



ATLAS 100

46701651- GPS SPEED SENSOR


**46701652- GPS SPEED SENSOR
FOR BRAVO 180S/300S**



INSTALLATION, USE AND MAINTENANCE

LEGEND OF SYMBOLS

 = Generic danger

 = Warning

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This manual is an integral part of the equipment to which it refers and must accompany the equipment in case of sale or change of ownership. Keep it for any future reference; ARAG reserves the right to modify product specifications and instructions at any moment and without notice.

1 INTENDED USE

ATLAS 100 is a GPS speed sensor compatible with signals coming from GPS and GLONASS systems, which allows measuring the speed of a farming machine during operation.

ATLAS100 outputs a signal having a frequency proportional to farming machine speed (please refer to section 10 "Technical data" for further details). ARAG devices provided with input for speed sensor can rely on this information after connection to ATLAS 100 sensor by means of the suitable cable supplied in the package.

Kit code 46701652, "Speed sensor for Bravo 180S/300S" is equipped with a serial port used for position (GGA) and speed (VTG) information, at 5 Hz, according to NMEA standard. BRAVO 300S and BRAVO 180S computers can be connected using the cable supplied with the system, they rely on the speed information to adjust product quantity and on position information to track the job carried out

The equipment is designed and manufactured according to European directives and international standards: 2014/53/UE (RED), 2014/30/UE (EMC), CFR47 Part 15 Subpart B - Unintentional Radiators (FCC-USA) e ICES-003 Issue 5 - August 2012 - Information technology Equipment (ITE) - Limits and Methods of Measurement (Canada).

2 FCC STANDARDS

This GPS speed sensor complies with the limits provided for class B digital devices, in accordance with CFR47 part 15, subpart B of FCC standards. These limits provide for parameters for a reasonable protection against harmful interferences.

The ATLAS 100 speed sensor generates, uses and can emit radio frequency energy and, if not correctly installed and used, may cause harmful interferences to the communications of radio frequency devices. Nevertheless, we do not guarantee that, in particular circumstances, interferences do not occur. If this equipment causes harmful interferences to radio and/or TV reception during switching on or off, the user should try to correct the interference by using one or more of the following measures:

- Re-orient or reposition the sensor.
- Increase the distance between the disturbed and/or malfunctioning device and the sensor.
- Connect the equipment to a power supply socket on a circuit different from the one to which the sensor is connected.
- Contact a retailer or a qualified radio / TV technician.





3 PRECAUTIONS



- Do not aim powerful water jets at the equipment when cleaning the device or the farming machine on which it is installed.
- Do not use solvents or fuel to clean the case outer surface.
- Comply with the specified rated power voltage (12 Vdc).
- In case of voltaic arc welding, unplug connector from the device.
- Only use ARAG genuine spare parts and accessories.

4 PACKAGE CONTENT

The table below indicates the components that you will find in the package.

Code	Speed sensor ATLAS100 	Instruction manual (DVD-ROM) 	Connection cable for output in frequency 	Connection cable for computer BRAVO 300S / BRAVO180S 
46701651	•	•	•	
46701652	•	•		•

5 DIMENSIONS

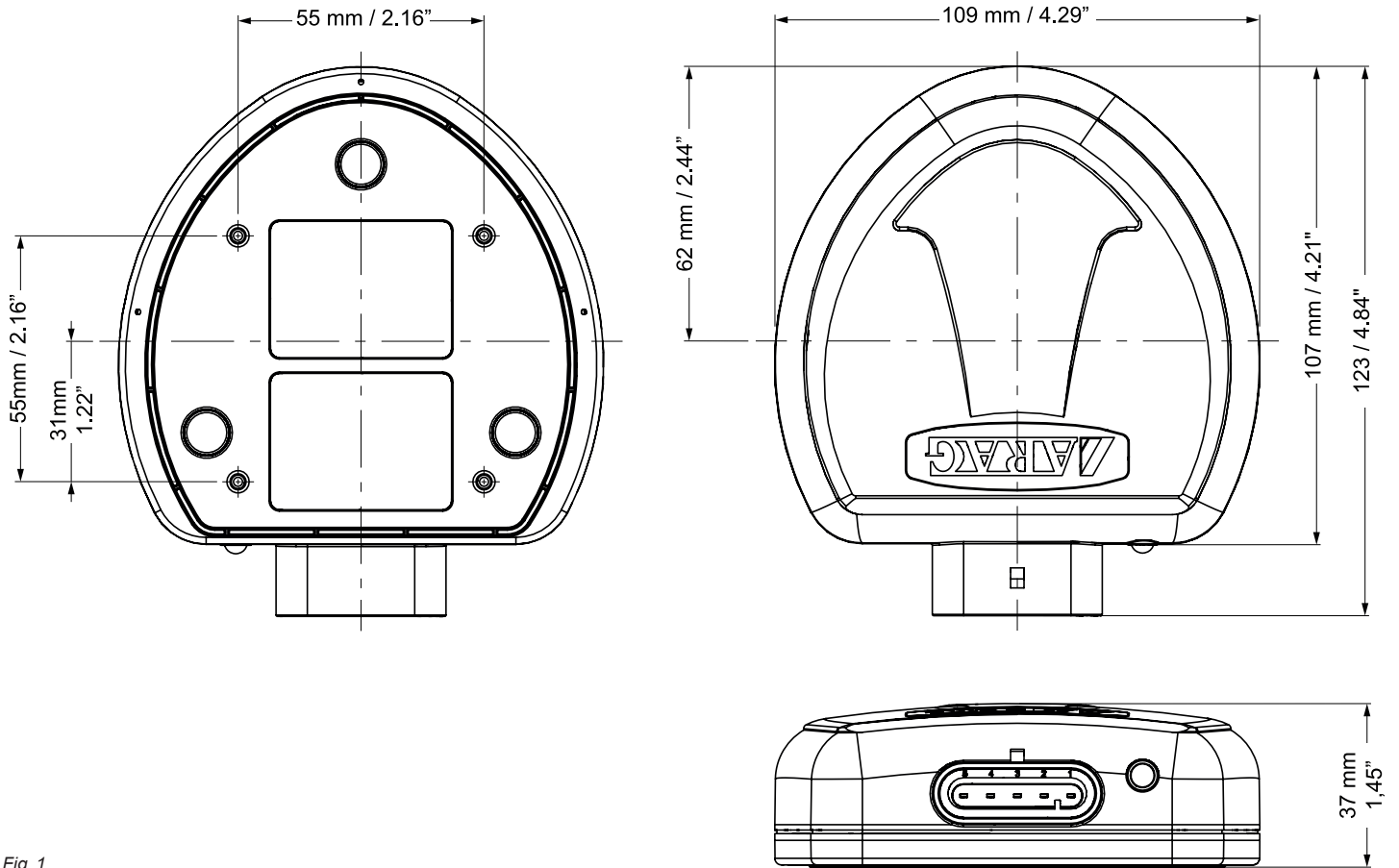


Fig. 1

6 POSITIONING



The user must position the speed sensor correctly as specified in this manual and properly account for the greater obstacle clearance height of the vehicle.

WARNING: The speed sensor does not feature any function able to set off the position error that occurs while working on an inclined surface: therefore we advise against using it to operate on inclined surfaces (hill) if the system as a whole is not provided with other solutions able to measure and correct such position errors.

GPS speed sensor installation:

There are certain essential requirements to be met when installing the sensor on the farming machine:

it must be mounted on the highest point of the vehicle (including the trailer); angle of reception in the skyward direction should be as wide as possible.

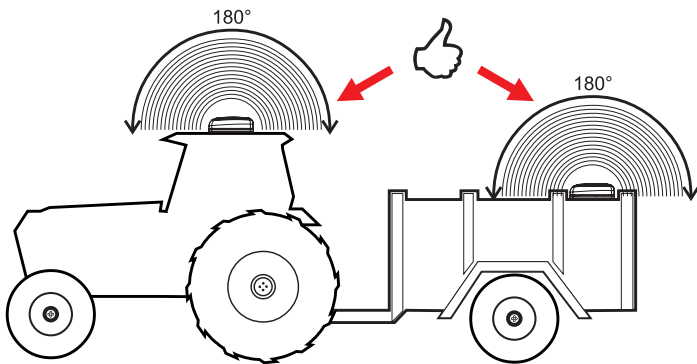


Fig. 2

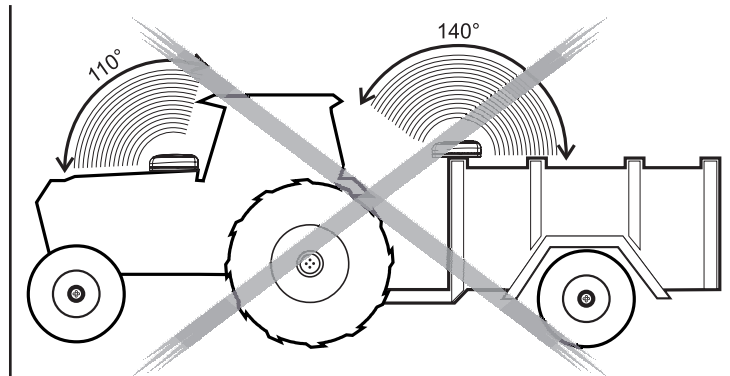


Fig. 3

CONTINUES

The sensor must be installed on vehicle longitudinal axis and positioned so that the harness is routed in the direction opposite to the motion (Fig. 5).

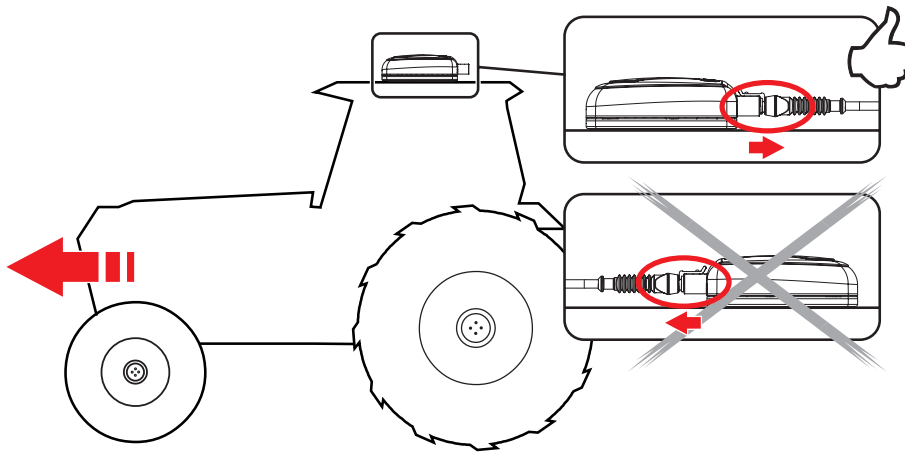


Fig. 4

• GPS speed sensor fastening:

The sensor is provided with 3 magnets on the bottom side and must be fastened to a level metallic surface (for instance: the roof of the farming machine). In case the roof is made of plastic, use a metal base (not supplied) fastened to farming machine chassis.

We recommend checking periodically the metal base correct fixing to prevent its accidental detachment.

The lower part of speed sensor also features four anti-rotation recesses (Fig. 6) which can be used to fasten the antenna or to avoid accidental misplacing of the sensor due to shocks or vibrations.

If the sensor is fastened using the anti-rotation recesses, we recommend using DIN 7505 4x10 mm self-tapping screws, paying utmost attention to avoid damaging the sensor housing (fig.7).

⚠ It is the operator's responsibility to ensure that the system is fixed securely in place. ARAG is not liable for any damage in the event the speed sensor should come off, regardless of the fixing method used.

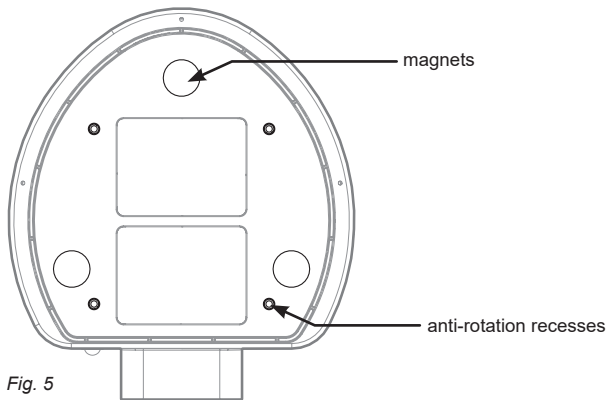


Fig. 5

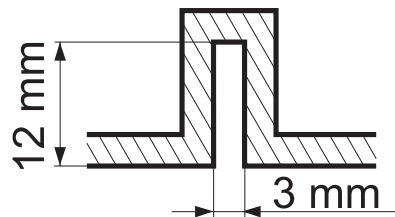


Fig. 6 - Dimensions of anti-rotation recesses

7 WIRING CONNECTIONS

- Use the supplied harnesses only.
- Take care not to break, pull, tear or cut the cables.
- Use of unsuitable cables not provided by ARAG automatically voids the warranty.
- ARAG is not liable for any damage to the equipment, persons or animals caused by failure to observe the above instructions.
- ATLAS 100 speed sensor is intended to be electrically powered by other devices. In this case it is necessary to install a 0.5A fuse on power positive cable.

7.1 General precautions for a correct harness position

• Securing the cables:

- fasten the harnesses so that they do not interfere with moving parts;
- route the harnesses so that they cannot be damaged or broken by machine movements or twisting.

• Fitting the cables to the connection points:

- Do not force the connectors by pushing too hard or bending them: the contacts may be damaged and device operation may be compromised.

Device name



WARNING: MAKE SURE THE YELLOW SEAL IS PROPERLY SEATED IN THE CONNECTOR: ONE LIP OF THE SEAL OUT OF ITS SEAT OR SEAL WRONG INSTALLATION COULD COMPROMISE SEALING AND PROTECTION AGAINST WEATHER CONDITIONS!



Use ONLY the cables and accessories indicated in the catalog, having technical features suitable for the use to be made of them.

7.2 Wiring harness connection

Connect the 5-pole Superseal connector of the harness to speed sensor, pushing it all the way down until engaging the retaining tooth. Do not twist or excessively bend the cable during positioning.

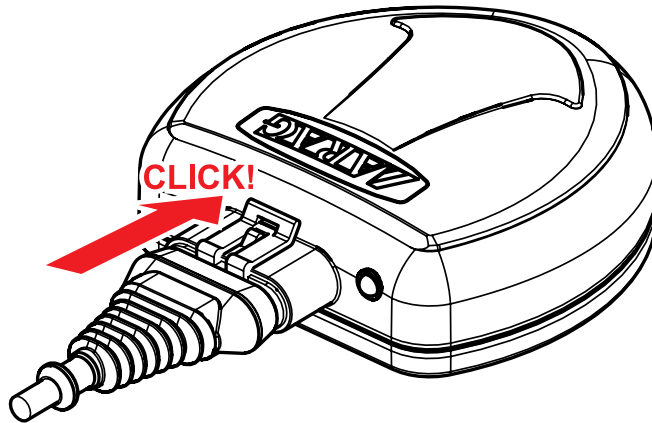


Fig. 7

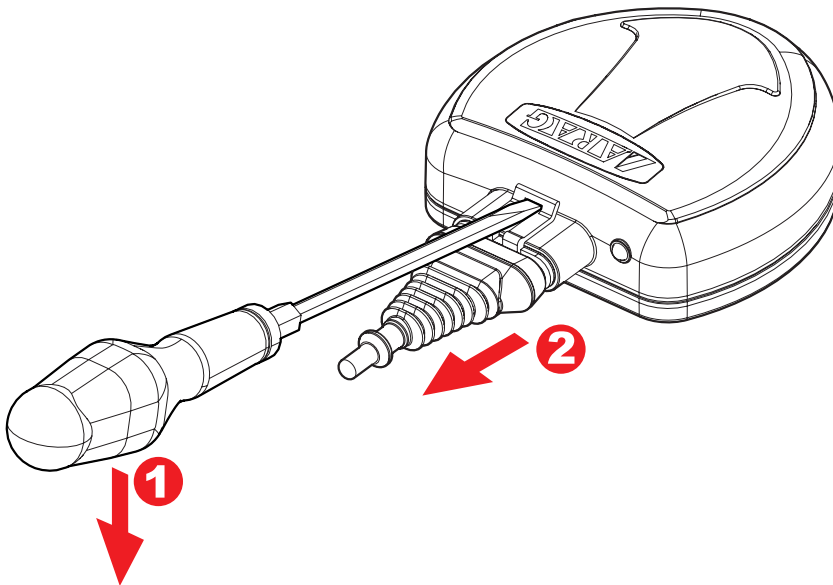


Fig. 8

To remove the connector from the speed sensor, insert a screwdriver (or similar tool) in the relevant seat onto the connector, slightly raise the tab (1) and slide out the connector (2).

8 LED SIGNALS

The LED on the rear side of ATLAS 100 sensor indicates receiver operation by changing color and status:

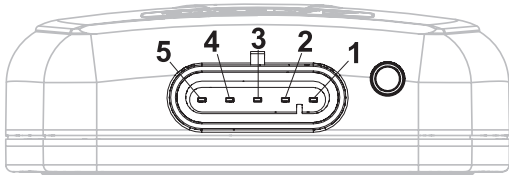
OFF: device off or not working
GREEN flashing: waiting for GPS data reception
GREEN steady on: correct reception of GPS data
RED flashing: power supply voltage incompatible with the permitted one


9 TROUBLESHOOTING

MALFUNCTION	CAUSE	REMEDY	APPLICATION		
			Code 46701651	Code 46701652	
The ATLAS 100 sensor does not output speed information	No power supply	Check connections and ensure that LED on device is ON	●	●	
	Device not connected	Check connections	●	●	
	Connection not set correctly	Ensure the proper speed source is selected on the menu of the device connected to ATLAS 100			●
		Ensure the proper serial port is set on the menu of the device connected to ATLAS 100			●
		Ensure the proper conversion constant is set on the menu of the device connected to ATLAS 100	●		
	Device waiting for satellite signal	Wait until LED goes from flashing to steady on		●	●
		Change sensor position		●	●
Speed not within working limits	Increase or decrease working speed to return within allowed range.		●		
The device outputs wrong speed information	Connection not set correctly	Ensure the proper conversion constant is set on the menu of the connected device	●		
Red LED flashing	Power supply voltage too low or too high	Check power supply voltage	●	●	

9.1 Connector connection

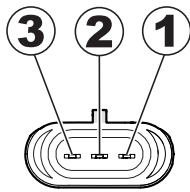
9.1.1 Pinout of Superseal connector on ATLAS 100 sensor




Position*	Connection of
1	GND
2	+12VDC
3	OUT (Output in square wave frequency) 
4	RS232_TX (OUT)
5	RS232_RX (IN)

*: contacts on antenna connector side

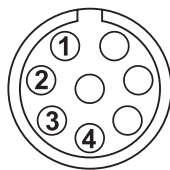
9.1.2 Pinout of cable connector for output in frequency (kit code 46701651)



Position*	Connection of
1	GND
2	+12 VDC
3	OUT (output in square wave frequency) 


*: contacts on connector side (external)

9.1.3 Pinout of cable connector for connection of BRAVO 300S / BRAVO 180S (kit code 46701652)



Position*	Connection of
1	GND
2	+12VDC
3	RS232_TX (OUT)
4	RS232_RX (IN)

*: contacts of connector on welding side

 ARAG is not liable for any damage to the system, persons, animals or property caused by speed sensor wrong or unsuitable assembly. Failure to observe the above instructions automatically voids the warranty.

10 TECHNICAL DATA

PERFORMANCE:

Number of receiver channels 72
Systems used:..... GPS & GLONASS
Refresh rate: 5 Hz
Start time: < 26 sec

ELECTRICAL FEATURES

Power supply voltage 9 ÷ 16 Vdc
Consumption 1 W
Protection against polarity inversion Yes
Protection against short-circuit..... Yes
Digital output:
Type: square wave (duty cycle 50%)
Maximum current: 50 mA
Conversion constant: 1 cm/pulse
Working range 1- 180 km/h
Serial port:
Type: RS232
Configuration 19200, N,8,1
Protocol: NMEA-0183
Messages: GPGGA and GPVTG at 5Hz

ENVIRONMENTAL FEATURES

Operating temperature -20°C / +50°C -4°F + +140°F
Storage temperature -20°C / +60°C -4°F + +140°F
Protection rating IP X5

PHYSICAL FEATURES

Weight (sensor only): 160 g.

11 END-OF-LIFE DISPOSAL

Dispose of the system in compliance with the established legislation in the country of use.

12 WARRANTY TERMS

1. ARAG s.r.l. guarantees this apparatus for a period of 360 days (1 year) from the date of sale to the client user (date of the goods delivery note).
The components of the apparatus, that in the unappealable opinion of ARAG are faulty due to an original defect in the material or production process, will be repaired or replaced free of charge at the nearest Assistance Center operating at the moment the request for intervention is made. The following costs are excluded:
 - disassembly and reassembly of the apparatus from the original system;
 - transport of the apparatus to the Assistance Center.
2. The following are not covered by the guarantee:
 - damage caused by transport (scratches, dents and similar);
 - damage due to incorrect installation or to faults originating from insufficient or inadequate characteristics of the electrical system, or to alterations resulting from environmental, climatic or other conditions;
 - damage due to the use of unsuitable chemical products, for spraying, watering, weedkilling or any other crop treatment, that may damage the apparatus;
 - malfunctioning caused by negligence, mishandling, lack of know-how, repairs or modifications carried out by unauthorized personnel;
 - incorrect installation and regulation;
 - damage or malfunction caused by the lack of ordinary maintenance, such as cleaning of filters, nozzles, etc.;
 - anything that can be considered to be normal wear and tear;
3. Repairing the apparatus will be carried out within time limits compatible with the organizational needs of the Assistance Center.
No guarantee conditions will be recognized for those units or components that have not been previously washed and cleaned to remove residue of the products used;
4. Repairs carried out under guarantee are guaranteed for one year (360 days) from the replacement or repair date.
5. ARAG will not recognize any further expressed or intended guarantees, apart from those listed here.
No representative or retailer is authorized to take on any other responsibility relative to ARAG products.
The period of the guarantees recognized by law, including the commercial guarantees and allowances for special purposes are limited, in length of time, to the validities given here.
In no case will ARAG recognize loss of profits, either direct, indirect, special or subsequent to any damage.
6. The parts replaced under guarantee remain the property of ARAG.
7. All safety information present in the sales documents regarding limits in use, performance and product characteristics must be transferred to the end user as a responsibility of the purchaser.
8. Any controversy must be presented to the Reggio Emilia Law Court.

13 EC DECLARATION OF CONFORMITY

The declaration of conformity is available at the website www.aragnet.com, in the relevant section.

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Only use genuine ARAG accessories or spare parts to make sure manufacturer guaranteed safety conditions are maintained in time. Always refer to ARAG spare parts catalog.

D20371_GB:m01 11/2017



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