

GPS VELOCITY SENSOR

MIE310

INSTRUCTION MANUAL



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Introduction

This instruction manual was written by the computer manufacturer and is an exclusive part of the product. The instructions in this manual are directed to trained personnel and appropriately rated. Batsi recommends his reading and conservation for future reference.

Product Compliance

The GPS velocity sensor MIE 310 is a product with CE mark.



This equipment was designed and manufactured following the standard EN ISO 14982:2009 (Agricultural and forestry machinery - Electromagnetic compatibility - Test methods and acceptance criteria), according to the directive 2014/30/UE and the directive 2011/65/UE.

Summary of warnings

Read it carefully, not respecting the following warnings may create dangerous situations.

- Using the product under conditions not provided by the manufacturer, may generate dangerous situations. Respect the conditions set out in these instructions.
- Do not use the equipment in the presence of explosive atmosphere in any case. Under no circumstances, use the equipment in harsh environments, which may damage equipment parts.
- Any installation operations, maintenance, cleaning or equipment repairing must be performed by qualified staff and always without power supply. Follow the existing electrical installation standards in the country where the installation is performed.

Technical information

Power supply: 12V DC

Consumption sleep: 65mA

Consumption data acquisition: 75mA

Output Supply auxiliary elements: 500mA.

Protection degree: IP65

Measurements: 64x98x39 mm.

Terms of use

BATSİ® recommends the installation of all devices, equipment and materials that constitute the set, following the UE directives 2006/42/CE, 2014/30/EU and future modifications. For the no European Union countries, besides of national standards, BATSİ recommends follow the prescriptions included in the mentioned directives.

Product Removal

According with the EU directive 2012/19/EU on waste electrical and electronic equipment (WEEE) Text with EEA relevance, this electronic product has not be removed with the other unclassified residues. Get rid of this equipment to a local collection point for recycling.

Applicable standards:

- **EN 55022:2010**
Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
- **EN 55024:2010**
Information technology equipment - Immunity characteristics - Limits and methods of measurement.
- **EN 61000-4-2:2009**
Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test
- **EN 61000-4-3:2006**
Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test (IEC 61000-4-3:2006).
- **EN 61000-4-8:2010**
Electromagnetic compatibility (EMC) – Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test.

Module description:

The MIE310 module is a velocity sensor based on GPS technology, which provides a precise speed signal. This is a compact equipment with an easy installation to mount in all kind of machinery. Very fast start-up without calibration. It has a battery to keep all the satellites GPS data to reduce the starting time.

It features two LEDs in order to verify the correct module operation.

Advantages:

- Easy to install.
- Easy and fast magnetic fixation without attachment brackets screwed needed.
- Easy to switch between different vehicles.
- Battery to keeping the GPS satellite data.
- May be implemented to many applications:
 - For a tractor traction control system.
 - To measure ground speed sprayers and fertilizer spreaders.
 - Etc.

- No calibration needed.

Module Specifications:

- Power supply 12V.
- Working temperature -20°C / +80°C.
- Degree of protection IP65.
- Weight 166gr.
- Antenna with magnetic mounting, high impact resistant, corrosion resistant and fully waterproof.
- Battery BR1225-3V, more than 2 year's duration.
- Start-up timing 35s typical, 60s max.
- Accuracy +/- 0.2 km/h.
- Velocity range between 0'8 km/h - 100 km/h.
- Frequency GPS data: 1 Hz.
- Satellites: GPS+GLONASS with SBAS.
- Frequency output (pulse): 132 pulses per metre (0.76 cm/pulse).
- Frequency output (Hz): 36.6 Hz per km/h.
- Square wave output PNP.
- Square wave output NPN.
- Energy consumption:
 - With external antenna connected: 75mA
 - Working: 90mA
- Size: Height x Width x Depth → 64x98x39 mm

Mounting Considerations

Avoid installation in areas with excessive vibration. An antenna that moves and is not properly secured can cause errors in travel speed. The idea is the antenna only moves when the vehicle is in motion.

Make sure the antenna cable can be directed safely to the cabin in the mounting position.

Just have to connect to the computer monitor or controller, and realize the same calibration and perform the same calibration would be used for other pulse sensors.

Antenna installation

Make sure the vehicle surface is clean, dry and free of dust particles.

The antenna must be located in an area with a clear view of the sky, mounted on the highest point of the vehicle and the centre of the vehicle roof.

Mount the antenna on a metal and magnetic surface.

Avoid fixed metal objects that may interfere with the satellite signals.

Mount the antenna away from electromagnetic sources, radio antennas and electric motors.

Power signal

If the POWER LED (green) is illuminated continuously, it indicates that the module is powered.

GPS signal indicator

If the SIGNAL LED (orange) lights up intermittently, the module receives GPS signal but is not a good signal.

If the SIGNAL LED (orange) lights up permanently, the module is receiving good GPS signal.

If the LED SIGNAL (orange) is not lit, the module receives no GPS signal.

Battery replacement

The module battery must be replaced every three years or when the SIGNAL LED remains more than 5 minutes without changing their initial state.

If the LED SIGNAL takes longer than 5 minutes to change state, after using it daily or weekly and always in an area with a clear view of the sky, this is an indication that battery is low.

Signal acquisition

- With the first start-up is necessary a waiting time, 1 minute at least, to make sure the module be able to acquire all the GPS satellites and receive good and reliable signal.
- For proper signal acquisition, a clear unobstructed view of the sky is required.
- When the module is used daily or weekly, time start-up is typically 35 seconds.

Module design:



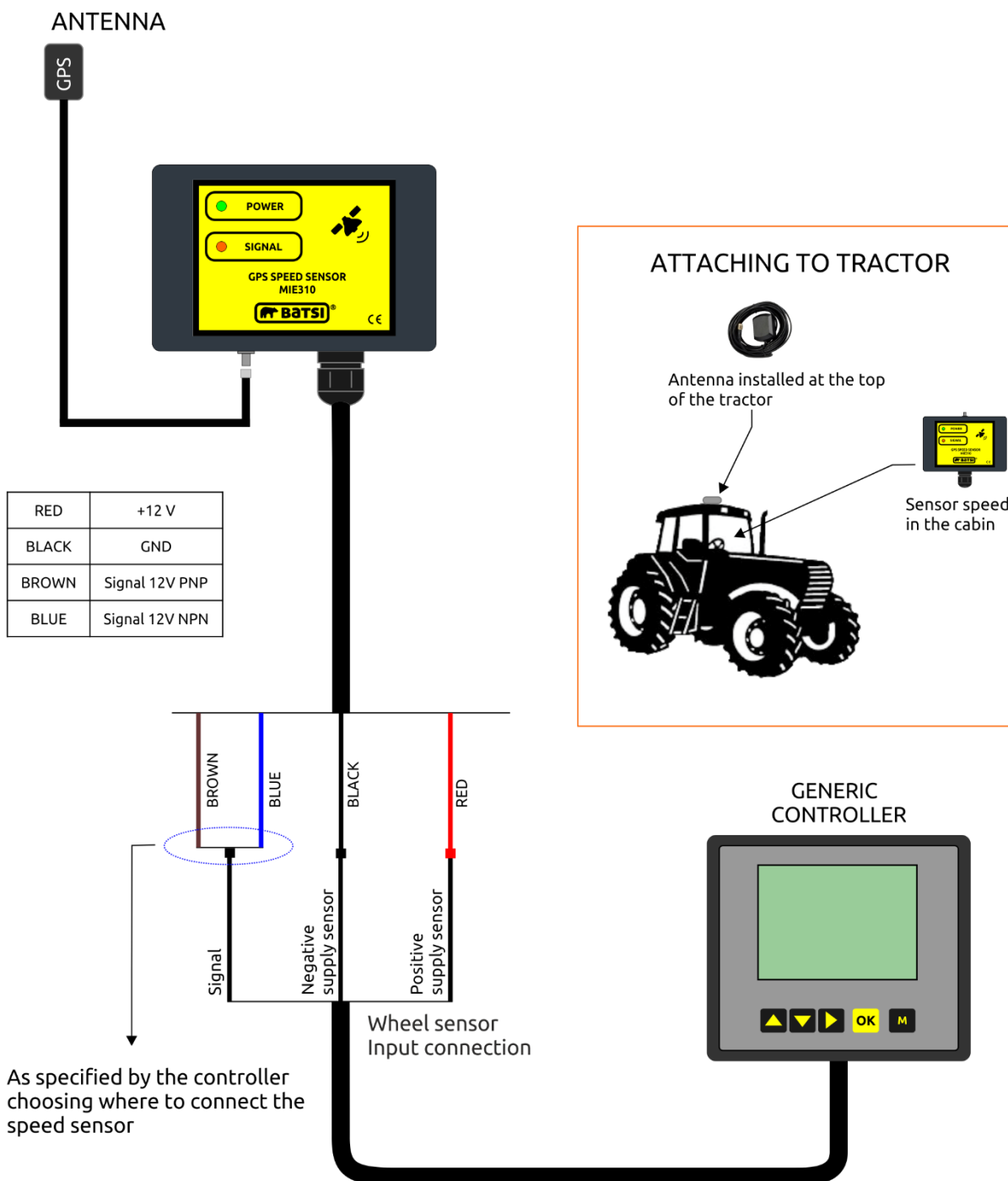
Wiring schematic:

RED	+12 V
BLACK	GND
BROWN	Signal 12V PNP
BLUE	Signal 12V NPN



MIE 310

INSTRUCTIONS SCHEME





DECLARATION OF CONFORMITY



EiD Electrònics, SL

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Hereby declares that the product:

Electronic controller MIE310

Conforms with the provisions of the following EU Directives:

EMC Directive 2014/30/EU

According to following harmonized standards:

EMC EN 61000-4-2:2009, EN 61000-4-3:2006, EN 61000-4-4:2012, EN 61000-4-5:2014, EN 61000-4-6:2014, EN 61000-4-8:2010, EN 55016-1-2:2014, EN 55016-2-1:2014, EN 55016-2-3:2010, EN 55025:2008

This product complies with **RoHS2 Directive 2011/65/EU** Restriction on Hazardous Substances according to the standard:

EN 50581:2012

Additional standards:

This product does comply with the standards:

EN 55022:2010, Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement

EN 55024:2010, Information technology equipment - Immunity characteristics - Limits and methods of measurement

Torrefarrera, 2016/08/25

EiD Electrònics SL
Xavier Monyarch Gros
Certification and Regulatory Affairs