POWERFLEET®
People Powered AIoT

Version 1.0

Fleet tracker MGS 700/800/800 with external antenna

Installation Guide

Table of Contents

1 All mgs module wiring is identical

MGS 700

MGS 800

MGS 800EX

1.1 MGS 700/800 Features

Built-in 3D accelerometer movement detection – Internal, replaceable SIM – Over-the-air configuration update – 2 LED for status indication

1.2 MGS 700/800-SPECS and I/O Inputs/Outputs

- 6 inputs (3 hi, 2 low, 1 analog) –
- Operating temperature conditions: -4° +149° F / -20° +65°

1.3 Module Specifications

Communication	Dimensions & Environment

• LTE/HSPA
  ○ 4G LTE
  ▪ North America: B2(1900), B4(AWS), B5(850), B12(700), B13(700), B17(700)
• 3G HSPA+
  ○ North America: B2(1900), B5(850)
• UDP/TCP/TFTP/SMS
• SIM: Internal, replaceable
• Antenna: Internal multi-band GSM antenna
	• Dimensions: ~5.6 x 2.9 x 0.8 inches
	• Weight: ~4 ounces
	• Temp, operating: -4° +149° F
	• Temp, storage: -40° +185° F
	• Vibration, Impact: SAE J1455

Inputs & Outputs	Interfaces
• 6 inputs (3 hi, 2 low, 1 analog) • 2 outputs	• 3D Accelerometer: Movement detection • 2 LED status indication • Connectors: 20-pin 3mm Molex, J1939, J1708 or OBD-II
Power	**Default Transmission Rates**
• Input voltage: 8 to 30V DC • Full operating mode: <100mA • Active standby: 13mA at 12V DC • Sleep mode: < 1mA • Internal Battery: 3.7V 900mAh, rechargeable	• Snapshot every 2 minutes • Data transmission every 6 minutes • Configurable
Warranty	
• Hardware: 3 years	

2 Overview of the MGS LEDs

The MGS100/200/700 LED indicator lights were designed to provide a simple visual reference regarding the device's status.

The table describes each status and the respective LED indications.

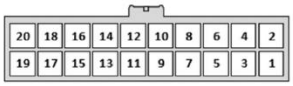
2.1 Green LED

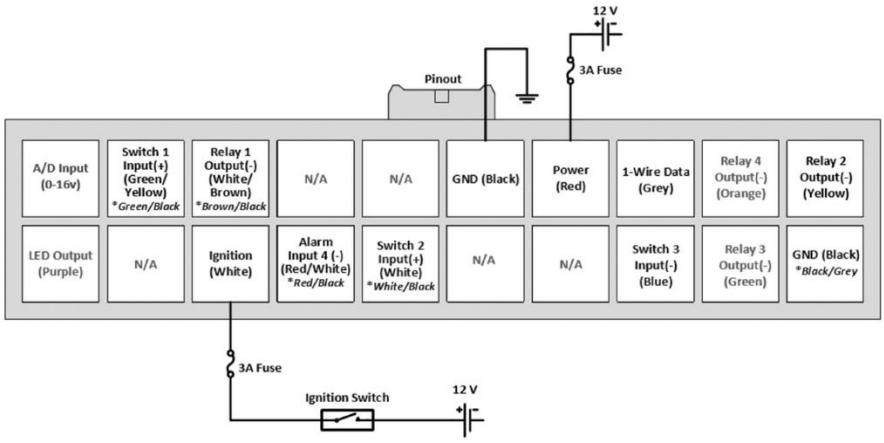
Off	Power down mode
Flash	Low power mode
Slow	Full power mode / Ignition off
Fast	Full power mode / Ignition on

2.2 Red LED

Off	No faults detected	**2-5**	Last data session failed
1-1	License key expired	**2-6**	Data plan is not available
1-2	Low supply voltage	**3-1**	GPS module fault
1-3	Allocated data usage exhausted	**3-2**	GPS antenna open/short
2-1	HSPA module fault	**3-3**	GPS no track (0 sat)
2-2	Not activated	**3-4**	GPS no x (<3 sat)
2-3	No HSPA signal	**3-5**	GPS no time
2-4	Network not found	**4-2**	Data transfer failed

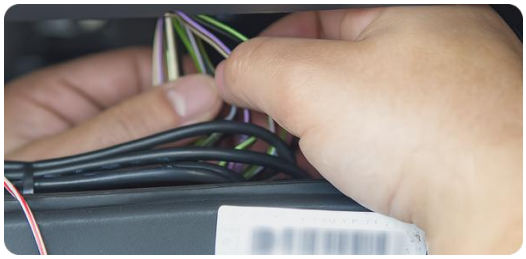
3 MGS 700/800 installation instructions

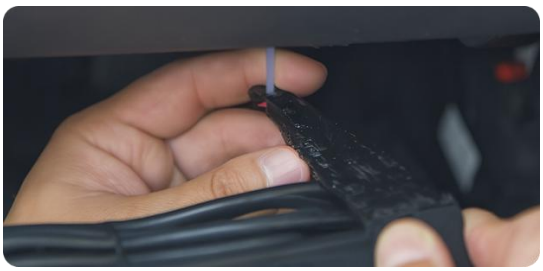




1. Connect the **Black** wire to chassis ground
2. Connect the **Red 12 volt** lead to the asset main battery source 8–30 volts DC
3. Connect the **White Ignition** source wire to a source that keeps power during start-up

4 To install the unit, perform the following steps:





1. Mount the device in a location with least amount of exposure to damage by people or objects. Possible mounting locations are under the central console, behind the dash, behind the glove compartment or in the trunk.

2. Run the ground (black) wire to a suitable chassis ground by using the crimp ring terminal.

3. Run the positive (red) wire to the constant power (+12 volts DC at all times) and splice an in-line fuse holder to the end. This is to protect the wire run.

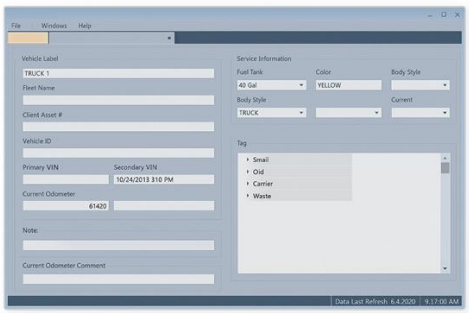
4. Splice the other side of the fuse holder to the power wire, identified in the vehicle with solder or crimp terminal.

5. Run the ignition switch input wire (white) to the primary ignition wire in the vehicle. Locate the appropriate wire under the dash. When the ignition key is turned to the “On or Run” position, this will show +12 volts DC.

6. For MGS200 only, install the covert antenna under the dash with a direct view of the sky unobstructed by any metal panels and connect to the modem. Hide wires for safety.

7. Confirm LED lights.

8. Login into Fleet Complete Application and update the asset with vehicle ID, VIN and odometer reading.



4.1 There are two acceptable methods of making a wire connection:

- Solder the 12V constant power and ground cables to the vehicle's power center.
- Crimp connectors with the use of the proper crimping tool.

5 FAQ

5.1 Where in a truck is the best place to hardwire an MGS module?

The best place to hardwire a MGS module is in a vehicle under the center console, inside the dashboard, under the glove compartment or in the trunk. For MGS module with internal antennas be sure the device is not obstructed by metal to avoid signal interference.

5.2 Can I install the modem outside of the vehicle?

No. MGS100/200/700 are not weatherproof and device must be installed in a dry location or in a all weather enclosure.

5.3 Can I wire the modem to the back of the car radio or with other accessories?

No, you will not get proper idle reports because the modem will not be able to monitor the ignition status properly.

5.4 Where is the best place to get a proper power and ignition?

Use the proper power or ignition wire directly from the ignition switch or behind the fuse box. Do not use the intermittent power sources such as brakes power wires, lights, radio or other accessories. The modem will not receive correct reading of the ignition status and will cause “Movement without ignition errors” and improper idling report.

5.5 What is the best way to connect the wires?

There are two acceptable methods of making a wire connection: soldering the wires with the soldering iron or weave and crimp the connectors with the use of the proper crimping tool. DO NOT use t-tap connectors. Always tape the connections after soldering or crimping to rust-proof.

5.6 Where is the best place to mount the antenna?

Install the MGS200 covert antenna behind a non-metal panel inside the dashboard. Mount the antenna with the red side facing up. Ensure to stay away from any metal panels.

5.7 Can additional sensors, such as door or temperature sensor, be installed with the MGS100/200/700?

Yes, the power harness provided with the kit allows up to 4 sensor inputs, such as temperature, door, PTO and other sensors.

5.8 What is the Default Data Settings (DDS) for MGS100/200/700?

The DDS for MGS100/200/700 is to record 1 position every 2 min and transmit location data to the server every 6 min. DDS Settings can be adjusted in the Unity application under Asset Settings.

5.9 What data is collected and transmitted by the MGS100/200/700 device?

Date, time, location - address and coordinates, speed, direction of travel, ignition status, battery level, odometer, sensor status.