



Appearance Patent No. ·· ZL 201830753148.1

V1.3

**HIGH ACCURACY DIGITAL TYPE INCLINOMETER
WITH FULL TEMPERATURE COMPENSATION**

RION ACA2400T

Technical Manual

DIGITAL TYPE INCLINOMETER WITH FULL TEMPERATURE COMPENSATION



PRODUCTION EXECUTION STANDARD REFERENCE

- Quality management system certification: GB/T19001-2016 idt ISO19001:2015 standard (certificate no.: 128101)
- High-tech enterprise (Certificate No .: GR201844204379)
- China National Intellectual Property Appearance Patent (Patent No .: ZL 201830753148.1)
- Revision time:2021-11-2

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

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► GENERAL DESCRIPTION

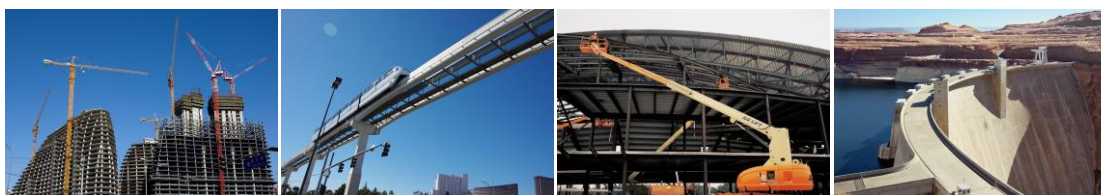
ACA2400T is an analog balanced servo inclinometer manufactured by RION Technology. Its principle is composed of five parts: non-contact displacement sensor, torque motor, error and amplification circuit, feedback circuit, and cantilever mass. The accuracy of this series of inclinometers is much superior to the inclination sensors of the electrolyte principle or the capacitance principle in non-linearity, repeatability, hysteresis, temperature drift and operating temperature, impact resistance, vibration and other properties. Internally integrated 32-bit ARM high-end system, resolution 0.0005 °, accuracy 0.005 °, temperature drift: 0.0008 ° C / °, non-contact installation characteristics make the ACA2400T have good system integration, Just fix the sensor on the surface of the measured object with screws, It can automatically calculate the attitude and inclination of the object. It is simple to use and does not need to find the relative change of the two surfaces to install. It has strong resistance to external electromagnetic interference and strong ability to withstand shock and vibration. It has a strong competitive advantage among domestic counterparts, and is professionally used in the industrial fields required by high-end users.

► FEATURES

- ★ Dual-Axis Inclinometer
- ★ Response frequency: 50Hz
- ★ Wide temperature working: -40~+85°C
- ★ Size: L110xW65xH32mm
- ★ output interface : RS232、RS485、TTL optional
- ★ IP67 protection grade
- ★ Measuring Range :±1~±15° optional
- ★ Wide voltage input: 9~36V
- ★ Resolution: 0.0005°
- ★ ZERO Temp. Drift ±0.0008
- ★ Waterproof aviation plug

► APPLICATION

- ★ Engineering vehicles automatic leveling
- ★ Precise equipment level control
- ★ Underground drill posture navigation
- ★ Based on the angle direction measurement
- ★ Bridge & dam detection
- ★ Medical facilities angle control
- ★ Railway gauging rule , gauge equipment leveling
- ★ Geological equipment inclined monitoring



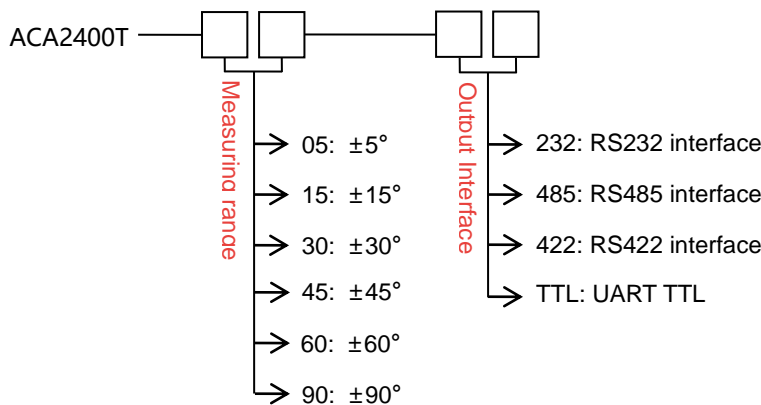
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► **TECHNICAL DATA**

ACA2400T	CONDITIONS	PARAMETERS			UNIT
Measure range		±05	±10	±15	°
Measure axis		X,Y	X,Y	X ,Y	
Resolution		0.0005	0.0005	0.0005	°
Measure accuracy	@25°C	0.003	0.005	0.006	°
Zero Temp. coefficient	-40 ~ 85°C	±0.0002	±0.0002	±0.0002	°/°C
Sensitivity temp coefficient	-40 ~ 85°C	≤50	≤50	≤50	ppm/°C
Power on time		0.5	0.5	0.5	S
Response frequency	20Hz				
Output rate	5Hz、15Hz、35Hz、50Hz can be setting				
Interface type	RS232/RS485/RS422/TTL				
EMC	According to EN61000 and GBT17626				
MTBF	≥50000 hours/times				
Insulation Resistance	≥100MΩ				
Shockproof	100g@11ms、3 Axial Direction (Half Sinusoid)				
Anti-vibration	10grms、10 ~ 1000Hz				
Protection grade	IP67				
Cables	Standard configuration: 2m length, wear-resistant, wide temperature, shielded cable 5P * 5.7mm aviation connector				
Weight	≤400g(without cable)				

*This performance parameters only cover the measurement ranges of ±5°, ±10°, and ±15°. For other measurement ranges, please refer to the nearest parameters.

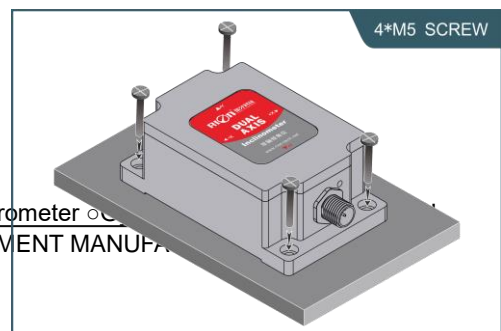
► **ORDERING INFORMATION**



E.g : ACA2400T-05-232 : ± 5 ° Measure range / RS232 interface output.

► **MECHANICAL PARAMETERS**

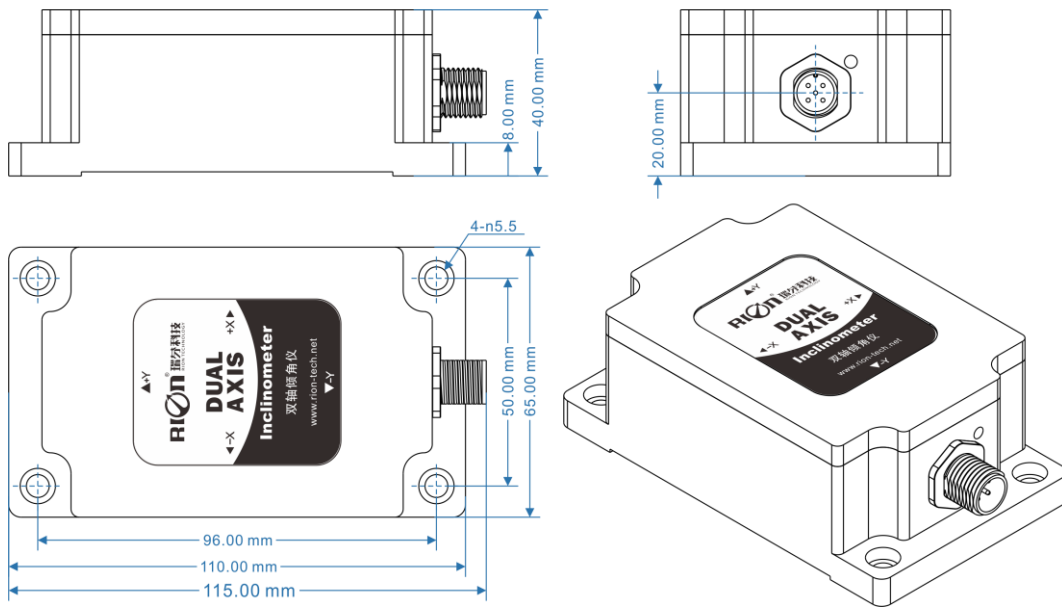
- Connector: Aviation connector
(1m Direct Leading Cable Can Be Customized)
- Inclinometer ○3D compass ○Digital inclinometer ○Accelerometer ○



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- Protection level: IP67
- Shell material: aluminum alloy shield oxidation
- Installation: Four M5 screws

► DIMENSION

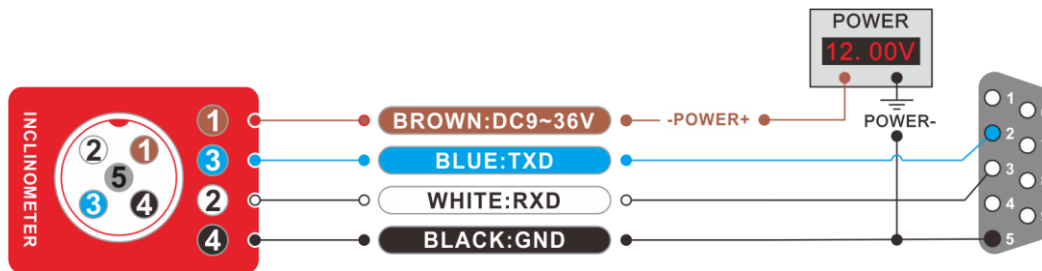


Shell size: L115×W65×H40mm
 Installation size: L96×W50×H40mm
 Mounting screws: 4 M5 screws

► ELECTRICAL CONNECTION

1: RS232 Cable Wire Information

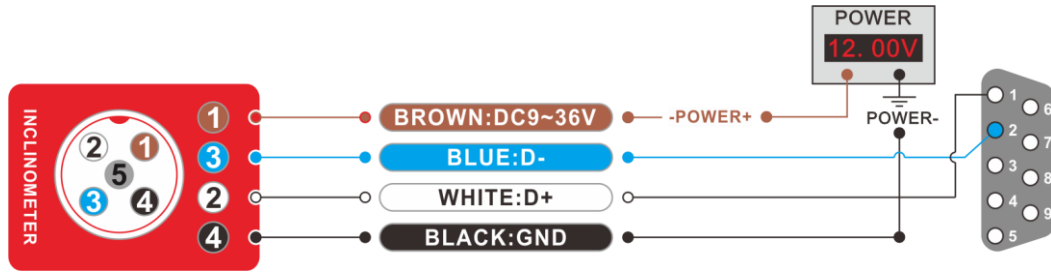
CABLE COLOR INFORMATION	BLACK	WHITE	BLUE	BROWN	GRAY
	GND Power negative	RS232(RXD)	RS232(TXD)	DC9~36V Power supply positive	FACTORY USING ONLY



2: RS485 Cable Wire Information

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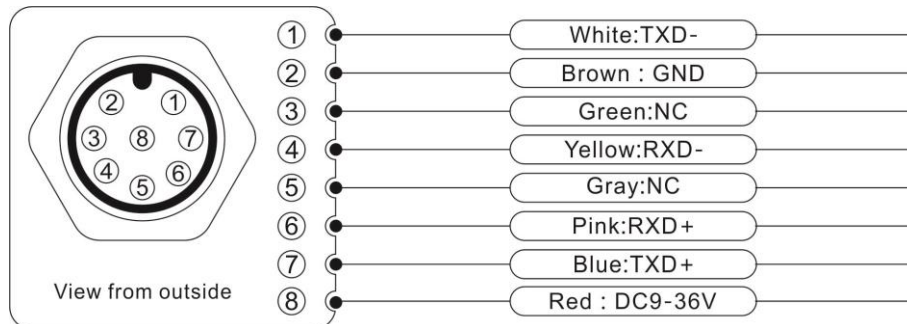
INFORMATION CABLE COLOR	BLACK	WHITE	BLUE	BROWN	GRAY
	GND Power negative	RS485(D+)	RS485(D-)	DC9~36V Power supply positive	FACTORY Using only



3: RS422 CABLE WIRE INFORMATION

1) Connector With Cable Information

INFORMATION CABLE COLOR	RED	BLUE	WHITE	PINK	YELLOW	BROWN
	DC9~36V Power supply positive	TXD+	TXD-		RXD+	RXD-



ACA2400T

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