the additional connector.

ECU Terminal	Function
1	+12V from main relay
2	Power ground
3	CAN H
4	CAN L
5	RS232.TXD
6	RS232.RXD
7	Flex Fuel input
8	+5v ref.
9	MAP sensor input
10	Analogue ground
11	EGT 2 input
12	Analogue ground
13	EGT 1 input
14	Analogue ground
15	MUX switch 3 input
16	Analogue ground
17	MUX switch 2 input
18	Analogue ground
19	MUX switch 1 input
20	+5v ref.
21	+5v ref.
22	+5v ref.
23	Analogue ground
24	Analogue ground
25	Analogue ground
26	Analogue ground

