RaceGrade Specification

Document Number		RG_SPEC-0008	
Title		MEFI to MoTeC M800 CAN adapter	
Revision	**Date**	**Prepared By**	**Change History**
1.1	08/10/12	Chris Brown	Added notes on CAN bus wiring.

Introduction

This adapter is used to interface a MEFI ECU with a MoTeC dash while maintaining the same communications template as the MoTeC M800 data stream format. The adapter automatically poles the MEFI ECU with appropriate J1939 commands on the 250 kbit/s CAN bus, and then combines them into a data stream on the other CAN bus running at 1000 kbit/s baud rate.

Compatible with either the MEFI 4 or 4b ECU

Connection 1 - "MoTeC CAN bus":

Unterminated

CAN bus rate: 1000 kb/s

No resistor included

Red = +12v

Black = Ground

White = CAN Hi dash side

Blue = CAN Lo dash side

Connection 2 - "MEFI CAN":

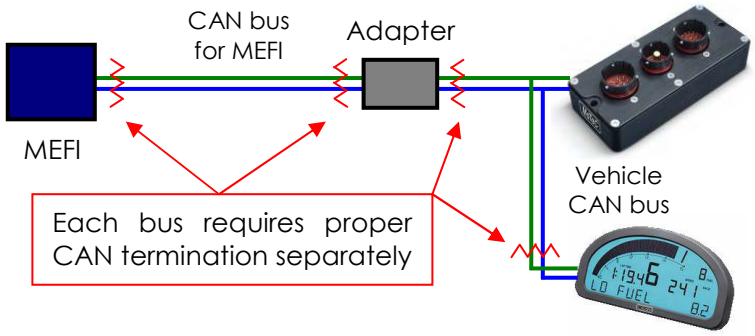
Unterminated

CAN bus rate: 250 kb/s

No resistor included

White = CAN Hi MEFI side

Blue = CAN Lo MEFI side



Specifications

Voltage Input: 6 to 18 volts

Temperature: 0 to 60 deg C

Part Number: RG MEFI ADAPTER

Note: Not all of the normal M800 channels are available from the MEFI. On the next page is a complete list of channels transmitted to the dash.

Byte	M800 Parameter	MEFI Parameter	Resolution
0 1	**RPM**	RPM	1 RPM (MSBF)
2 3	**Throttle Position**	Throttle Position	0.1 % (MSBF)
4 5	**Manifold Pressure**	Manifold Pressure	0.1 kPa (MSBF)
6 7	**Air Temperature**	Air Temperature	0.1 DegC (MSBF)
8 9	**Engine Temperature**	Engine Coolant Temperature	0.1 DegC (MSBF)
10	**Lambda 1**	Oxygen Sensor Bank A Sensor Voltage	4.8828125 mV
11		Oxygen Sensor Bank A Cross Counts	1 Cnts/Sec
12	**Lambda 2**	Oxygen Sensor Bank B Sensor Voltage	4.8828125 mV
13		Oxygen Sensor Bank B Cross Counts	1 Cnts/Sec
20 21	**Fuel Pressure**	Fuel Pressure	0.1 kPa (MSBF)
24 25	**Oil Pressure**	Oil Pressure	0.1 kPa (MSBF)
36	**User Channel 1**	IAC Status	Bit 0: 0=Not close throttle idle control; 1=Close idle control Bit 1: 0=IAC not in control of RPM; 1=IAC in control of RPM Bit 2: 0=Load Anticipate 1 not enabled; 1=enabled Bit 3: 0=Load Anticipate 2 not enabled; 1=enabled
37		Desired Idle Speed	8RPM
38	**User Channel 2**	Virtual IAC Position	0.39%
39		Load Anticipate 1 Value	0.39%
40	**User Channel 3**	Load Anticipate 2 Value	0.39%
41		Idle Valve Duty Cycle	0.39%
44 45	**Battery Voltage**	Battery Voltage	0.01 V (MSBF)
82	**Ignition Advance**	Spark Advance	(90/256) - 20 degrees
83		Knock Retard	22.5/256 degrees
88 89	**Fuel Used**	Fuel Flow Rate	0.1 L/Hr (MSBF)
98 99	**Fuel Actual PW**	Injector Bank A Base Pulse Width	0.5 microseconds (MSBF)
100 101	**Fuel Effective PW**	Injector Bank B Base Pulse Width	0.5 microseconds (MSBF)
108	**Fuel Comp 1**	Bank A BLM Cell Value	0.0078125 (0~2 mult)
109		Bank A Fuel Mult	0.0078125 (0~2 mult)
110	**Fuel Comp 2**	Bank B BLM Cell Value	0.0078125 (0~2 mult)
111		Bank B Fuel Mult	0.0078125 (0~2 mult)