VasfEFI ECU - Installation Guide

Power wiring, relay logic, sensor connection rules and installation limits

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This guide is for vehicle installation only. The full 56-pin pinout is provided in the separate Pinout Reference document.

Core hardware facts

CKP input: inductive / VR crank sensor only. Hall crank sensors are not supported.
CAM default jumper: 5V by default. Use CAM_5V unless the 12V cam input is explicitly required.
Tachometer default jumper: 5V by default. The jumper may be moved if a 12V tach output is needed.
VMOT: DRV8825 motor-supply input. Feed VMOT from an external relay only when a stepper valve is used.

Recommended power architecture

Branch	Typical fuse	Purpose
ECU main feed	10A before ignition switch / 5A after switch	ECU logic feed and relay-coil supply
Injectors + coils relay	20A	Shared switched supply for injectors and ignition coils
Cooling fan relay	30A	Electric fan high-current branch
Fuel pump relay	20A	Fuel pump switched feed
Main vehicle distribution	120A	Main battery branch feeding actuator relays

Recommended flow: Battery -> 120A main fuse -> fused actuator branches -> relays. Separate battery feed: Battery -> 10A ECU fuse -> ignition switch -> 5A ECU fuse -> ECU and relay coils.

Relay wiring rule

Relay pin	Connection	Comment
30	Power from branch fuse	High-current input
87	Output to load	Fan / pump / injectors-coils / optional VMOT relay
86	Ignition-switched 12V	Shared relay-coil feed is acceptable
85	ECU low-side control	ECU sinks relay coil to ground

Relay-coil current is small. Using the same ignition-switched line for ECU power and relay-coil feed is normal and acceptable.

Grounding rules

All ECU grounds must connect to the engine block, at the same ground point used by the battery negative cable.
Do **not** ground the ECU to chassis sheet metal separately.
PGND is for actuator / power return.
GND / SENSOR_GND is for sensor reference return.

Sensor connection limits

Signal	Supported	Important note
CKP	VR / inductive only	Raw Hall crank sensors are not supported
CAM_5V	5V Hall / open-collector	Default jumper position
CAM_12V	12V Hall / digital	Use only when the 12V cam input is intended
TACHO	5V by default	Jumper selectable to 12V
VSS	0-5V digital, open-collector or 12V pulse	Raw VR speed sensors require external conditioning
O2_2	Narrowband only	Heater wiring stays external / OEM style

Post-catalyst O2: connect **signal -> O2_2** and **sensor reference -> SENSOR_GND**. The narrowband heater is not ECU-controlled; wire it externally to switched 12V and engine-block ground.