

KMS MD35 Communication protocol Release 1.02

KMS MD35 ECU







INTRODUCTION

AIM has developed special applications for many of the most popular ECUs: by special applications we mean user-friendly systems which allow to easily connect your ECU to our high tech data loggers: user needs only to install harness between the **logger** and the ECU.

Once connected, the logger displays (and/or records, depending on the logger and on the ECU data stream and configuration) values like RPM, engine load, throttle position (TPS), air and water temperatures, battery voltage, speed, gear, lambda value (air/fuel ratio) analog channels...

All AIM loggers include – free of charge – **Race Studio 2** software, a powerful tool to configure the system and analyze recorded data on your PC.

Warning: once the ECU is connected to the logger, it is necessary to set it in the logger configuration in Race Studio 2 software. Select Manufacturer "KMS" Model "MD35". Refer to Race Studio Configuration user manual for further information concerning the loggers configuration.

Warning: for any further information concerning ECU firmware/software settings and/or upgrading it is always recommended to address to the ECU dealer.



Chaper 1 – CAN Communication Setup

KMS MD35 ECU is equipped with a CAN communication setup used to communicate parameters to an external logger.

The image here below shows the standard CAN communication setup.



Chapter 2 – Software settings

To ensure a correct communication with AIM loggers KMS MD35 ECU software setting is needed; use KMS more recent software and follow the procedure here below described:

- run the software;
- select "Options" icon;

select "options";





• select "External Dashboard";

• select "AIM KMS CAN (1MHz)";

• press "OK";

Options	al nu	mber: 440068
RPM pickup		AUX1
RPM Limiters and Powershift	1	AUX2
Engine load sensor		AUX3
Injection settings		External Dashboard
Startup		Pemarks Select
Throttle pump effect	Exter	nal Dashboard" ettings
Hardware configuration		Traction control settings
Lambda control		Communicationport
Boost control		
A.L.S.		
		<u>O</u> k
		<u>C</u> ancel

Version info: 4MA1AI1AC Serial number: 440068
Evternal Dachboard
AIM FROT_DART AIM KMS_UART AIM PROT_CAII
KMS_CAN (1 MHz) KMS_CAN (0.5 MHz)
Select "KMS _CAN (1 MHz)"
Ontions
Version info: 4MA1AI1AC Serial number: 440068
External Dashboard
Output protocol for: XMS_CAN (1 MIZ)
Output protocol for: XMS_CAIL(1 MHz)
External Dashboard Output protocol for: XIAS_CAN(1 MII2)
External Dashboard Output protocol for: XXIS:CAN(1MII2) WE Cancel PRESS OK
Output protocol for: MISS CALIF(IMID)
Output protocol for: XIAS_CAN(I MILE)
Output protocol for: KILS CALL(LMID) V PRESS OK



•

press "OK" again;

Options DATA IS NOT LOCKED !!!				
Version info: 4MA1AI1AC Serial number: 440068				
i	RPM pickup	AUX1		
RPM Lim	iters and Powershift	AUX2		
Eng	ine load sensor	AUX3		
Inje	ection settings	External Dashboard		
	Startup	Remarks		
Thro	ttle pump effect	Speed settings		
Hardw	are configuration	Traction control settings		
La	mbda control	Communicationport		
В	oost control			
	A.L.S.			
		Press OK]	

- Control
 <t
- Data download starts automatically and KMS setting procedure is over.

Chapter 3 – Connection to AIM loggers

To connect AIM logger to KMS MD35 ECU

- Connect cable labelled CAN+ of AIM logger to pin 1 (red cable) of the ECU;
- Connect cable labelled CAN- of AIM logger to pin 2 (green cable) of the ECU.







Chapter 4 – Communication protocol

Channels received by AIM loggers connected to KMS MD35 ECU are:

RPM

CHANNEL NAME

FUNCTION

K RPM K ECT K IAT K MAP K OILP K_TPS_ENG_LOAD K_BOO_ENG_LOAD K BATT VOLT K_EXH_TEMP1 K EXH TEMP2 **K_CRANK** K GEAR K_ACC_RPM_CH K INJ1 PULSE K INJ1 CORR K LAMBDA1 K LAMBDA2 K LAMBDA1 STAT K LAMBDA2 STAT K INJ2 PULSE K_INJ2_CORR K_IGNIT_CORR K_IGNIT_BTDC K AUX2 ACT K AUX3 ACT K FUELPUMP ACT K AUX1 ACT K LAMBDA ACT K_LAMB_ERR_ACT K_BOOST_ACT K SUPP ERR ACT K POWER SW ACT K LAUNCHSW ACT K RPM LIM K BOOST LIM K FUEL CUT LIM K_IDLE_VALVE K_BOOST_VALVE K ATM PRESS K_TPS

Engine cooling temperature Intake air temperature Manifold air pressure Oil pressure Throttle Position Sensor Engine Load **Boost Engine Load Battery Voltage Exhausted Temperature1** Exhausted Temperature2 Crank sensor signal Gear Value RPM Injection 1 Pulse Injection 1 Correspondence Lambda signal 1 Lambda signal 2 Lambda1 Status Lambda 2_Status Injection _Pulse Injection 2 Correspondence Ignition _Correspondence Ignition before top death condition Auxiliary 2 Active Auxiliary 3_Active Fuel pump active Auxiliary 1 Active Lambda Active Lambda Error Active **Boost Active** Supply Error Active **Power Switch Active** Launch switch Active **RPM** limiter **Boost limiter** Fuel cut limiter Idle Valve **Boost Valve Atmospheric Pressure Throttle Position**