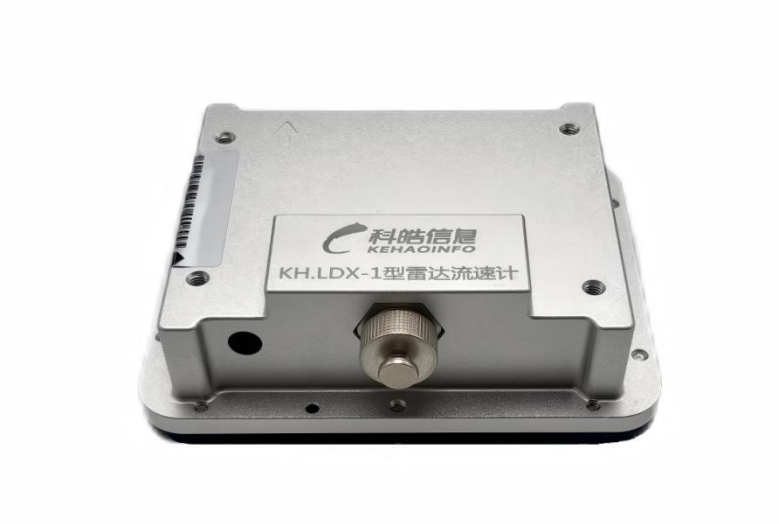
KH.LDX Radar Current Meter Product Introduction



Shenzhen KEHAO Information Technology Co., LTD

CONTENTS

I . Product Overview 4
II . Main parameters and Indicators 5
III . Specifications and Wiring Definition 7
IV . Precautions for installation 8

Warning

- Please read this manual carefully before using the Radar Current Meter for the first time.
- This product is not designed as explosion-proof and must not be used in flammable or explosive environments. For such applications, please select an appropriate explosion-proof model.
- In complex or enclosed environments, electromagnetic interference may affect the measurement accuracy of non-contact radar instruments.
- Ensure the product is installed and used correctly. Improper installation may result in inaccurate measurement data.
- Operate the instrument strictly in accordance with the instructions provided in this manual, and retain the manual for future reference.
- In the event of instrument malfunction, please return the product to authorized after-sales service personnel for maintenance.

Statement

- The company reserves the right to modify the contents of this manual without prior notice. Any updates will be incorporated into subsequent versions. For the latest information, please contact us.

Ⅰ. Product Overview

This product is a Radar Current Meter integrating microstrip antenna, RF circuit and signal processing circuit. It directly outputs the speed information of the target, which is used for measuring the Current rate of river and underground pipe network. The radar uses German imported integrated chip, front low noise amplifier and ultra high sensitivity.

II . Main parameters and Indicators

Absolute Maximum Rating:

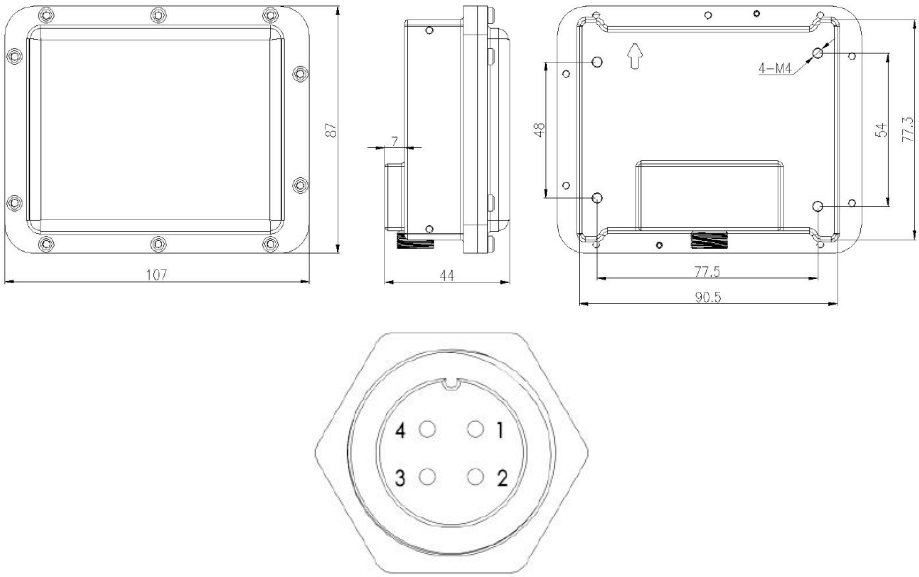
		Crest value	Unit
Voltage	Supply electricity	36	V
Temperature	Working temperature	85	°C
	Storage temperature	125	°C

Parameter Valve:

Parameter	Minimum	Typical case	Maximum	Unit	Test Condition
Supply electricity					
Voltage	9	12	24	V	
Current (standard power consumption version)		100		mA	12V
Current (low power version)		29		mA	12V
launch					
Frequency range		24		GHz	
Radiation power EIRP		20		dBm	
Antenna					
Increase the antenna gain		18.5		dB	
Receive antenna gain		18.5		dB	
Radiation Angle of the launch antenna (3dB)		±6		deg	
		±12		deg	
Receiving antenna radiation Angle (3dB)		±6		deg	
		±12		deg	
Current velocity measurement					
Measuring range	0. 1-20			m/s	
Certainty of measurement	±0.01			m/s	
Resolution	0.01			m/s	
Identification ofCurrent direction	Two-way automatic identification				Filters can be configured
MT	1			Per second	
Digital Interface	RS485				9600bps

Note: The radar is factory-configured to support both ASCII and MODBUS protocols. You can switch between protocol modes according to the corresponding instructions. (For the detailed electronic protocol specification and the dedicated debugging software, please contact our company to obtain them separately.)

III . Specifications and Wiring Definition



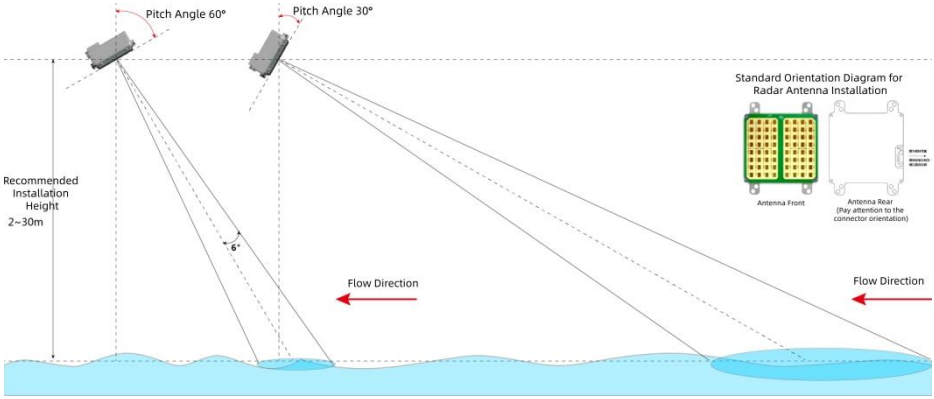
The external interface adopts pure copper IP67 waterproof aviation plug

Value	Explain
Vcc	12V DC power supply
GND	Negative DC power supply
485+	
485-	

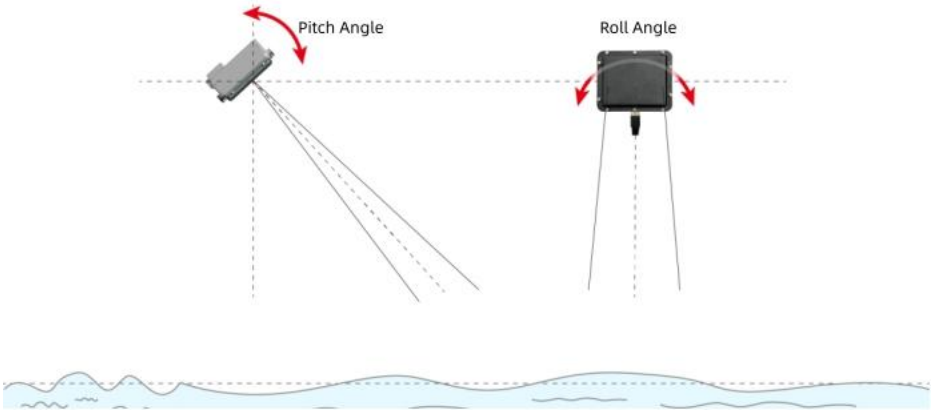
IV . Precautions for installation

The radar system should be installed at a height of 2 to 20 meters, ideally within 10 meters if possible. Choose the installation height based on the actual environment. TheCurrent velocity sensor module should be installed at an angle of 40 to 60 degrees, depending on the river's slope. This angle refers to the angle between the antenna plane of theCurrent velocity sensor module and the horizontal plane (or the radar pitch angle). In rivers with uneven waterCurrent, it is recommended to install the sensor at a maximum height of 12 meters, with an optimal installation angle of around 55 degrees. A larger installation angle enhances the strength of the reflected signal, effectively suppressing rainfall interference and improving signal quality. It is recommended to install theCurrent velocity sensor module facing upstream, with the waterCurrent speed close to the sensor, and the speed display showing positive values. If there are strong reflectors like metal in the radar's emission direction, it can significantly affect the radar test results.

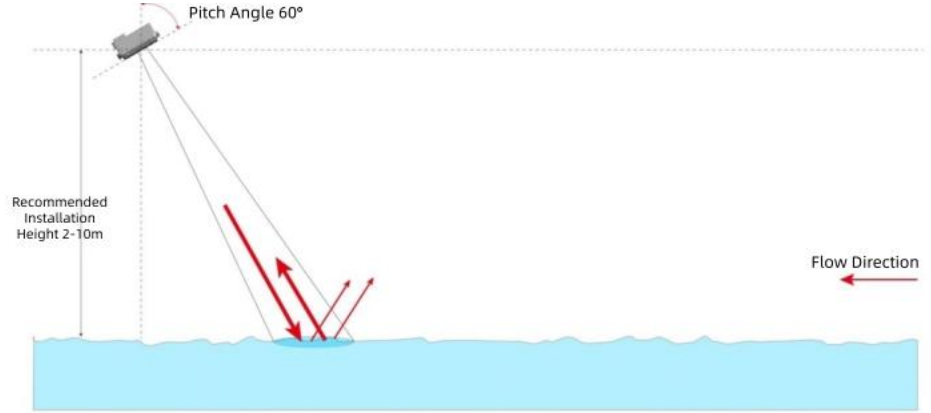
4.1 Installation Angle Description



Radar installation Angle description

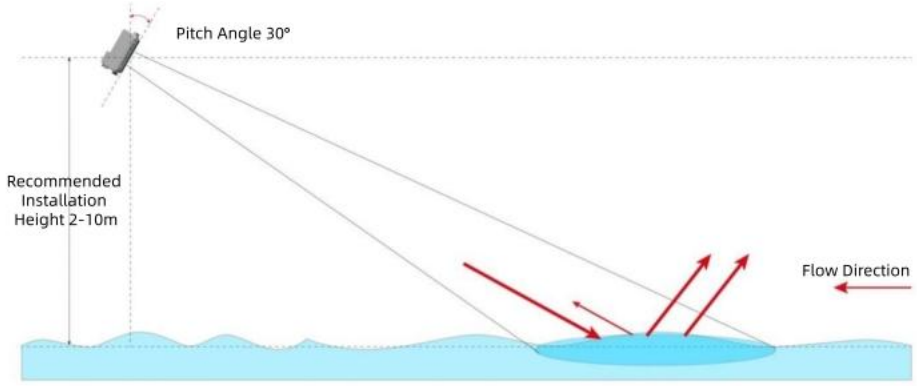


Radar pitch and roll angles are shown



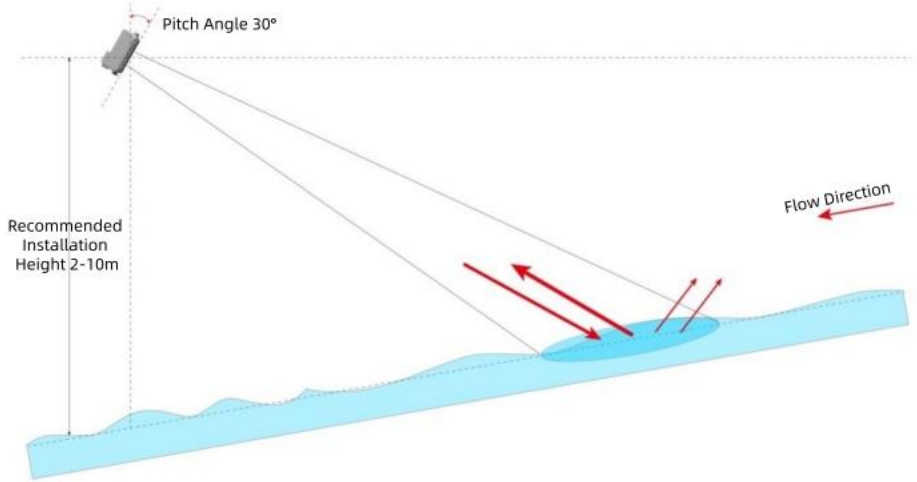
Radar large pitch Angle installation diagram

The greater the Angle of radar installation, the stronger the energy reflected by the water surface, and the stronger the energy perpendicular to the water surface. It is recommended to install 50°~65°.



Radar small pitch Angle installation illustration 1 (not recommended for gentle waterway)

On the contrary, the smaller the pitch Angle of radar installation, the weaker the energy reflected by the water surface, and the smaller the signal energy received by the radar. At the same time, the strength of radar reflection energy is also related to theCurrent state of the water surface.



Radar small pitch Angle installation illustration 2 (recommended)

As shown in the figure above, in an environment with a large slope of the river channel, the radar needs to be installed at a small pitch Angle (based on the pitch Angle read by the radar) so that the signal energy received by the radar is strong.

Contact Us

Should you have any questions or require technical support, please do not hesitate to contact us.

Shenzhen KEHAO Information Technology Co., LTD

Address: Software Industry Base, Haitian 2nd Road, Yuehai Sub-district, Nanshan District, Shenzhen, China

Email: export@kehaoinfo.com

Website: www.kehaoinfo.net

WhatsApp: +1 (213) 246-7245