ETSPro ATTESA Controller with LFB Installation Manual

Thank you for your purchase!

Technical Details:

- Advanced microprocessor based system
- · Dual axis high resolution g-sensor
- · Custom firmware with driver adaptive capability
- Internal modes switch on the fly automatically (hands free)
- Using advanced algorithms instead of unintelligent "static mapping" or "lookup tables"
- Unique Left Foot Braking input to override the system using right foot throttle

Installation:

Installation is recommended to be performed by a licensed auto mechanic.

4 conductor 18 AWG heavy wire:

- Red = 12-13.8v positive (switched power) ***Note: Do not connect to "always on" power***
- Green = 0v negative (ground)
- Black = ETS Coil Pin 1
- White = ETS Coil Pin 2

3 conductor 22AWG light wire:

- Red = Ebrake cutout wire (ground this to stop ETSPro activity)
- Black = Foot brake for Left Foot Braking option (12V when braking, float when released)
- Green = TPS: (Review appropriate ECM Schematic for correct wire)

Notes / Suggestions:

A suggested location for installation of the ETS-PRO is under the rear parcel shelf (same location as stock) or under the center console for other swapped or track car installations. The installer must also ensure the relay for the ATTESA pump motor is properly wired to turn on. The installer must verify proper connections prior to turning the unit on.

A suggested location for installation of the dual axis G-Sensor is on the horizontal metal surface above the transmission tunnel, under the center console or even above and in front of the rear differential (~1 meter of wire between the control module and the sensor is provided for this purpose). Any other firm, level, horizontal surface will do as long as the sensor case can be attached firmly using epoxy or other strong adhesive. Do not use double sided tape or foam carpet tape. We recommend using two part epoxy or contact cement made for plastics. Note the orientation arrow and install the sensor with the arrow pointed toward the front of the car (the wires exit the G-Sensor module towards the front of the car and the screws in the cover face upwards).

Hard-wiring the ETS-PRO to the ATTESA SOLENOID is a recommended option, especially for a track car. This eliminates the possibility of old wires cracking or with possible shorts in them. It is also easy and quick to troubleshoot if need be. The only input needed from the engine is TPS (Throttle Position Sensor). The G-Sensor input comes prewired and connected to the ETS-Pro. If you choose to keep the OEM system intact, we recommend unplugging the factory Nissan ETS control unit from the harness to protect its respective wires and circuit.

All ETS-Pro controllers feature an optional handbrake cutout wire, for handbrake input, allowing the diff to open when the handbrake is pulled (for the most part it isn't necessary). It is simply a crutch for the lesser semi-auto controllers in order to do low speed driving in parking lots and for handbrake turns. Both of which are not a problem in Auto Mode. If you do not wish to use it please tape and isolate the wire to prevent accidental grounding. Grounding the handbrake wire will simply stop output from the controller temporarily until the wire is not grounded anymore. You will notice the light on the ETS-PRO switch goes out when this is grounded. Unground the wire and the light turns back on. You may also opt to use a toggle switch to ground for this.

ETS-PRO with Left Foot Braking option has a foot brake wire that needs to be spliced into the rear brake light wire. When break is active this wire reached 12Vdc to signal the controller of a breaking event.

The OEM Nissan ETS control unit is located under the rear parcel shelf in the trunk, next to the rear stereo speaker. The body ground is connected to the top side of the rear parcel shelf. You may use this body ground for the ETS-PRO. The OEM Nissan ETS control unit's switched (+12V) is fused at 10A so that is suitable to power the ETS-PRO. Additionally you may pull TPS signal (pin 47 according to the Nissan wiring diagram, but check with a multimeter to be sure) at this harness. Before finalizing vehicle wiring connections, must verify these connections with a multimeter. Lastly, you must ensure the ATTESA pump's motor relay is being triggered on.

A frequently asked question during this step is: Where can I obtain "switched power" in my car? Again, this one is a bit tricky as all cars seem to be different. The best way to locate power is with a multimeter. Look for an empty circuit in your fuse panel that can accommodate the amps necessary. Turn the key on and off to make sure it is switched power.

WARNING Patching through another circuit can cause blown fuses or malfunctions of the other devices on that circuit due to low available current.

Operational Details:

Key ON, ensure the ATTESA pump motor is powering on and check the ETS-PRO switch blinks once. Set the knob in mid point and push the mode switching button to ensure it lights up. The system always reboots into auto mode for safety.

Automatic Mode:

Go to a clean dry parking lot, and check the feel of the car when turning at low speed. Try the knob at the lowest setting and then at higher settings (at or slightly above mid (1/2) point to start). At the lowest setting there is no output so the car will feel like it did before the controller was installed. It will feel normal to turn and have no binding. At the mid setting on the knob during low speed turning and light braking operation there will also be no binding in Auto Mode. The G-Sensors will reduce output during braking and turning. During periods of heavy throttle you may feel a "tightening" of the car, during periods of light throttle or deceleration you will feel the car loosening up again.

Now, find an area with poor traction. Turn the knob to the lowest setting. Straighten the car out and hit the throttle giving a minimum of 2/3 throttle. You will feel how loose the car is because there is no ATTESA-Solenoid output. Get out and observe the burnout pattern, most likely from the rear wheels only. Now turn the knob up to maximum and repeat the test. The car should feel much tighter and accelerate faster due to the added traction. Get out and observe the AWD burnout pattern. This is easiest to observe in dirt or snow.

Manual Mode:

Go to a clean dry parking lot, and check the feel of the car when turning at low speed. Try the knob at the lowest setting and the highest setting. At the lowest setting there is no output so the car will feel like it did before the controller was installed. It will feel normal to turn and have no binding. Now turn the knob up fully, drive slowly and try to turn gradually tighter until the car starts to protest and fight back. You will feel severe binding in the steering wheel. Careful not to over-do it, you can stall the car if your transfer case plates are grabby. While the controller is at full lock and driving slowly in a circle, pull the handbrake slightly, you will see the ETS-PRO LED turn off and feel the center diff relax. It will be easy to turn once again.

Left Foot Braking:

If you apply brake with left foot and increase throttle with right foot passed a certain throttle threshold you will be in control of the output to ATTESA Solenoid by apply more Throttle. The more you press the gas pedal (assuming you are still also pushing on brake pedal) the higher the output. This is particularly advantageous in sharp turns to lock/load the transmission right before reaching apex and launching out of the corners.

G-Sensor Calibration Procedure:

All ETS-PRO units come calibrated G-sensor with excellent accuracy. Perform this procedure ONLY if necessary This is in case you are not sure your G-sensor is installed level, want to increase LFB threshold or want to determine if the unit's processor/software is responsive.

- Park the car on level ground, shut off engine.
- Wait 30 seconds for power to dissipate from the system.
- Press and hold the Auto/Man switch.
- If you want to increase LFB threshold press the gas pedal as desired (if do not want to change the current level do not press of gas pedal).
- Start the car / turn the key forward to power the ETS-Pro controller.
- Continue to hold for 3-5 seconds. Do not move around or agitate the car, as the G-Sensor does some measurements and mathematically calculates its new horizon.
- Release the button.
- Wait 3-5 seconds further, and then drive as normal.