RION TECH
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Appearance Patent No.: ZL 201730674512.0

V2.0

ANGULAR GYRO SENSOR

RION TL740D

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)

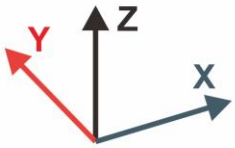
○ CE certification: registration No.: AT18250EC100019

○ China National Intellectual Property Appearance Patent (patent No.: ZL 201730674512.0)

○ Revision date: 2021-12-15

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

TL740
ANGULAR GYRO SENSOR



▶ GENERAL DESCRIPTION

TL740D is RION-TECH newly developed horizontal azimuth angular gyro sensor based on latest MEMS inertial measurement platform , by means of the dynamic attitude algorithm for the angular velocity of gyroscope ,it can simultaneously output carrier's azimuth angle .The product inernal integrated RION's Patent Inertial navigation algorithm, through the model of attitude angle data fusion , can solve the gyro short time drift problem as much as possible .

This product is specially used for robot car, AVG vehicle azimuth orientation, attitude control and other related applications of the UAV, instead of the traditional robot vehicle magnetic bar guide shortcomings, no need at the site layout of magnetic stripe, is the necessary navigation components for the next generation of robot vehicle automatic tracing and driving.

▶ KEY FEATURES

★ Azimuth angle output
★ Strong vibration resistance
★ Light weight
★ Long life,strong stability
★ Cost-effective
★ All solid state
★ Compact & light design
★ RS232/RS485/TTL output optional
★ DC9~36V power supply

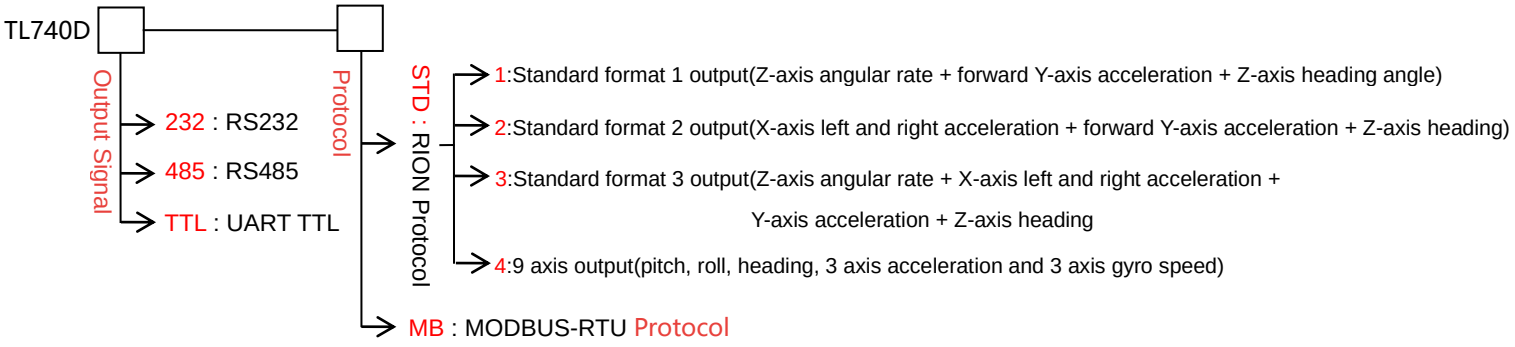
▶ APPLICATION

★ AGV truck
★ Car Navigation
★ 3D virtual reality
★ Platform stability
★ Auto safety system
★ UAV / Robot
★ Turck-mounted satellite antenna equipment
★ Industrial control

▶ TECHNICAL DATA

TL740D	PARAMETERS
Mesuring range	Azimuth Angle (±180°)
Acquisition bandwidth	>100Hz
Resolution	0.01°
Azimuth accuracy	<0.1°/min
positional accuracy	<2mm/m (converted from angle accuracy)
Nonlinear	0.1% of FS
Max angle rate	150°/s
Accelerometer range	±4g
Acceleroemter resultuion	0.001g
Acceleroemter accuracy	5mg
Starting time	5s（Static）
Input Voltage	+9V~36V
Current	60mA(12V)
Working Temp.	-40 ~ +85℃
Storage Temp.	-40 ~ +85℃
Vibration	5g~10g
Impact	200g pk，2ms，½sine
Working life	10 years
Output rate	5Hz / 15Hz / 25Hz / 50Hz / 100Hz Can set
Output signal	RS232 / RS485 / TTL (Optional)
MTBF	≥50000 hours /times
Insulation resistance	≥100 Megohm
Impact resistance	100g@11ms、3 Axial Direction (Half Sinusoid)
Anti-vibration	10grms、10～1000Hz
Protecting	IP67
Weight	≤150g (including 1 meter cable)

▶ ORDERING INFORMATION

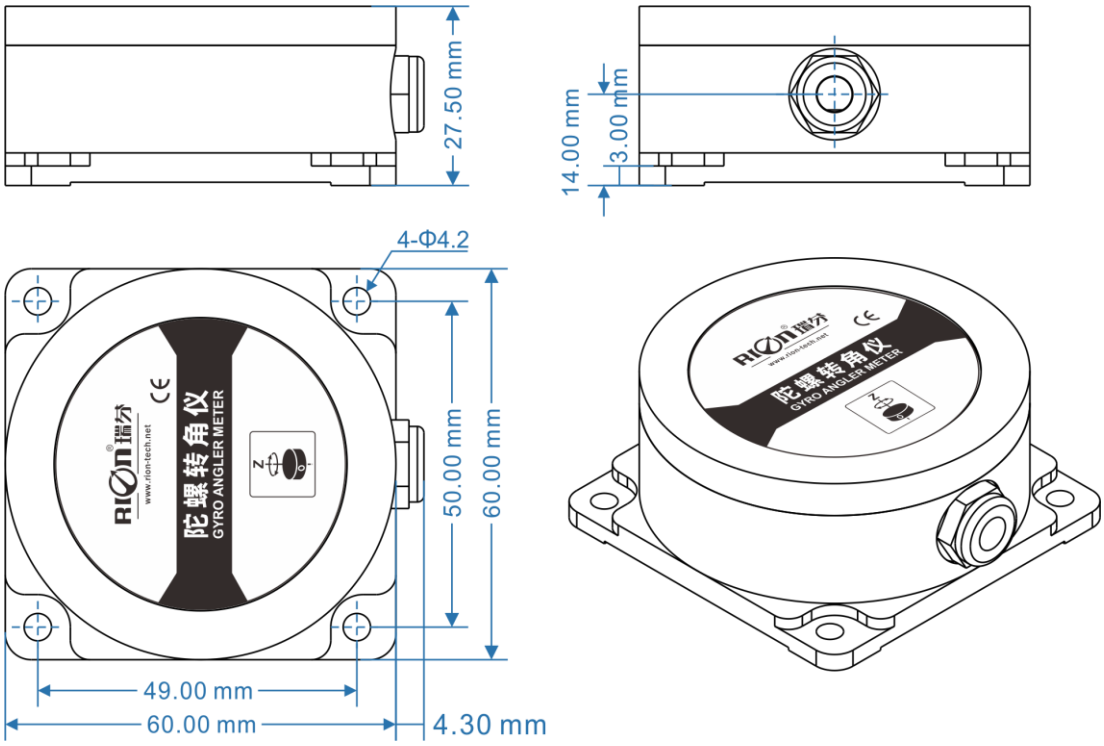


E.g :TL740D-232-STD1 : RS232Output Interface/RION Protocol Standard format 1 output.

▶ ELECTRICAL CONNECTION

LINE COLOR FUNCTIONS	BLACK	WHITE	GREEN	RED
	GND Power Negative	TTL(RXD) RS232(RXD) RS485(D+)	TTL(TXD) RS232(TXD) RS485(D-)	DC 9～36V Power Positive

▶ SZIE

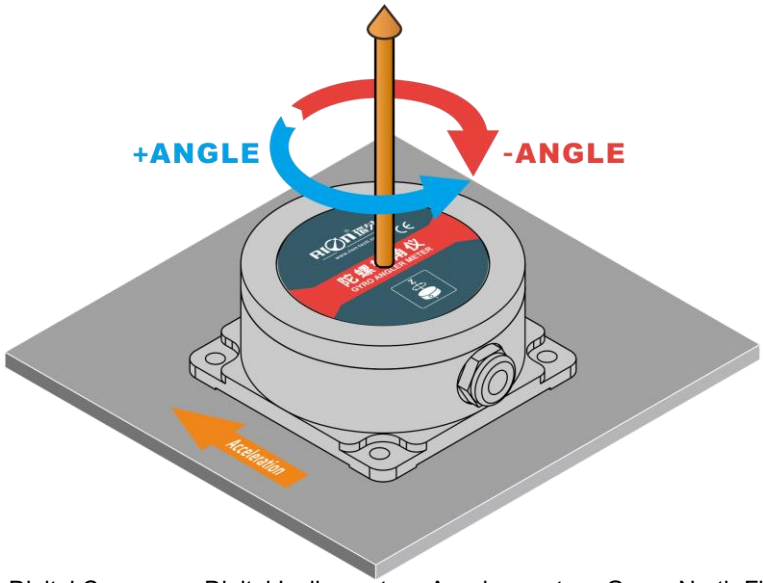


Shell size: L60×W664.3×H27.5mm

Installation size: L49*W50*H40mm

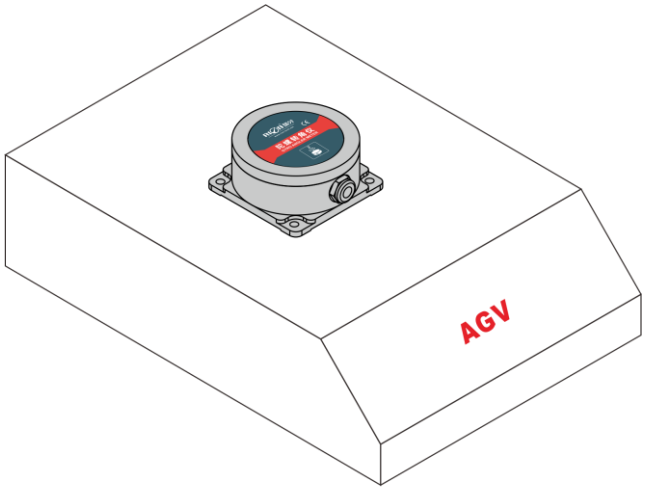
ounting screws: 4 M4 screws

▶ INSTALLATION DIRECTION



▶ INSTALLATION PRECAUTIONS

1.The angular gyro sensor should be mounted in the center position of the measured object , in order to reduce the influence of linear acceleration on the measurement accuracy. See below diagram as ref.

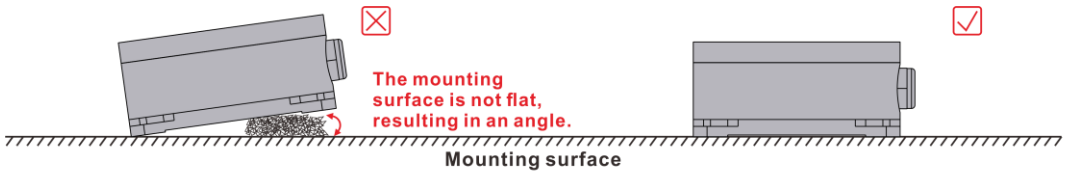


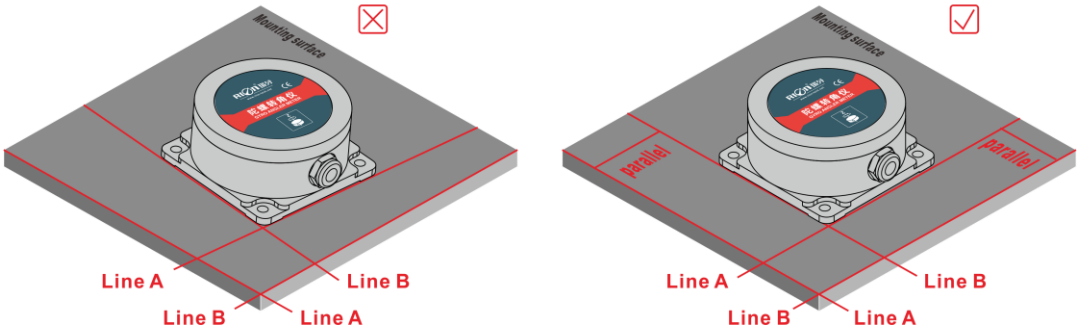
The gyro goniometer is installed in the geometric center of the AGV vehicle

2. The installation of the instrument should be kept parallel to the surface of the measured object, and reduce the influence of the dynamic and acceleration on the angle meter. Incorrect installation will lead to measurement errors, with particular attention to "surface" and" line "

①The mounting surface of the instrument fixing must be close, smooth and stable with the measured surface. If the mounting surface is not smooth, the angle error of angle measurement can be caused easily. See figure Pic.AB

②The axis of the instrument must be parallel to the axis of measurement, and the two axis should not be included angle as far as possible , see figure Pic.CD





3. Do not shake violently during the use of the product, avoid violent vibration, away from the vibration source (if you can not avoid please install the shock absorber), so as not to affect the product measurement accuracy;

4. Try to avoid a sharp acceleration, arrest, sharp turn angular velocity greater than 300 DEG /s movement during use, so as not to affect the measurement precision of products.

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