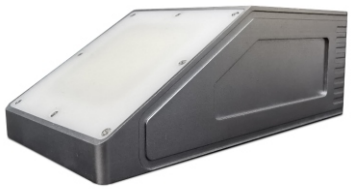
RKL-07 Radar Flow Meter



Overview

RKL-07 Radar Flow Meter is capable of continuously measuring the water flow in rivers and open channels. By integrating the radar flow meter with a radar water level gauge, it measures surface velocity and water level in a non-contact manner. For regular channel sections, conventional mathematical formulas are employed to calculate flow results. In contrast, for irregular river sections, flow rate results are derived using the point method and calculus. This non-contact measurement technique is unaffected by sediments, aquatic vegetation, and other debris, thereby reducing maintenance costs and enhancing reliability.

Features

The two-in-one product performs flow calculation directly

Simple construction and installation, low power consumption, economical and applicable

High Ip68 protection level, maintenance free

Does not destroy the water flow state, guarantees the measurement data accurate

24/7 online automatic monitoring, unattended

Applictions

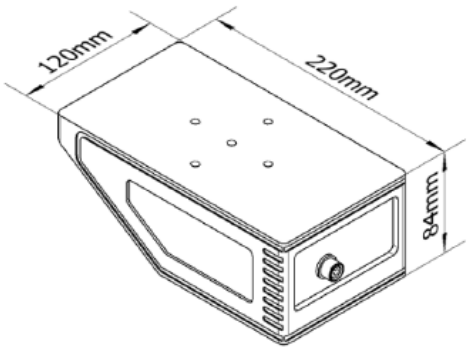
River Lakes Shallow water Hydrology Irrigation channel

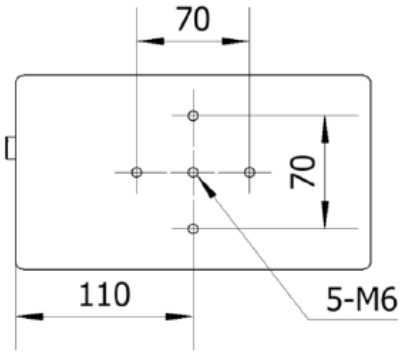
Technical Parameter

Item	Technical Specification	
	Speed	Distance
Range	0.03 ~ 20 m/s (It has to do with the flow) pattern)	0.4-40m
Accuracy	±1%FS	±3mm
Resolution	0.01m/s	1mm
Antenna style	14×32°	11×11°
Frequency	24GHz	
Supply	DC6 ~ 30V (suggested use 12 v)	
Power consumption	Working current :80mA@12V; Sleep current :1mA@12V	
Output	RS485(MODBUS-RTU)	
Working temperature	- 40~+85 ℃	
Protection grade	IP68	
Product size	220x120x84mm	
Weight	5.8kg	
Cable length	5m default, customizable	

Dimension

Flowmeter





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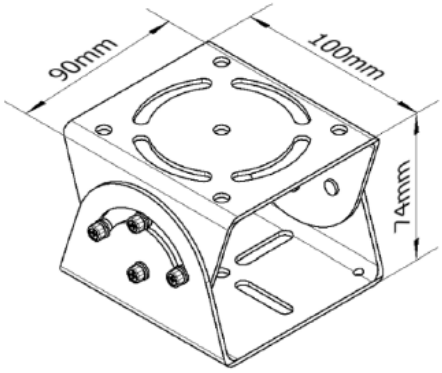
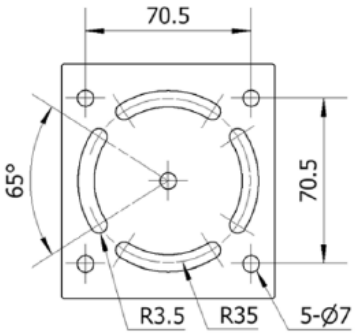
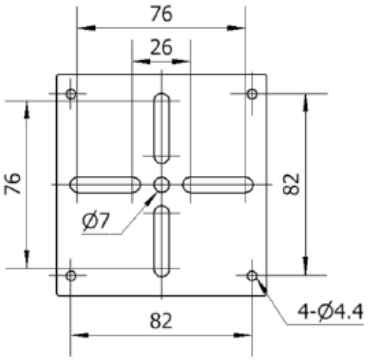




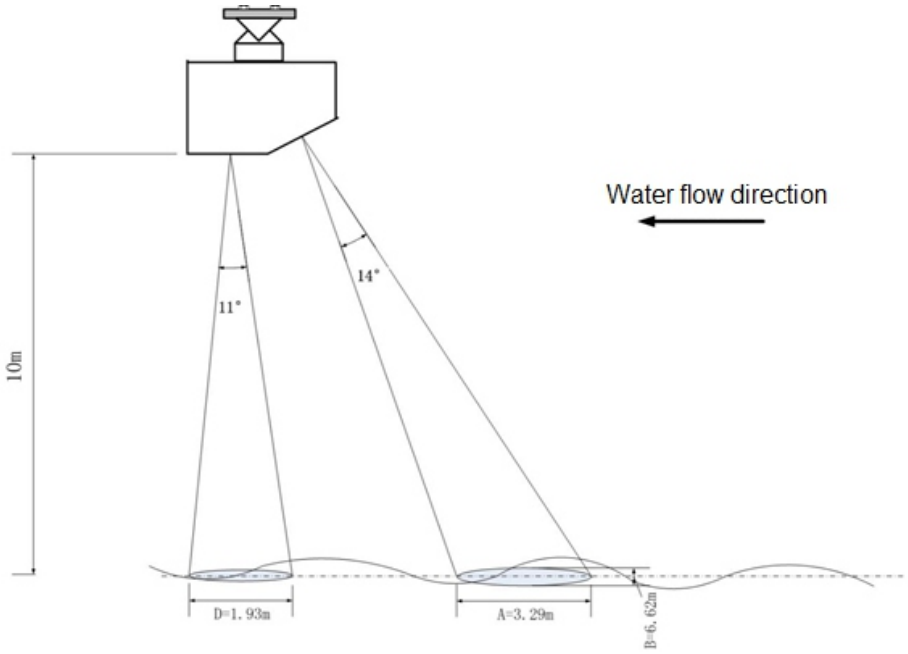


Mounting

The flowmeter integrates a radar water level gauge and a radar current meter. The antenna beam angle of the radar water level gauge is 11 × 11 °, and the antenna angle of the radar is 14 × 32 °. When the water level gauge illuminates the water surface, the illuminated area is similar to a circle, and when the current meter illuminates the water surface, the illuminated area is similar to an elliptical area, as shown in the figure. Accurately understanding the illuminated range of the radar wave helps to choose a suitable installation location and avoid interference factors in the measurement scene, such as tree branches swaying with the wind on both sides of the river.

Mounting

When the installation height is 10 meters, the antenna illumination area of the water level gauge and flow meter:



The boundary of the radar illuminated water surface area is directly proportional to the installation height. The table below shows the parameter values of A, B, and D when the water level gauge and flowmeter beams illuminate the water surface at an installation height of 1 meter (A, B, and D are defined in the above figure). The actual installation height (in meters) multiplied by the following values is the actual corresponding parameter.

Parameter	length
Flowmeter A	0.329
Flowmeter B	0.662
Water level sensor D	0.193

Revision time	Reviser	Current Version	Remarks
20250719	Echo	V5. 0	