



## Features

- High performance and low cost
- Small size and low weight
- Multiple error calibration algorithms
- Customizable Input Range
- High dynamic and high vibration environments
- Configurable data output frequency

## Applications

Guidance

Robot

UAV/USV

INS

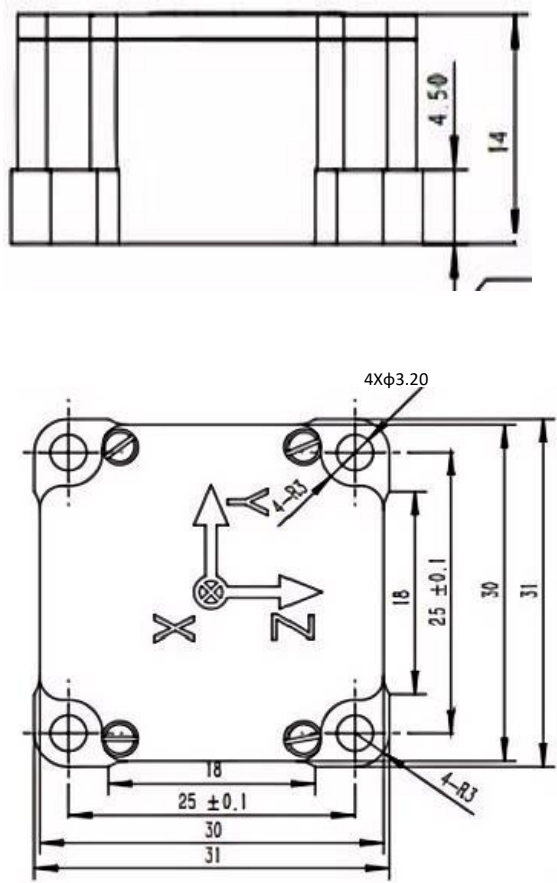
## Description

ZR-IMU100J is a high performance, miniaturized Inertial Measurement Unit composed of three MEMS gyroscopes, three accelerometers and a main control circuit. The IMU can output accurate three-dimensional angular velocity and acceleration information. The IMU is factory calibrated and compensated for temperature effects over the full temperature operating range.

## Technical Specifications

|      | Parameter                   | Unit   | Typical |       |
|------|-----------------------------|--------|---------|-------|
|      | Supply voltage              | V      | 5.0±0.5 |       |
|      | Supply current              | mA     | ≤100    |       |
|      | Operating temperature       | °C     | -40~85  |       |
|      | Start-up time               | s      | 0.5     |       |
|      | Mechanical shock            | g      | 2000    |       |
|      | Sample rate                 | Hz     | 200     | 1K    |
|      | RS422 transmission bitrate  | Bits/s | 460800  |       |
| GYRO | Input range                 | °/s    | ±500    |       |
|      | Resolution                  | °/s    | ≤0.01   |       |
|      | Bias instability            | °/h    | <3      | Allan |
|      | Bias stability              | °/h    | <15(1σ) |       |
|      | Bias error over temperature | °/h    | <30     |       |
|      | Scale Factor Non-Linearity  | ppm    | <200    |       |
| ACC  | Input range                 | g      | ±8      |       |
|      | Resolution                  | mg     | ≤0.25   |       |
|      | Bias stability              | mg     | <0.2    | 1σ    |
|      | Bias error over temperature | mg     | <2      | 1σ    |
|      | Scale Factor Non-Linearity  | ppm    | <200    |       |

Outline Drawing:



- NOTES:**
- 1.UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.
  - 2.ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.
  - 3.DIMENSIONS ARE IN mm.

|                                                                                                                                                                                                                                                                                                                                            |                           |                                                                                       |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------|----------|
| <div> 西安星航通信科技有限公司<br/>XI'AN SATNAVCOM TECHNOLOGY CO., LTD.</div> <div>Tel: +86 135 1916 6509</div> <div>Website: <a href="http://www.mwglobe.com">www.mwglobe.com</a></div> <div>E-Mail: <a href="mailto:sales@mwglobe.com">sales@mwglobe.com</a></div> | PART NAME                 |                                                                                       |          |
|                                                                                                                                                                                                                                                                                                                                            | Inertial Measurement Unit |                                                                                       |          |
|                                                                                                                                                                                                                                                                                                                                            | ZR-IMU100J                | REV                                                                                   | DATE     |
|                                                                                                                                                                                                                                                                                                                                            |                           | V1.0                                                                                  | 2025.4.2 |
|                                                                                                                                                                                                                                                                                                                                            | SCALE 1:1                 |  |          |



## Features

- High Precision and low cost
- Small size and low weight
- Multiple error calibration algorithms
- Customizable Input Range
- High dynamic and high vibration environments
- Configurable data output frequency

## Applications

Fathometer

Auto Pilot

UAV/USV

AUV

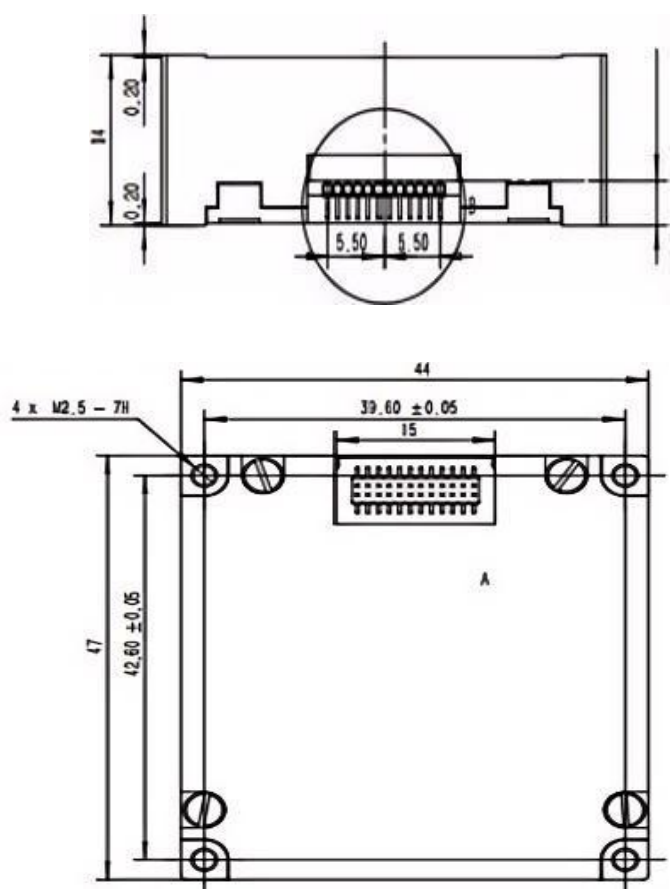
## Description

ZR-IMU200S is a high precision, miniaturized Inertial Measurement Unit composed of three high-precision MEMS gyroscopes, three high stability accelerometers and a main control circuit. The IMU can output accurate three-dimensional angular velocity and acceleration information. The IMU is factory calibrated and compensated for temperature effects over the full temperature operating range.

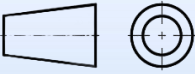
## Technical Specifications

|      | Parameter                   | Unit   | Typical  |       |
|------|-----------------------------|--------|----------|-------|
|      | Supply voltage              | V      | 5.0±0.5  |       |
|      | Supply current              | mA     | ≤ 200    |       |
|      | Operating temperature       | °C     | -40~85   |       |
|      | Start-up time               | s      | 0.5      |       |
|      | Mechanical shock            | g      | 2000     |       |
|      | Sample rate                 | Hz     | 200      | 1K    |
|      | RS422 transmission bitrate  | Bits/s | 460800   |       |
| GYRO | Input range                 | °/s    | ± 300    |       |
|      | Resolution                  | °/s    | ≤ 0.01   |       |
|      | Bias instability            | °/h    | < 0.5    | Allan |
|      | Bias stability              | °/h    | < 5 (1σ) |       |
|      | Bias error over temperature | °/h    | < 10     |       |
|      | Scale Factor Non-Linearity  | ppm    | < 200    |       |
| ACC  | Input range                 | g      | ± 8      |       |
|      | Resolution                  | mg     | ≤ 0.25   |       |
|      | Bias stability              | mg     | < 0.08   | 1σ    |
|      | Bias error over temperature | mg     | < 0.5    | 1σ    |
|      | Scale Factor Non-Linearity  | ppm    | < 200    |       |

Outline Drawing:



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|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------|---------------------------------------------------------------------------------------|
|  西安星航通信科技有限公司<br>XI'AN SATNAVCOM TECHNOLOGY CO., LTD. | PART NAME                                  |           |                                                                                       |
|                                                                                                                                         | High Performance Inertial Measurement Unit |           |                                                                                       |
|                                                                                                                                         | ZR-IMU200S                                 | REV       | DATE                                                                                  |
|                                                                                                                                         |                                            | V1.0      | 2025.4.9                                                                              |
| Tel: +86 135 1916 6509                                                                                                                  |                                            | SCALE 1:1 |  |
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