

Boostec Diesel ECU

—
common rail diesel engine controller
pinout

September 14, 2026

1 Connectors

The Boostec Diesel ECU carries five connectors on the back of the case. Connector 1 is the power block, connector 5 carries nothing but injector drive, and connectors 3 and 4 hold everything else. Connector 2 exists only for plug and play fitment to Mercedes Benz OM61x cars and duplicates functions that are available elsewhere.

Pins with no internal connection are left out of the tables below.

Serial number notes matter on this controller: units from 200 up are second generation, and a few pins only exist from 300 or 500 up.

1.1 Connector 1 – power

Pin	I/O	Function	Note
1	IN	12 V feed for accessory pins, from main relay	10 A max
4	IN	Power ground	
5	IN	Power ground	
6	IN	Power ground	
7	IN	12 V supply from main relay	15 A max
8	IN	12 V supply from main relay	15 A max

ECU power must come through a relay that the ECU itself controls. Pins 7 and 8 share one 15 A fuse. The only exception to relay control is bench testing with no engine running.

1.2 Connector 2 – Mercedes plug and play only

Pin	I/O	Function	Note
11	IO	CAN 1 H	Terminated internally, same net as 3-1
12	IO	CAN 1 L	Terminated internally, same net as 3-2
13	IN	Ignition switch input	Switched +12 V to bring up the main relay. Also on 3-31 from S/N 200

1.3 Connector 3

Pin	I/O	Function	Note
1	IO	CAN 1 H	Terminated internally, same net as 2-11
2	IO	CAN 1 L	Terminated internally, same net as 2-12
3	IO	CAN 2 H	Terminated internally
4	IO	CAN 2 L	Terminated internally
5	OUT	5 V reference	200 mA max. Usually the pedal
6	IN	Thermocouple +	K type
7	IN	Thermocouple –	K type
8	OUT	Sensor ground	Usually the pedal
9	IN	Analog in 1	Pedal secondary, 57.6 k Ω pull up
10	IN	Analog in 0	Pedal primary, 100 k Ω pull down
12	OUT	Output 9	Low-side, 5 A max
14	IN	Analog in 8	57.6 k Ω pull up
15	IN	Analog in 9	57.6 k Ω or 3 k Ω pull up, selected in software
16	IN	Analog in 10	57.6 k Ω or 3 k Ω pull up, selected in software
17	IN	Analog in 11	57.6 k Ω pull up
18	OUT	5 V reference	200 mA max
19	OUT	Sensor ground	
20	IN	Digital in 1	Active low, 12 V tolerant, 10 k pull up or 1 k pull down
21	IN	Digital in 2	Active low, 12 V tolerant, 10 k pull up or 1 k pull down. No speed or frequency
22	IN	Digital in 3	Active low, 12 V tolerant, 10 k pull up
23	OUT	Sensor ground	Usually the pedal
24	IN	Digital in 5	Active low, 12 V tolerant, 10 k pull up
25	OUT	Output 11	Low-side, 1 A max, 4.7 k pull up to 12 V. Two way link to a glow relay
26	IN	Digital in 4	Active low, 12 V tolerant, 10 k pull up
27	IN	Analog in 12	57.6 k Ω pull up
28	IN	Analog in 13	57.6 k Ω pull up
29	IN	Analog in 14	57.6 k Ω pull up
30	OUT	12 V accessory	5 A max
31	IN	Ignition switch input	Switched +12 V to bring up the main relay. S/N 200 and up

Pin	I/O	Function	Note
32	IN	Digital in 8	Active low, 12 V tolerant, 10 k pull up. S/N 200 and up. No speed or frequency, but reads RS232
35	OUT	12 V accessory	5 A max. Usually the turbo control solenoid
37	OUT	12 V accessory	5 A max
40	OUT	5 V reference	200 mA max
41	OUT	Sensor ground	
42	IO	LIN bus	Shared with 4-32, do not use both
43	OUT	Output 10	Low-side, 5 A max
44	OUT	Main relay, positive	High-side, 1 A max. S/N 300 and up
45	OUT	Analog output	0–5 V
46	OUT	Main relay, negative	Low-side, 1 A max
47	IN	Digital in 7	Active low, 12 V tolerant, 10 k pull up. S/N 200 and up
48	OUT	Output 5	Low-side, 5 A max. Usually the turbo control solenoid
49	OUT	Output 1	Low-side, 5 A max, 1 k Ω pull up to accessory 12 V. The only tacho capable output
50	OUT	Output 4	Low-side, 5 A max, flyback diode to accessory 12 V
51	OUT	Output 7	Low-side, 5 A max
52	OUT	Output 8	Low-side, 5 A max

Use either the positive or the negative main relay output, not both. The other leg of the relay coil goes to ground or to battery positive to suit.

1.4 Connector 4

Pin	I/O	Function	Note
1	OUT	5 V reference	200 mA max
2	OUT	Sensor ground	Usually the cam sensor
3	IN	Cam sync input	4.7 k Ω pull up, 12 V tolerant. Hall or VR
4	OUT	Sensor ground	Usually the rail pressure sensor
6	IN	Analog in 6	Dedicated MAP input, 57.6 k Ω pull up
7	OUT	Sensor ground	Usually the MAP sensor
8	OUT	5 V reference	Usually the MAP sensor. 200 mA max
9	OUT	Injector 8, logic level	S/N 500 and up, or 10031 and up on branded units
10	OUT	Output 2	Low-side, 5 A max
11	OUT	12 V accessory	5 A max
12	OUT	5 V reference	200 mA max
13	OUT	5 V reference	200 mA max
14	IN	Analog in 4	Usually the rail pressure sensor. 57.6 k Ω pull up
15	IN	Digital in 6	Active low, 12 V tolerant, 10 k pull up. S/N 200 and up. Oil pan sensor on Mercedes
17	OUT	Sensor ground	S/N 200 and up
18	OUT	5 V reference	200 mA max
21	OUT	Output 3	Low-side, 5 A max, flyback diode to accessory 12 V. Usually the rail pressure solenoid
22	OUT	12 V accessory	5 A max
23	IN	Analog in 3	Usually the charge air temperature sensor. 3 k Ω pull up
24	IN	Analog in 5	57.6 k Ω pull up
25	OUT	12 V accessory	5 A max
26	IN	Crank trigger input	4.7 k Ω pull up, 12 V tolerant. Hall or VR
27	OUT	Sensor ground	Usually coolant and air temperature
29	OUT	Output 16	High-side, 1 A max. S/N 300 and up. Needs a blocking diode if paralleled with a switch
30	OUT	Output 15	Low-side, 1 A max. S/N 200 and up
31	OUT	12 V accessory	5 A max. Usually the rail pressure solenoid
32	IO	Output 17	Low-side, 1 A max. S/N 500 and up, or 10031 and up on branded units

Pin	I/O	Function	Note
33	OUT	Output 6	Low-side, 5 A max
34	OUT	Sensor ground	
36	IN	Analog in 2	Usually the coolant temperature sensor. 3 k Ω pull up
37	OUT	Sensor ground	Usually the crank trigger
38	OUT	Output 12	Low-side, 1 A max. S/N 200 and up
39	OUT	Output 13	Low-side, 1 A max. S/N 200 and up
40	OUT	Output 14	Low-side, 1 A max. S/N 200 and up

1.5 Connector 5 – injectors

Injector drive only. Nothing else may be connected to these pins and no other function can be assigned to them in software.

Pin	I/O	Function	Note
1	OUT	Injector 8 negative	Injector supply common on units built for OM611/612/613 plug and play
2	OUT	Injector 7 negative	Injector supply common on units built for OM611/612/613 plug and play
3	OUT	Injector 6 negative	
4	OUT	Injector positive common	
5	OUT	Injector 1 negative	
6	OUT	Injector 4 negative	
7	OUT	Injector 3 negative	
8	OUT	Injector 2 negative	
9	OUT	Injector 5 negative	

2 Function to pin index

Read these the other way round: pick the function, find the pin. Pin references are given as connector/pin.

2.1 Analog inputs

Never feed an analog input above 5.0 V. Overshoot on one input spoils the accuracy of every other input until all of them are back inside range.

Input	Pin	Note
0	3/10	100 k Ω pull down to ground, use for the pedal
1	3/9	57.6 k Ω pull up to 5 V, use for the pedal secondary
2	4/36	3 k Ω pull up to 5 V, usually coolant temperature
3	4/23	3 k Ω pull up to 5 V, usually charge air temperature
4	4/14	57.6 k Ω pull up to 5 V, samples synchronously, use for rail pressure
5	4/24	57.6 k Ω pull up to 5 V
6	4/6	57.6 k Ω pull up to 5 V. Dedicated MAP input
7	–	Used internally to measure supply voltage
8	3/14	57.6 k Ω pull up to 5 V
9	3/15	57.6 k or 3 k Ω pull up, selected in software
10	3/16	57.6 k or 3 k Ω pull up, selected in software
11	3/17	57.6 k Ω pull up to 5 V
12	3/27	57.6 k Ω pull up to 5 V
13	3/28	57.6 k Ω pull up to 5 V
14	3/29	57.6 k Ω pull up to 5 V
15	3/6–7	K type thermocouple

2.2 Digital inputs

Protected to ± 50 V. All except 2 and 8 can read frequency or speed. Any of the speed capable inputs can be given crank or cam duty, though 9 and 10 are the defaults.

Input	Pin	Note
1	3/20	10 k Ω pull up to 5 V, or 1 k pull down, selected in software
2	3/21	10 k Ω pull up to 5 V, or 1 k pull down. No speed
3	3/22	10 k Ω pull up to 5 V
4	3/26	10 k Ω pull up to 5 V
5	3/24	10 k Ω pull up to 5 V
6	4/15	10 k Ω pull up to 5 V
7	3/47	10 k Ω pull up to 5 V
8	3/32	10 k Ω pull up to 5 V. No speed, but reads RS232
9	4/26	4.7 k Ω pull up to 5 V. Normally the crank trigger
10	4/3	4.7 k Ω pull up to 5 V. Normally cam sync

2.3 Switched outputs

Every one of these switches ground except output 16, which supplies 12 V. Outputs 1 to 9 are PWM capable, but only 3 and 4 carry internal diodes, which is what proportioning valves want. Anything switched under 50 Hz, or drawing under 1 A at full duty, is fine without a diode.

Output	Pin	Note
1	3/49	5 A max. PWM. 1 k Ω pull up to 12 V. The only analog tacho output
2	4/10	5 A max. PWM
3	4/21	5 A max. PWM. Diode to accessory 12 V
4	3/50	5 A max. PWM. Diode to accessory 12 V
5	3/48	5 A max. PWM
6	4/33	5 A max. PWM
7	3/51	5 A max. PWM
8	3/52	5 A max. PWM
9	3/12	5 A max. PWM. Synchronous suction control capable
10	3/43	5 A max. Second synchronous suction control channel
11	3/25	1 A max. Talks the Mercedes OM61x PWM glow controller protocol both ways
12	4/38	1 A max. S/N 200 and up
13	4/39	1 A max. S/N 200 and up
14	4/40	1 A max. S/N 200 and up
15	4/30	1 A max. S/N 200 and up
16	4/29	High-side switched 12 V, 1 A max. S/N 300 and up
17	4/32	1 A max. S/N 500 and up

2.4 Supply and ground pins

Group	Pins	Limit
Sensor ground	3/8, 3/19, 3/23, 3/41, 4/2, 4/4, 4/17, 4/27, 4/34, 4/37	5 A max return per pin. 4/17 is S/N 200 and up
5 V sensor supply	3/5, 3/18, 3/40, 4/1, 4/8, 4/12, 4/13, 4/18	200 mA total across all of them
12 V accessory	3/30, 3/35, 3/37, 4/11, 4/22, 4/25, 4/31	5 A per pin, 10 A total. Fed straight off 1/1, not under software control

Nothing landing on a sensor ground pin may be grounded anywhere else in the vehicle. If you can measure 10 ohms or less from a sensor ground pin to chassis with the ECU unplugged, there is a wiring fault to find.

Boostec / Outback Diesel Systems Pty Ltd, ABN 74 672 803 119. <https://boostec.com.au>. Check for a newer revision of this sheet before committing a harness build.