

### **Installation & Operation Instructions**

**The Ag Express GVS** is a GPS based velocity sensor that produces true ground speed pulses to equipment designed to interface with radar or wheel speed sensors. The GVS can be quickly transferred from vehicle to vehicle, provides high accuracy, and is easy to install and use. Simply attach the connector to your monitor/control equipment, perform the same calibration you would use for other pulse sensors and you're ready to go.

**No subscription required**



#### **Physical Specifications**

- UV stable polycarbonate enclosure
- Connector as specified by customer
- Pin 1 Ground, Pin 2 Signal, Pin 3 & 4 Power
- Standard Cable length 15 feet
- Power 4.8 to 16 Volts, 0.1Amps max.
- Backup Battery CR2032 Lithium Coin
- Physical Size 3.50" x 2.14"
- Operating Temp. -40°C to +65°C (-40°F to +149°F)
- Storage Temp. -40°C to +80°C (-40°F to +176°F)
- Humidity 100% Condensing

#### **Performance Specifications**

- Velocity Accuracy 0.1MPH
- GPS Update Rate 7 Hz (7 updates per second)
- Backup Battery Life > 3 years

#### **Mounting Considerations**

- The GVS mounting location should have a clear unobstructed view of satellites on all sides.
- Avoid overhead metal structures that can block the satellite signals.
- Mount the GVS at the highest point of the vehicle with the white dome pointing directly towards the sky.
- Be aware of door heights and structures that the GVS needs for safe physical clearance.
- Avoid mounting in areas with excessive vibration. An antenna that moves or sways may produce ground speed errors. The idea is to have the antenna move only when the vehicle is moving for accurate true ground speed measurement.
- The GVS can be mounted on a flat surface such as the roof of the vehicle cab.
- Simply attach the GVS magnet to a solid metallic surface that is high on the vehicle. (if your vehicle does not have a metal roof – Ag Express has an available mounting plate)
- Carefully route the cable from the GVS to your monitor or control and plug it in.
- The Status Block is near the end of the cable – position it so that it is easily viewable by the operator.

#### **Features**

- Completely self-contained (GPS receiver, antenna, and velocity to pulses converter)
- 16 Channel WAAS enabled GPS receiver
- 7 updates per second for high precision speed
- 58.94 Pulses per MPH, (other rates available contact Ag Express)
- 0.1MPH accuracy from 0.5 to 50 MPH
- Magnetic mount for ease of installation & transfer
- Diagnostic LED's on cable to verify operation
- Different connectors available for various applications
- Cables available to run multiple monitors/controls

#### **Acquisition Rates**

- Cold Start < 45 seconds
- Warm Start < 33 seconds
- Hot Start < 20 seconds

### Calibration

After installing the GVS, your monitor/control equipment will need to be calibrated. Follow the procedure for your controller or monitor that is typical of calibrating a Radar. While these procedures are different for various manufacturers, it typically involves driving an accurately measured distance to determine a speed calibration value for your system. If you need any assistance with this call your nearest Ag Express location.

Before running the calibration, allow the GVS to download a full satellite table by turning on the GVS where it has a clear view of the sky for about ten minutes. The status indicator should be solid green (using 4 or more satellites) before performing the calibration.

### Operation



#### Status Block Operation (LED lights)

**Power LED:** When the GVS is hooked to a DC supply the LED that is labeled Power will be Green. If this LED does not light check for proper supply voltage and connections.

**Status LED:** The first time the GVS is turned on it will have no satellite information. While the GVS is building its satellite table, the LED labeled Status will be Red. Before the GVS can provide speed information, the GPS receiver must download this table from each satellite. This is referred to as a cold start and will take around 60 seconds. A warm start occurs when there is a partial table in the GVS or the table is being updated and takes less than 33 seconds. A hot start takes place when power to the GVS is off for only a short time and the sensor will be ready in less than 20 seconds.

The GVS uses a small internal battery to keep the Satellite information when power is removed to minimize startup times, but the longer power is removed, the longer it will take the GVS to acquire current satellite information.

When the GVS is ready the LED will change from Red to Green (if the vehicle is stopped). Once the vehicle begins moving, the Status LED is normally flashing so fast that it appears as though both the Red and Green are on at the same time. If the GVS loses the satellite signal, the Status LED will go solid Red, even if the vehicle is moving, until a good signal is re-acquired. If the GPS signal is healthy, the Status LED will be Green when the vehicle is stopped.

#### Note:

If the status indicator takes several minutes to switch to green when the unit is powered up after it has been off for only a short time, this is an indication that the unit needs to be serviced.

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