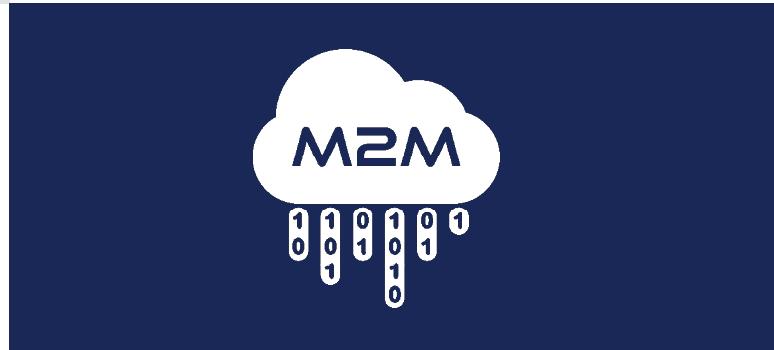




## HSI-1 SVR Surface Velocity Radar



SVR is a non-contact method for measuring surface flow velocity in open channels. The SVR uses radar technology to measure the Doppler shift of electromagnetic waves reflected from the water surface. The Doppler shift is proportional to the water's surface velocity, and an calculate the velocity of water at various depths.

# Unique Features

- Highly accurate and reliable method for measuring open channel flow that is not affected by sediment or debris in the water.
- Does not require contact with the surface water.
- Used in rivers, streams, canals, flumes, and irrigation channels.
- SVR consists of a radar antenna, transmitter, and receiver that are mounted above the water channel. The antenna emits a radar signal that is reflected off the water surface and received by the receiver.
- The Doppler shift of the reflected signal is used to calculate the surface velocity of the water, and this information can be used to calculate the discharge of the channel.
- The SVR can be used in conjunction with other sensors, such as water level sensor, to provide a complete picture of open channel flow.
- Data collected by the SVR can be transmitted wirelessly to a data logger or a computer for analysis and storage



Stevens Water Monitoring Systems, Inc.

12067 NE Glenn Widing Drive, Suite 106,  
Portland, Oregon 97220

1 800 452 5272 | 503 445 8000

[www.stevenswater.com](http://www.stevenswater.com)

**STEVENS**

# TECHNICAL SPECIFICATIONS

## GENERAL

<b>Measurement Range</b>	0.05 to 15 m/s. Depending on flow conditions
<b>Speed Selection</b>	Default is meters / second. Feet / second is an option
<b>Flow Direction</b>	Bi-directional   Measures backwater situations.
<b>Measurement interval</b>	Up to 1 measurement per second
<b>Resolution</b>	0.1 mm/s (0.0001 ft)
<b>Accuracy</b>	± 2% of measured value
<b>Radar frequency</b>	24 GHz (K-band)
<b>Radar opening angle</b>	12 degrees Azimuth 24 degrees Elevation

## POWER

<b>Power supply</b>	9 to 24 VDC
<b>Power /current consumption active</b>	Typical <112 mA at 12 VDC ~ 5 second warmup. 30 to 60 seconds for measurement output (depending on flow conditions)
<b>Maximum current</b>	<250 mA

## SENSOR INPUT AND POSITIONING

<b>Serial interface</b>	RS-485
<b>Protocol</b>	MODBUS
<b>Vertical distance to water surface</b>	0.5 to 15 m (1.64 to 82 feet) minimum depending on wave height

## ENVIRONMENTAL

<b>Operating temperature</b>	-40°C to 85°C (-40°F to 185°F). Battery charging protected below 0°C.
<b>Housing</b>	IP 68
<b>Lightning protection</b>	Gas Discharge Tubes on sensor inputs

## PHYSICAL

<b>Dimensions (L x W x H)</b>	134.5 mm (5.3 in) x 114.5 mm (4.5 in) x 80 mm (3.2 in) [without mounting bracket]
<b>Weight</b>	0.756 kg (1.67 lbs)