AiM Infotech

# Lotus Elise, Exige, 2-Eleven, 3-Eleven from 2004 ECU

## Release 1.03

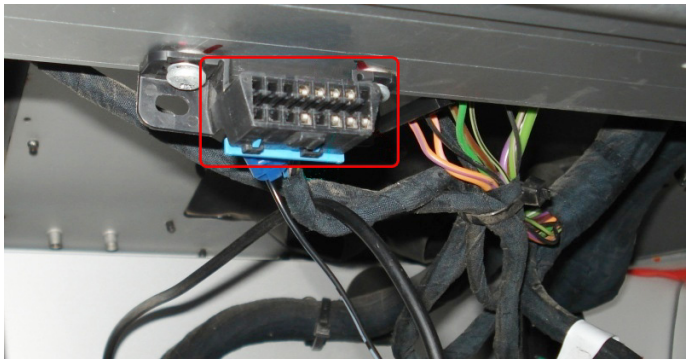
# 1 Supported years and models

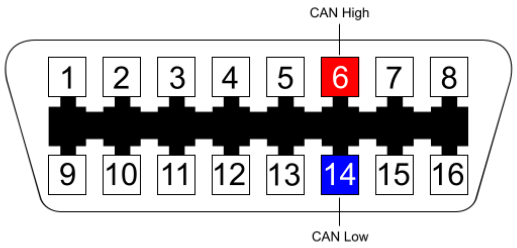
This tutorial explains how to connect Lotus cars to AiM devices. Supported years and models are:

| | | |
|---|---|---|
| • Elise S2/Exige S2/2-Eleven (white dash) | all models | 2004-2007 |
| • EliseS2/Exige S2/2-Eleven (black dash) | all models | 2008-2011 |
| • Elise S3/Exige V6/3-Eleven | all models | from 2011 |

# 2 Wiring connection

Lotus cars feature a bus communication protocol based on CAN on the OBDII plug placed under the stock dash as shown here below on the left. On the right is OBDII connector pinout and bottom is connection table






| OBDII Pin | Pin function | AiM cable |
|---|---|---|
| 6 | CAN High | CAN+ |
| 14 | CAN Low | CAN- |

# 3
# AiM device configuration

Before connecting the device to the ECU set this up using AiM Race Studio software. The parameters to select in the device configuration are:

- ECU manufacturer “Lotus” and, according to your vehicle characteristics
- ECU Model
    - "Clusters 04-07" for Lotus Elise S2/Exige S2/2-Eleven all models (white dash) 2004-2007
    - "Clusters 08-09" for Lotus Elise S2/Exige S2/2-Eleven all models (black dash) 2008-2011
    - "Clusters 11-19" for Lotus Elise S3/ Exige V6/3-Eleven from 2011 (Race Studio 3 devices only)

# 4
# Available channels

Channels received by AiM devices connected to Lotus vehicles change according to the selected protocol.

## 4.1
## "Lotus - Clusters 04-07" protocol

Channels received by AiM devices connected to "Lotus - Clusters 04-07" protocol are:

| CHANNEL NAME | FUNCTION |
|---|---|
| RPM | RPM |
| SpeedVeh | Vehicle speed |
| WaterTemp | Water temperature |
| FuelIst | Instant fuel consumption |
| Bitfield | Includes the following warning lights: |
| = 1 SFLight | Shift light |
| = 2 MILLight | Malfunction indicator light |
| = 3 OilLight | Low oil pressure light |
| = 4 TCLight | Traction control light |

**Technical note**: not all data channels outlined in the ECU template are validated for each manufacturer model or variant; some of the outlined channels are model and year specific, and therefore may not be applicable.

# 4.2
# "Lotus - Clusters 08-09" protocol

Channels received by AiM devices connected to "Lotus - Clusters 08-09" protocol are:

| CHANNEL NAME | FUNCTION |
|---|---|
| RPM | RPM |
| SpeedVeh | Vehicle speed |
| WaterTemp | Water temperature |
| IntakeAirTemp | Intake air temperature |
| TPS | Throttle position sensor |
| PPS | Pedal position sensor |
| CuSelLTC | Custom selection - traction control level |
| MAF | Manifold air flow |
| FuelIst | Instant fuel level |
| Bitfield1 | Includes the following warning lights: |
| = 1 SFLight1 | Shift light 1 |
| = 2 SFLight2 | Shift light 2 |
| = 3 SFLight3 | Shift light 3 |
| = 4 MILLight | Malfunctioning indicator light |
| = 5 OilLight | Low oil pressure light |
| = 6 TCLight | Traction control light |
| Bitfield2 | Includes the following warning lights: |
| = 1 ServLight | Service light |
| = 5 TH2OLight | Water temperature light |
| FuelAver | Average fuel level |

**Technical note**: not all data channels outlined in the ECU template are validated for each manufacturer model or variant; some of the outlined channels are model and year specific, and therefore may not be applicable.

# 4.3
# "Lotus - Clusters 11-19" protocol

Channels received by AiM devices connected to "Lotus - Clusters 11-19" protocol are:

| CHANNEL NAME | FUNCTION |
|---|---|
| RPM | RPM |
| Gear | Gear |
| Vehicle Speed | Vehicle speed |
| Speed FL | Front left wheel speed |
| Speed FR | Front right wheel speed |
| Speed RL | Rear left wheel speed |
| Speed RR | Rear right wheel speed |
| YRS LatAcc | Lateral Acceleration |
| YRS YawRate | Yaw Rate |
| SteerSpd | Steering speed |
| Coolant Temp | Water temperature |
| SteerAngle | Steering position angle |
| Fuel Level | Fuel level percentage |
| Throttle Pedal | Throttle pedal position |
| Fuel Cons | Fuel consumption |
| TrqReducton ASR | Torque reduction |
| TrqIncrease | Torque increase |
| IndicatedDriverT | Driver torque |
| CombustionTorque | Combustion torque |
| SystemState | ESP system state |
| Mode | Engine mode display message |
| CruiseContStatus | Cruise control status |
| SportSwFitted | Sport switch activation |
| RaceSwitch | Race switch activation |
| BrakeSwitch | Brake switch |

| | |
|---|---|
| BrakeLightSwitch | Brake light switch |
| FuelLamp | Fuel reserve lamp |
| ClutchPedStatus | Clutch pedal status |
| LTC 5 steps | 5 steps LTC (OFF 1% 3% 6% 9% 12%) |
| LTC 10 steps | 10 steps LTC (OFF 0-9) |
| SportRaceLamp | includes the following warning lights: |
| = 1 BrakeLamp | Brake warning lamp |
| = 2 SportInfoLamp | Sport info lamp |
| = 3 HoldGear_TCS | Hold gear |
| = 4 RaceInfoLamp | Race info lamp |
| Switches 1 | includes the following parameters: |
| = 1 Start_Condition | Start_Condition |
| = 2 Kick_Down_Req | Driver kick down request |
| ESP ASR Sport | includes the following warning lights: |
| = 1 ESP_ASR_SwStatus | Electronic controls activation |
| = 2 Sport_SwStatus | Sport mode activation |
| ESP ABS ASR | Includes the following warning lights/messages: |
| = 1 ABSErrorStatus | ABS error status |
| = 2 ABSIntervention | ABS intervention |
| = 3 ASRErrorStatus | ASR error status |
| = 4 ASRIntervention | ASR intervention |
| = 5 ASRInfoLamp | ASR info lamp |
| = 6 ESPErrorStatus | ESP error status |
| = 7 ESPIntervention | ESP intervention |
| = 8 ESPInfoLamp | ESP info lamp |
| Dash Lamp | Includes the following warning lights: |
| = 1 CoolantTempFlash | Coolant temperature flash |
| = 2 TPMSLamp | TPMS lamp |
| = 3 ServiceLamp | Service lamp |
| = 4 LOPLamp | Low oil pressure lamp |
| = 5 MIL | Malfunction indicator light |
| = 6 ShifLamp3 | Shift lamp3 |

| | |
|---|---|
| = 7 ShifLamp2 | Shift lamp2 |
| = 8 ShifLamp1 | Shift lamp1 |
| Status ASR | Numeric Status of Bit Fields |
| = 1 StatusTR_ASR | Status torque reduction ASR |
| = 2 StatusTI_ASR | Status torque increase ASR |

**Technical notes**

- Not all data channels outlined in the ECU template are validated for each manufacturer model or variant; some of the outlined channels are model and year specific, and therefore may not be applicable.
- **According to the vehicle Traction Control module**, this parameter can be displayed in different ways:
    - **ON/OFF** (enable the **"ESP ASR SwStatus"** reference channel);
    - **5 steps scale** (enable the "**LTC 5 steps"** reference channel);
    - **10 steps scale** (enable the "**LTC 10 steps"** reference channel);
- **"Gear" channel is displayed only if the AiM device is connected to a vehicle model equipped with automated gearbox.**