

Adaptronic Select ECU for RX7 Series 5 FC Turbo



Notes on the RX7 Series 5 FC Plug-in ECU:

- 1 We recommend adding a wideband lambda sensor if you're doing your own tuning. For various reasons we recommend using the Innovate LC-2 or MTX-L.
- 2 This ECU does not drive the emissions control outputs.
- 3 The ECU can be used in direct fire ignition mode - but doing so means that you can't use Aux output 1 (switch control output)
- 4 The air conditioner output (1L) is driven in hardware in response to the aircon request input (1O). The inverse of this also drives digital input 4, so it must be set as A/C request (active high)
- 5 The ECU can use the factory MAP sensor (2 bar) or the internal ECU MAP sensor (4 bar)

View from loom side of plug:

4Y	4W	4U	4S	4Q	4O	4M	4K	4I	4G	4E	4C	4A	3O	3M	3K	3I	3G	3E	3C	3A	2K	2I	2G	2E	2C	2A	U	S	Q	O	M	K	I	G	E	C	A
4Z	4X	4V	4T	4R	4P	4N	4L	4J	4H	4F	4D	4B	3P	3N	3L	3J	3H	3F	3D	3B	2L	2J	2H	2F	2D	2B	V	T	R	P	N	L	J	H	F	D	B

Pinouts for the RX7 Series 5 ECU

Factory Pin	Factory Function (NC means No Connection in factory loom)	Adaptronic Pin (blank means no connection to Adaptronic)	Comments
4Y	Grn / Blk Injector (Rear Primary)	Injector Output 3	
4W	Grn / Red Injector (Front Primary)	Injector Output 1	
4U	Blk / Grn Oil Metering Pump 2 bar	Aux Output 8 bar	Always functions opposite to 4S
4S	Blk / Ora Oil Metering Pump 2	Aux Output 8	
4Q	Blu / Grn Idle Control Solenoid Valve	Aux Output 2	
4O	Yel / Blk Blower input	Digital Input 7	Electrical load input
4M	Blu / Ora PRC Solenoid Valve		
4K	Brn Fuel pump (circuit opening) relay	Aux Output 5	
4I	Split Air Solenoid Valve		
4G	Wht Crank Pos Sensor G (2 tooth)	CAS 2 input	
4E	Blu Crank Pos Sensor NE (24 tooth)	CAS 1 input	
4C	Blk Chassis Ground	PGND	
4A	Blk / Wht Chassis Ground	PGND	
4Z	Grn / Red Injector (Rear Secondary)	Injector Output 4	
4X	Grn / Wht Injector (Front Secondary)	Injector Output 2	
4V	Blk / Red Oil Metering Pump 1 bar	Aux Output 7 bar	Always functions opposite to 4T
4T	Blk / Blu Oil Metering Pump	Aux Output 7	
4R	Blu / Wht Boost Control	Aux Output 3	
4P	Wht / Blu Defogger input		
4N	Grn / Red unknown function		
4L	Wht / Grn Headlight input	Digital Input 8	Electrical load input
4J	AWS Solenoid Valve		
4H	Red Crankshaft Sensor -ve	SGND	
4F	NC		
4D	Brn / Blk Sensor Ground	SGND	
4B	Blk / Wht Chassis Ground	PGND	
3O	Blu / Red Switch Solenoid Valve	Aux Output 1	
3M	Wht Knock Sensor	Knock input	
3K	Grn / Ora MAF signal	Aux Temp	
3I	Brn / Wht TPS 5V	TPS 5V	
3G	Blk / Grn TPS Full Range	TPS signal input	
3E	Grn / Wht Coolant Temp Sensor	ECT	
3C	Blk Oxygen Sensor Input	O2 signal Input	
3A	Grn / Red Oil Metering Pump Sensor	Ext In	
3P	Blu / Ryel - Relief Solenoid Valve	Aux Output 4	
3N	Blu Port Air Solenoid Valve		If converting to 4 wheel speed inputs, this should be the front right wheel speed input.
3L	Grn Intake Air Temperature Senor	MAT input	
3J	Brn / Red Power GND	PGND	
3H	Grn / Yel MAP signal	MAP signal input	
3F	Grn / Red TPS Narrow Range	SVSS1	Can be used for flex fuel sensor input or front left wheel speed input for traction control
3D			
3B	Grn / Red Sensor GND	SGND	

No "Plug 2" is fitted on the RX7 Series 5

Factory Pin	Factory Function (NC means No Connection in factory loom)	Adaptronic Pin (blank means no connection to Adaptronic)	Comments
1U / U	Brn / Yel Mileage Sensor 2		
1S / S	Red / Blk Fog Lamp Switch	Digital Input 6	Electrical load input
1Q / Q	Grn / Red Clutch Switch	Digital Input 1	
1O / O	Blu / Ora A/C request	Digital Input 4	This triggers digital input 4, after inversion, and also drives the A/C clutch output
1M / M	Blu Speedometer	MVSS1	If converting to 4 wheel speed inputs, this should be the rear left wheel speed input.
1K / K	Grn / Red Fuel Pump Relay (Speed)		
1I / I	Ora Data Link Connector	Igniter Output 4	Not used on factory, but can use this pin for conversion to direct fire for leading ignition, rotor 2 (you lose the switch solenoid output then). This wire comes out at the diagnostic connector (orange wire)
1G / G	Brn Igniter Trailing	Igniter Output 2	If converting to direct fire, this becomes the trailing output for rotor 1.
1E / E	Check light	Aux Ouptut 6	
1C / C	Blk / Red starter interlock switch		
1A / A	Blu / Red constant power	Const 12V	Straight from battery via fuse
1V / V	Blu IGF ignition feedback		
1T / T	Blk / Blu brake light switch	Digital Input 5	
1R / R	Grn / Blk Neutral Switch	Digital Input 2	
1P / P	Blk / Yel Heat Hazard		
1N / N	LtGrn / Blk Steering Pressure Sensor	Digital Input 3	Engine load input
1L / L	Blk / Wht A/C Relay	AC Relay Output	Driven by AC input
1J / J	Brn / Yel Igniter Trailing select	Igniter Output 3	If converting to direct fire, this becomes the trailing output for rotor 2.
1H / H	Brn Igniter Leading	Igniter Output 1	When converting to direct fire, this output becomes the trigger for leading ignition on rotor 1 (front)
1F / F	Yel / Blk Data Link Connector	MVSS2	If converting to 4 wheel speed inputs, this should be the rear right wheel speed input
1D / D	Yel Data Link Connector	CAS 3, for flex fuel	This pin comes out at the the diagnostic connector (yellow wire).
1B / B	Blk / Wht Main Relay	+12 Ignition	Output from EFI relay

Notes on tachometer and ignition outputs:

The FC RX7 runs wasted spark on the leading and addressing on the trailing plugs. These are wired:

Leading plugs	Ignition 1	1H
Trailing spark signal	Ignition 2	1G
Trailing rotor selection	Ignition 3	1J

With a 3ms dwell time and a 1ms spark time, this gives a maximum RPM of 7500. Higher RPM can be achieved by reducing the dwell time or converting to direct fire ignition.

This ECU can be used in direct fire mode, by using the 4th ignition output, in the following configuration:

Front leading (Leading rotor 1)	Ignition 1	1H
Front trailing (Trailing rotor 1)	Ignition 2	1G
Rear trailing (Trailing rotor 2)	Ignition 3	1J
Rear leading (Leading rotor 2)	Ignition 4	1I

The 1I pin comes out at the datalink connector, or you can run another wire directly to the pin on the ECU. Note that when using ignition 4 output on the ECU, Aux 1 is not available. Aux 1 on the Select RX7 ECU controls the split valve for emissions control.

The tachometer function on the FC RX7 is derived from the ignition system, so to run direct fire, you will need to configure an auxiliary output as a tachometer and wire it up with an external pullup.