Rion Technology MCA418T Current Output Type Inclinometer Owner's Manual

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Rion MCA418T Current Output Type Inclinometer

Product Information

- **Product Name:** RION TECH V1.8 MCA410T/420T Current output type Inclinometer
- **Manufacturer:** RION TECH
- **Certifications:** CE CERTIFICATION: ATSZAHE181129003, APPEARANCE PATENT: ZL 201830752891.5
- **Waterproof:** Yes

Product Description: The MCA418T/428T series tilt sensor is a new low-cost tilt angle measurement product developed independently by RION. It adopts the latest anti-interference platform design and integrates a new micro-mechanical sensing unit. It has a wide working temperature range, excellent anti-vibration properties, and long-term stable and reliable performance.

Product Features:

- Wide voltage input: 9~36V
- Zero point can be set on site
- High vibration resistance: >3500g

Specifications:

- Output current: 4~20 mA
- Resolution: 0.1°
- Measurement accuracy: 0.05°
- Response time: < 25 ms
- Temp. drift characteristics: -40~85°C
- Output load: >500 ohm
- Operating hours: 50000 hours/time (no fault)
- Insulation resistance: >100 Megohm
- Anti-vibration: 10grms 10~1000Hz
- Impact resistance: 100g @ 11ms 3 Axial Direction (Half Sinusoid)
- Shell material: Electroplated metal housing

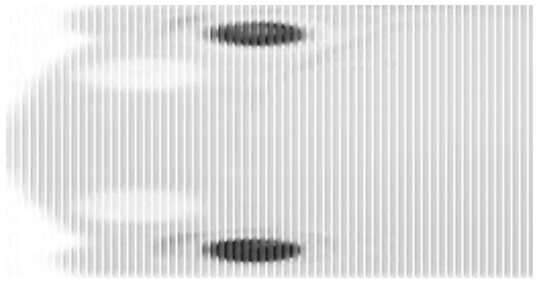
- Weight: 200g (Including 1 meter standard cable)
- Quality system: GB/T19001-2016 idt ISO19001:2015 standard (Certificate No.: 128101)

Application Range:

- Agricultural machinery
- Lifting machinery
- Crane
- Aerial platform
- Solar tracking system
- Medical equipment
- Electric vehicle control

Product Usage Instructions

1. This tilt sensor measures the tilt angle of the object through the principle of sensing the gravity of the earth. When installing, try to ensure that the direction of the sensor axis is parallel to the direction of the tilt axis of the measured object to achieve the best measurement accuracy.
2. The sensor must be tightly, flatly, and stably mounted. If the mounting surface is uneven, it may cause errors in the measurement angle of the sensor.
3. The factory default installation is horizontal upward. However, the user can set the corresponding installation method according to their needs. Please refer to Article 2 of the operating instructions for instructions on how to make the corresponding settings.



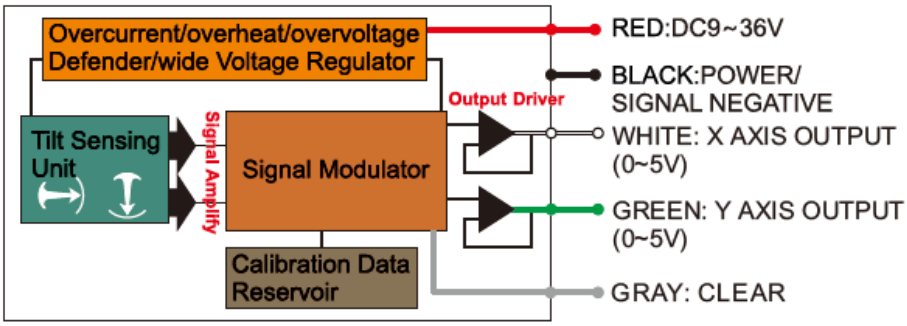
DESCRIPTION

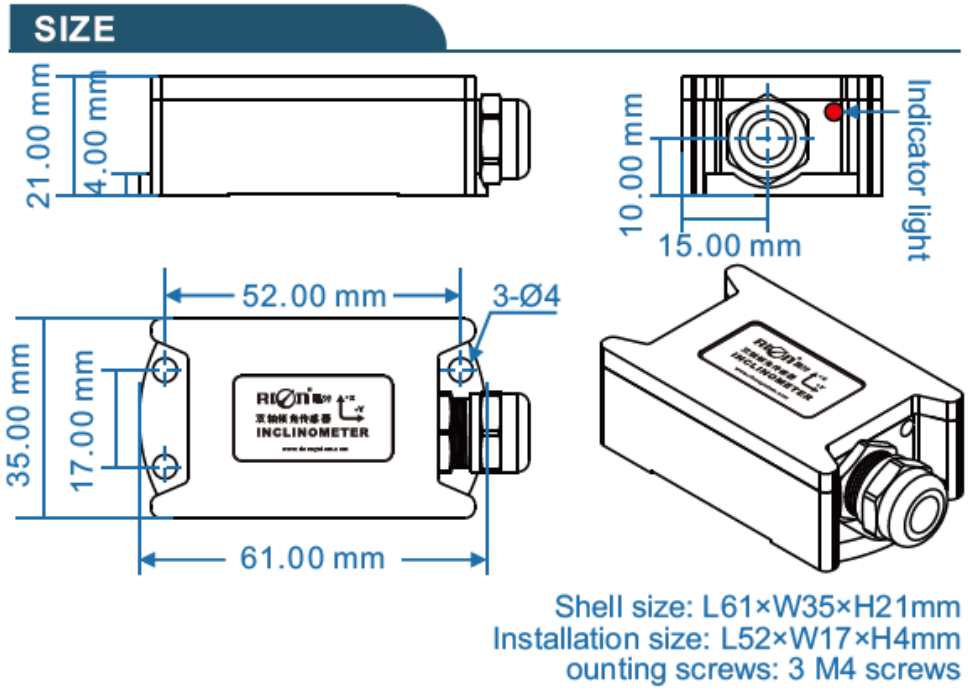
MCA418T/428T series tilt sensor is a new low cost tilt angle measurement product developed independently by RION. It adopts the latest ant interference platform design and integrates a new micromechanical sensing unit. It has wide working temperature, excellent antivibration and long-term stable and reliable performance. This product adopts the noncontact principle to measure the tilt angle. The internal capacitive micromechanical unit measures the component generated by the gravity of the earth to solve the real time tilt angle. The installation is simple and convenient. It only needs to be fixed on the object being measured and there is no need to find fixed shaft and rotating shaft. Variety of installation methods could meet customer different measurement needs. It is an ideal sensor for construction machinery vehicles, agricultural machinery, solar tracking and other industrial equipment's.

FEATURES

- Resolution:0.1°
- Six installation methods
- IP64 protection grade
- Wide voltage input:9~36V
- Zero point can be set on site
- High vibration resistance:>3500g

SYSTEM DIAGRAM





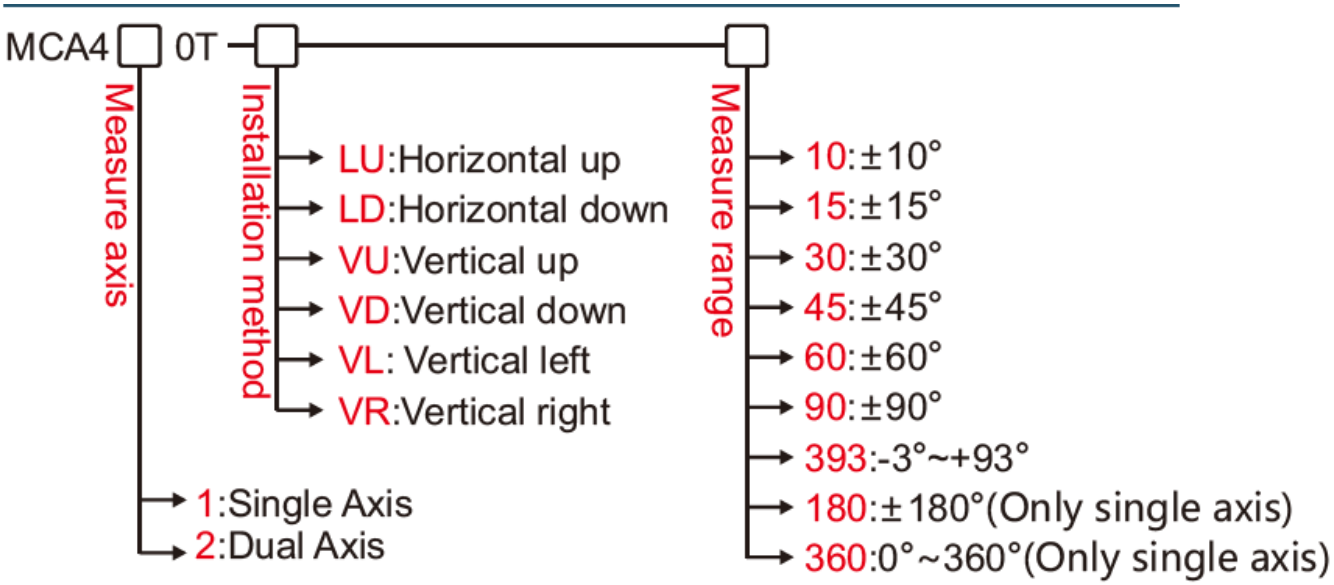
APPLICATION

- Agricultural machinery
- Lifting machinery
- Crane
- Aerial platform
- Medical equipment
- Solar tracking system
- Medical equipment
- Electric vehicle control

PARAMETERS

MCA418/428T	CONDITION	PARAMETER	UNIT
Output current		4~20	mA
Resolution		0.1	°
Measurement accuracy	25℃	±0.3	°
Response time		0.05	S
Temp. drift characteristics	-40℃ ~ 85℃	±0.5	°
Output load	>500 ohm		
operating hours	50000 hours/time (no fault)		
Insulation resistance	>100Megohm		
Anti-vibration	10grms、10~1000Hz		
Impact resistance	100g@11ms、3 Axial Direction (Half Sinusoid)		
shell material	Electroplated metal housing		
weight	≤200g(Including 1 meter standard cable)		
Quality system	GB/T19001-2016 idt ISO19001:2015 standard (Certificate No.: 128101)		

ORDERING INFORMATION



E.g: MCA410T-LU-10: Indicates Single-axis, Horizontal Up Installation Method, ±10° Measure range.

CONNECTION

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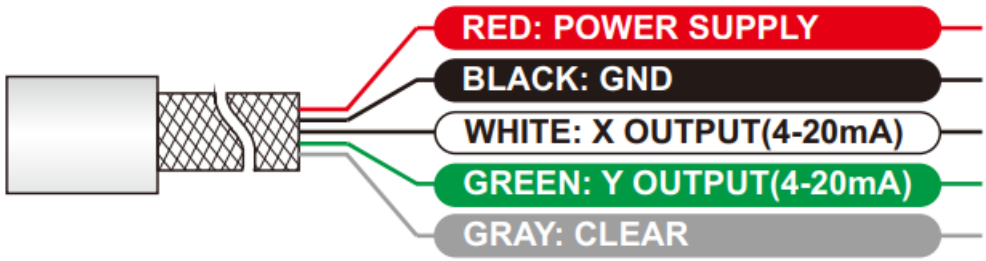
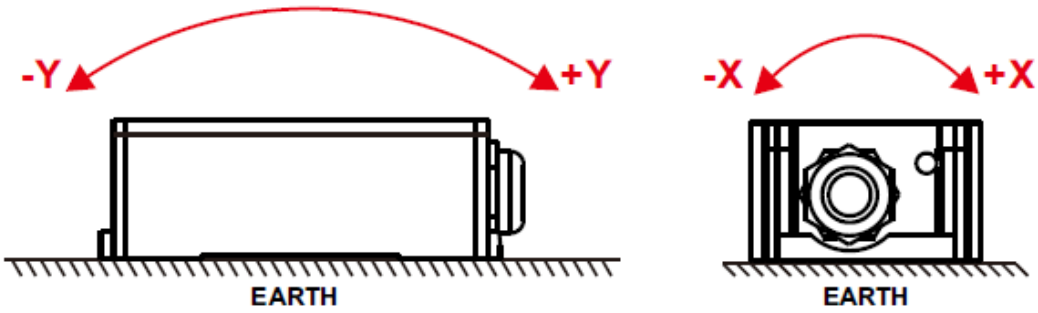


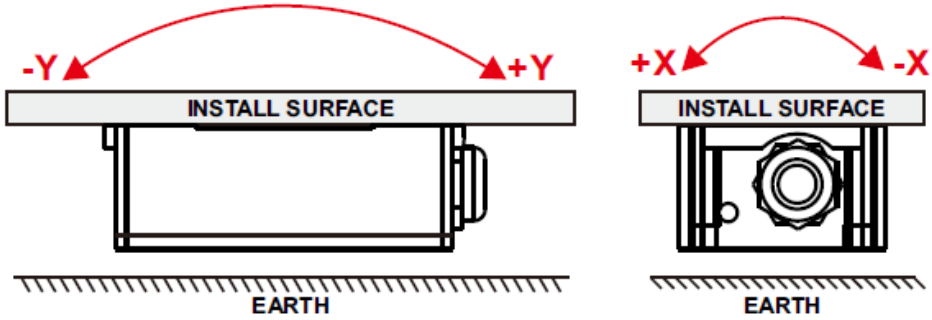
Cable diameter Ø5.5mm

- Single core diameter Ø1.3mm

INSTALLATION WAY



<Level up install>



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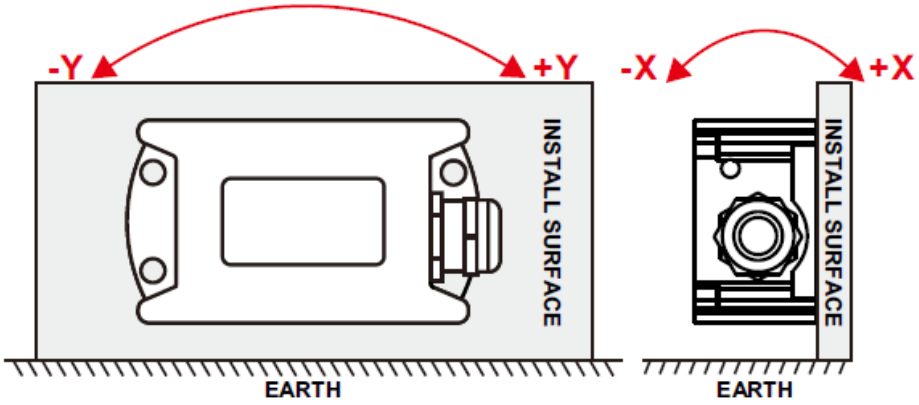

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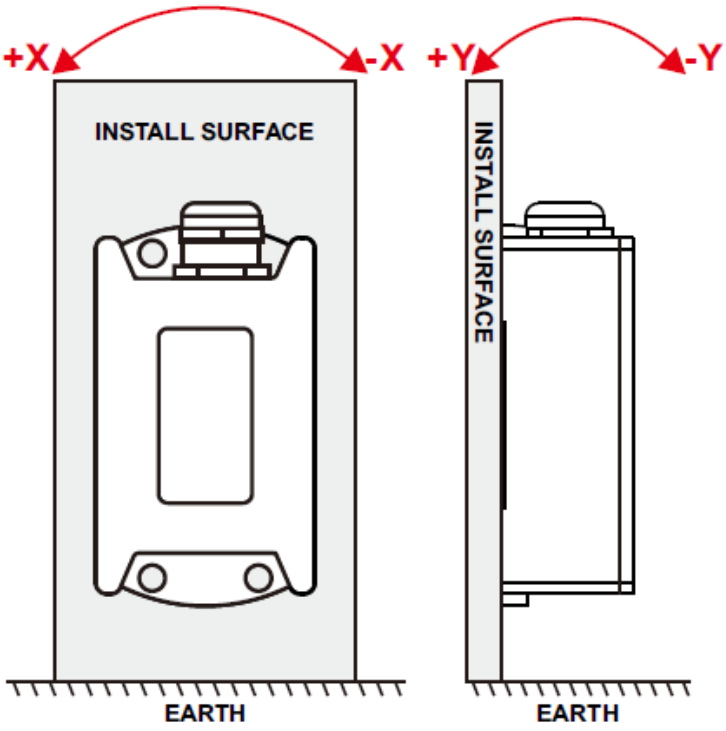

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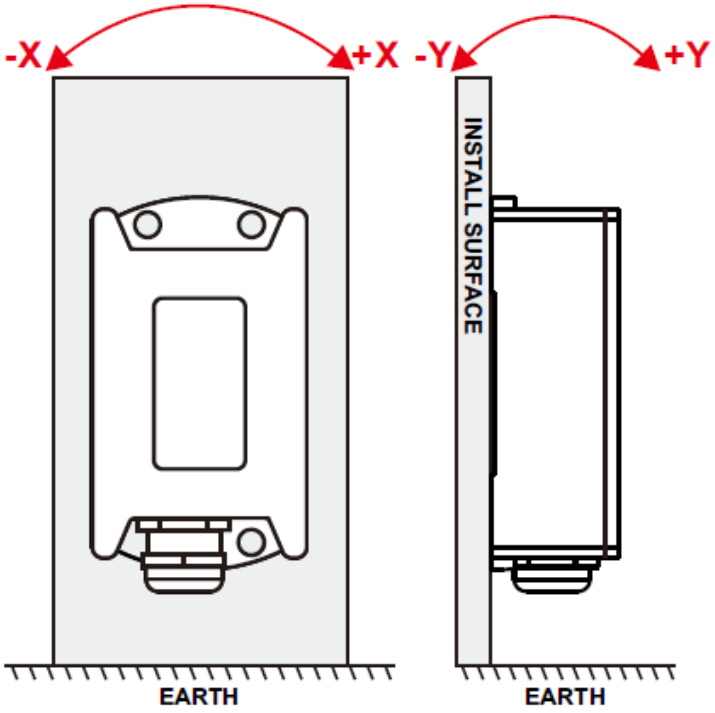

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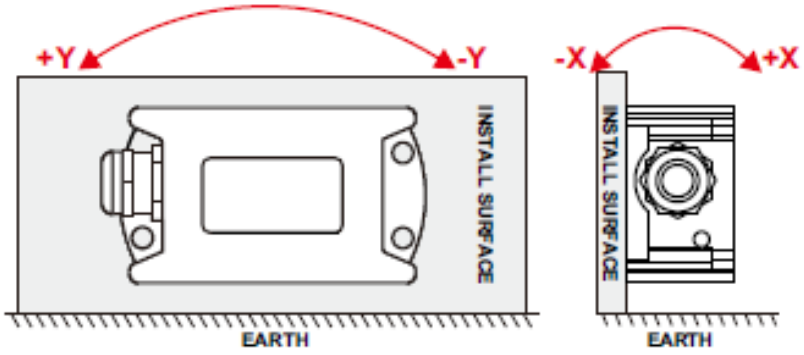


«Vertical right install>

Remarks: The factory default installation is horizontal upward, the user can sets the corresponding installation method according to needs, please refer to Article 2 of the operating instructions, and make the corresponding settings.

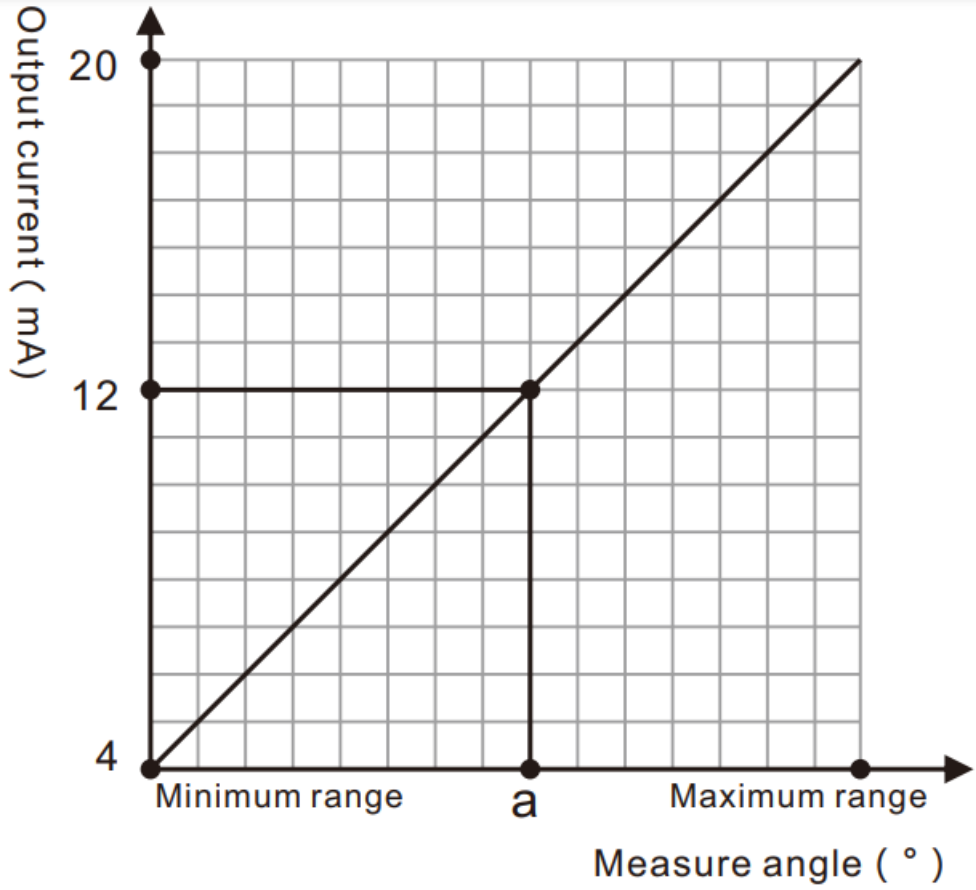
INSTRUCTIONS FOR USE

1. This tilt sensor measures the tilt angle of the object through the principle of sensing the gravity of the earth. When installing, try to ensure that he direction of the sensor axis of the sensor is parallel to the direction of the tilt axis of the measured object to achieve the best measurement accuracy. It must be tight, flat, and stable. If the mounting surface is uneven, it will easily cause errors in the measurement angle of the sensor.
2. The inclination sensor can be installed and measured arbitrarily on six sides. After the installation is complete, use the zero setting function of he sensor to set the current position to zero. In the internal memory of the product, after zeroing, the product will work with the current position at zero degrees.) The setting method is as follows: short-circuit the sensor setting wire (gray) and the ground wire (black) for more than 3 seconds, and the sensor power indicator will turn off until the indicator light flashes again, then release the setting line, the zero setting is completed, and the indicator light returns to the constant light working mode.
3. The protection level of this sensor is IP67. Rain or strong water spray will not affect the operation of internal devices. Please do not immerse it n water for a long time to avoid damage to the internal circuit of the product. The manufacturer will provide paid maintenance service.
4. After the product installation is completed, please pay attention not to short-circuit the signal line and the positive pole of the power line to avoid burning the output circuit. Since the negative signal of this product and the negative pole of the power supply are shared, please connect he negative signal of the collection end and the negative pole of power supply of the product.

PRODUCT OUTPUT CHARACTERISTICS

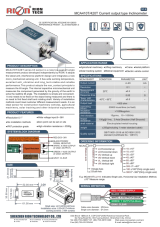
The output of this product is DC current 4mA-20mA, which corresponds to the minimum range and maximum range of the angle measurement range. When calculating the angle, you can get the corresponding angle value according to the ratio distribution, for example: MCA418T-LU-30: It means that the angle range of the product is ‡30 degrees, the output current is 4mA ~ 20mA, the current that is proportionally distributed to get 0 degrees output is 12mA, and the sensitivity is 0.26667mA/degree. MCA418T-LU-0393: indicates that the angle range of the product is -3 degrees to +93 degrees, the output current is 4 mA to 20mA, and the current output at 0 degrees is proportionally distributed to 4.5mA, and the sensitivity is 0.1667mA/degree. The picture on the right is the output characteristic curve:

Remarks: a=(maximum range-minimum range)/2



Add: Block 1&Block 6, COFCO(FUAN) Robotics Industrial Park , Da Yang Road No. 90,Fuyong Distict, Shenzhen City, China
Tel:(86) 755-29657137 (86) 755-29761269
Web: www.rionsystem.com/en/
Fax:(86) 755-29123494
E-mail: sales@rion-tech.net

Documents / Resources

	Rion Technology MCA418T Current Output Type Inclinometer [pdf] Owner's Manual MCA418T Current Output Type Inclinometer, MCA418T, Current Output Type Inclinometer, Output Type Inclinometer, Type Inclinometer, Inclinometer

References

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- SHENZHEN RION TECHNOLOGY CO., LTD