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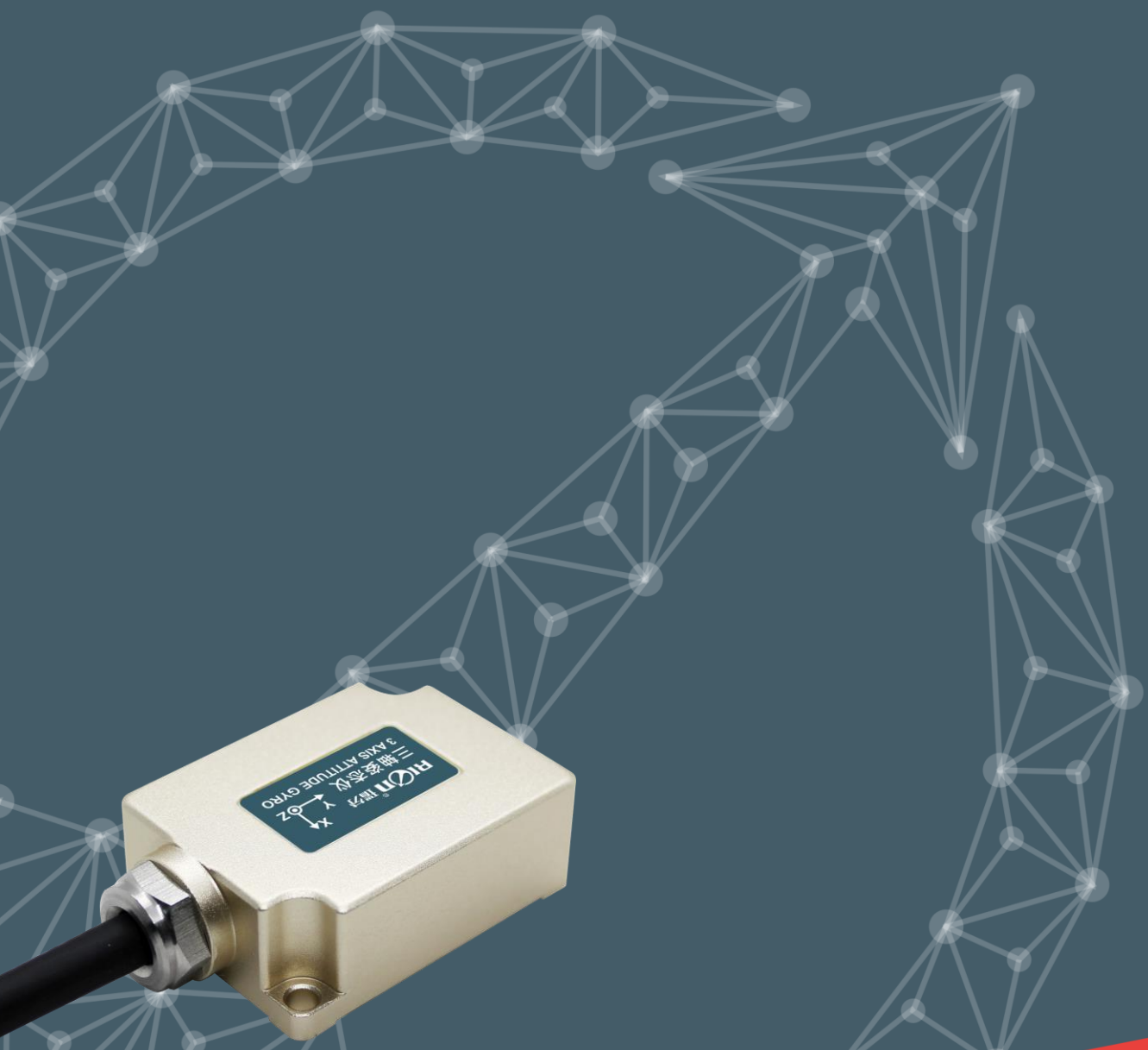


V1.2

3 AXIS ATTITUDE GYRO

RION TL735G

Technical Manual

RION QUALIFICATION CERTIFICATION

○ Quality management system certification: GB/T19001-2016 idt ISO19001:2015 standard (certificate No.: 128101)

○ High-tech Enterprise (Certificate No.: GR201844204379)

○ Revision date: 2021-6-15

Note: Product functions, parameters, appearance, etc. will be adjusted as technology upgrades. Please contact our sales to confirm when purchasing.

▶ INTRODUCTION

TL735G is a high-precision three-axis attitude meter developed by RION Technology based on the company's latest MEMS inertial measurement platform. It outputs the horizontal azimuth angle and angular rate of the object in real time by performing dynamic attitude algorithm on the angular rate of the gyroscope. The product integrates RION's patented inertial navigation algorithm. Through the multi-model data fusion of the attitude angle, the short-term drift of the gyroscope can be solved to the greatest extent.

The azimuth angle of this product has a power-down storage function, and is suitable for high-voltage rotary switch angle indications in 5G antenna monitoring, outdoor billboards, and other industries.

▶ MAIN FEATURE

★ Super electromagnetic compatibility
★ Real-time angular rate output
★ Horizontal azimuth and attitude angle output
★ Long life, strong stability
★ Forward axis acceleration
★ All solid state
★ Compact and lightweight design
★ RS485 output optional
★ DC9~36V power supply

▸ APPLICATION

★ 5G antenna monitoring
★ Outdoor billboard
★ 3D virtual reality
★ Stable platform
★ Car security system
★ Drone
★ Vehicle-mounted satellite antenna equipment
★ Industrial control
★ Robot

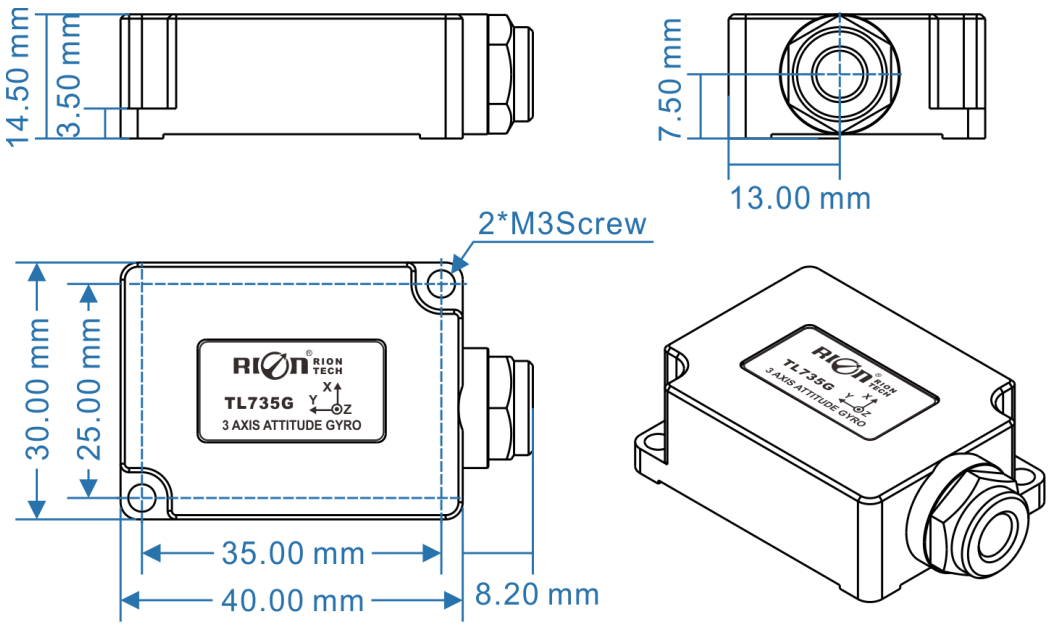
▶ SPECIFICATION

TL735G	Parameters
Azimuth measurement axis	Z-axis azimuth angle ±180°
Acquisition bandwidth	>100Hz
Azimuth resolution	0.01°
Azimuth accuracy	<0.5°
Non-linear	0.1% of FS
Pitch accuracy	0.1° RMS
Roll accuracy	Dynamic 0.5°, static 0.1° RMS
Tilt resolution	0.01°
Tilt range	Roll ± 180º, pitch ± 90º
Gyro angular rate	±125 °/s (other angular rates can be customized)
Acceleration range	±2g
Acceleration resolution	0.1°
Acceleration accuracy	0.5mg
Default data output type	Euler angle
Default azimuth measurement range (Data output type is Euler angle)	±180°
Start Time	5s (stationary) vibration <10mg
Input voltage	9~36V, default +24VDC, 12mA
Current	40mA
Operating temperature	-40℃ ~ +85℃
Storage temperature	-40 ℃~ +125℃
Vibration	5g~10g
Impact	200g pk，2ms，½sine
life span	10 years
Start Time	5-6 seconds, stand still (acceleration <0.01g)
Maximum sampling rate	100 times/sec
Serial communication rate	Default 9600 baud rate
Output signal	RS485
MTBF	≥50000 hours/time
Insulation resistance	≥100 megohm
Impact resistance	100g@11ms, 3 Axial Direction (Half Sinusoid)
Anti-vibration	10grms、10～1000Hz
Waterproof level	IP67
Cable	Standard 1-meter cable
Weight	35g (not including cable)

Advantages:

1. Realize zero drift of azimuth angle in static state through gyro temperature drift suppression technology;
2. The azimuth angle and roll angle have the function of power-off storage;

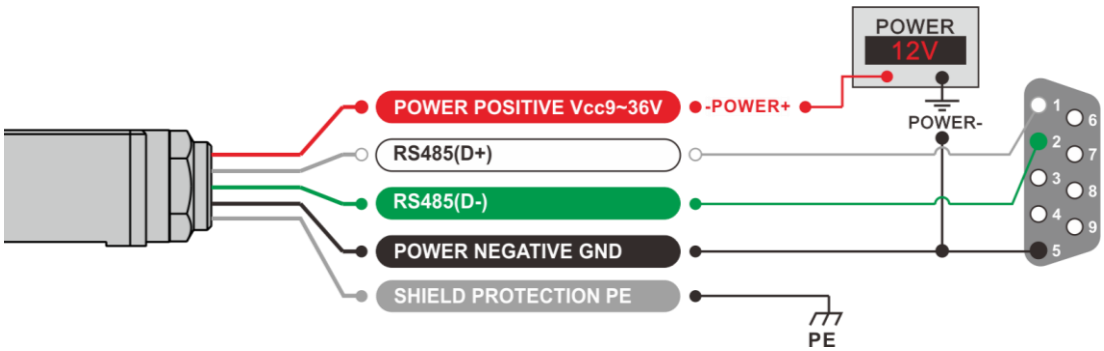
▶ PRODUCT SIZE



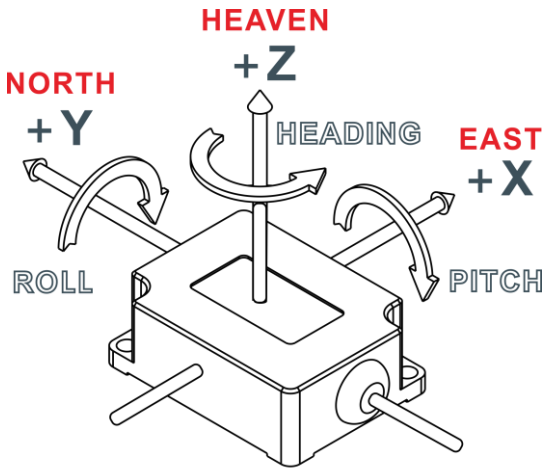
SIZE：40*30*14mm

▶ PRODUCT ELECTRICAL CONNECTION

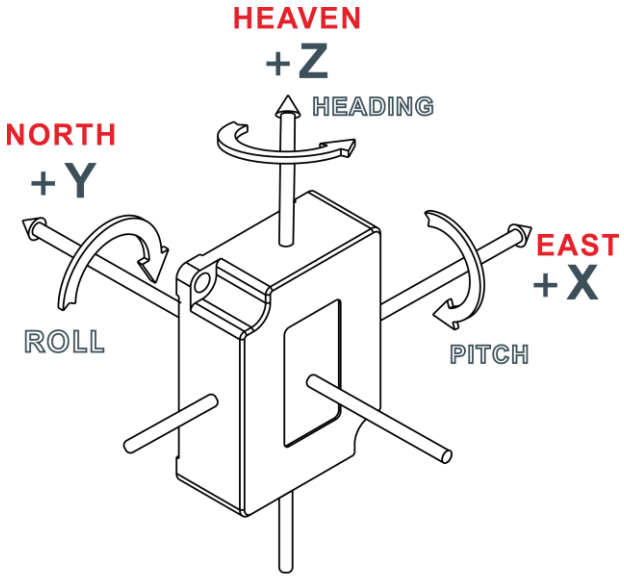
Color Function	BLACK	WHITE	GREEN	RED	Shielded wire
	GND	RS485(D+)	RS485(D-)	Vcc 9～36V Positive pole	Grounding (PE)



▶ INSTALLATION AND MEASURE DIRECTION



Horizontal installation



Vertical installation

Note: The installation measurement direction is switched by instructions.

▶ UPPER COMPUTER SOFTWARE OPERATION INTERFACE

Parameter area

Open/Close: Open and close the COM port;
Com: Select the COM port corresponding to the device;
Address: Fill in the current address code of the sensor, the factory default is 00, 255 (0xFF) is the universal address (broadcast address);
Baud Rate: Select the current baud rate of the sensor, the factory default is 9600;

Set

Off Set: Clear the gyro
Save: Save the data and the angle data can be saved synchronously, the file is saved in the C:----COMDATA file by default;
Browse: select the save path
Set Address: Set the sensor address code, enter the address code in the input box on the right, and click the Set Addr. button;
Set Baud Rate: Set the baud rate of the sensor, select the corresponding baud rate in the right selection box, and then click the Set B.R button;
Auto Output: Switch the sensor to automatic output mode, which can be filled with different output frequencies in Hz;
Catechism: Switch the sensor to question and answer mode. If you choose question and answer mode, you must enter the send command in the input box at the bottom left of "Send Command" (please refer to this specification for the command), and fill in the sending frequency in Send Data. Hz;
Roll_RST: Roll angle reset button. When first installed, the roll angle can be set to the initial angle value within -180-180 degrees.
Range_Set: Set the range of the heading angle and roll angle, +/-180*N (N= 1, 2, 4, …). The drop-down list box on the right is the selectable range.
Read_Range: Read the current range of the sensor.
CurHeadSet: used to set the heading angle. Write the angle value in the text box on the right. The angle value must be smaller than the measurement range. It will be valid after you stop querying the data (GO—>STOP).
GO/STOP: When set to query mode, start, or stop query.

RION TECH

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