Lotus K4 Plug-In ECU

Installation manual

Ecumaster Lotus K4 plug-in kit for Rover S2 ECU is cost efficient replacement to a troublesome OEM unit, which often gets water damage and it is not possible to replace because of its discontinuation.

The kit is supplied with:

- **Ecumaster Plug & Play ECU**
- **Mounting plate**
- **Pre-assembled aux connector**
- **Wideband oxygen sensor LSU4.9**
- **Fuse**

The ECU is preloaded with proper base map software, and there is no need to touch it before the first start.

Keep in mind the base map is only for the start-up and stationary engine testing purposes! Driving on base map is not permitted, and a tuning session is required to set all parameters for your specific engine!

Before starting the car, a few steps are necessary to perform. Their importance is a key to avoid damage to any component. Follow the "Installation" section below.

Installation

1. **Disconnect the battery**
2. **Disconnect connectors from OEM ECU**
3. **Remove the OEM ECU**
4. **Mount the Ecumaster ECU in place the OEM one using a special adapter plate**
5. **Locate the front fuse box and replace the fuse on the position 8 (rated 7.5A) with the fuse included in the kit**
6. **Disconnect the idle control valve connector, take off the yellow tab and carefully remove wire from the middle pin (see photo). Removed wire secure with insulation tape or heatshrink so it doesn't short to the grounded elements of the engine. Be sure of the connector orientation!**

7. Remove the front OEM lambda sensor form exhaust system (pre catalytic converter) and install wideband LSU 4.9 sensor from the kit package

8. Connect sensor to the prewired link loom of auxiliary connector

9. Make sure lambda cable is far enough from the moving parts of the engine and exhaust system

10. Once all the wires are secured you can reconnect the battery and start the car

Additional aux connector

This connector leads out other signals for a user. For example allows for a connection of external sensors or parameters logger. Its pinout is posted on the following side.

For the aux connector use only the Superseal 1.0 terminals!

CAN bus wires must be twisted pair type!

All connections must be secured to avoid shorts and insulation damage!

Use only good quality crimping tools to avoid loose connections!

Back spare connector pinout:

No.	Function
1	12V from main relay
2	Power ground
3	CAN H
4	CAN L
5	TXD
6	RXD
7	Flex fuel input
8	5V supply
9	Analog input #5
10	Analog input #6
11	EGT input #2
12	Sensor ground
13	EGT input #1
14	N.C.
15	N.C.
16	N.C.
17	N.C.
18	N.C.
19	N.C.
20	12V from main relay
21	WBO heater
22	WBO Ip
23	WBO Vs
24	WBO Rcal
25	WBO VGND
26	Power ground

I/O assignment

No.	EMU pin name	Function
1	Analog In #2	AC request
2	Analog In #4	Oil temperature
3	AUX 1	Exhaust flap
4	AUX 2	Speedometer signal for dash
5	AUX 3	Water temperature for dash
6	AUX 4	Tacho
7	AUX 5	VVT
8	AUX 6	VVT
9	H-bridge #1 winding A	IACV
10	H-bridge #1 winding B	IACV
11	H-bridge #2 winding A	IACV
12	H-bridge #2 winding B	IACV
13	Ignition coil #1	Coil cyl. #1 & #4
14	Ignition coil #2	Coil cyl. #2 & #3
15	Ignition coil #3	Radiator fan “slow”
16	Ignition coil #4	Fuel pump
17	Ignition coil #5	Main relay
18	Ignition coil #6	Radiator fan “fast”
19	Injector #1	Injector cyl. #1
20	Injector #2	Injector cyl. #2
21	Injector #3	Injector cyl. #3
22	Injector #4	Injector cyl. #4
23	Injector #5	Check engine lamp
24	Injector #6	AC clutch