

SoundWater Orcas SP™ Flowmeter

Fast, easy install.
Flow readings anywhere.
Links with your system.



Markets

Water, Wastewater, Irrigation, Processing, Chemical, Energy Management,
Food & Beverage, Petrochemical, HVAC



All the fast-install, easy-to-use features of the Orcas Portable—plus permanent installations

Meet the Orcas SP

Now you can capture accurate and reliable flow readings with any SCADA, PLC system, or the Ayyeka Wavelet™ with less hassle and in less time—wherever you need a flow or volume measurement.

No wires. No bulky electronics box. Your single piece ultrasonic flowmeter installs on the outside of your pipe in a snap—and senses through the pipe wall. Your mobile device helps you setup the hardware and displays readings. So you'll get your job done more quickly, every time.

Need an IoT web interface and cellular data collection?
Simply combine the Orcas SP with Ayyeka Wavelet™.

Features

- Installed on outside of pipe—non-invasive, no break in piping, no production down time
- 4-20mA, pulse, or MODBUS RTU output—for SCADA & PLC communication
- Compatible with Ayyekas' Wavelet—for cellular data collection
- iOS™ & Android™ compatible
- Uses Bluetooth™ 4.0 (BT LE)—no wires
- Built-in data logging
- Accurate, reliable, robust
- Quick, easy setup
- Covers pipe sizes ranging in diameter from 1" to 26"
- Weatherproof/Rugged

Certifications

FCC, RCM

The Orcas semi-permanent flow metering solution.

What is Orcas SP?

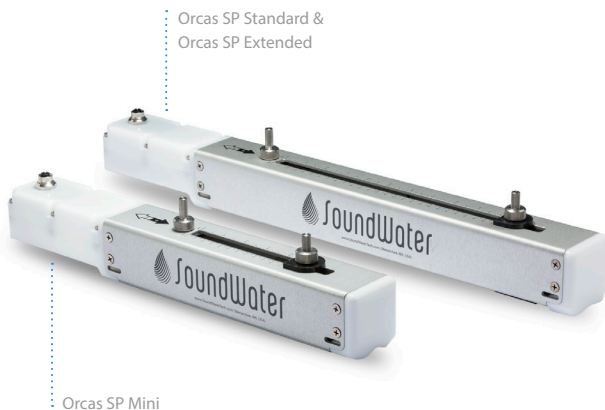
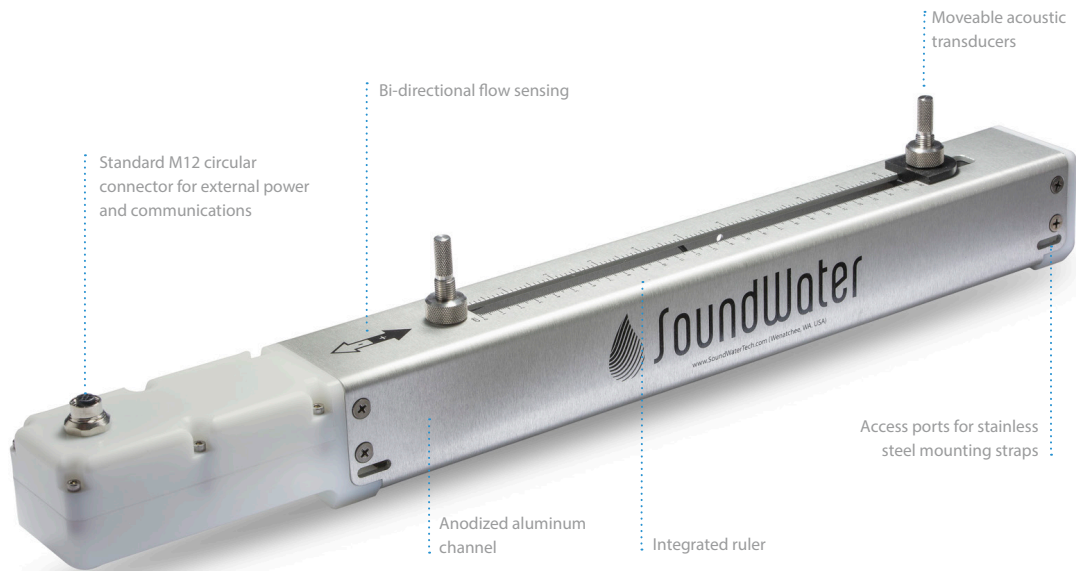
The Orcas SP Flowmeter solution starts with the Orcas app (downloadable from the app stores) and works on both iOS and Android devices. The companion Orcas SP Sensor is a compact, clamp-on ultrasonic transducer device that transmits flow measurements to any SCADA, PLC, or Ayyeka Wavelet™ (for cellular data collection and web interface).

The unique nature of Orcas SP is a combination of the fast, easy install of a portable flowmeter plus external power and communications common to permanent installations. Orcas SP has the best of both worlds—making your job fast, easy, and hassle free.

Connect easily with your system - Orcas SP comes fitted with a robust, 5-pin M12 circular connector for wiring to your PLC, SCADA, flow controller or custom process hardware. Orcas SP takes external power for continuous use, and delivers 4-20mA, pulse, or MODBUS RTU output - so your systems can record flow.

Installs in a flash with the Orcas app, just bring the clamp-on sensor along with a tablet or smartphone (iOS or Android). Bluetooth connectivity replaces wires, and the Orcas app guides you through your application setup.

The durable mechanical design is o-ring sealed and gasketed for long term, and reliable use in outdoor environments.



The Orcas SP family of sensors.

Orcas SP Mini

Ideal for pipes ranging in size from 1" to 4.5".

Orcas SP Standard

Ideal pipes ranging in size from 2" to 12".

Orcas SP Extended

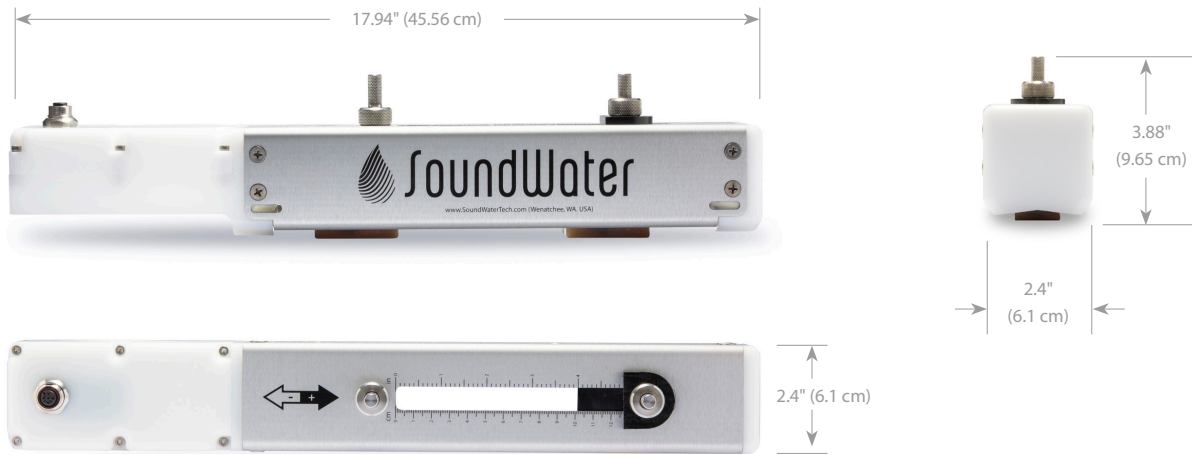
Ideal for pipes ranging in size from 2" to 18".

Orcas SP Extended Plus

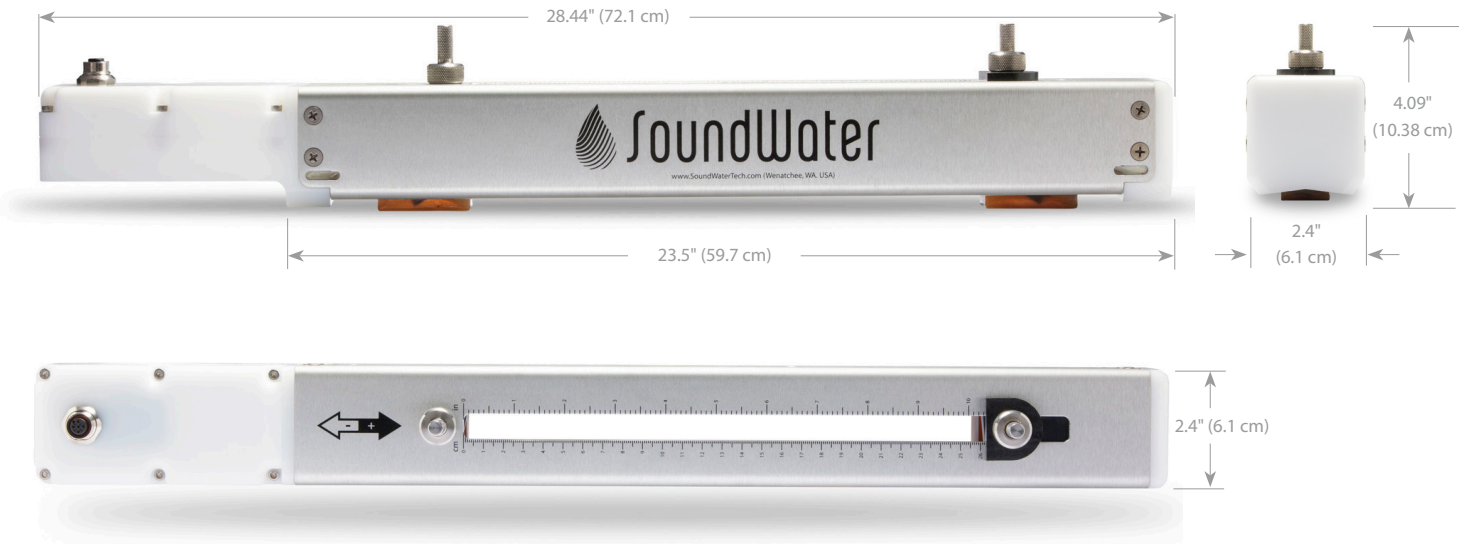
Ideal for pipes ranging in size from 4" to 26".

Dimensions

Orcas SP Mini



Orcas SP Standard and Orcas SP Extended



Features

✓ Fastest Install & Setup

The clamp-on ultrasonic sensor design mounts onto the outside of your pipe and senses through the pipe wall. It can be installed in a few minutes, and is a single piece design.

The Orcas App guides you through setup, and wireless Bluetooth connection from any BLE-enabled (Bluetooth Low Energy) mobile device: iPhone™, iPod Touch™, or Android™.

✓ Works with PLC & SCADA Systems

Easily connect power and communications using a robust M12 circular connector. A standard 4-20mA, pulse, or MODBUS output transmits data to your SCADA, PLC or other third-party hardware for capturing flow.

✓ Cellular Data & IoT Web Interface

For remote applications (or where hard-wired communication is impractical), make Orcas SP an IoT device by adding the Ayyeka Wavelet. Wavelet seamlessly transmits flow data from your Orcas using mobile networks—and you access your data through any web browser. Now you can quickly locate any of your flow installations around the world, and analyze live flow measurements and a graphical flow history from virtually anywhere.

✓ Efficient

All-in-one clamp-on ultrasonic design mounts on the outside of your pipe - and with no transducer wires to untangle or connect.

Intuitive Orcas app guides you through setup with pre-loaded libraries for pipes and, liquids—so you get it right the first time.

✓ Accurate

Orcas SP is typically accurate within 1.0 to 3.0 percent (depending upon the application and pipe size), with a wide operating range and no pressure drop.

✓ Weatherproof

Designed for installation outdoors or indoors - rain or shine.

Intuitive

✓ Orcas App guides you through setup, displays transducer spacing, and the integrated ruler on the Orcas SP Sensor makes setting it a snap.

Easy to Own

✓ Always up-to-date. The Orcas app and sensor firmware are automatically updated with new features as they are introduced.

Highly affordable. With all its advantages, Orcas SP is priced competitively with comparable (but bulkier) devices.

App Features

Interactive smart phone/
tablet control app
—iOS or Android

- ✓ Save location information
- ✓ Handy built-in pipe specifications —or add your own
- ✓ Drag and drop output selection



- ✓ English or metric units
- ✓ Easy-to-use data logging
- ✓ Select liner and liquid types —or define your own



Specifications*

Pipe Materials Metal: Steel, Stainless Steel, Copper, Brass, Aluminum
Plastic: PVC, CPVC, HDPE, PE, PIP

Installation Installs on pipe from 1" to 26" nominal diameter depending on hardware selection
15 pipe diameters upstream; 5 diameters downstream required for optimal performance (typical)

Flow Detection Range Bi-directional; 0.1 ft/s to 20 ft/s (0.03 m/s to 6 m/s)

Performance	PIPE SIZE	ACCURACY	OPERATING RANGE	REPEATABILITY
	3" to 26"	±1.0% to 2.0% typical	-20 to 20 ft/s (-6 to 6 m/s)	0.5%
	1" to 2"	±2.0% to 3.0% typical	-20 to 20 ft/s (-6 to 6 m/s)	0.5%

*Under standard conditions, assuming fully developed and symmetrical flow profile (typically taken on a straight run of 15 diameters upstream and 5 diameters downstream; flow rate above 3 ft/s or 1m/s; non-aerated liquids).
If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Outputs (optional) CURRENT (4-20 MA) Current proportional to flow; user programmable.
PULSE NFET (NPN type) open drain output with frequency proportional to flow; user programmable.
MODBUS RTU RS485, user programmable port settings.

Display Flow measurements display on SoundWater's Orcas™ App (iOS or Android; Apple, Samsung or Google devices recommended)
Mobile devices connect wirelessly to Orcas™ with Bluetooth 4.0 (BT LE)
Metric and English units

Data Logger Store up to 14 days of flow data

Software Save and recall site setup information
Mobile device App for iPhone, iPad, iPod touch and Android devices

Hardware	PIPE SIZE RANGE	PIPE MATERIAL
Orcas SP Mini	1" to 4.5"	Steel, Stainless, Copper, Brass, Aluminum, PVC, HDPE, PIP
Orcas SP Standard	2" to 12"	Steel, Stainless, Copper, Brass, Aluminum, PVC, HDPE, PIP
Orcas SP Extended	2" to 18"	Steel, Stainless, Aluminum, PVC, HDPE, PIP
Orcas SP Extended+	4" to 26"	Steel, Stainless, Aluminum, PVC, HDPE, PIP

Power 12-24 VDC external power for continuous use
0.6 W Typical (100 mA max current)

Turndown 200:1

Environmental Liquid/pipe temperature -40° to 160° F (-40° to 70° C)
Optional high liquid/pipe temperature -40° to 212 F (-40° to 100° C)
Ambient temperature -40° to 100 F (-40° to 37° C)
IP65 splash proof & weather resistant

Materials Body: Anodized aluminum channel, HDPE housing and footings
Mounting Straps: Stainless Steel

Manufacture SoundWater Technologies, United States

Markets

- Water
- Wastewater
- Irrigation
- Building Services
- Chemical
- Food & Beverage
- Pump and Well
- Energy Management

Benefits

- Non-invasive
- Low-installation cost
- Accurate

Applications

- Irrigation
- Raw Water
- Potable Water
- Chillers
- Condensers
- Process Control
- Batching
- Raw Sewage
- Effluent
- Sludge
- Chemicals
- Food & Beverage
- Leak detection
- Batching
- Rate Indication
- Volumetric Measurement
- Mixed Liquor

Ordering Orcas SP Flowmeter Kits, Parts, & Accessories

Contact your local supplier to order your Orcas SP Ultrasonic Flow Metering solution.

Flowmeter Kits

Orcas SP Ultrasonic Flowmeter kits include everything you need to install, setup and measure flow.

PART NUMBER	DESCRIPTION	PIPE SIZE	OUTPUT
4084	Orcas SP Mini Kit	1" — 4.5"	4-20mA & Pulse
0688	Orcas SP Std Kit	1" — 12"	4-20mA & Pulse
2022	Orcas SP Ext Kit **	2" — 18"	4-20mA & Pulse
5723	Orcas SP Ext+ Kit **	4" — 26"	4-20mA & Pulse
3280	Orcas SP Mini Kit	1" — 4.5"	Wavelet
2174	Orcas SP Std Kit	2" — 12"	Wavelet
7487	Orcas SP Ext Kit **	2" — 18"	Wavelet
0099	Orcas SP Mini Kit	1" — 4.5"	MODBUS RTU
9160	Orcas SP Std Kit	2" — 12"	MODBUS RTU
1173	Orcas SP Ext Kit **	2" — 18"	MODBUS RTU
1682	Orcas SP Ext+ Kit **	4" — 26"	MODBUS RTU

** Orcas SP Ext not compatible with copper or brass.

Parts & Accessories

PART NUMBER	DESCRIPTION
3065	Mounting Straps: 2x75", 190cm
9755	USB 2.0 Cable; A Male/B Male
0421	Connecting Cable (30 ft; 10 m.)
2601	Coupling Gel (150 g.)

This device complies with Part 15 of FCC Rules and Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Contains FCC ID: XDULE40-S2, Contains IC: 8456A-LE452. CAN ICES-1/NMB-1; CAN ICES-3 (B)/NMB-3(B)

MODEL: SWT ORCAS-01

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