

AiM InfoTech

POLARIS
RZR
RZR v2
RZR ProR LV

Release 1.02



ECU



1

Supported models

This document explains how to connect AiM devices to the vehicle Engine Control Unit (ECU) data stream.

Supported models and years are:

- RZR – RS1
- RZR – XP 1000
- RZR – XP Turbo
- RZR – Pro
- RZR – ProR

2

Wiring Connection

These models feature a specific manufacturer protocol based on CAN, accessible through the Delphi 8 pins female connector plug placed in the front hood. For this installation refer to the following pinout of the Delphi female connector and its connection table.



Polaris connector pinout

B
D
G
H

Pin function

Battery voltage
Ground
CAN Low
CAN High



AiM cable

V Batt
GND
CAN -
CAN +

AiM cable colour

Red
Black
Blu
White

3

Race Studio configuration

Before connecting the AiM device to the ECU, set all functions using AiM software Race Studio. The parameters to set in the device configuration are:

- ECU manufacturer: **Polaris**
- ECU Model: **RZR**
RZR V2 (only RS3)
RZR ProR LV (only RS3)

4

Protocols

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

4.1

"Polaris - RZR" protocol

Channels received by AiM devices configured with "Polaris - RZR" protocol are:

CHANNEL NAME	FUNCTION
RPM	Engine RPM
VehicleSpeed	Vehicle speed
ThrottlePosition	Throttle position sensor
WaterTemperature	Water temperature
IntakeAirTemp	Intake air temperature
ChargeAirTemp	Charge air temperature
EPSTemperature	Electronic power steer temperature
ManifoldAirPressure	Manifold Air pressure
BarometricPress	Barometric pressure
BoostPressure	Boost pressure
BrakeSwitch	Brake switch
Gear	Engaged gear
EngineLoad	Engine load
FuelLevel	Fuel level
FuelRate	Fuel rate
FuelEconomy	Fuel economy
AverageFuelEco	Average fuel economy
EPSTeeringRate	Electronic power steer rate
EPSInputForce	Electronic power steer input torque
EPSOutputForce	Electronic power steer output torque
EPSCurrent	Electronic power steering current
EPSAlarm	Electronic power steering alarm
FrontDriveActive	Front wheel drive activation
MIL	Malfunction indicator lamp
BatteryVoltage	Battery voltage



SeaBelt	Seat belt
Odometer	Odometer
OdometerTrip1	Odometer trip 1

Technical note: not all data channels outlined in the ECU template are validated for each manufacture's model or variant; some of the outlined channels are model and year specific, and therefore may not be applicable.

4.2

"Polaris – RZR v2" protocol

Channels received by AiM devices configured with "Polaris – RZR v2" protocol are:

CHANNEL NAME	FUNCTION
RPM	Engine RPM
Gear	Engaged gear
VehicleSpeed	Vehicle speed
ThrottlePosition	Throttle position sensor
WaterTemperature	Water temperature
IntakeAirTemp	Intake air temperature
BrakeSwitch	Brake switch
ChargeAirTemp	Charge air temperature
EPSTemperature	Electronic power steer temperature
ManifoldPressure	Manifold air pressure
BarometricPress	Barometric pressure
BoostPressure	Boost pressure
EngineLoad	Engine load
FuelLevel	Fuel level
FuelRate	Fuel rate
FuelEconomy	Fuel economy
AverageFuelEco	Average fuel economy



EPSSteeringRate	Electronic power steer rate
EPSInputForce	Electronic power steer input force
EPSOutputForce	Electronic power steer output force
EPSCurrent	Electronic power steer current
EPSSAlarm	Electronic power steer alarm
FrontDriveActive	Front wheel drive activation
MIL	Malfunction indicator lamp
BatteryVoltage	Battery voltage
SeatBelt	Seat belt
Odometer	Odometer
OdometerTrip	Odometer trip 1

Technical note: not all data channels outlined in the ECU template are validated for each manufacturer's model or variant; some of the outlined channels are model and year specific, and therefore may not be applicable.

4.3

"Polaris – RZR ProR LV" protocol

Channels received by AiM devices configured with "Polaris – RZR ProR LV" protocol are:

CHANNEL NAME	FUNCTION
Lambda Measured	Measured lambda
Lambda Target	Target lambda
FrontDriveStatus	Front wheel drive status
Pedal Position	Accelerator pedal position
PolarisEngineRPM	Engine RPM
FuelRange	Fuel range
TransReqGear	Engaged gear
LatAccel	Lateral acceleration
LongAccel	Longitudinal acceleration
VerticalAccel	Vertical acceleration



TurboBoostPress	Turbo boost pressure
Lamp	Warning lamp
LampState	Lamp state
DTC1	DTC1
EngineCoolantTem	Engine coolant temperature
BrakeSwitch	Brake switch
WheelSpeed	Wheel speed
EngineThrottlePo	Engine throttle position
EngFuelRate	Fuel rate
InstFuelEcon	Instant fuel economy
FuelLevel	Fuel level
EPSSensedInputTo	Electronic power steer input force
EPSSensedOutputT	Electronic power steer output force
EPSTemp	Electronic power steer temperature
EPSSteerVelocity	Electronic power steer rate
SusDampFL	Suspension damper front left
SusDampFR	Suspension damper front right
SusDampRL	Suspension damper rear left
SusDampRR	Suspension damper rear right
SusMode	Suspension mode
Airborne	Airborne
Braking	Braking
Cornering	Cornering
Accel	Acceleration
PedalPositionVol	Accelerator pedal position voltage
FanRelay	Fan relay
HighRangeLoad	Engine load
FanDutyCycle	Fan duty cycle
TargetBoostPress	Target boost pressure
BoostCtrlSolInd	Boost control solenoid percent
BoostTemp	Charge air temperature



Injector1PulseW	Injector 1 pulsewidth
Ign1Timing	Ignition 1 timing
Ign1Dwell	Ignition 1 dwell time
Injector2PulseW	Injector 2 pulsewidth
Ign2Dwell	Ignition 2 dwell time
Ign2Timing	Ignition 2 timing
EngineLoad	Engine load
IdleTargetRPM	Idle target RPM
IntakeAirTempera	Intake air temperature
ManifoldAbsolute	Manifold air pressure
BoostPressure	Boost pressure
BarometricPressu	Barometric pressure
EngineThrottle	Throttle position sensor
VehicleSpeed	Vehicle speed

Technical note: not all data channels outlined in the ECU template are validated for each manufacture's model or variant; some of the outlined channels are model and year specific, and therefore may not be applicable.