Geoforce AT4 Standard Equipment Tracker Installation Guide

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Step 1: Prepare for the Installation

Be sure you have received all the components you need. This must include:

1. The Geoforce Standard Equipment Tracker (SET) unit.
2. Any optional components:
   - Input / Output cables (Inputs can accept 6-30VDC, and Outputs can sink up to 150mA).
   - Specialty mounting hardware.
   - Peripherals (i.e. LEDs, switches, relays).

Step 2: Record the Asset and SET Serial Numbers

1. Record SET's electronic serial number (ESN).
2. Record the asset serial number (on which SET was installed).
3. Send this information to your Geoforce account administrator.

Step 3: Plan the Installation

Before drilling any holes or running any wires, decide where the SET will be located. Select a location that allows for a **clear, unobstructed view of the sky** and ensure the SET will not installed in a location that will exceed its environmental specifications as this will void the warranty. The SET should be accessible post-installation as it may be necessary to view the LEDs for troubleshooting.

Verify Power, Ground and Ignition

Use a multi-meter to check each power source (power, ground and ignition) to ensure that proper signaling exists. Employ standard commercial wiring methods such as solder and heat-shrink tubing, crimped connectors or ScotchLoks to create a permanent installation. Wire nuts are **not** approved.
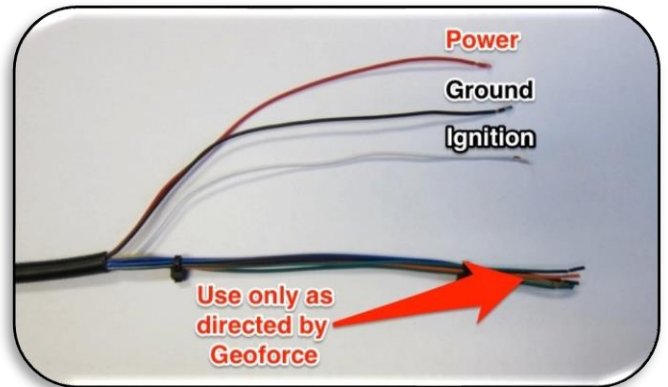
Red Wire

This power input wire must be connected to a constant (un-switched) +6 to +30 VDC supply. This wire **MUST** be fuse protected to not more than 5 amps.

Black Wire

This ground wire must be connected to battery negative or chassis ground.

White Wire

This ignition input wire **MUST** be connected to the asset's ignition or another appropriate key-operated line, such as ACC or ON/RUN, such that power to the white wire is only available when the ignition is on. This wire **MUST** be fuse protected to not more than 5 amps.

Unit Placement

The Geoforce SET uses an IP66-rated sealed enclosure with both GPS and cellular antennas mounted internally. To maximize the quality of the location computed by the GPS, the unit should have a **clear view of the sky.** Ideally, nothing should block the unit beyond 5 degrees above the horizon. Directly on top of the asset is the best location. The SET is not designed for covert installations and cannot be mounted inside a metal housing or engine compartment. Doing so will severely impair the SET. The wiring harness should be used at the length provided. **DO NOT CUT OR SHORTEN IT.** Instead, coil any excess cable taking care not to crimp or flatten the cable as this will negatively affect the SET's performance.

Mounting Guidelines

The SET **MUST be rigidly affixed** to a flat, solid surface on the asset. Avoid attaching it to plastic panels. Attach the SET to the solid body of the asset using screws or bolts, 3M VHB adhesive tape or cable ties. If you anticipate that personnel may interfere with the SET after installation, use a fastener such as tamper resistant Torx or hex bolts and locking nuts to secure the SET. Also consider protecting the wiring harness by routing it through a chassis member or covering it with a sheet metal channel. Using rubber grommets, MS21919 clamps, or a sealing gland to buffer the wiring harness when it passes through steel components is strongly recommended to prevent short circuits or damage to the harness.

Step 4: Connect Components

1. Make sure the asset is outside with a **clear view of the sky.**
2. Connect any optional components from step 1 to the power harness.
3. Connect the SET to the asset's power supply.
4. Select the ignition from OFF/LOCK to ON/RUN.
5. Ensure the green and amber LEDs are active.
6. **Wait 5 minutes** as the SET connects to the wireless network, provisions itself and obtains its configuration script.
7. Select the ignition from ON/RUN to OFF/LOCK.

With power applied and ignition selected on, the status LEDs will show activity. Ideally, both the GPS (green) and Comm (amber) LEDs should be steady.

Step 5: Installation Verification via SMS to 972-325-5402

1. Start a new SMS message on your phone to 972-325-5402.
2. Enter the ESN into the message body. Add only one ESN per line.
3. Wait for a response.
4. Use the table below to determine whether your installation has gone according to plan.

Interpreting the results:

Value	Meaning
No Tags Identified	Geoforce could not identify the ESNs you specified
Last Read	Timestamp of the most recent message received by Geoforce
No Ignition Events	Geoforce has never seen an ignition event from this ESN
Ign On	Timestamp of the most recent 'Ignition On' event
Ign Off	Timestamp of the most recent 'Ignition Off' event
No Input 1 Msgs	Normal, unless Input 1 is connected to an accessory
No Input 2 Msgs	Normal, unless Input 1 is connected to an accessory
Input 1 On	Latest timestamp Input 1 saw voltage
Input 1 Off	Latest timestamp Input 1 saw no voltage

Internal Battery Note:

Your SET arrives with a 40% charged battery. The asset's power system must be able to deliver 6-30 VDC and at least 500mA of current for four hours to completely charge the backup battery. If the asset's power system fails or the SET becomes disconnected before a full charge is reached, published battery life will not be realized. If operating the asset for this length of time is not possible due to fuel costs or other reasons, charge the unit with a bench power supply prior to installation.

Suggested Mounting Accessories:

Sealing Gland	Grommets, High-Temp, ¼" ID	Cable Clamps, ¼"	Screws, Self-drilling, 10-16 x ¾"
McMaster–Carr	McMaster-Carr	Aircraft Spruce & Specialty	McMaster--Carr
P/N: 69915K54	P/N: Various	P/N: MS21919DG4	P/N: 90106A216