



— 05 / KEEP YOUR CONTROLLER

Nitrous integration

Additional permission, native safeguards and useful tuner logs.



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Installation and app setup review draft

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Current app workflow: Configure this installation from its function in Settings. Controls provides live actions and the Dashboard provides glance controls; use a card's edit menu to return to setup. A configured output remains visible even when disabled. Enabled rules operate their assigned enabled outputs automatically; there is no extra output mode to select. Live Off, On or duty takes over a generic output until you choose Resume automation. Setup keeps the electrical limits, calibration and response settings. Assigned boost, WMI and nitrous outputs use their controller-specific actions, preserving sensor protections and any paired fuel/stage logic. Nitrous Arm allows its configured activation conditions to operate; it is not an unconditional spray command.

Setup and vehicle data: Starting presets remain editable; Add Sensor includes calibration and fine tuning before Create. Use dedicated IGN, fresh running-engine OBD evidence, or both for vehicle activity; a dedicated IGN wire is optional when valid OBD evidence is available. If the pressure hose is unused, explicitly select OBD pressure in setup. A valid atmospheric sensor reading cannot identify a disconnected hose. These app choices do not change the product-specific electrical compatibility or limitations described below.

FD Design LS · September 2026 · Independent integration proposal

Use your existing nitrous controller, screen, solenoid drivers and tune. Add FusionDrive to bring compatible signals into one view, record them alongside ECU data, and add a local permission rule that can stop the controller from activating.

This guide is for review before publication. The circuits describe supported interface patterns, but have not been installed or tested on these controllers. Match the exact part number and revision, then complete the acceptance record. Manufacturer names identify the equipment; they do not imply endorsement. NX's manuals expressly limit their instructions to NX equipment and warn against mixed-brand installations.



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What changes in your car

The nitrous controller still decides its own progression, RPM and throttle windows, pressure/mixture protections and lockouts. FusionDrive supplies an **additional permission**, through an electrically compatible interface. Permission ON means the controller may operate when its own conditions allow. It does not mean nitrous is flowing.

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Your gauges and native display can stay connected. FusionDrive can show the compatible signals you add: ECU RPM and throttle where available, measured bottle/fuel pressure, wideband output, your permit command, and a documented external-active or duty reference. It cannot see every internal state over one permission wire.

The operating rules are saved on FusionDrive and run without the phone. Recording a full drive log requires the phone at the time; Cloud backup is optional.



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Choose the correct route

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- **NOS Mini 15974NOS or 25974NOS:** add a series permission contact to an existing discrete WOT circuit. If the trigger is an analog TPS connection, use an installation-specific alternative; do not pull TPS to ground.
- **NOS Launcher:** an unused second input can provide a ground-triggered inhibit while the original TPS/WOT remains connected.
- **NX Maximizer 5/6 or Nitrous Outlet ProMax:** an unused +12 V secondary input can require permission. Existing transbrake usage must be preserved.
- **Standalone window switch:** add a series permission contact to the existing relay-coil circuit; keep the native window switch in that circuit.
- **No compatible spare interface:** start with monitoring. A custom interface may be needed before adding control.

AUX1 is J6 pin 2 and AUX2 is J6 pin 8. They are low-side sinks, not +12 V outputs or isolated switches. The four main outputs are high-side and have different wiring. Never select a spare pin based only on its name.

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Before you unplug anything

Save the existing tune and note the exact controller part number, hardware/firmware revision and display/software version. Record every wire currently connected to TPS, RPM, transbrake, arming, fuel/nitrous solenoids, retard and pressure sensors. Photograph connector orientation.

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Identify the active stage count and every tune/profile users can select. Record which native safety gates are enabled and demonstrate that they already work. Separate controller signal wires from the wires on its relay harness: matching colours need not mean matching functions.

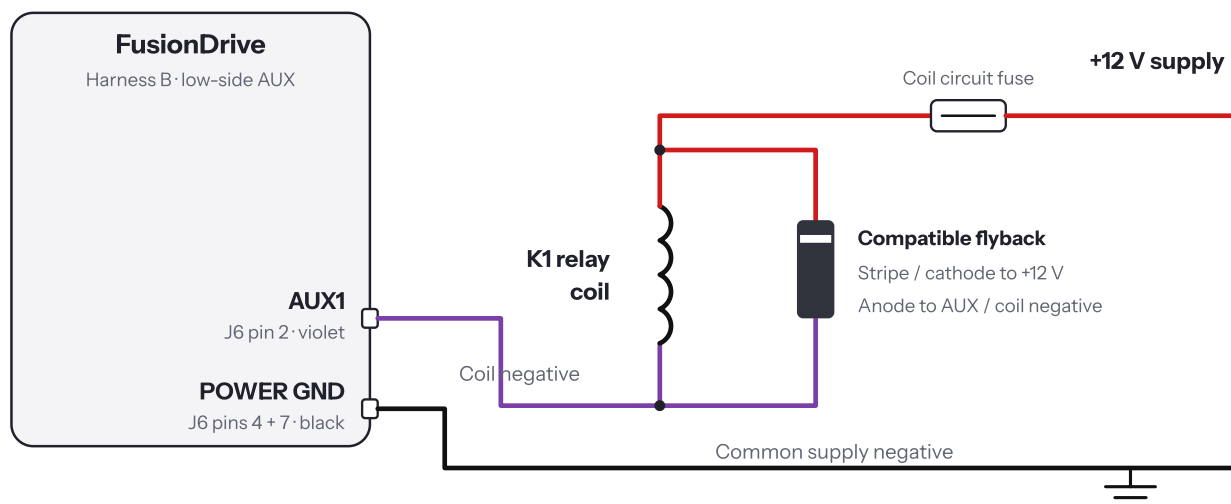
For these review installations, have a matched 12 V automotive relay or isolated interface, fused coil supply, suitable wiring/connectors, a meter, an oscilloscope or equivalent recorder, and instrumented dummy loads. The relay coil's current, transient suppression and power sequence must suit FD AUX. Use a physical master arm switch. Do not choose a relay simply because the contact rating is large; the coil is the load on AUX.

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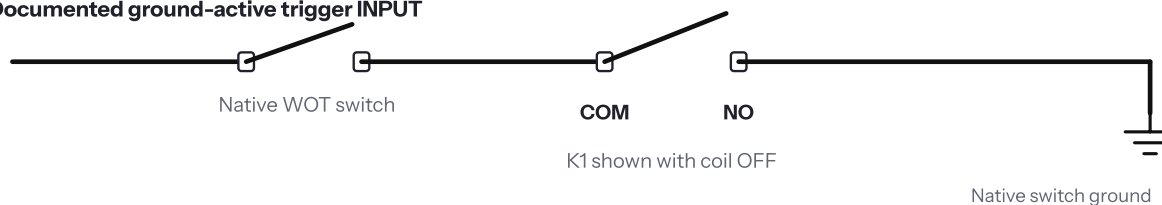
Circuit A — permission in a discrete WOT circuit

E-03 | Additional permission in series



K1 CONTACTS · electrically isolated from the coil

Documented ground-active trigger INPUT



Coil and contact circuits remain separate. A mechanical relay is binary only: 0% or 100%.

NO closes only when energized; OFF interrupts the permitted path.

Match coil current, suppression polarity and contact ratings to the selected relay before installation.

Ground-active discrete trigger example only. For a positive enable input use the isolated +12 V permission circuit. Do not insert either into analog TPS; preserve native safety gates and do not bypass the switch.

Drawing nodes:

- 1 Fused switched +12 V → relay coil positive.
- 2 Relay coil negative → FD AUX1, J6 pin 2.
- 3 FD J6 pins 4/7 → the intended system ground.

- 4 Suppression diode across the coil: stripe/cathode toward coil positive, anode toward AUX. If the relay has internal suppression, verify its required polarity instead of adding an incompatible arrangement.
- 5 Insert the relay's isolated normally-open contact **in series** with the existing WOT switch circuit.

For ground activation: controller's verified ground-trigger input → original WOT switch → relay NO contact → controller-approved ground.

For +12 V activation: existing fused/armed +12 V → original WOT switch → relay NO contact → controller's verified positive-trigger input.

The original switch and FD permission must both be active. With FD unpowered or command 0%, the relay releases and permission is removed. Native controller power, tach, sensors and protection wiring stay in place.

Do not draw the relay across the WOT switch. That would let FD bypass it. Do not insert this contact in an analog TPS wire, and do not PWM the mechanical relay. Only 0% and 100% are used.



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NOS Mini: two similar names, different outputs

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The legacy 15974NOS uses white/blue and white/red as its stage trigger inputs; they can be configured for a TPS or a ground/positive WOT switch. Its yellow/orange general-purpose outputs switch ground. The current 25974NOS uses the same trigger colours but its yellow/orange outputs provide +12 V. Both families use blue/red high-current low-side solenoid outputs. [NOS15974 manual, pp1–4](#), [NOS25974 manual, pp4–5](#).

Use Circuit A only when your existing trigger is a discrete switch. Preserve that switch and the controller's RPM checks. For a two-stage installation, verify both trigger paths and stage enable behaviour. One contact can only cover both if the original circuit already supplies both through the same approved trigger path; otherwise use isolated contacts for each path.

If the controller uses its trigger inputs for analog TPS, there is no independent third enable input identified in these manuals. Keep monitoring initially, or design a separate interruption of the solenoid-power relay enable that removes power from both fuel and nitrous together while retaining controller power. That alternative needs an exact existing wiring diagram; it is not a generic TPS splice.

Do not connect yellow/orange status outputs straight to FD IN. Even the legacy ground output may sit at the voltage of its attached load when off. Use a protected 0–5 V conditioner or isolated status interface, then check what its configured output delay means. An active timing output is not necessarily an immediate injection-active indication.

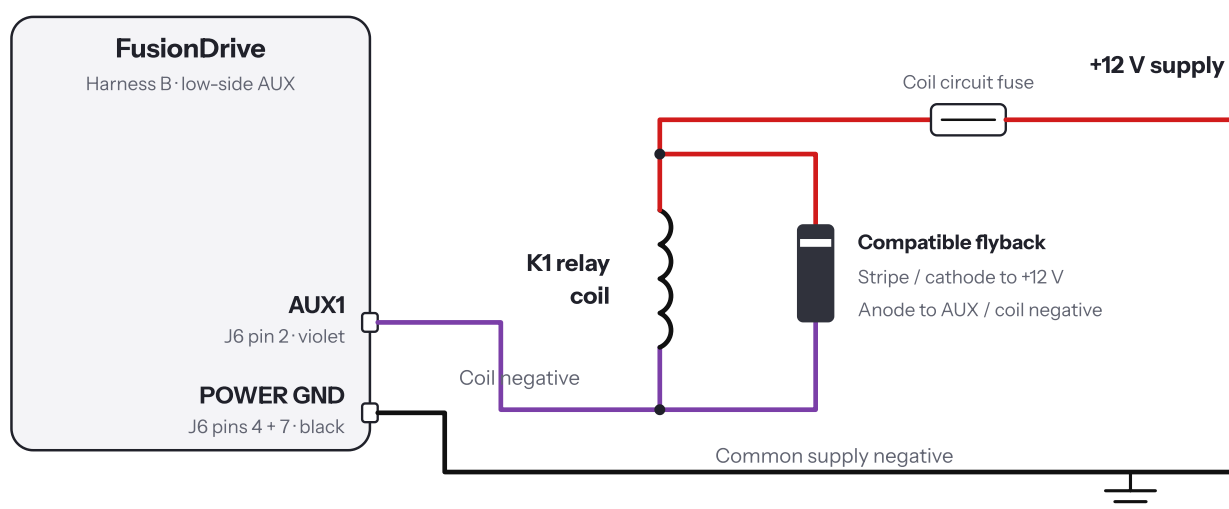
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Circuit B — an unused +12 V input adds permission

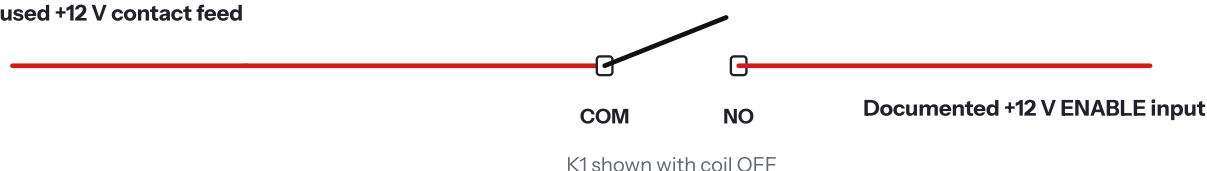
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E-02 | Isolated +12 V permission



K1 CONTACTS · electrically isolated from the coil

Fused +12 V contact feed



Coil and contact circuits remain separate. A mechanical relay is binary only: 0% or 100%.

NO closes only when energized; OFF interrupts the permitted path.

Match coil current, suppression polarity and contact ratings to the selected relay before installation.

Qualified automotive interface only; these labels do not imply an internal connection between coil and contacts.

Drawing nodes:

- 1 FD drives the relay coil as in Circuit A.
- 2 Existing fused/armed +12 V → isolated relay NO contact → the controller's verified secondary input.
- 3 The native TPS, RPM and protection inputs retain their original wiring.

- 4 Configure the secondary input to **arm/enable the required stage**, never to replace the native WOT requirement.

FD command 0% opens the contact, withholding permission. FD command 100% closes it. Test the actual controller's truth table: every native gate must still block operation with this input high.

7.1 NX Maximizer 5 and 6

Both use a required TPS/WOT input and a separate +12 V-active Input #2. On MAX5, Input #2 is **dark brown**; on MAX6 it is **tan**. The MAX5 tan wire is instead a retard output. The manufacturer diagrams distinguish AFR-control wiring from two-output wiring. [MAX5 manual, pp3-4,7-8](#), [MAX6 manual, pp3-4,5-9](#).

Use Circuit B only if Input #2 is available. In the native software, assign the secondary input's arm function to every stage that FD must permit. Confirm the installed MAX5 software's exact option and logic; MAX6 documents an "arm this output" assignment. Keep the required blue TPS/WOT input operating normally.

If Input #2 currently receives a transbrake or stage button, do not remove that function. A combined isolated interface must preserve the original request and FD permission, with no direct joining of voltage sources. Have that installation-specific circuit reviewed before wiring.

The white/green solenoid-percent reference must **not** be assumed 0–5 V from the wire's purpose alone. The downloaded manuals do not establish its electrical encoding or transfer function. Obtain that information before using it as an FD input. Retard outputs likewise need their exact selected polarity and conditioning checked.

7.2 Nitrous Outlet ProMax 00-61002

The secondary input is connector **pin 5, green**, activated by +12 V. The per-stage Trans Brake setting can enable or disable a stage. Pin 6 white/red is a 0–5 V duty-reference output; its precise scale/stage meaning still requires confirmation. The manual explicitly says CAN-labelled pins 7/8 do not function. [ProMax manual, pp4,18,30-31](#).

Use Circuit B for an unused pin 5. Set the native Trans Brake option to **Enable** for each controlled stage in each usable tune. Keep all applicable native System Lockouts. Perform the dummy-load truth table before accepting that this acts as an additional gate on your firmware.

If pin 5 already serves a transbrake, use a reviewed combined interface. Do not overwrite its job. Do not connect AUX directly to pin 5: AUX cannot produce the required positive voltage.

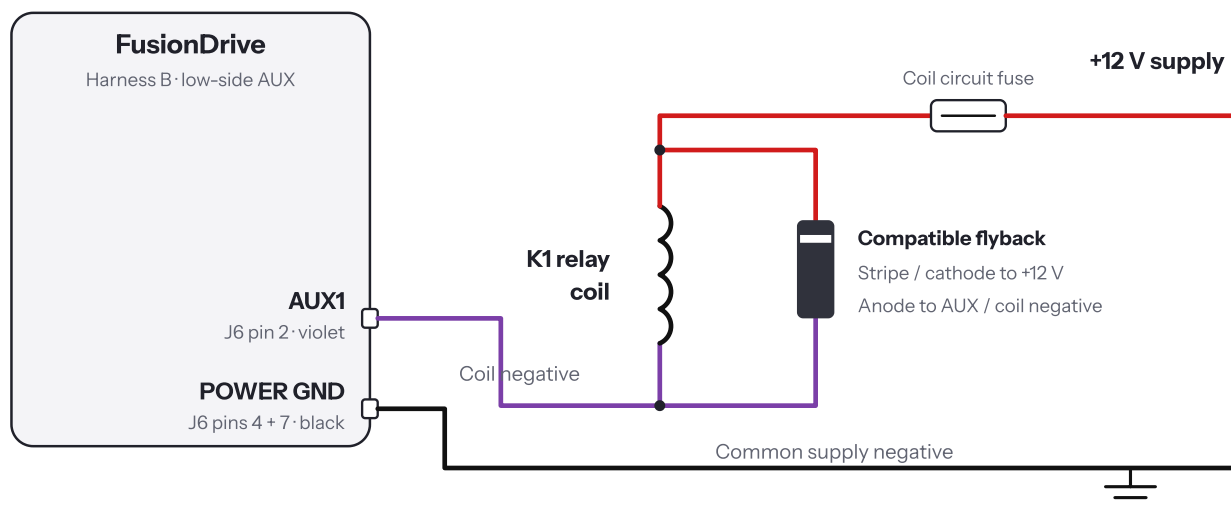
For pin 6 monitoring, first log raw connector voltage. Determine which stage or combined command the reference follows, its idle value and full-command endpoint with injection isolated. Only then enter a matching two-point calibration and label it **external commanded duty**. Do not label the value measured flow.

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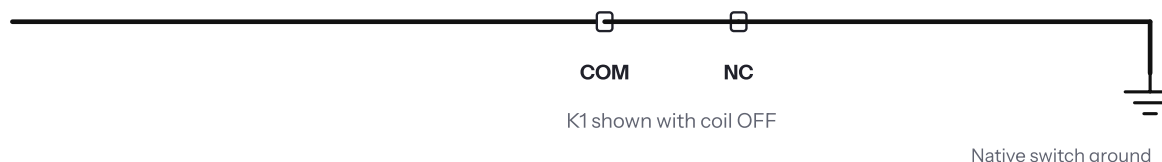
Circuit C — NOS Launcher inhibit input

N-01 | Launcher ground inhibit



K1 CONTACTS · electrically isolated from the coil

Launcher WHITE/RED INPUT2 · Disable



Coil and contact circuits remain separate. A mechanical relay is binary only: 0% or 100%.

NC opens when energized; OFF grounds the disable input.

Match coil current, suppression polarity and contact ratings to the selected relay before installation.

Set unused Input 2 to Ground Switch + Disable for every required stage. Native WOT/RPM remain required.

Launcher input 1 is white/blue; input 2 is white/red. Each can use ground, positive or TPS activation, and each stage can assign an input to Enable, Disable or Ignore. Yellow/orange GPO are low-current ground outputs. The orange NOSbus wiring is the native accessory network, not an established FD CAN connection. [Launcher manual, pp5,10-11.](#)

Where input 2 is unused:

- 1 Retain input 1's original TPS/WOT and native RPM/protection configuration.
- 2 Configure input 2 as **Ground Switch** and **Disable** for every relevant stage.

- 3 Wire input 2 → relay isolated **NC** contact → controller-approved ground.
- 4 Drive the relay coil from FD AUX as Circuit A.
- 5 FD off means NC closed, input 2 grounded and the stage inhibited. FD permission ON energizes the coil, opens NC and removes only that added inhibit.

Test master and slave stages separately. If input 2 already has a purpose, stop at monitoring until the combined logic is designed. A direct AUX pull-down on this inhibit input would have the wrong loss-of-FD behaviour: AUX off would release the inhibit.

Keep using the native display/software to save its tune. FD does not write NOSbus configuration or convert Launcher tune files.

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Circuit D — retain a window switch and its power relay

Insert an isolated NO permission contact **in series with the existing power-relay coil circuit**. Keep the native switch output, physical arm and any fuel-pressure switch in the same required chain. Do not place FD AUX in parallel with the native output.

9.1 Nitrous Outlet OO-61001

This single-stage progressive/window module has a blue TPS/WOT input, green tach input, pink +12 V binary output, yellow ground binary output and white/yellow progressive signal for its external driver. Its low-current outputs are not solenoid power outputs. [Rev H manual, pp1,5–8](#).

Use Circuit A if the original WOT is discrete. Use Circuit D for its documented binary power-relay path. Its progressive driver input is a separate interface; do not treat the white/yellow wire as a general enable wire. Preserve the native fuel-pressure switch and controller gates.

9.2 NOS 15982NOS WOT/RPM window

Red/white supplies armed power; solid red is stage 1 positive relay output; black/white is stage 2 ground relay output. White/black is the shift output, yellow/white is TPS and tan is tach. [NOS window-switch manual, pp3–4](#).

Use Circuit D for each stage's native coil circuit, drawing stage 1 and stage 2 separately because their output polarities differ. Keep the RPM/TPS setup in the NOS unit. A second-stage contact cannot automatically govern the first stage too.

9.3 NX 18959 TPS/RPM window

This module's blue output switches ground and is rated 1 A; a separate relay carries the solenoid load. White is its TPS/microswitch input and grey is RPM. Normal activation inside the configured window uses its Normally Open selection. [NX 18959 manual, pp1–2](#).

Use Circuit D, retaining its native TPS/RPM settings. Relay-harness colours shown in the source diagram are different from module-wire functions; identify the actual coil terminals. Test the configured NO/NC sense before adding FD.

9.4 NX 18961 RPM window and 15961 TPS AutoLearn

The 18961's blue output switches ground; the manufacturer requires a relay above 3 A. It has no TPS gate. The 15961 TPS module drives a relay at up to 1 A and has no RPM window function. [NX 18961 manual, pp1–3](#), [NX15961 manual](#).

Use Circuit D after matching the exact revision and identifying its relay circuit. Preserve the complementary RPM or WOT device already installed. Do not assume either module alone supplies both checks. No direct wire-colour recipe is provided for unmatched 15961 LED revisions.



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Set up the FD app

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10.1 1. Name and calibrate the signals

Connect the phone to the actual FD device. Open **Sensors** and configure each compatible added input. Use names that describe evidence: `Physical nitrous arm`, `Measured fuel pressure`, `Measured bottle pressure`, `Measured lambda`, `ProMax duty reference`.

For a switch, set its threshold, hysteresis and reverse logic so the displayed state matches both physical positions. Verify a disconnected wire too. FD IN1–IN6 accept conditioned 0–5 V; they are not 12 V digital inputs or tach/solenoid pulse counters. Do not join two 5 V supplies. A wideband sensor needs its own wideband controller; connect only its documented analog/CAN output.

Select available ECU data under CAN/OBD and configure documented accessory CAN signals where applicable. Validate actual refresh and missing-data behaviour. A label in a dropdown does not establish that a car broadcasts the signal.

10.2 2. Prepare the permission output

In **Outputs**, select a free AUX channel and name it for the controller. Choose an appropriate output preset and enable the output, minimum 0%, maximum 100%, initial duty 0%. Disable generic ramp/calibration for immediate binary operation. Only command 0% or 100%.

Confirm no dedicated boost, EBC, WMI or nitrous feature owns the channel. Keep **More → Nitrous → System Enable** off: this retain-controller path is configured through generic outputs and rules, not an external-controller Nitro wizard.

10.3 3. Create a local permission rule

In **Automations**, add a named rule and select **ALL** for the intended conditions. Include a deliberate physical permission request and the additional signals the installation actually uses. Choose thresholds in their displayed units after calibration; do not copy another engine's pressure or temperature values.

Add **AUX permit → ON/100%**. Enable **Restore Previous Value When False**. Start with the output at 0%; this option restores the captured prior value, not an assumed opposite. Keep other rules/manual commands from making that prior value nonzero. Add maximum active time and cooldown where appropriate.

Use one owner rule for this permit. A missing required source, disabled rule and normal condition release must all produce the intended permission OFF outcome. Native controller checks remain independently required.

10.4 4. Save, reload and power-cycle

Save the output and rule; wait for acknowledgement. Reload saved values and check the names, mapping, conditions, action and restoration. Reboot with actuators isolated: manual duty starts OFF, while saved rules can run again when eligible. Test with the phone disconnected; an operating rule must not depend on the phone remaining connected.

10.5 5. Build the tuner log

Select permission command, external-active/duty evidence if available, measured pressures and wideband, RPM/TPS and any related boost/WMI channels. Add controller/rule events that the device exposes. Name units and provenance clearly.

Compare native controller logs against FD over a dummy-load run. Check offsets, repeated values, source ages and missing samples. A requested high recording rate does not make an ECU PID or ADC update faster. The log can explain recorded signals and events; it cannot establish every unseen internal reason.

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Prove the installation before injection

Keep the bottle closed and delivery isolated according to the kit's procedure. Disconnect solenoids and use dummy loads for the electrical checks. Record measured results rather than ticking boxes from a code review.

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- FD off/reboot/update: added permission cannot allow a shot.
- Physical arm OFF: no activation regardless of phone or FD command.
- FD permit ON with WOT false, RPM out of range, pressure/mixture fault or native lockout: no activation.
- All native gates healthy with FD permit OFF: no activation.
- All required gates and permission true: intended dummy-load progression only.
- Permission removed during a ramp: nitrous and fuel stop together; no persistent mismatched stage output.
- Each saved tune/stage, transbrake, gear lockout, hold/resume and cooldown behaves as recorded.
- Lost/stale required signals and rule disable remove permission; phone disconnect alone does not stop valid local control.
- Interface current, voltage, ground offset and suppression suit the actual board and controller.
- Sensor tee/conditioner does not alter the existing controller or gauge reading.

Record controller identity, FD firmware/app build, circuit revision, test date, operator, waveforms and unresolved items. Release the installation for a controlled vehicle/dyno test only after this review is accepted.



Questions?

Documentation · fusiondrive.io/docs

Support · in the app: [More](#) → [Settings](#) → [Device & firmware](#) → [Report an Issue](#)

Review copy · [Local FD V3 installation library](#)

FusionDrive switches real current to real loads and can control boost, water/methanol injection and nitrous. Fuse every feed and every load, respect the ratings in the specifications, and set failsafes before you drive. Configure and tune with the vehicle stationary. The installer is responsible for compliance with local vehicle regulations. Local review draft. These accessory installations have not received physical compatibility sign-off or manufacturer approval. Follow the exact-model qualification and commissioning steps in this guide before use. Match the exact model, generation, connector and manual revision. Terminal labels identify electrical connections, not connector mating-face or cavity order. Follow cavity markings and the official harness view; do not wire by colour alone. Manufacturer names identify equipment only. These independent FD instructions do not replace the manufacturer's manual.