



# **DIGITAL MAGNETIC COMPASS**



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## Introduction

ASMP-10X is a product developed in accordance with military standards and resistant to the harshest environmental conditions. Its small size and light weight make it easy to use in various fields of application. Combined with high accuracy and precision, ASMP-10X is designed for use in hand-held devices (electrooptic systems such as binoculars, etc.), land vehicles, and weapon control systems.

The heading angle accuracy of the product is  $<0.25^\circ$  ( $1\sigma$ ). The elevation and bank angle accuracy is  $0.05^\circ$  ( $1\sigma$ ), and the data rate can be adjusted in the range of 0.042 Hz - 50 Hz.

ASMP-10X stands out with its easy system integration and resistance to high vibration and shock effects in the systems it is in. It has also been tested to the MIL-STD810G standard and offers maximum performance in the smallest volume. Thanks to these features, ASMP-10X can be used in both defense industry systems and industrial systems.



ASMP-10X



# Applications

- 3D-magnetic field vector
- The angle between the horizontal component of the surrounding magnetic field and the line of sight projection of the ASMP-10X, in relation to the ASMP-10X's line of sight, is known as the azimuth.
- Angles of elevation and bank with respect to the horizontal plane (also referred to as pitch and roll, etc.)



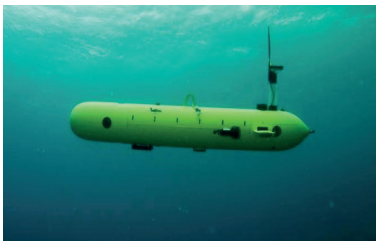
*Handheld Devices (Binocular)*



*Antenna Alignment*



*Surveying*



*Unmanned Underwater Vehicle*



*Unmanned Ground Vehicle*



*Land Vehicles*

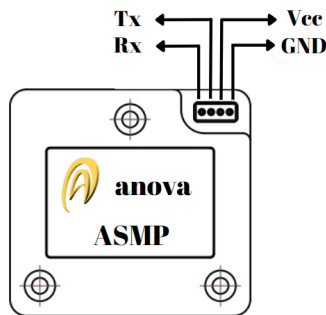


*Weapon Control System*



## ASMP-10X Pins

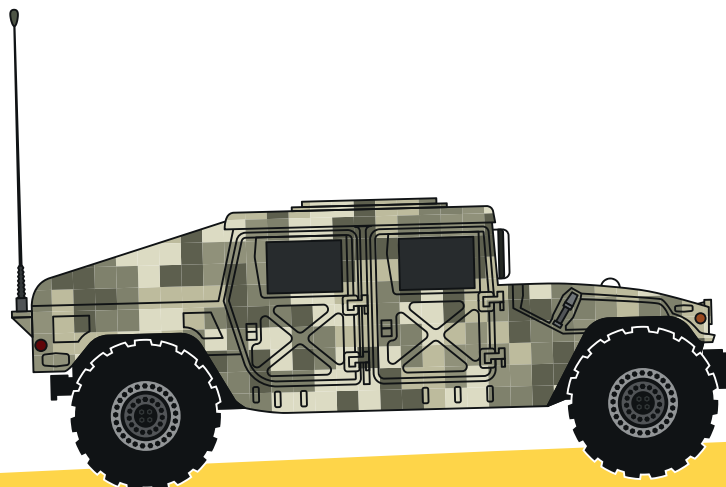
TX (OUT)	RX (IN)
Transmit Pin	Receive Pin
Vcc	GND
Power supply voltage with range $5\text{ V} \pm 5\%$ Power consumption 200 mW average	Power and signal ground, electrically isolated from the housing



ASMP PINS

## Integration

Integration involves the process of integrating the ASMP-10X into a host system to provide precise readings of azimuth, elevation, and bank. For this to be achieved, the host system must be designed to ensure the accurate performance of the ASMP-10X. This requires stable magnetic influences on the system, which should not be subject to physical movement or changes from electric currents. If there are any persistent magnetic influences that cannot be eliminated, the ASMP's built-in compensation procedures should be used to compensate for them. The ASMP-10X must also receive the appropriate voltage and current requirements for its power supply. Additionally, the software interface should be correct and use the appropriate protocols.



# Technical Data

## HEADING

Accuracy	<0,25° (1σ)
Elevation / Bank range	-45° +45°

## ELEVATION / BANK

Accuracy	0,05° (1σ)
Calibrated range	-50° to +50°
Functional range	-89° to +89°

## ELECTRICAL PROPERTIES

Power Supply	4,5V - 5,5V
Power consumption operational mode typical	200 mW

## COMMUNICATION INTERFACE

Serial interface type	5V TTL (optional RS - 232)
Connector type	4 pin

## MEASUREMENT CHARACTERISTICS

Measurement rate	0,042 Hz - 50 Hz
Start up time after shutdown	<150 ms

## MECHANICAL PROPERTIES

Housing	Aluminium
Weight	25 g
Dimensions (L x W x H)	33 x 31 x 13.55 mm

## ENVIRONMENTAL PERFORMANCE

Operating temperature range	-32 +65°C
Storage temperature range	-55 +85°C
Shock (half sine)	50 g / 11 ms
Vibration	5 Hz - 2000 Hz, 120 minutes, 0,04 g <sup>2</sup> / Hz

## ASMP-10X Interface Kit

The ASMP-10X interface kit provides both the essential equipment and software to facilitate a thorough understanding of the ASMP-10X, as well as its effective installation and functioning.

### Hardware

- ASMP-10X
- A cable used for connecting to a PC interface
- Screws for mounting

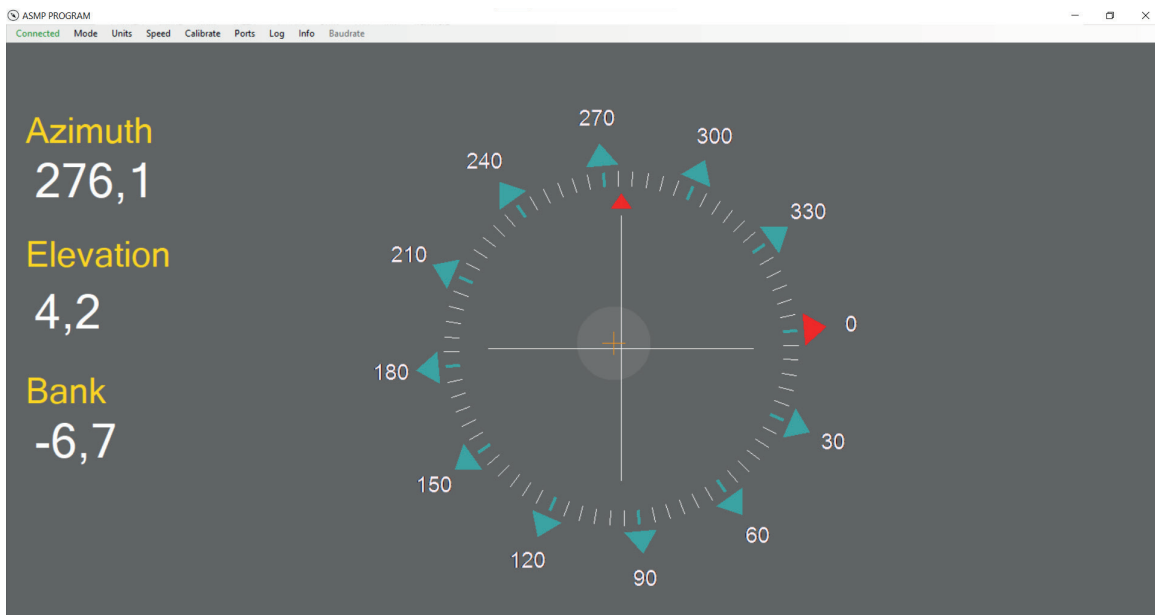
### Software

- Software program
- Manual



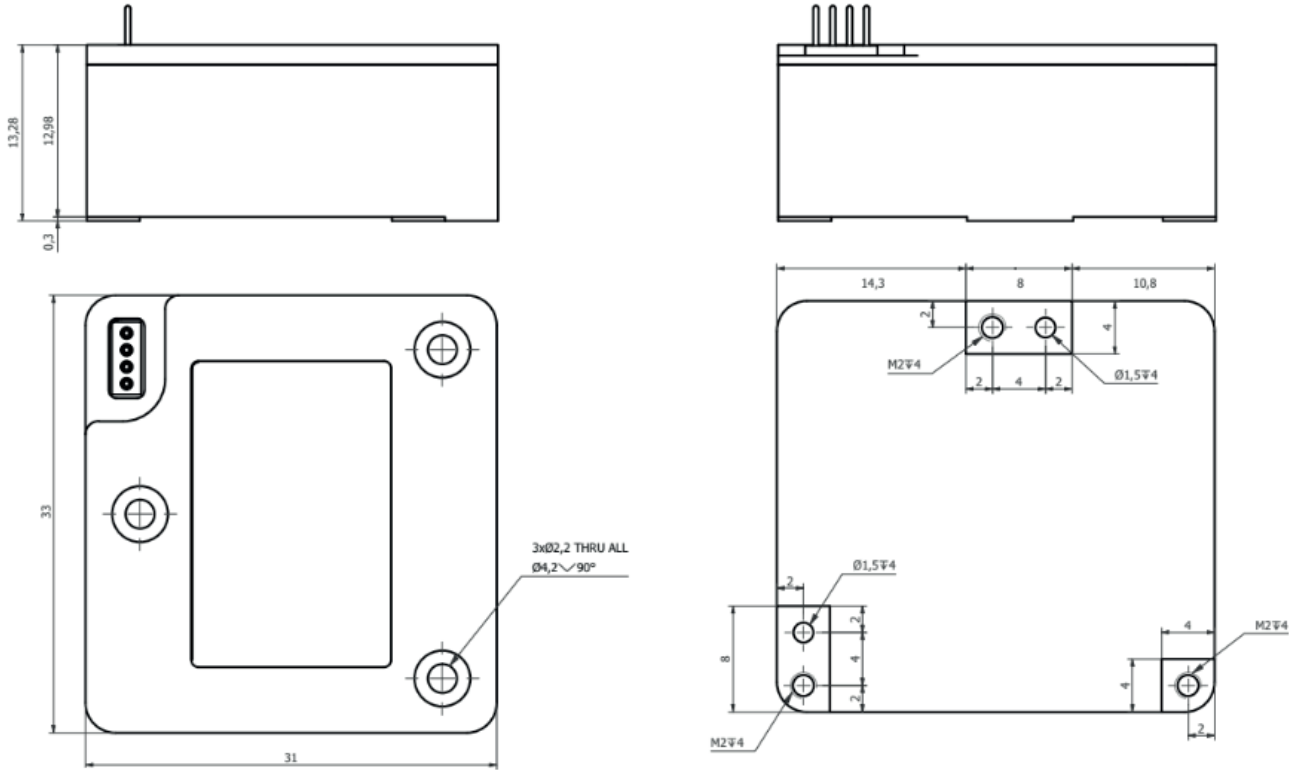
## ASMP PROGRAM INTERFACE

1. First, open ASMP-10X.exe.
2. Then, connect it to the interface.
3. Select the correct port number from the "Port" option.
4. If you receive an error message, check your configuration without cancelling the message, select the correct configuration in the menu, and press the retry button.
5. You can now use mode angle, hard/soft calibration function, and make changes in the ASMP-10X program.



# Technical Drawing

UNIT: mm



## The ASMP-10X Manual

Further information can be found in the ASMP-10X manual.



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