

SENOFEE

ITEM NO: DEM302



3D Digital Compass Single Board

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General Description

DEM302 is a high-precision three-dimensional electronic compass developed by Senofee. It uses patented three-dimensional compensation technology to provide accurate heading data even at an inclination angle of $\pm 40^\circ$. It has a small size and low power consumption. It is more suitable for volume-sensitive measurement systems. It is widely used in many fields such as antenna stabilization, vehicle navigation, and attitude reference.

Specifications

Heading accuracy: 1.2°
 Tilt angle accuracy: 0.15°
 Anti-vibration performance: $>2000g$
 Store temperature: $-55^\circ\text{C} \sim +100^\circ\text{C}$

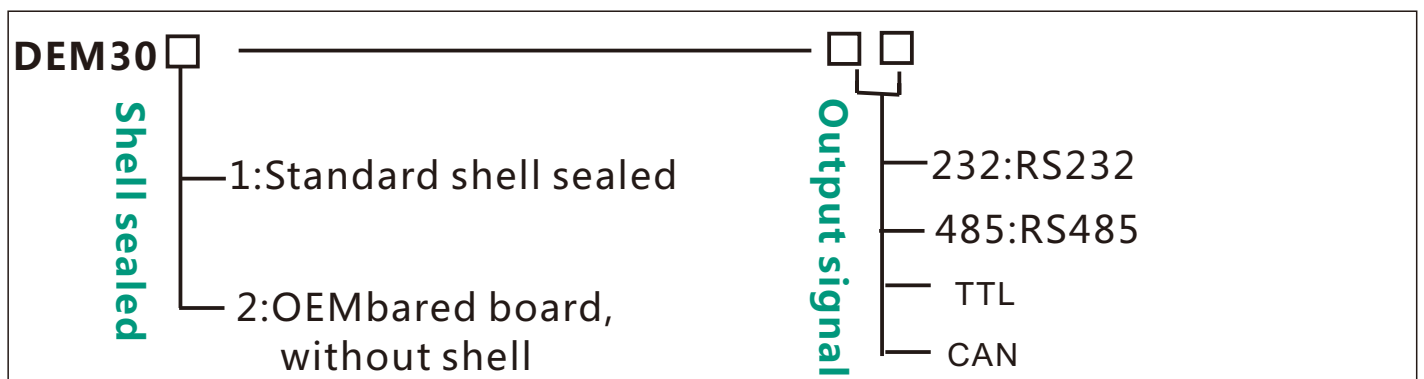
Tilt angle resolution: 0.15°
 Tilt angle measuring range: $\pm 45^\circ$
 Wide temperature working: $-40^\circ\text{C} \sim +85^\circ\text{C}$
 Output signal: RS232, RS485, TTL, CAN

Applications

- 1: Industrial automatic leveling
- 2: Medical equipment
- 3: Solar automatic tracking
- 4: Tower tilt monitoring
- 5: Lifting angle control of cranes
- 6: Structural deformation monitoring
- 7: Measuring and mapping instruments
- 8: Military equipment automation



Ordering information



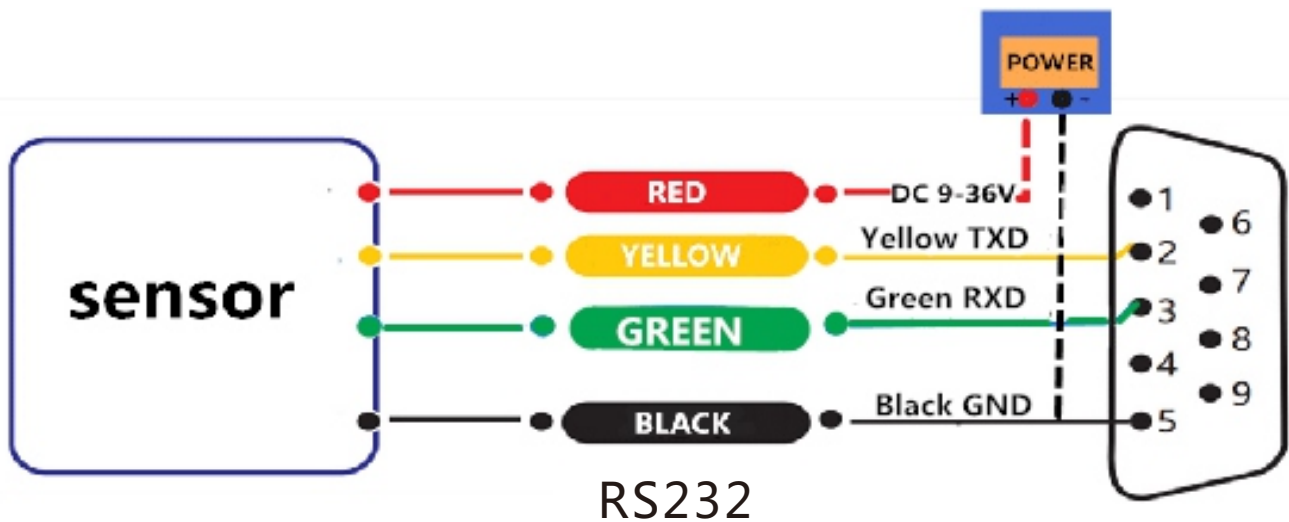
E.g: DEM30 2-232 : standard/ RS232 output

Electrical parameters

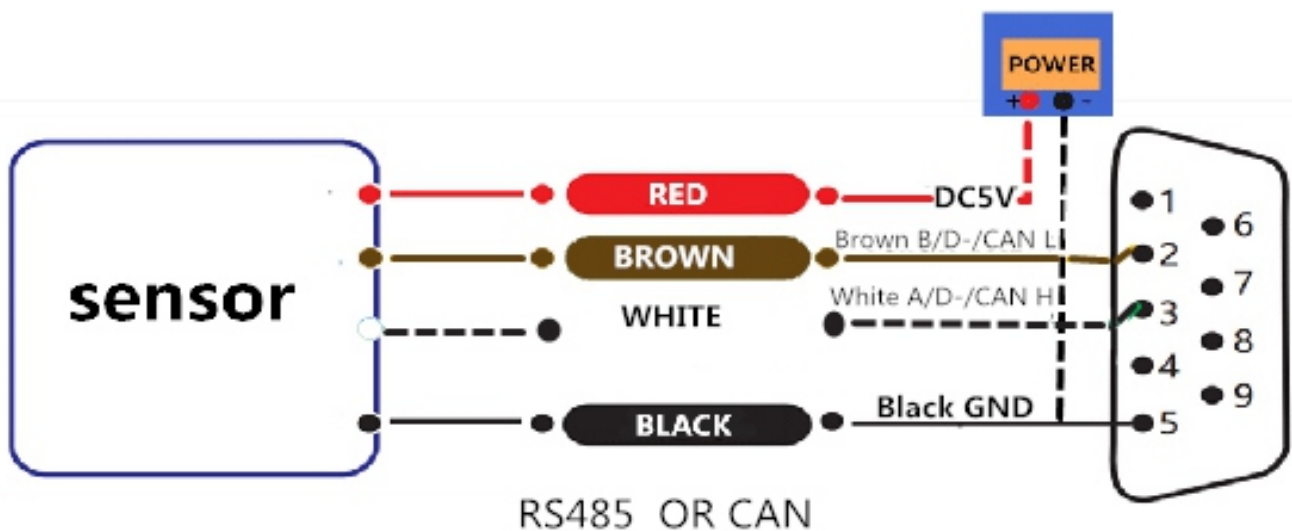
Compass Heading Parameters	Heading accuracy	0.8°[1] (RMS)
	Resolution	0.3°
	Repeatability	0.3°
Heading	Pitch accuracy	0.15°
	Roll accuracy	0.15°
	Resolution	0.01°
	Navigation tilt angle range	0°~360°
Calibration	Hard iron calibration	Yes
	Soft iron calibration	Yes
	Limited tilt user calibration	Yes
Physical features	Dimension	L59 x W37 x H22.6 (mm)
	Weight	100g
	Interface connector	7-pin
Interface features	Start delay	<50MS
	Maximum sample rate	10Hz/S
	Communication rate	2400 to 19200samp0baud
	Output format	Binary high performance protocol
Power	Power supply voltage	(Default) DC+5V
	Current(Maximum)	40mA
	Ideal mode	35mA
Enviroment	Wide temperature working	-40°C ~ +85°C
	Storage temperature	-45°C--+125°C
	Resistance shock performance	3000g

Electrical Connection

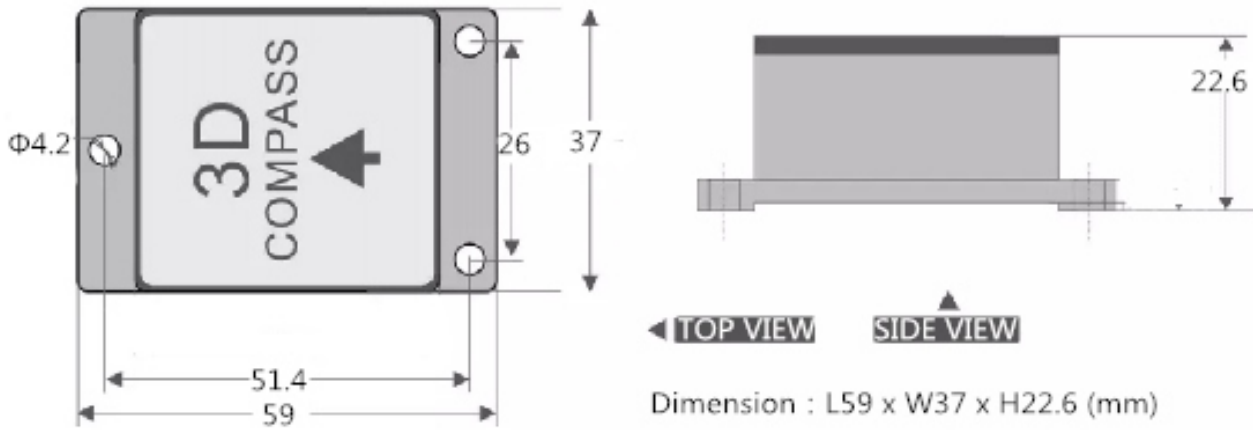
Line color	RED	BLACK	YELLOW	Green
function	DC 9V~36V Power positive	GND Power Negative	RS232(RXD)	RS232(TXD)



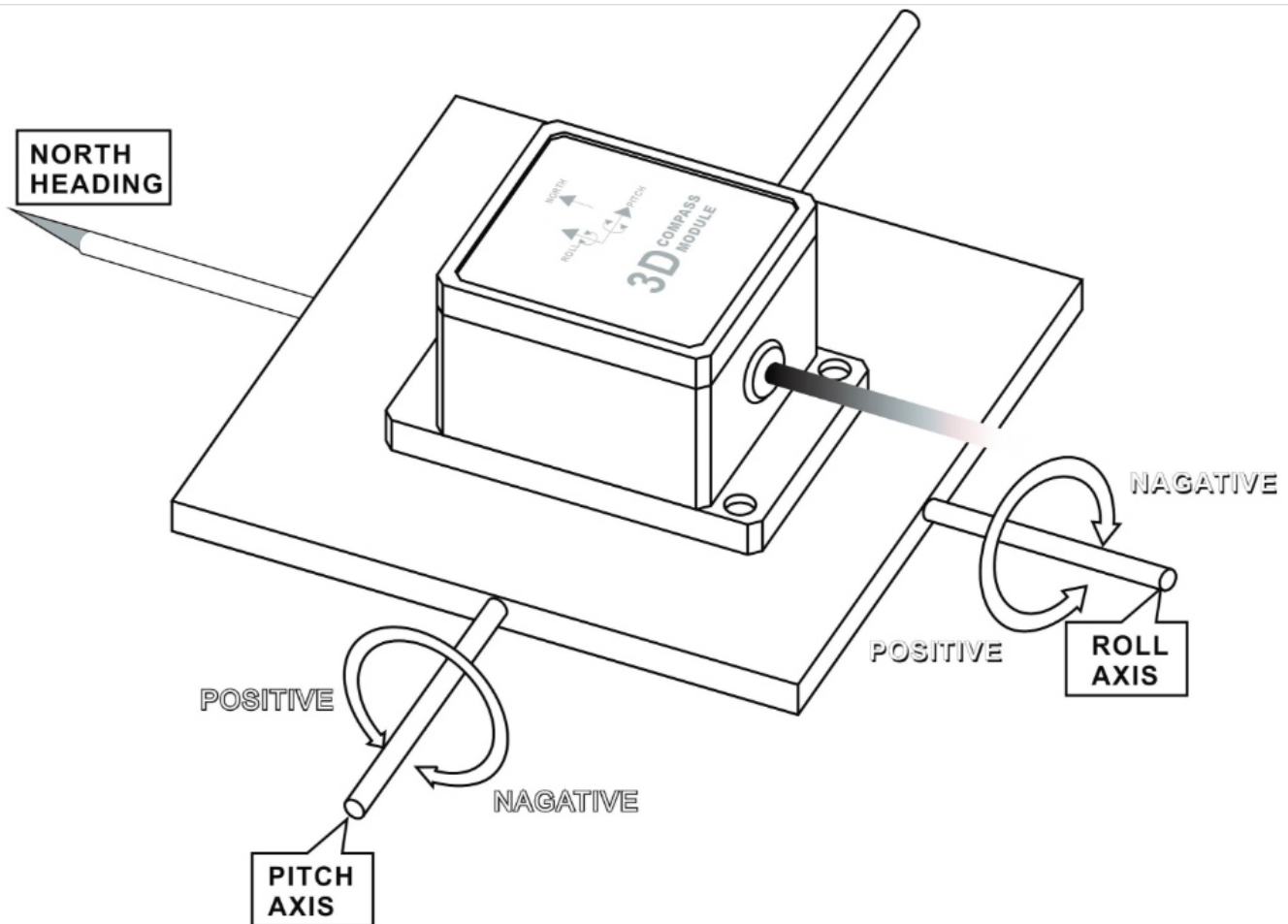
Line color	RED	BLACK	Brown	White
function	DC 9V~36V Power positive	GND Power Negative	RS485 B or CANL	Rs485 A or CANH



Product size chart

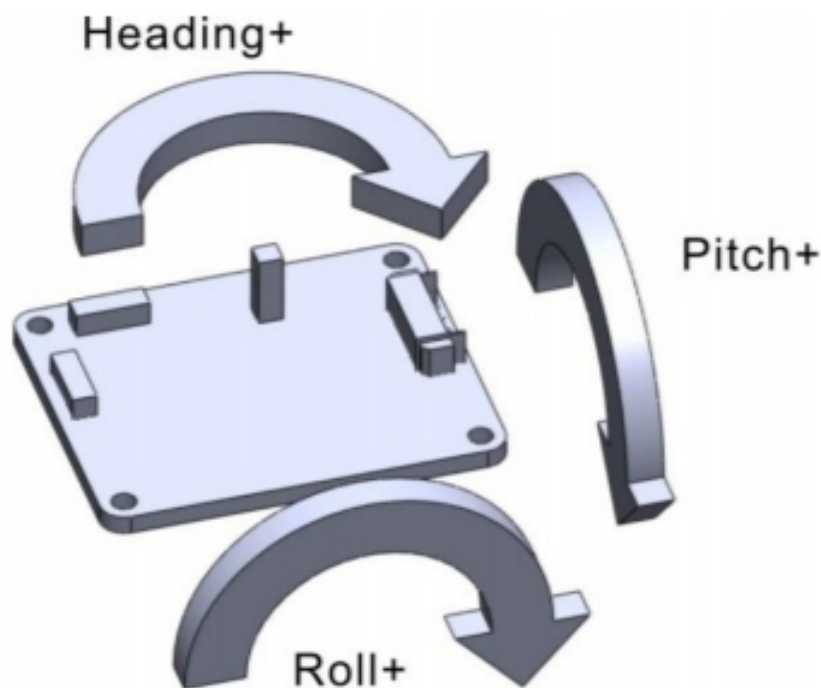


Measuring direction



Production installation notes:

Although DEM302 can compensate magnetic interference, users should choose an environment with the least magnetic interference to install and use. Choose to place DEM302 away from iron, nickel, magnets, motors and other magnetic materials as much as possible. If there are these magnets around, for the medium, please maintain a distance of at least 0.5m. In order to ensure that the product achieves the best measurement effect, use a non-magnetic screwdriver and non-ferrous screws. Be sure to strictly avoid magnets, motors and other strong magnetic materials within 10cm of the compass, which may cause the compass to measure. The accuracy is irreversibly decreased. Each DEM302 electronic compass is provided with a 2 meter cable, and the cable length is optional. Although DEM302, it can compensate for magnetic deviation in a stable magnetic environment, but it cannot compensate for changing magnetic interference. For example: a wire with direct current generates a magnetic field, if the direct current changes, the size of the magnetic field will also change. Batteries are another source of interference. The magnetic field environment is different for each installation location. Yes, the user must evaluate the feasibility of installation in this operating environment. The heading accuracy of DEM302 can reach 1.2° , which is beyond doubt after rigorous verification, and the same scientific test method is vital. Our recommended test method is: install the DEM301 electronic compass on a vertically erected aluminum (or other magnetic material) heading accuracy measurement on the rod (rotating rod is perpendicular to the rotating platform, try to avoid large external magnetic field interference).



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