# AK3100

# Dalang Communication Technology Co., Ltd Product Specification



| | |
|---|---|
| Product Name: | High precision sensors |
| Product Model: | AK3100 |
| Version Number: | V 1.0 |
| Revision Date: | 2025.12.31 |

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# 1 Product Application Scenarios

AK3100 product is a high-performance industrial grade geomagnetic sensor designed specifically for drones and intelligent mobile platforms. The product adopts the industry-leading RM3100 magnetometer core, integrated into a sturdy aluminum alloy housing, and seamlessly connects with the flight control system through the DroneCAN/UAVCAN bus protocol. It has IP68 level fully sealed protection and a wide temperature range of -40 ℃ to 85 ℃, ensuring stable and reliable 3D magnetic field data in various harsh environments. It is an ideal choice for improving the heading accuracy of drones, robots, and various navigation systems.


Figure 1 Product Application Scenarios

# 2 Features

In this chapter, we will delve into and comprehensively elaborate on the functionalities and operating principles of the AK3100, detailing how it plays a pivotal role in various applications as follows:

1. **Superior core performance:** Using the industry-leading RM3100 magnetometer core, it provides high-precision, low-noise 3D magnetic field measurement.
2. **Advanced communication interface:** Supports DroneCAN/UAVCAN bus protocol, seamlessly integrates with mainstream flight control systems such as ArduPilot and PX4.
3. **Strong real-time data performance:** With a data update rate of up to 80Hz and the ThreadX real-time operating system, it ensures high-speed dynamic response.
4. **Strong environmental adaptability:** It has IP68 fully sealed protection and a wide temperature range of -40 ℃~85 ℃, suitable for harsh outdoor and industrial environments.
5. **Sturdy and lightweight structure:** It adopts an aluminum shell, weighs only 42.2 grams, and has a small volume (50 × 35 × 14mm), making it easy to integrate and install.
6. **Good system compatibility:** specially optimized for ArduPilot/PX4, plug and play, reducing integration and debugging costs.
7. **Power supply and interface specifications:** 5V DC power supply, standard GHR-04V-S interface and 50cm outlet for easy connection and wiring.
8. **Widely applicable scenarios:** suitable for high-precision heading measurement scenarios such as drones, robots, and intelligent navigation platforms.

# 3 Structural Characteristic

In this section, we will conduct an in-depth analysis of the product's design details, presenting its aesthetic features and precise interface specifications through detailed structural diagrams. This perspective aims to provide a comprehensive framework, thereby enhancing the understanding and perception of the product's architecture. Refer to Figure 2， Table 1.


Figure 2 Product Structure Diagram (unit: mm)

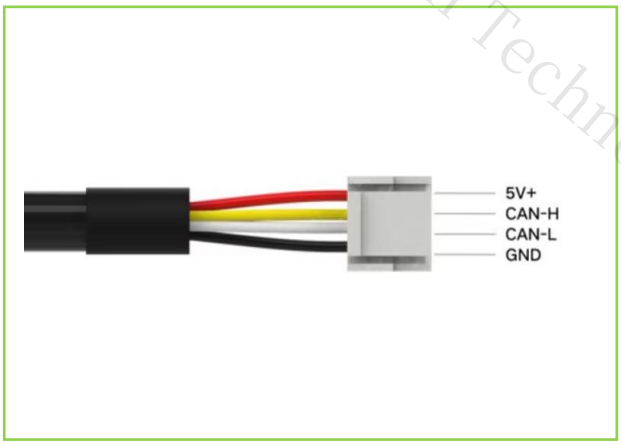


Table 1 Interface Definition

| PIN name | Description |
|---|---|
| VCC | The main power supply of the system has a supply voltage of 5V |
| CAN-H | CAN bus high-level signal line |
| CAN-L | CAN bus low-level signal line |
| GND | grounding |

# 4 Specifications

In this section, we will provide a detailed list and explanation of the product's chip features, sensitivity, accuracy, operating principles, and other technical details, as detailed in Table 2.

Table2 Product Specifications

| Project | Specifications |
|---|---|
| Product Model | AK3100 |
| sensor type | Three-axis magnetometer |
| Core sensors | RM3100 |
| Output Protocol | DroneCAN / UAVCAN |
| Data update rate | 80 Hz |
| compatible system | ArduPilot / PX4 |
| real-time system | ThreadX RTOS |
| electrical interface | GHR-04V-S (4-pin) |
| power supply voltage | 5V DC |
| Overall dimensions | 50×35×14mm |
| Product weight | 42.2g |
| Length of outgoing line | 50cm |
| Shell material | aluminium |
| Protection level | IP68 |
| Operating Temperature | -40℃ ~ +85℃ |

# 5 Product Photos

In this chapter, we will showcase real-life images of the product, as shown in Figure 5. These images provide a detailed view of our product from various angles and perspectives. We believe that through authentic representation, we can better convey the value and concept of the product, thereby enhancing your trust and satisfaction.


Figure 3 Product Images