

# Non-Contact Surface Velocity Sensor

Water Flow

## General Description

KISTERS' SVS is a contact-free surface velocity sensor for open channels and rivers. The sensor uses **innovative radar technology** and enables **reliable, non-contact measurement** without the need for structural work in the water.

With its **very low power consumption**, its **high reliability** and **low maintenance** SVS enables the permanent recording of the flow velocity of open channels for long periods of time. It is the ideal sensor for **24/7 monitoring** surface water velocity especially in **unattended areas**. Because contact-free water velocity measurements are unaffected by sediments, mud and floating refuse, the SVS provides accurate results even in **flooding situations**.

SVS is **easily mounted** on bridges, ceilings of closed channels or any superstructures of the channel. Depending on the condition of the water surface, the device can be installed in a height of 0.5 to 35 m.

## Measuring principle

The SVS transmits a radar signal to the water surface (at a 60° angle) and receives the reflected signal. By analyzing and comparing both signals the water surface velocity can be derived (principle of Doppler frequency shift). To provide reliable data, a minimum wave height of at least 3 mm is required.

**Setting and configuration** of the SVS can be easily and conveniently done on a PC or laptop via standard terminal programs.

## Applications

- Surface Water Velocity Measurement
- Natural Open Waters
- Open Channels
- Water Flow

## Features

- Non-contact, maintenance-free
- No structural constructions in the water needed
- Simple integration into existing system
- Remains operational in flooding situations
- Low power, optionally solar powered
- Detection of flow direction
- Measurement range from +/- 0.10 to +/- 15 m/s (depending on flow conditions)
- Near blanking zone 0.5 m
- Set measurement frequency or external trigger
- Independent of environmental influences



## Technical Specifications

<b>Dimensions and Weight</b>	241 x 246 x 154 mm, 2.7 kg (9.5 x 9.7 x 6.1 in, 6 lbs)
<b>Material</b>	Aluminum housing, powder coated
<b>Protection Class</b>	IP 67
<b>Power</b>	<ul style="list-style-type: none"><li>- Supply: 6 to 30 V</li><li>- Consumption at 12 V: standby approx. 1 mA, during active operation approx. 110 mA</li><li>- Lightning protection</li></ul>
<b>Temperature</b>	<ul style="list-style-type: none"><li>- Operating temperature: -35 to 60 °C (-31 to 140 °F)</li><li>- Storage temperature: -40 to 60 °C (-40 to 140 °F)</li></ul>
<b>Velocity Measurement</b>	<ul style="list-style-type: none"><li>- Measurement range: 0.10 to 15 m/s (0.33 to 49.2 ft/s) (depending on flow conditions)</li><li>- Accuracy: +/- 0.01 m/s; +/- 1% FS</li><li>- Resolution: 1 mm/s (0.04 in/s)</li><li>- Direction recognition: +/-</li><li>- Measurement duration: 5 to 240 s, measurement interval: 8 s to 5 h</li><li>- Radar: frequency 24 GHz (K-Band), opening angle 12°</li><li>- Distance to water surface: 0.50 to 35 m (1.64 to 114.8 ft)</li><li>- Necessary minimum wave height: 3 mm (0.12 in)</li></ul>
<b>Automatic Vertical Angle Compensation</b>	Accuracy +/- 1°, resolution +/- 0.1°
<b>Interface</b>	<ul style="list-style-type: none"><li>- 1 x RS485 or Modbus</li><li>- 1 x SDI-12</li><li>- Optional analog version: velocity 4 to 20 mA, 0 to 10 m/s configurable</li></ul>
<b>Digital Input</b>	<ul style="list-style-type: none"><li>- 1 x Trigger input</li><li>- Low: 0 to 0.6 V; High: 2 to 30 V</li></ul>

## Accessories

### Radar sensor connecting cable:

LiYCY, 12 x 0.25 mm<sup>2</sup>, all solder joints protected with shrink tubing, shielded cable with tinned copper braiding, PVC outer sheath, configured and tested.



### iRIS dataloggers and data modems:

- Robust housing
- IP over one or two channels of your choice: 4G with 3G fallback / GPRS, satellite, IoT

- I/O: analog, digital, SDI-12, Modbus
- iLink software
- Telemetry or cloud app

**Please ask for details.**

Reseller

**KISTERS Australia** | sales@kisters.com.au | kisters.com.au  
**KISTERS Europe** | hydromet.sales@kisters.eu | kisters.eu  
**KISTERS New Zealand** | sales@kisters.co.nz | kisters.co.nz  
**KISTERS North America** | kna@kisters.net | kisters.net

 **KISTERS**