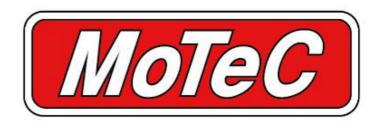


AiM Infotech

MoTec CAN Custom Data Set1

Release 1.01







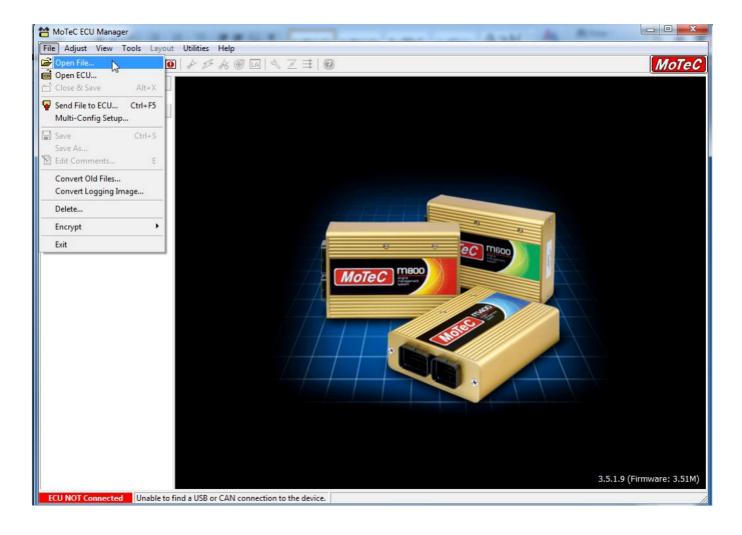


This tutorial explains how to connect MoTec and AiM devices.

## 1 Software Setup

MoTec devices need to be set up via MoTec ECU Manager software. Run it and follow this path:

• File -> Open file





Select File			
Look In:	<mark>}</mark> M800-∨35	- 🗢 🔁 💣	
Name	ut Templates es	Modified V 17/06/2008 16 14/05/2012 14 14/05/2012 14 14/05/2012 14	48:00 1:48:00
, File name: Comments:	Start.e35 Programmer: Fuel Pressure: Injector Type:	[	<u>D</u> K Cancel
Files of type	e: M400/M600/M800 V3.5	<b>_</b>	1.

Upload the project file you already have - this file has ".e35" extension - and press "OK"

The panel below appears; follow this path:

• Adjust -> General Setup -> Communications -> Setup Custom Data Sets...

쒐 MoTeC ECU Manager - Sta	art	Collegements gettering	a <u>J</u> amona		4 1 4	J Annie annate -	Januar Artestina -	
File Adjust View Tools	Layout Uf	tilities Help						
🖻 🗂 Close & Save	Alt+X	🎙 🗲 🦧 🞯 🖪 🖉	N Z 🗮 🔞					MoTeC
Stan Fuel Ignition	) 		La Diff	ET (C)	Bat V (V)			
Function Digital Input Functio			0,05	110,0	16,0	RPM Effcy (%) Load (%)	TP (%) MAP (kPa) EMAP Bat V (V)	F APW (ms) F Duty (%) F Time (deg) F Trims (ms)
Auxiliary Output Fur Ignition Output Fund Injector Output Fund	ctions 🕨 🕨		0,00	0,0	0,0	La1 La2	ET (C) AT (C) EGT 1	F I rims (ms)     Ign Adv (dBTDC)   I Trims (dBTDC)
General Setup	•	- Main Setup	0.0 s -0.05	20,0	8,0	LaCtrl1 LaCtrl2		
MA Sensor Setup	+	Miscellaneous Setu;				1		1
Data Logging Setup	• •	Fuel	Data		- <b>1</b>			
Security Setup	•	Ignition	s the data that is	sent	, <b>↓</b>			
	AN 0 Address AN 0 Transfel	RPM Limit	CAN Channel.					
<sup>50,0</sup> 150,0 B	R2 Lap Beac	Communications	Setup Custi	om Data Set:				
	AN 1 Data	Firing Or der	RS232 Tel	emetry Setu	p V3			
	AN 1 Address AN 1 Transfe	Odd Fire TDCs	CAN Setup					
	AN 2 Data	Timers	MDD Setup					
	AN 2 Address AN 3 Data	ň	4 : C DBW4 Setu	р				
	AN 3 Address	0	5:C SLM		+   -			
20,0 30,0 7, C	AN 4 Data AN 4 Address AN 5 Data AN 5 Address AN 6 Data AN 6 Address	0 0 0 0 0 0	6 : Custom Data Set 1 7 : Custom Data Set 2 8 : Custom Data Set 1 9 : Custom Data Set 2 Press F1 for Details	Compound				
· 00 50.0 · .								
Lambda 1 vs. RPM		Engine Temp	, ,					
1,00		10,0						



"Custom Data Sets" panel appears. It is now necessary to add all channels needed by the configuration.

Custom Data Sets	
Custom Set 1 Custom Set 2	
<b>①</b>	
Export Comms template OK Cancel Help	

To add a channel

- press "Add" in the panel here above
- the panel below appears
- insert the channel you wish in "Search text" box (1) and press "OK" (2)
- the requested channel appears in the list (3)

Custom Data Sets	
Select Channel	
Search	ОК
Search text : rpm 1	Cancel
Channels : RPM (RPM)	
3	
Show non-sensor channels	
Export Comms template OK Cancel	



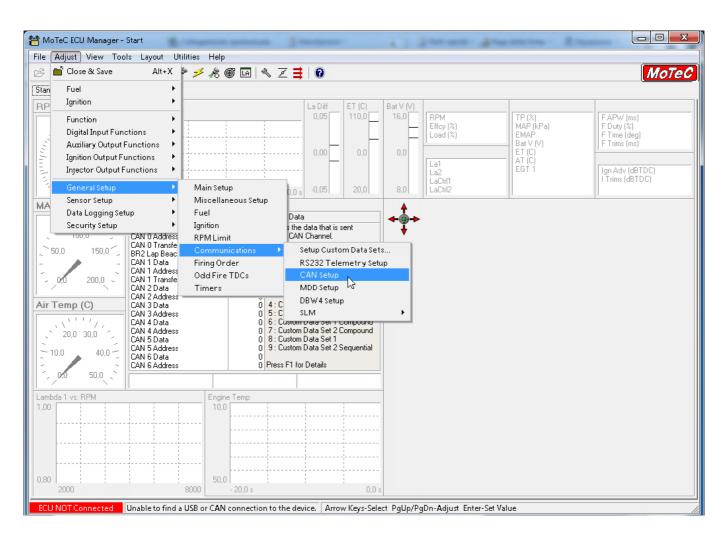
The image below shows all the channels to be added. At the end press "OK" to save and exit.

Custom Da	ta Sets	- superior to the	X
Custom 9	Set 1 Custom Set 2		
	, ,		
Item	Channel	<u> </u>	Add
1	RPM (RPM)		
2	Right Ground Speed (RG Spd)	<u>_</u> h	iange
3	Left Ground Speed (LG Spd) Right Drive Speed (RD Spd)	C	)elete
5	Left Drive Speed (LD Spd)		
6	Throttle Position (TP)	D	elete All
7	Throttle Position 2 (TP2 )	+	• <b> </b>
9	Throttle Pos Driver (TPD) Throttle Pos Driver2 (TPD2)	_	
10	Engine Temp (ET)		
11	Oil Temp (OT)		
12 13	Fuel Temp (FT) Inlet Air Temp (AT)		
14	Manifold Pressure (MAP)		
15	Barometric Pressure (BAP)		
16	Oil Pressure (OP)		
17	Fuel Pressure (FP) Battery Voltage (Bat V)		
19	Fuel Used (F Used)		
20	Gear (Gear)		
21	Gear Shift Force (G Sft F)		
22	Gear Chg Cut Level (GearCut) Lambda 1 (La1)		
24	Lambda 2 (La2)		
25	La1 Short Term Trim (La1 STr)		
26 27	La2 Short Term Trim (La2 STr)		
27	Wheel Slip (Slip) TC Power Reduction (TC Pwr)		
29	Cam Aim R Inlet (CamARIn)		
30	Cam Aim R Exh (CamAREx)		
31	Cam Pos R Inlet (CamRIn) Cam Pos R Exh (CamREx)		
33	Cam Aim L Inlet (CamALIn)		
34	Cam Aim L Exh (CamALEx)		
35	Cam Pos L Inlet (CamLin)		
36 37	Cam Pos L Exh (CamLEx) Efficiency Point (Effcy)		
38	Load Point (Load)		
39	User Channel 1 (User 1)		
40	User Channel 2 (User 2) User Channel 3 (User 3)		
41	User Channel 4 (User 4)		
43	User Channel 5 (User 5)		
44	User Channel 6 (User 6)		
45 46	User Channel 7 (User 7) User Channel 8 (User 8)		
47	Status Flags 1 (Status1)		
48	Status Flags 2 (Status2)		
49 50	Status Flags 3 (Status3) Status Flags 4 (Status4)		
51	Status Flags 4 (Status4) Status Flags 5 (Status5)		
52	Error Group 1 (Error 1)		
53	Error Group 2 (Error 2)		
54 55	Error Group 3 (Error 3) Error Group 4 (Error 4)		
56	Error Group 5 (Error 5)		
57	Error Group 6 (Error 6)	_	
58	Error Group 7 (Error 7)	=	
59 60	Error Group 8 (Error 8) Error Group 9 (Error 9)		
61	Error Group 10 (Error10)	•	
		1	
Export	Comms template OK	Cancel	<u>H</u> elp



The software comes back to the main page. Follow this path:

• Adjust -> General Setup -> Communications -> CAN Setup





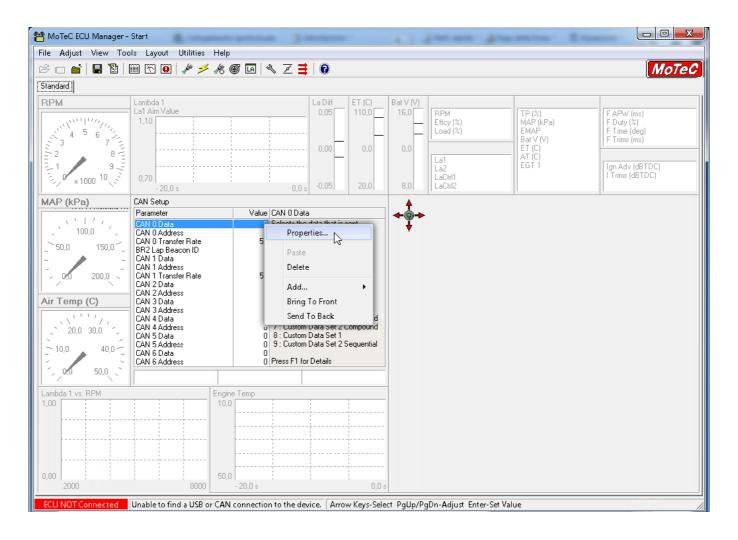
The window here below appears. Three parameters are to be set:

- CAN Data
- CAN Address
- CAN Transfer Rate

You can choose CAN 0 or CAN1 line and the other two parameters are subsequent.

In the example below CAN 0 was chosen.

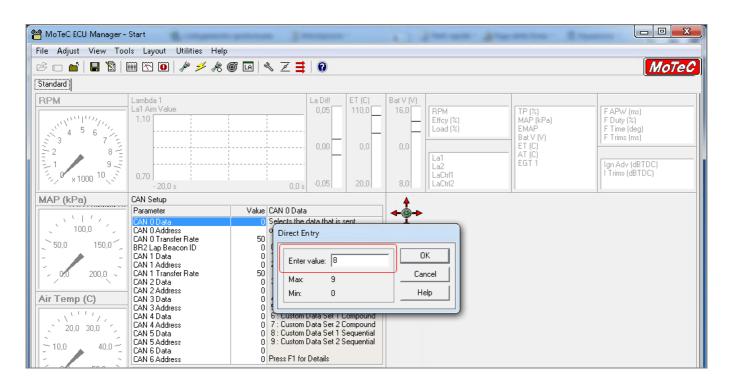
Start selecting the CAN line you want to use and right click on it selecting "Properties..." as shown below.







#### Direct Entry panel appears: fill in "8" and press "OK"



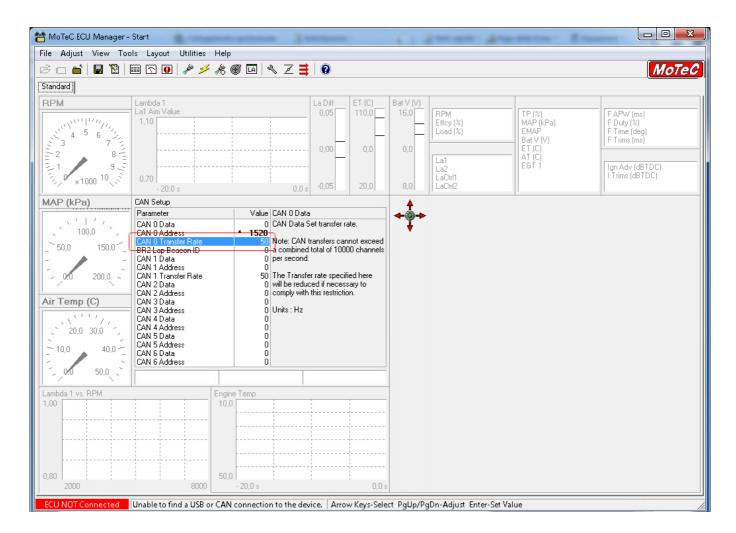
#### Then do the same with "CAN 0 Address": fill "Direct Entry " panel with 1520 and press "OK"

MoTeC ECU Manager - File Adjust View Toc	otari Is Layout Utilities Help	annen gen				S and all all all all all all all all all al	Competition of Competition	
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Standard								
RPM	Lambda 1 La1 Aim Value 1,10		La Diff 0,05	ET (C) 110,0	Bat V (V) 16,0	RPM Effcy (%) Load (%)	TP (%) MAP (kPa) EMAP	F APW (ms) F Duty (%) F Time (deg)
3 7 1 1 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0,70		-0,00	0,0	0,0	La1 La2 LaCtrl1 LaCtrl2	Bat V (V) ET (C) AT (C) EGT 1	F Trims (ms)
MAP (kPa)	- 20,0 s CAN Setup Parameter	0,0 s Value CAN 0 Data		20,01	4			
100,0   50,0 150,0   200,0 200,0   Air Temp (C) 20,0   10,0 40,0	CAN 0 Data CAN 0 Data CAN 0 Transfer Rate BR2 Lap Beacon ID CAN 1 Data CAN 1 Data CAN 1 Address CAN 1 Address CAN 2 Data CAN 2 Data CAN 3 Data CAN 3 Data CAN 3 Address CAN 4 Address CAN 5 Address CAN 5 Data CAN 5 Address CAN 6 Data CAN 6 Data CAN 6 Data	0 Set the Add Ut Direct Er 50 w	ress for CAN htry value: 152 320 0 e for ADL 1! e for MDD 2	20	Ca	DK Incel		





As far as "CAN 0 Transfer rate" is concerned: leave it set on 50 Hz as below.



Once all parameters set transmit the configuration to your device.



# 2 AiM device configuration

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

- ECU manufacturer "MoTec"
- ECU Model "CAN\_CUSTOM\_DATA\_SET1"

## 3 Available channels

Channels received by AiM devices connected to "MoTec" "CAN\_CUSTOM\_DATA\_SET1" protocol are.

ID	CHANNEL NAME	FUNCTION
ECU_1	MO_RPM	RPM
ECU_2	MO_GRD_SPEED_R	Right ground speed
ECU_3	MO_GRD_SPEED_L	Left ground speed
ECU_4	MO_DRV_SPEED_R	Right drive speed
ECU_5	MO_DRV_SPEED_L	Left drive speed
ECU_6	MO_THROT_POS	Throttle position
ECU_7	MO_THROT_POS2	Throttle position 2
ECU_8	MO_TH_POS_DRV	Throttle position driver
ECU_9	MO_TH_POS_DRV2	Throttle pos driver 2
ECU_10	MO_ENGINE_TEMP	Engine temperature
ECU_11	MO_OIL_TEMP	Oil temperature
ECU_12	MO_FUEL_TEMP	Fuel temperature
ECU_13	MO_AIR_TEMP_IN	Inlet air temperature
ECU_14	MO_MANIFOLD_PR	Manifold air pressure (MAP)
ECU_15	MO_BARO_PR	Barometric air pressure (BAP)
ECU_16	MO_OIL_PR	Oil pressure



ECU_17	MO_FUEL_PR	Fuel pressure (FP)
ECU_18	MO_BATT_ECU	Battery voltage (V Bat)
ECU_19	MO_FUEL_USED	Fuel used
ECU_20	MO_GEAR	Gear
ECU_21	MO_GEAR_SH_FOR	Gear shift force
ECU_22	MO_GEAR_CUT_LV	Gear change cut level
ECU_23	MO_LAMBDA_1	Lambda 1
ECU_24	MO_LAMBDA_2	Lambda 2
ECU_25	MO_LA_1_SH_TRM	La 1 short term trim
ECU_26	MO_LA_2_SH_TRM	La 2 short term trim
ECU_27	MO_WHEEL_SLEEP	Wheel sleep
ECU_28	MO_TC_POW_RED	Traction control power reduction
ECU_29	MO_CAMAIM_R_IN	Cam aim right inlet
ECU_30	MO_CAMAIM_R_EX	Cam aim right exhausted
ECU_31	MO_CAMPOS_R_IN	Cam position right inlet
ECU_32	MO_CAMPOS_R_EX	Cam position right exhausted
ECU_33	MO_CAMPOS_L_IN	Cam position left inlet
ECU_34	MO_CAMPOS_L_EX	Cam position left exhausted
ECU_35	MO_CAMAIM_IN	Cam aim inlet
ECU_36	MO_CAMAIM_EX	Cam aim exhausted
ECU_37	MO_CAMPOS_IN	Cam position inlet
ECU_38	MO_CAMPOS_EX	Cam position exhausted
ECU_39	MO_EFFCY_POINT	Efficiency point
ECU_40	MO_LOAD_POINT	Load point
ECU_41	MO_USER1	User channel 1
ECU_42	MO_USER2	User channel 2
ECU_43	MO_USER3	User channel 3
ECU_44	MO_USER4	User channel 4
ECU_45	MO_USER5	User channel 5
ECU_46	MO_USER6	User channel 6
ECU_47	MO_USER7	User channel 7
ECU_48	MO_USER8	User channel 8



ECU_49	MO_USER9	Status group 1	
ECU_50	MO_USER10	Status group 2	
ECU_51	MO_USER11	Status group 3	
ECU_52	MO_USER12	Status group 4	
ECU_53	MO_USER13	Status group 5	
ECU_54	MO_USER14	Error group 1	
ECU_55	MO_USER15	Error group 2	
ECU_56	MO_USER16	Error group 3	
ECU_57	MO_USER17	Error group 4	
ECU_58	MO_USER18	Error group 5	
ECU_59	MO_USER19	Error group 6	
ECU_60	MO_USER20	Error group 7	
ECU_61	MO_USER21	Error group 8	
ECU_62	MO_USER22	Error group 9	
ECU_63	MO_USER23	Error group 10	