



V2.1

INCLINOMETER **RION HCA716/HCA726**

Technical Manual



RION QUALIFICATION CERTIFICATION

- Quality management system certification: GB/T19001-2016 idt ISO9001:2015 standard (Certificate No.: 128101)
- CE certification: ATSAHE180205007
- China National Intellectual Property Appearance Patent (Patent No.: ZL 201730610076.0)
- Revision date: 2022-3-11

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



RION INCLINOMETER HCA726
Housing monitoring, dangerous wall monitoring

► **GENERAL DESCRIPTION**

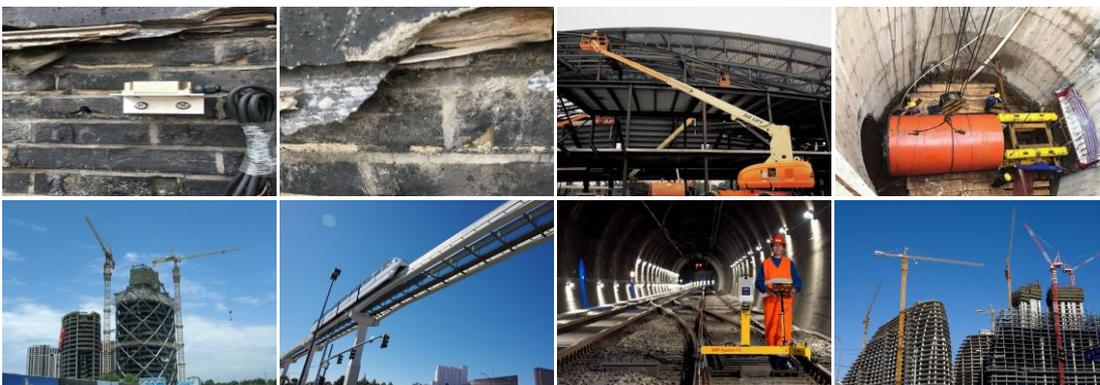
HCA716S / HCA726S is a small volume high-precision single / dual-axis inclinometer developed by RION Technology for industrial field control. It adopts RS485 / RS232 serial access interface. Built-in high-precision 24bit A / D differential converter, through the 5th order filtering algorithm, can measure the tilt and pitch angle of the sensor output relative to the horizontal plane. The product integrates the latest technology main MEMS tilting unit, the measuring range up to $\pm 180^\circ$, and the full-scale accuracy is 0.01° , which can easily achieve dual-axis and single-axis tilt measurement. The product belongs to a real industrial grade product, with reliable and stable performance, good scalability, and multiple output options. It is suitable for the application of monitoring of ancient buildings, dilapidated buildings, ancient walls, etc., and large-scale high-precision measurement in industrial sites.

► **FEATURES**

- ★ Single / dual axis inclination measurement
- ★ Accuracy: Refer to data table
- ★ Wide temperature operation $-40 \sim +85^\circ\text{C}$
- ★ IP67 protection grade
- ★ Direct lead interface
- ★ Range $\pm 1 \sim \pm 90^\circ$ optional
- ★ DC 9 ~ 36V wide voltage input
- ★ Resolution 0.001°
- ★ High vibration resistance $> 100g$

► **APPLICATION**

- ★ Monitoring of ancient buildings and dilapidated buildings
- ★ Leveling of construction vehicles
- ★ Medical equipment angle control
- ★ Underground drilling rig attitude navigation
- ★ Elevation angle measurement of directional satellite communication antenna
- ★ Monitoring of bridges and large lands
- ★ Mining machinery, oil drilling equipment
- ★ Railway gauge ruler and gauge leveling
- ★ Geological equipment tilt monitoring

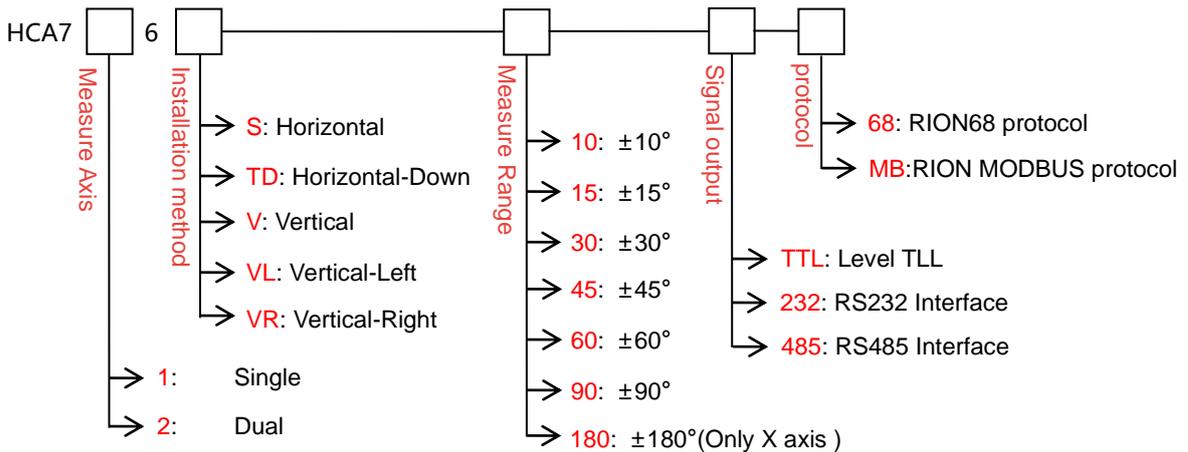


► **TECHNICAL DATA**

HCA716/HCA726	CONDITION	PARAMETERS				UNIT
Measure range		±15	±45	±60	±180	°
Measure axis		X,Y	X,Y	X,Y	Vertical X	axis
Resolution		0.001	0.001	0.003	0.005	°
Measure accuracy	@25°C	±0.008	±0.01	±0.01	±0.01	°
Zero Temp.coefficient	-40 ~ 85°C	±0.0005	±0.0005	±0.0005	±0.0005	°/°C
Sensitivity temp-coeffi	-40 ~ 85°C	≤0.01	≤0.01	≤0.01	≤0.01	%/°C
Power on time		0.5	0.5	0.5	0.5	S
Response frequency	20HZ					
Interface	TTL / RS232 / RS485 optional					
Communication protocol	RION 68 protocol / MODBUS RTU protocol optional					
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: 1m length, wear-resistant,oil-proof, wide temperature, shielded cable4*0.2mm2					
Weight	≤150g (including 1 meter cable)					

*This parameter only list ± 15 °, ± 45 °, ± 60 °, and ± 180 ° series for reference. For other measurement ranges, please refer to the nearest neighbor parameter.

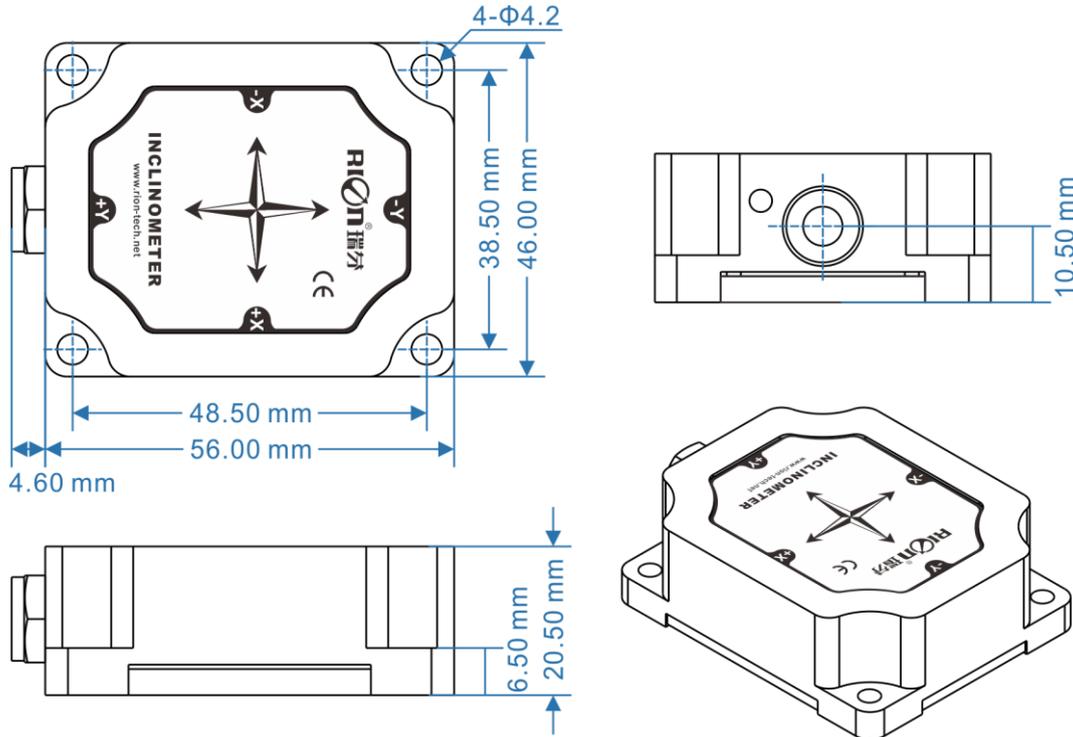
► **ORDERING INFORMATION**



E.g : HCA716S-10-232-68 : Single axis / standard horizontal / ±10° measure range / RS232 signal output / RION68 protocol.

Note: Vertical measurement installation only for single axis X axis.

► **DIMENSION**



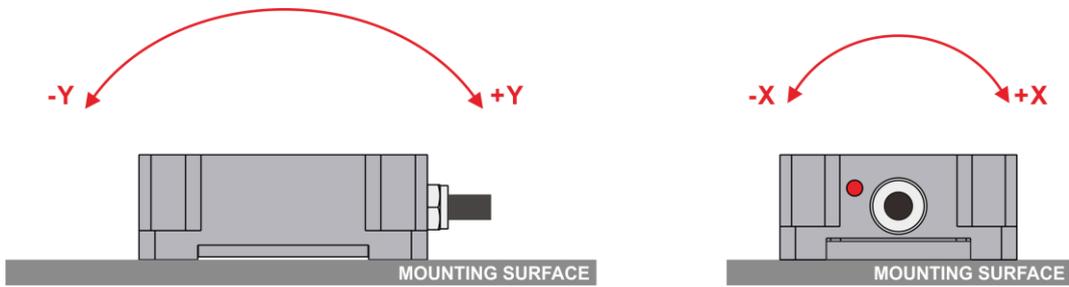
Shell size: L56×W46×H20.5mm

Installation size: L48.5×W38×H6.5mm

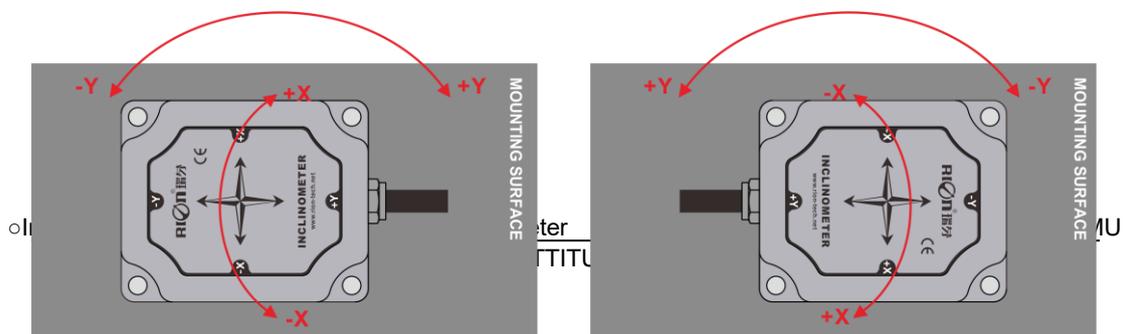
Mounting screws: 4 M4 screws

► **MEASURING DIRECTIONS**

The installation must guarantee the product bottom is parallel to measured face, and reduce the influence of dynamic and acceleration to the sensor. This product can be installed horizontally or mounted vertically (vertical installation selection is only applicable to single axis), for installation please refer to the following scheme.



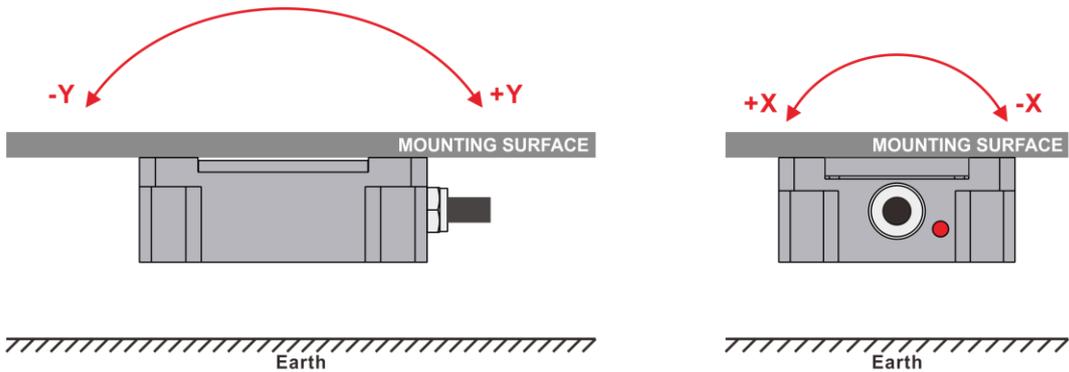
Horizontal installation



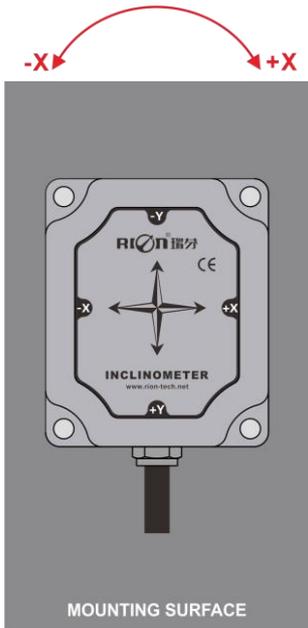
Vertical-left installation

Vertical-right installation

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Horizontal-down installation



Vertical installation