

AiM InfoTech

Hondata
KPro4 ECU

Release 1.03



ECU

1

Supported models

This tutorial explains how to connect AiM devices to Engine Control Unit (ECU) datastream.
Supported models are:

- KPro4

2

Software configuration

For Hondata KPro4 ECU to correctly communicate with AiM device it is necessary to set it up using the dedicate Hondata software "Kmanager". The setup changes according to the data bus communication protocol you choose.

Follow the steps here below to know how to proceed.

2.1 RS232 data stream setup

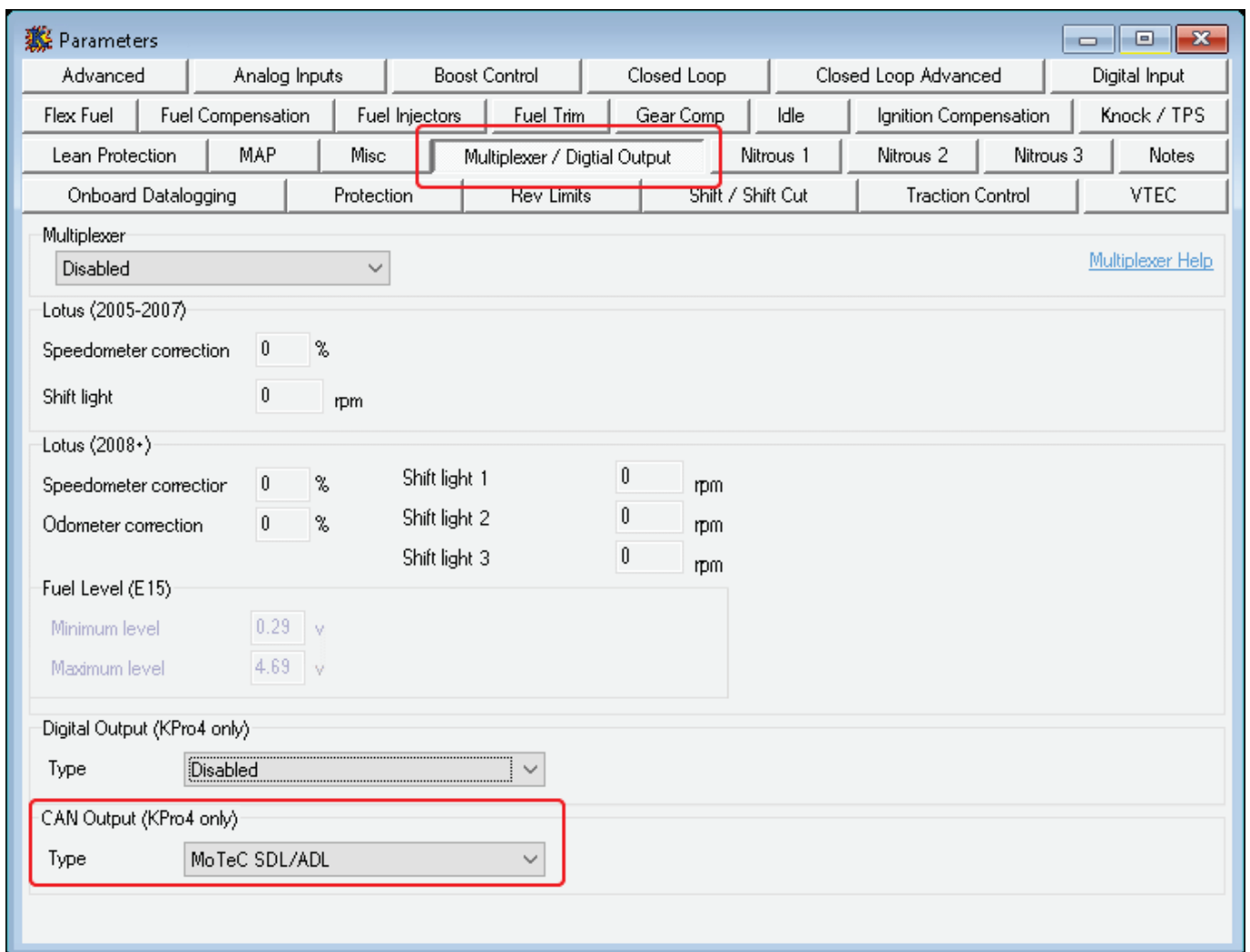
- In Parameters panel press "Multiplexer/Digital Output" and set "Digital Output" box to "AiM MXL" as shown below:

The screenshot shows the 'Parameters' software window with the 'Multiplexer / Digital Output' tab selected. The 'Multiplexer' dropdown is set to 'Disabled'. The 'Digital Output (KPro4 only)' section has its 'Type' dropdown set to 'AiM MXL', which is highlighted with a red box. The 'CAN Output (KPro4 only)' section has its 'Type' dropdown set to 'Disabled'.

Category	Sub-category	Value	
Parameters	Multiplexer	Disabled	
	Lotus (2005-2007)	Speedometer correction	0 %
	Lotus (2005-2007)	Shift light	0 rpm
	Lotus (2008+)	Speedometer correctior	0 %
		Odometer corection	0 %
		Shift light 1	0 rpm
	Fuel Level (E15)	Minimum level	0.29
		Maximum level	4.69
	Digital Output (KPro4 only)	Type	AiM MXL
	CAN Output (KPro4 only)	Type	Disabled

2.2 CAN data stream setup

- In Parameters panel press "Multiplexer/Digital Output" and set "CAN Output" box to "MoTeC SDL/ADL" as shown below:



The screenshot shows the 'Parameters' window with the 'Multiplexer / Digital Output' tab selected. The 'Multiplexer' dropdown is set to 'Disabled'. The 'CAN Output (KPro4 only)' dropdown is set to 'MoTeC SDL/ADL'. The 'Digital Output (KPro4 only)' dropdown is set to 'Disabled'.

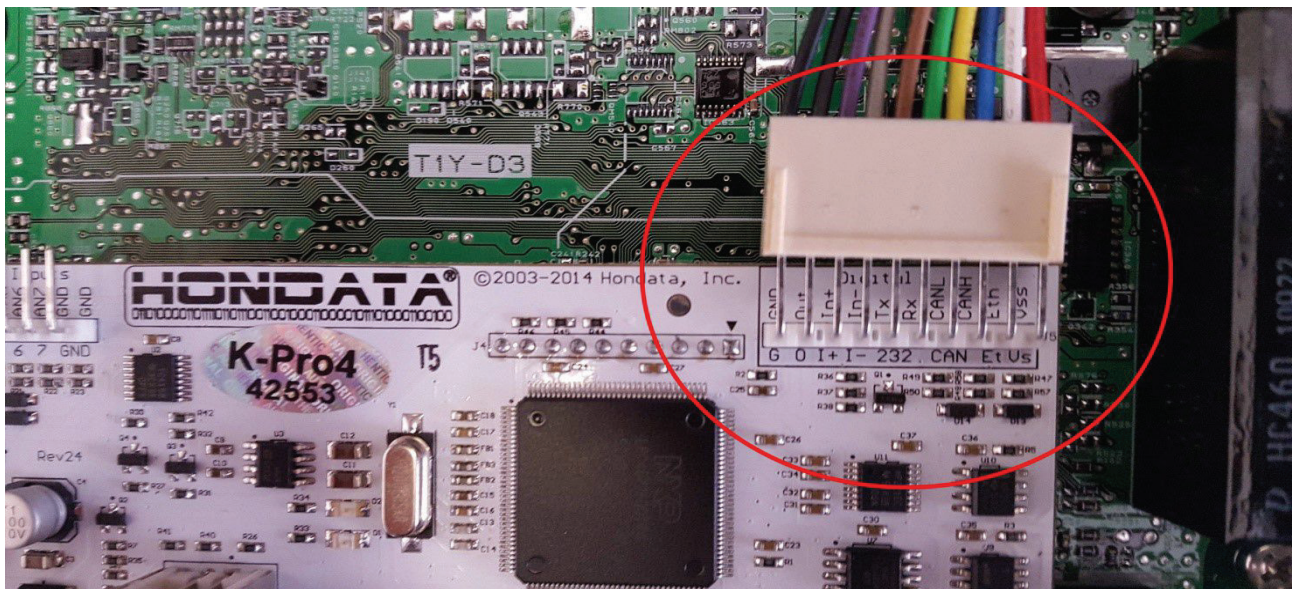
Category	Parameter	Value
Multiplexer	Multiplexer	Disabled
Lotus (2005-2007)	Speedometer correction	0 %
Lotus (2005-2007)	Shift light	0 rpm
Lotus (2008+)	Speedometer corrector	0 %
Lotus (2008+)	Odometer correction	0 %
Lotus (2008+)	Shift light 1	0 rpm
Lotus (2008+)	Shift light 2	0 rpm
Lotus (2008+)	Shift light 3	0 rpm
Fuel Level (E15)	Minimum level	0.29
Fuel Level (E15)	Maximum level	4.69
Digital Output (KPro4 only)	Type	Disabled
CAN Output (KPro4 only)	Type	MoTeC SDL/ADL

- Shut the vehicle down and disconnect the USB cable for the changes to take effect.

3 Wiring connection

For Hondata KPro4 ECU, it is possible to connect to AiM devices through the accessory harness connector (following picture). Hondata accessory harness already allows to perform both connections. AiM suggests to prefer the new CAN bus, much faster and more reliable.

Hondata KPro4 ECU



Here below you find the accessory harness connector wires colors and their function:

ECU Cable function	ECU Cable colour	AiM cable colour	AiM cable label
GND	Black	Black	RS232GND
RS232TX	Brown	White	ECU RS232TX
CANH	Blue	White	CAN+
CANL	Yellow	Blue	CAN-

Please note:

AiM wiring harnesses supplied after September 2018 have the following labels:

ECU RS232TX (white) to be connected to **ECU TX** pin

ECU RS232RX (blue) to be connected to **ECU RX** pin (if indicated in the connection table above)

AiM wiring harnesses supplied before September 2018 have the following labels:

RS232RX (white) to be connected to **ECU TX** pin

RS232TX (blue) to be connected to **ECU RX** pin (if indicated in the connection table above)

4

Race Studio configuration

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

- ECU manufacturer: **Hondata**
- ECU Model: **KPRO** for serial RS232 communication protocol
KPRO4_CAN for CAN bus communication protocol

5

Protocols

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

5.1

"Hondata – KPRO" protocol

Channels received by AiM devices configured with "Hondata – KPRO" protocol are:

CHANNEL NAME	FUNCTION
HONDATA_RPM	RPM
HONDATA_SPEED	Vehicle speed
HONDATA_GEAR	Engaged gear
HONDATA_ECT	Engine cooling temperature
HONDATA_IAT	Intake air temperature
HONDATA_BATTERY	Battery voltage supply
HONDATA_TPS	Throttle position sensor
HONDATA_MAP	Manifold Air Pressure
HONDATA_INJECTOR_TIME	Injection time



HONDATA_IGNITION_PHASE	Ignition phase
HONDATA_REVERSE_LOCKOUT	Reverse lockout
HONDATA_BRAKE_SWITCH	Brake indicator
HONDATA_SCS	SCS
HONDATA_EPS	EPS
HONDATA_FUEL_PUMP	Fuel pump indicator
HONDATA_RADIATOR_FAN	Radiator fan indicator
HONDATA_VTEC_OIL_PRESS	Oil pressure
HONDATA_VTECS1	Solenoid indicator 1
HONDATA_VTECS2	Solenoid indicator 2
HONDATA_MIL	Malfunctioning indicator lamp
HONDATA_CAM_ANGLE	Cam angle
HONDATA_LAMBDA	Lambda value
HONDATA_AFR	Air/Fuel ratio
HONDATA_KNOCK_COUNT	Knock since power on

5.2

"Hondata – KPRO4_CAN" protocol

Please note: Hondata KPRO4 ECU features some customizable analogue channels. To answer our customers request, AiM decided to set oil pressure and oil temperature on channels 15 and 16 of this driver. To correctly sample these channels is however necessary to physically connect specific sensors to specific ECU pins. The sensor to connect are:

- Autometer 2246 pressure sender (image below on the left) to connect to ECU Analog0 pin
- Autometer 2252 temperature sender (image below on the right) to connect to ECU Analog1 pin; moreover, you need to install a 1.5kOhm 1% pull up resistor connected to VCC 5V.

Please refer to your ECU user manual to know the ECU pinout.



Channels received by AiM devices configured with "Hondata – KPRO4_CAN" protocol are:

CHANNEL NAME	FUNCTION
ECU RPM	RPM
ECU SPEED	Vehicle speed
ECU GEAR	Engaged gear
ECU VOLTAGE	Battery voltage
ECU IAT	Intake air temperature
ECU ECT	Engine coolant temperature
ECU TPS	Throttle position sensor
ECU MAP	Manifold air pressure
ECU INJ	Injection time



ECU IGN	Ignition angle
ECU LAMBDA	Lambda value
ECU KNOCK CNT	Knock counter
ECU CAM TARGET	Camshaft target
ECU CAM ACTUAL	Actual camshaft
ECU POIL	Oil pressure
ECU OILT	Oil temperature
ECU ANALOG2	Analog signal 2
ECU ANALOG3	Analog signal 3
ECU ANALOG4	Analog signal 4
ECU ANALOG5	Analog signal 5
ECU ANALOG6	Analog signal 6
ECU ANALOG7	Analog signal 7
ECU FREQ Hz	Frequency
ECU ETH CONT	Ethanol counter
ECU FUEL T	Fuel temperature