

HR.FSL-1 Radar Velocity Meter

Overview

HR.FSL-1 is a velocity measuring instrument using microwave technology, which can be used with water level detection for hydrological monitoring. It is designed for surface flow monitoring of natural rivers, canals/cules/pipes, etc., and flood monitoring in urban flood seasons, such as low-lying Ground water, drain flow rate monitoring, etc. The product absorbs the 24GHz planar microstrip radar technology of InnoSenT from Germany, and adopts its own back-end processing technology to accurately extract the water flow speed, which can realize non-contact and unmanned automatic monitoring.



Features

- Built-in German InnoSenT 24GHz (ISM standard band) radar detection module
- CW planar microstrip radar non-contact detection, free from weather, sediment and floating objects.
- Fast and accurate measurement, stable data output, suitable for high flow rate environments during flood periods.
- The transmission frequency of the antenna is flexible and adjustable, which can effectively avoid mutual interference of multiple products.
- Several communication interfaces can be set to facilitate user system docking.

Spec

- Measurement operation and standby mode combined to reduce consumption.
- Prevents internal condensation, water and lightning protection, suitable for various outdoor environments.
- Small in size, easy for mounting and maintenance.

Effective distance	0.5 ~ 30 m
Speed range	0.15 ~ 15 m/s
Resolution	0.01 m/s
Accuracy	±0.02 m/s
Start duration	< 3 s
Measuring duration	3~240s
Antenna type	Planar microstrip array antenna, 32°× 14°
Radio frequency	24.000 ~ 24.250 GHz
Transmit power	26 dBm
Communication interface	RS-232(default)/ RS-485 / SDI-12 / 4-20 electric current loop
Digital type	9600(default),8,n,1; baud rate adjustable
Working voltage	+7 ~ 28 V DC
Working current	Normal operating mode, 12V, current 110mA Standby mode current ≤ 1mA
Working temperature	-40 ~ 60 °C
Protection level	IP66
Dimension (length×width×height)	100×100×40 (mm)
Housing material	Front cover POM, back cover aluminum alloy

Electrical connection

The signal interface is compatible with RS-232(default), RS-485, SDI-12 and 4~20mA,default interface is RS-232. Other interfaces can be selected through software settings. The interface connector uses a

waterproof air plug and leads the interface pin through a connecting cable of approximately 5 m, as shown in Figure 3 below. Please refer to the table below for pin function description.



Pin instruction

Pin	Definition
Brown	7~28V power input
Blue	GND
Yellow	TXD_A(RS232/ RS485)
Orange	RXD_B(RS232/ RS485)
Green	IOOUT(4-20mA)
Red	SDI-12 (Reserved)

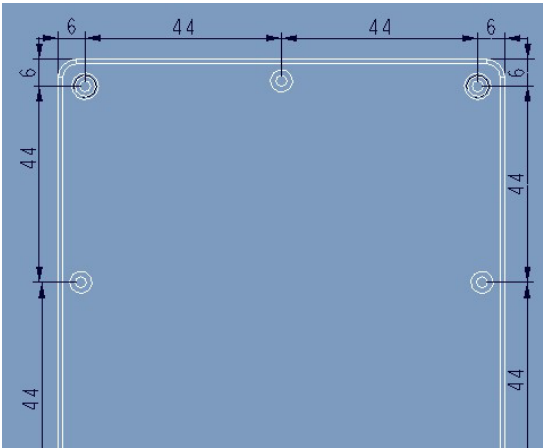
Communication interface definition

Baud rate	9600(default)
Calibration	NONE
Digital byte	8
Stop	1

Mounting

Mounting requirements

- Angleα: 30° ~ 60°



- Height: 0.5 ~ 30 m
- Mounting hole is as shown on the right

Unit: mm

Mounting type

- By building facilities such as bridges. E.g: at the beam of the bridge.
- Make auxiliary equipment such as cantilever to support the flow meter to hang over the water surface

