

Mazda Miata/MX5 NB8B/C 2001-2005 OEM ECU Pinout

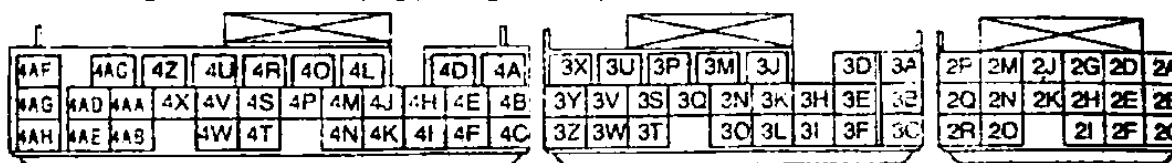
From: Adaptronic eSel039 Select Plugin ECU for Mazda MX5 / Miata NB8B/C

Applicable vehicles / engines:

- Mazda MX5 NB8B/C (2001 – 2005) – Factory naturally aspirated, variable valve timing (SVT) / BP engine
- Mazda MX5 NB8C-SE (2003 – 2005; “Mazdaspeed Miata” in the US)– Factory turbo, No VVT / BPT engine
- Mazda MX5 NB8B-SP (2001 – 2002; Australia only) – Factory turbo, VVT / BPT engine

Pinout references

Pin numbering from loom side of plug (looking into ECU):



Factory Pin	Wire colour	Factory Function	Adaptronic Function	Comments
2A	Y/B	Injector for cylinder 1	Injector Output 1	
2B	R/Y	Cooling fan relay	Aux Output 7	Fans driven at full speed
2C	L/W	Condenser fan relay	Aux Output 7	Fans driven at full speed
2D	V/G	Injector for cylinder 2	Injector Output 4	
2E	Lg	EGR valve	MVSS2	
2F	W/G	EGR valve	Digital input 8	
2G	Y/R	Injector for cylinder 3	Injector Output 2	
2H	P/B	EGR valve	SVSS1	
2I	P	EGR valve	SVSS2	
2J	Y/G	Injector for cylinder 4	Injector Output 3	
2K	L/B	Aircon relay	Aux Output 8	
2M	R/W	Fuel pump relay	Aux Output 5	Fuel pump output for immobiliser equipped cars
2N	B/W	VTCS solenoid valve	Aux Output 4	
2O	R	Fuel pump relay	Aux Output 5	Fuel pump output for cars with no immobiliser
2P	O	Idle control solenoid valve positive	Connected to 12V ignition power (4AF)	
2Q	V/R	Idle control solenoid valve negative	Aux Output 1	
2R	W/L	Malfunction indicator lamp	Aux Output 6	
3A	B	Ground	Power Ground	
3B	B/R	Ground	Power Ground	
3C	G/Y	Purge solenoid valve	Digital in 6	
3D	Gy/B	EGR boost sensor solenoid valve	Digital in 7	

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3E	NC			
3F	Br/W	Igniter for cylinders 1 and 4	Ignition output 2	
3H	L/O	Main relay	Pulled to ground when the ECU sees more than a 2V on pin 4S (ignition switch input).	Not used on all models. Early models had the main relay driven by the ignition switch directly.
3I	B/Y	Igniter for cylinders 2 and 3	Ignition output 1	
3J	B/O	Front O2 sensor heater	Connected to power ground	
3K	Y/B	Evap leak detection pump		
3L	NC			
3M	Gy/R	Generator control	Driven by regulator in ECU, takes feedback from voltage at pin 4AG	
3N	NC			
3O	G/O	Tachometer	Ignition output 3	
3P	W/B	Rear O2 sensor heater	Connected to power ground	
3Q	G/W	Data link connector	CAS3	Can be used for flex fuel
3S	R/B	Immobiliser unit	Connected to 12V via 1k resistor	
3T	G/R	Speedometer signal	MVSS1	
3U	Br/R	Generator warning light	Driven by internal circuit, activates light when voltage is < 12.55 V	
3V	Gy/L	Cam position sensor	CAS 2 input	Pulses for cylinder and TDC identification, and inlet cam position detection
3W	NC			
3X	NC			
3Y	V/W	Crank position sensor	CAS 1 input	Pulses for calculating ignition timing
3Z	NC			
4A	B/L	Ground	Power Ground	
4B	G	Brake switch	Digital Input 5	
4C	Br	Power steering load input	Digital Input 3	
4D	Y	Boost control (turbo) VVT positive (NA)	Aux Output 2	NOTE: Drives high, not low
4E	Y By/Y	Boost control (turbo) Diagnostic (NA)	Connected to pin 4D internally	
4F	Lg/B	Aircon request input	Digital Input 4	
4H	V	Clutch/Neutral switch	Digital Input 2	
4I	W/G	Clutch/Neutral switch	Digital Input 1	

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Factory Pin	Wire colour	Factory Function	Adaptronic Function	Comments
4J	O	VTCS vacuum switch		
4K	NC			
4L	Lg/R	+5V out for sensors	+5V output	
4M	W	Knock sensor	Knock signal input	
4N	P/L	Air temperature sensor	Aux Temperature signal input	Mounted in airflow meter
4O	B/R	Sensor ground	Sensor Ground	
4P	R/L	Engine Coolant Temperature	ECT signal input	
4R	V/Y	Air temp sensor (turbo) VVT valve negative (NA)	Aux temp input (turbo) Aux output 3 (NA)	Internal jumper to select
4S	B/W	Ignition switch	Triggers 3H output	
4T	Gy	Generator output voltage	Not used in the regulator	
4U	NC			
4V	G/B	Throttle Position Sensor signal	TPS signal input	
4W	L	Front O2 sensor signal	O2/EGO signal input	
4X	P	Air flow meter signal	MAP signal input	AFM signal pin can be used for MAP signal when fitting an external MAP sensor
4Z	P/B	TCM (auto only)		
4AA	R	Rear O2 sensor signal		
4AB	NC			
4AC	By/Y V/G	Data link connector Auto TCM	Turbo model: Br/Y Auto model: V/G	
4AD	Br/B	Fuel gauge sender		
4AE	L/Y	EGR boost sensor		
4AF	W/R	Main relay	+12V Ignition	
4AG	L/R	Battery constant power	Constant power input	This input is used to measure the battery voltage for the generator control. Therefore it must have power otherwise the generator control will not function.
4AH	R/G	Evap leak detection pump solenoid valve		