

CS4500

Ultrasonic, Ultra-accurate.



High Precision, Low Maintenance!

Innovation at its finest! If you consistently demand the best, our CS4500 Ultrasonic Speed Sensor delivers. Ultra-accuracy is foremost! With no frictional moving parts, the ultrasonic sensor is capable of speed reading accuracy as low as 0.1 knots. By eliminating the traditional paddlewheel, there is no fouling and drag is reduced to a minimum. Unlike paddlewheels, the CS4500 is engineered to measure water-speed below the turbulent boundary layer of the hull resulting in accurate clean-water readings.

Tried And True Technology

The innovation doesn't stop here. Ultrasonic sensing is a proven technology that has been used on ships for nearly 20 years. Building on this technology, AIRMAR developed an advanced design which operates at a higher frequency enabling reliable operation in both salt and fresh water. The state-of-the-art processor in the CS4500 calculates speed every half second, allowing the ultrasonic sensor to respond to rapid changes in vessel speed. This translates into the most reliable and accurate ultrasonic speed sensor on the market—at a very competitive price.

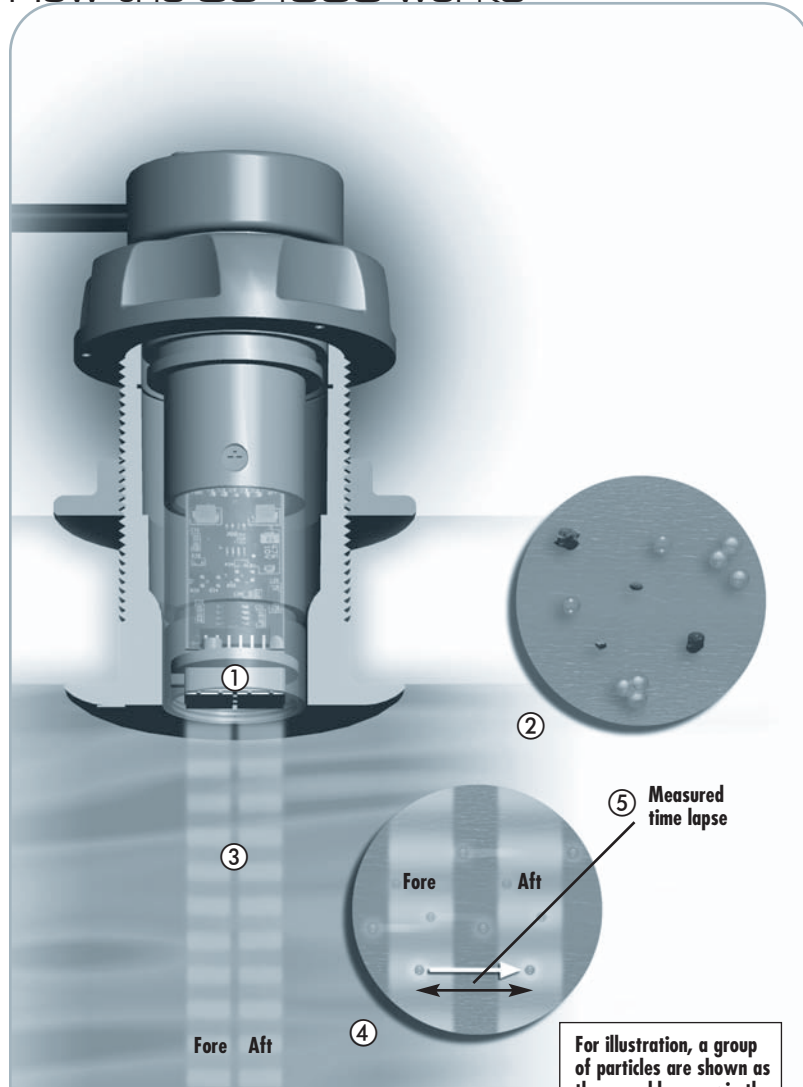
- Unparalleled accuracy as low as 0.1 knots
- No moving parts—no paddlewheel to foul and clean
- Makes retrofitting a breeze—the retractable insert fits most Airmar 2" housings
- Built-in temperature sensor



CS4500

Technical Information

How the CS4500 works



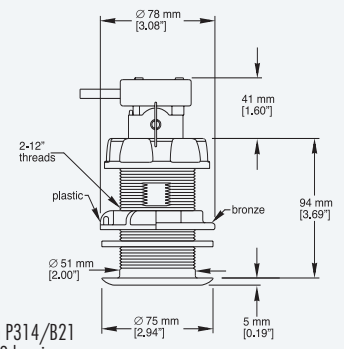
For illustration, a group of particles are shown as they would appear in the FORE beam and later in the AFT beam.

- ① In the CS4500, two transducers are incorporated in a single housing.
- ② Small particles present in the water pass through the beam.
- ③ The speed sensor uses ultrasonic pulses to collect echoes from the small particles in the water as they pass under two ceramics embedded in the sensor.
- ④ As the boat travels through the water, both ceramics "view" the same stream of particles.
Because it takes time for particles to travel between the two ceramics, the aft ceramic detects the particles later than does the fore ceramic.
- ⑤ By measuring this time lapse, the instrument is able to calculate the boat speed.

Available Housing Options

CS4500-650 Insert Options

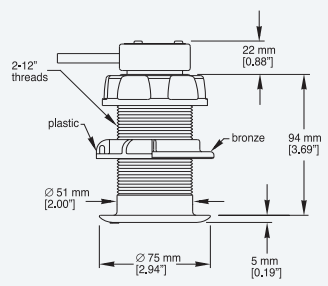
P17/B17



Also available in P314/B21 and P217/B119 housings

CS4500-610 Insert Option

P120/B120



Speed measured	77 - 178 mm (3 - 5") below the hull (outside the boundary layer)
Frequency	4.5 MHz
Pulse repetition frequency	5.5kHz
Signal output	Airmax paddlewheel format
Data update rate	2/sec.
Speed range	0.1 - 40 knots
CE compliant	yes
Supply voltage	10 - 15 VDC
Current	155ma @ 12 VDC
Operating temperature range	0° - 40° C (32° - 104° F)
Sensor insert material	Bronze
Thru-hull housing material	Bronze or plastic
Sensor cable type	Airmax C190
Sensor cable length	10 meters standard
Instrument cable length	3 meters standard, up to 30 meters possible
Blanking plug	yes