Datasheet

# Brant RM3100

**Features**

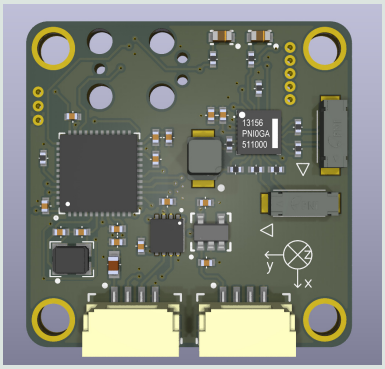
- Low power consumption
- High precision magnetic field measurement
- DroneCAN interface for data output
- Compact and robust design
- Wide operating temperature range

**Applications**

- Industrial automation
- Navigation systems
- Geophysical surveying
- Scientific research
- Unmanned vehicles

**Description** The Brant RM3100 is a high precision industrial magnetometer designed for accurate magnetic field measurements. It is ideal for applications requiring reliable and precise magnetic data.

It features advanced sensor technology that ensures high accuracy and stability over a wide range of environmental conditions. Its compact design allows for easy integration into various systems and platforms.



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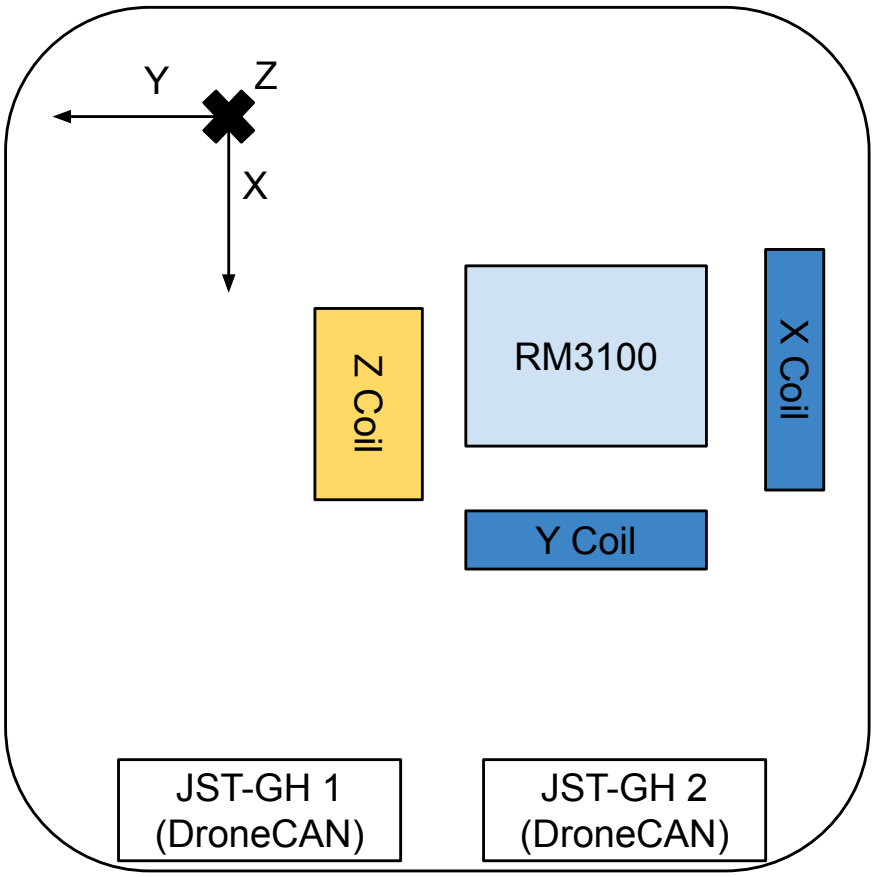
# 1 : Diagram and pin description

## 1.1 : Diagram

The following figure represents the different components and connectors of Brant.

**Figure 1: RM3100 Diagram**



## 1.2 : Pin description

Pinout follows the standard connector specifications.

**Figure 2: Connector, pin 1**

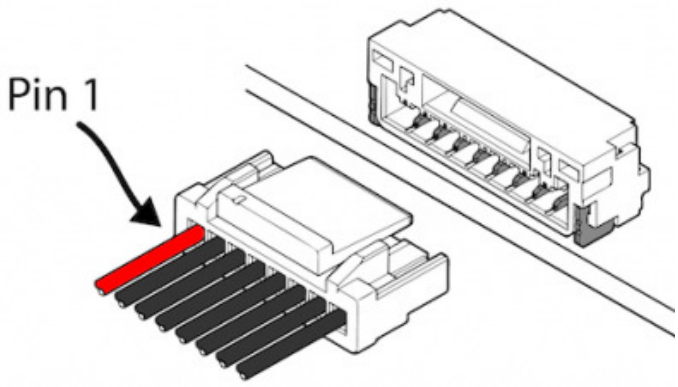



**Table 1: Pinout JST-GH 1 configuration**

| | Pin | Name | Type | Function |
|---|---|---|---|---|
| **Power** | 1 | VCC | P | Power supply input |
| **Data** | 2 | CAN_H | I/O | CAN High |
| | 3 | CAN_L | I/O | CAN Low |
| **Power** | 4 | GND | P | Ground |

**Table 2: Pinout JST-GH 2 configuration**

| | Pin | Name | Type | Function |
|---|---|---|---|---|
| **Power** | 1 | VCC | P | Power supply input |
| **Data** | 2 | CAN_H | I/O | CAN High |
| | 3 | CAN_L | I/O | CAN Low |
| **Power** | 4 | GND | P | Ground |

# 2 : Electrical and mechanical specifications

The values for the following operating conditions have been specified at 25°C ambient temperature.

**Table 3: Electrical and mechanical specifications**

| Symbol | Parameter | Test conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $V_{CC}$ | Supply voltage | - | 3.0 | 3.3 | 3.6 | $V$ |
| $I_{CC}$ | Current consumption | - | - | 10 | 50 | $mA$ |
| $T_{op}$ | Operating temperature | - | -40 | - | +85 | $°C$ |

# 3 : Absolute maximum rating

Stresses above those listed as "absolute maximum ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device under these conditions is **not** implied. Exposure to maximum rating operations for extended periods may affect device reliability.

**Table 4: Absolute maximum ratings**

| Symbol | Parameter | Maximum value | Unit |
|---|---|---|---|
| $V_{CC}$ | Supply voltage | -0.3 to +3.7 | $V$ |
| $T_{stg}$ | Storage Temperature | -40 to +125 | $°C$ |

# 4 : Performance Characteristics

## 4.1 : Magnetic Field Measurement

Brant provides high accuracy magnetic field measurements.

**Table 5: Magnetic Field Measurement Performance**

| Parameter | Typical Value[1] | Unit |
|---|---|---|
| Range | ±800 | $T$ |
| Gain | 38 | $LSB/T$ |
| Sensivity | 26 | $nT$ |
| Noise density | 1.2 | $nT/\sqrt{Hz}$ |

1 : Cycle counts set to 100

# 5 : Communication interface

Brant utilizes two JST-GH connectors for communication, employing the DroneCAN protocol. DroneCAN is a lightweight protocol designed for reliable communication in distributed systems, particularly suited for unmanned vehicles and robotics. It supports real-time data exchange and ensures robust performance in demanding environments.

## 5.1 : DroneCAN Interface

The DroneCAN interface is used for communication with Brant. It supports high-speed data transfer and is designed to meet the rigorous demands of industrial applications.

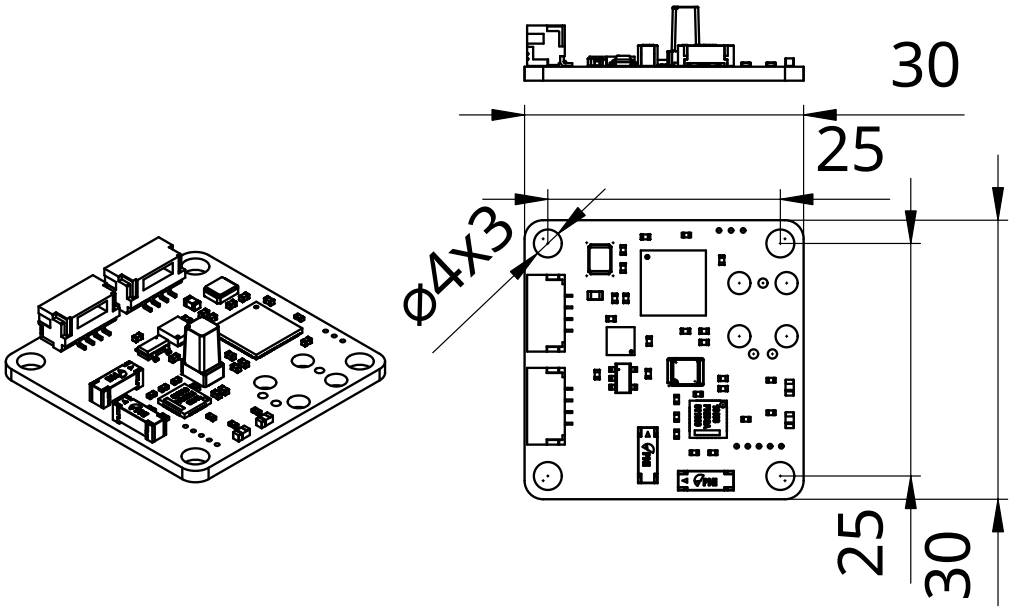
The interface supports bit rates up to 1 Mbps, providing fast and efficient data communication.

You can use either the JST-GH 1 or JST-GH 2 connector for DroneCAN communication.

# 6 : Mechanical drawing

To facilitate mounting on various platforms, Brant features mounting holes located at the corners.

**Figure 3: Mechanical drawing**



# 7 : Appendix

## 7.1 : Useful links

Systork Community Forum

## 7.2 : Glossary

# 8 : Revision History

**Table 6: Document revision history**

| Date | Revision | Changes |
|---|---|---|
| 3 June 2025 | 1.0 | Initial release |