

ECUMASTER ADU

Application Note



ECUMASTER EMU CLASSIC

Revision 1.2

1. Copyright and trademarks

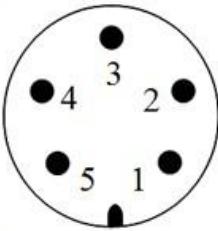
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2. Introduction

This application note explains how to connect and configure the ADU with the ECUMASTER EMU CLASSIC via Serial connection.

3. Electrical connection

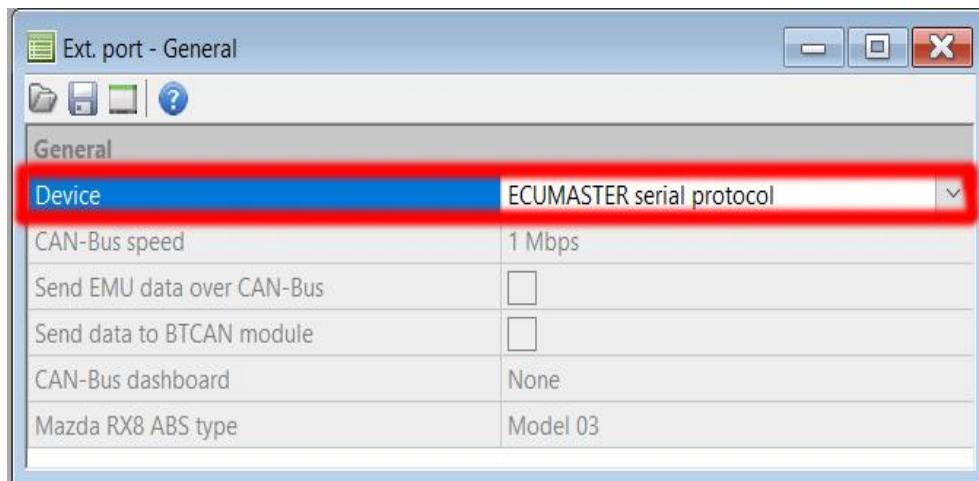
The Ecumaster EMU has a 5 way circular connector where you will find the serial connections. The picture below shows the connector pinout.

	1 – Rx (<i>Serial receive</i>)
	2 – Tx (<i>Serial transmit</i>)
	3 - +3,3V
	4 - Ground
	5 - +5V

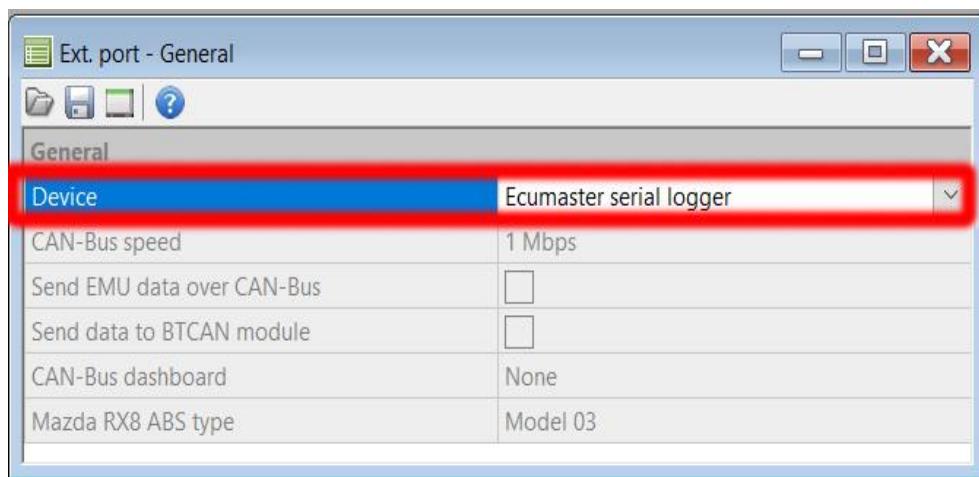
Terminal #2 of circular connector (*Tx*) should be connected to ADU terminal #7 (*Rx input*). It is recommended to use shielded cable for this connection.

4. EMU Classic configuration

The EMU needs to be configured prior to communication with ADU. The serial communication options are available in the “*Configuration / Ext. port / General*” window which can be accessed through the drop-down menus on the left side of the software. Select “*Ecumaster serial protocol*” under “*Device*”



From firmware version 82.0 of the ADU it is possible to use the Ecumaster serial logger (EDL-1) protocol. Using this protocol makes it possible to use the EDL-1 with ADU at the same time. This is the preferable protocol due to the fact that more channels are available to display (See the list of the supported channels).



5. ADU configuration

To configure the ADU, the Ecumaster serial protocol should be selected in “CANBus / Serial Setup”. To open the “CANBus / Serial Setup” press F9 to open the pane selector and then select “General / CANBus Serial Setup”.

CANbus / Serial Setup	
CANbus / Serial Setup	
CAN2 terminator	<input type="checkbox"/>
CAN2 speed	500 kbps
GPS CANbus	CAN1
GPS static hold	zero
Tire temperature cameras CANbus	CAN1
Tire temperature cameras base ID	420
Serial protocol	Ecumaster serial protocol

Configuration when Ecumaster serial protocol is used

CANbus / Serial Setup	
CANbus / Serial Setup	
CAN2 terminator	<input type="checkbox"/>
CAN2 speed	500 kbps
GPS CANbus	CAN1
GPS static hold	zero
Tire temperature cameras CANbus	CAN1
Tire temperature cameras base ID	420
Serial protocol	Ecumaster Classic EDL protocol

Configuration when Ecumaster serial logger protocol is used

CAN messages take priority over Serial, so please ensure that no ECU CAN messages are present in the Project Tree pane. Make sure no CAN inputs override used ecu.* channels!

Name	Formula	Details	
Pages			
pg_generic		page, usage: 9%	
pg_generic2		page, usage: 6%	
pg_track		page, usage: 12%	
pg_trackSimple		page, usage: 10%	
pg_rally		page, usage: 7%	
pg_pmu		page, usage: 7%	
Analog inputs			
a_fuelLevel1	linear sensor: range: 0,0 - 100,0; voltage: 0,0 - 5,0V	A3, pd 1M	
Functions			
f_isGPSValid	gps.status > 1		
f_oil_alarm	ecu.oilPress < 1,00bar, delay true for 1s, delay false for 1s		
f_batt_alarm	ecu.battery < 12,00V		
f_dt_alarm	ecu.dt >= 105,00°C, delay true for 1s, delay false for 1s		
+ m_emublack	CAN1 0x600 - 8 frames		
m_pmu1	CAN1 0x668 - 8 frames		
al_battery	ecu.battery < 13,0	Error: "Battery voltage too low #"	

Use *Delete* button to remove existing ECU mob.

6. Supported channels

Ecumaster serial protocol

ADU channel	Description
ecu.analog1	Analog #1 voltage
ecu.analog2	Analog #2 voltage
ecu.analog3	Analog #3 voltage
ecu.analog4	Analog #4 voltage
ecu.afr	Air to fuel ratio
ecu.baro	Barometric pressure
ecu.battery	Battery voltage
ecu.clt	Engine coolant temperature
ecu.ecuTemp	ECU internal temperature
ecu.egt1	Exhaust gas temperature #1
ecu.egt2	Exhaust gas temperature #2
ecu.ethanolContent	Fuel ethanol content
ecu.fuelTemp	Fuel temperature
ecu.fuelPressEffective	Effective fuel pressure
ecu.fuelLevel	Fuel level
ecu.fuelPress	Fuel pressure
ecu.gear	Gear
ecu.iat	Intake manifold temperature
ecu.injPW	Injection pulse width
ecu.injDC	Injectors DC
ecu.ignAngle	Ignition advance
ecu.ignDwell	Ignition coil dwell
ecu.knockLvl	Knock level
ecu.lambda1	Lambda #1
ecu.lambda1Trgt	Lambda #1 target
ecu.map	Manifold absolute pressure
ecu.oilTemp	Oil temperature
ecu.oilPress	Oil pressure
ecu.rpm	Engine RPM
ecu.speed	Vehicle speed
ecu.secInjPW	Secondary injectors pulse width
ecu.tableSet	Current table set
ecu.tps	Throttle position

Ecumaster serial logger protocol

ADU channel	Description
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ecu.analog4	Analog #4 voltage
ecu.afr	Air to fuel ratio
ecu.baro	Barometric pressure
ecu.battery	Battery voltage
ecu.clt	Engine coolant temperature
ecu.ecuTemp	ECU internal temperature
ecu.egt1	Exhaust gas temperature #1
ecu.egt2	Exhaust gas temperature #2
ecu.ethanolContent	Fuel ethanol content
ecu.errorFlags	Clt,Lat,Map,Wbo,Egt1&2,Knock,Flex Fuel,Dbw,Frp
ecu.flags1	Gearcut,ALS,Launch Control,Idle control,Tables set
ecu.flags2	Parametric outputs 1-4, Virtual outputs 1-2
ecu.flags5	Fuel pump, Coolant fan, AC Clutch
ecu.fuelTemp	Fuel temperature
ecu.fuelPressEffective	Effective fuel pressure
ecu.fuelLevel	Fuel level
ecu.fuelPress	Fuel pressure
ecu.gear	Gear
ecu.iat	Intake manifold temperature
ecu.injPW	Injection pulse width
ecu.injDC	Injectors DC
ecu.ignAngle	Ignition advance
ecu.ignDwell	Ignition coil dwell
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