

**Race Studio 3** 

# Fuel Used Channel

## **Question:**

How can I obtain the information referred to the used fuel during each session?

## Answer:

The Fuel Used channel, which informs about the used fuel quantity, can be activated configuring your device properly. Once the session is finished, the value is represented in the Counters tab of the connected device menu (through Race Studio 3) and in the device menu Counter page as well (from the device itself).

**N.B.:** the Fuel Used channel can be activated **only** in the MXx and EVOx devices configurations, starting from the Race Studio 3 release n. **3.16.20**;

N.B.: this parameter can be calculated by the AiM systems **only if** in the device configuration an ECU communication protocol is selected, which includes the channel with Fuel Flow function (consumed fuel over time).



#### **Race Studio 3**

The Fuel Used can be included in the available channels list (Channels tab) in the following way:

• Enter in the Configurations section of Race Studio 3 (22), choose for an existing configuration or create a new one clicking "New". After the device type has been selected and its name and eventually a comment have been added, click "OK": by default, the Channels tab is shown, which reports the available channels list (in the list, the Fuel Used channel is not present; see following image).

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e Save As Close Transmit								
ECU Stream CAN2 Stream CAN Expansions	Math Channe	is Status Variables Paramete	ers Shift Lights and Alarms	Trigger Commands Dis	play Smart	/Cam Strean	CAN Output	
	RPM	RPM	Engine RPM	RPM Sensor	rpm	20 Hz	max: 16000 ; factor: /1 ;	
	Spd1	Speed1	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;	
	Spd2	Speed2	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;	
	Spd3	Speed3	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;	
	Spd4	Speed4	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;	
	Ch01	Channel01	Voltage	Generic 0-5 V	mV	20 Hz		
	Ch02	Channel02	Voltage	Generic 0-5 V	mV	20 Hz		
	Ch03	Channel03	Voltage	Generic 0-5 V	mV	20 Hz		
	Ch04	Channel04	Voltage	Generic 0-5 V	mV	20 Hz		
	Ch05	Channel05	Voltage	Generic 0-5 V	mV	20 Hz		
	Ch06	Channel06	Voltage	Generic 0-5 V	mV	20 Hz		
	Ch07	Channel07	Voltage	Generic 0-5 V	mV	20 Hz		
	Ch08	Channel08	Voltage	Generic 0-5 V	mV	20 Hz		
	AccX	AccelerometerX	Inline Accel	AiM Internal Accelerometer	g 0.01	50 Hz		
	AccY	AccelerometerY	Lateral Accel	AiM Internal Accelerometer	g 0.01	50 Hz		
	AccZ	AccelerometerZ	Vertical Accel	AiM Internal Accelerometer	g 0.01	50 Hz		
	GyrX	GyroX	Roll Rate	AiM Internal Gyro	deg/s 0.1	50 Hz		
	GyrY	GyroY	Pitch Rate	AiM Internal Gyro	deg/s 0.1	50 Hz		
	GyrZ	GyroZ	Yaw Rate	AIM Internal Gyro	deg/s 0.1	50 Hz		
	Accu	GPS Accuracy	GPS Accuracy	AIM GPS	mm	10 Hz		
	Spd	GPS Speed	Vehicle Spd	AIM GPS	km/h 0.1	10 Hz		
	Alt	Altitude	Altitude	AIM GPS	m	10 Hz		
	OdD	Odometer	Odometer Total	AIM ODO	km 0.1	1 Hz		
	Luma	Luminosity	Brightness	AiM Luminosity	%	1 Hz		



• Entering the ECU Stream tab, it is possible to choose the ECU communication protocol available for your vehicle: **only if it features one channel with the Fuel Flow function**, a popup window appears which communicates that the Fuel Used channel has been activated and it can be configured from the Channels tab.

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All MXS 03 <sup>sc</sup>								
Save Save As Close Transmit								
Channels ECU Stream CAN2 Stream CAN Expansions Math Channels Status Variable	es Paramete	rs Shift Lights and Alarms T	rigger Commands Display	y SmartyCa	Cam Stream CAN Output			
	ECU: POL	ARIS - RZR	Ch	iange ECU	•			
	Enabled Cha	annels (Max. 120) 28 / 28						
	ID	Name	Function	Unit	Freq			
	CC02	RPM	Engine RPM	rpm	10 Hz			
	CC19	VehicleSpeed	Vehicle Spd	km/h 0.1	10 Hz			
	CC22	✓ ThrottlePostion	Pct Throttle Load	% 0.01	10 Hz			
	CC18	✓ WaterTemperature	Water Temp	C 0.1	10 Hz			
	CC40	✓ IntakeAirTemp	Air Temp	C 0.1	10 Hz			
	CC33	ChargeAirTemp	Temperature	C 0.1	10 Hz			
	CC28	EPSTemperature	Temperature	C 0.1	10 Hz			
	CC41	Mani 💽 AiM-sw	×	bar 0.01	10 Hz			
	CC42	Bare By selecting the	nis CAN protocol	bar 0.01	10 Hz			
	CC05	Configurable	vated the Fuel Used channel in 'Channels' tab	bar 0.01	10 Hz			
	CC20	✓ Brab	ОК	#	10 Hz			
	CC04	Gear	K	#	10 Hz			
	CC01	EngineLoad	Number	#	10 Hz			
	CC27	FuelLevel	Percent	% 0.01	10 Hz			
	CC23	FuelRate	Fuel Flow	I/s	10 Hz			
	CC24	FuelEconomy	Volume Flow	I/s	10 Hz			
	CC25	AverageFuelEco	Rate	%/s 0.1	10 Hz			
	CC29	EPSSteeringRate	Rate	%/s 0.1	10 Hz			
	CC30	EPSInputForce	Torque	Nm 0.1	10 Hz			
	CC31	EPSOutputForce	Torque	Nm 0.1	10 Hz			
	CC32	EPSCurrent	Current	A 0.001	10 Hz			
	CC09	EPS_Alarm	Number	#	10 Hz			
	CC47	FrontDriveActive	Wheel Drive	#	10 Hz			



• Going back to the Channels tab, it is now possible to find the Fuel Used channel (by default, placed at the bottom of the list): clicking it, the settings window appears (lower image), from whom it is possible to modify the channels name, its sampling frequency, its measurement unit and its displayed decimal places.

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All MXS 03 30									
Save Save As Close Transmit									
Channels ECU Stream CAN2 Stream CAN Expansions Math	Channels 5	Status Variables Param	eters Shift Lights and	Alarms Trigger Command	ls Display Smart	Cam Stream	CAN Output		
ID	~	Name	Function	Sensor	Unit	Freq	Parameters		
RP	M 🔽	RPM	Engine RPM	RPM Sensor	rpm	20 Hz	max: 16000 ; factor: /1 ;		
Spo	d1 🗸	Speed1	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;		
Spo	d2 🖌	Speed2	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;		
Spo	d3 🖌	Speed3	🜁 Channel Settings	Channel Settings			wheel: 1600 ; pulses: 1 ;		
Spo	d4 🖌	Speed4	Name	FuelUsed			wheel: 1600 ; pulses: 1 ;		
Chù	01	Channel01	Function	Fuel Level					
Chu	02	Channel02							
Chu	03	Channel03	Sensor	AIM FUEL USED					
Chù	04	Channel04	Sampling Frequency	10 Hz		\$			
Chi	05	Channel05	Unit of Measure	1		÷			
Chū	06	Channel06	Display Precision						
Chi	07 🔽	Channel07	bispidy Precision	r deemarpidee					
Chi	08	Channel08							
Acc	cX 🗸	AccelerometerX							
Acc	cY 🗸	AccelerometerY							
Aco	cZ 🗹	AccelerometerZ			Save	Cancel			
Gyr	rX 🗸	GyroX			ourc	Guncer			
Gyr	rY 🔽	GyroY	Pitch Rate	AIM Internal Gyro	deg/s 0.1	50 Hz			
Gyr	rZ 🔽	GyroZ	Yaw Rate	AiM Internal Gyro	deg/s 0.1	50 Hz			
Acc	cu 🗹	GPS Accuracy	GPS Accuracy	AIM GPS	mm	10 Hz			
Spo	d 🗸	GPS Speed	Vehicle Spd	AIM GPS	km/h 0.1	10 Hz			
Alt		Altitude	Altitude	AIM GPS	m	10 Hz			
DO	_	Odometer	Odometer Total	AIM ODO	km 0.1	1 Hz			
Lur	ma 🔽	Luminosity	Brightness	AiM Luminosity	%	1 Hz		7	
Fue	el 💌	Fuel Used	Fuel Level	AIM FUEL USED	10.1	10 Hz			
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Once these first settings are done, click Save and they will be stored by the software, so that the Fuel Used channel can be utilised in the other device configuration section tabs.



#### **Race Studio 3**

Once the session is over, with connected device to the PC, it is possible to obtain the counters updated values: from the Counters tab, click Receive (upper page zone; see following image) to refresh the odometers and the Fuel Used values.
Additionally, it is possible to transmit a Fuel Used value to the device, digiting it in the field and clicking the "set" button (A). The Fuel Used value can be reset too, digiting "0" in the field and clicking "reset" to transmit the value to the device (B).

Clicking the Fuel Used label or the current measurement unit symbol, it is possible to modify the measurement unit itself (the choice is among liters, UKgal or USgal).



The used fuel quantity value can be reset from the devices too:

- MXx Series: MENU/<< -> Counters -> move to the Fuel Used row -> CHANGE -> OK (the Reset option is automatically selected);
- EVOx Series: MENU -> Counters -> move to the Fuel Used row -> RESET (if an AiM visor is plugged into the net).