

# Cypress™ Ultrasonic Flowmeter

Ultrasonic flowmeters designed for speed and ease.



**Cypress** is a compact ultrasonic flowmeter with external power and industrial communications designed for long-term flow monitoring and certified for use in C1D2 hazardous areas. It installs on the outside of your pipe—and senses flow through the pipe wall. The Cypress Flowmeter connects with your mobile device or to the SoundWater Flow Computer for displaying measurements.

Whether you're using your mobile device or the Flow Computer, the setup is easy to follow. Quick, simple installation—5 minutes from start to finish.

## Fast to install, easy to use.

### SoundWater Advantages

#### MEASUREMENTS YOU CAN TRUST

Our proprietary SoundWater Reciprocity Architecture™ prevents zero-flow drift and eliminates the need for calibration, resulting in long-term measurement stability and accuracy.

#### INCREASES PRODUCTIVITY

Featuring compact lightweight construction and intuitive apps—our products streamline installation, training, and setup—saving you time and money.

#### MADE IN USA

Locally owned and operated out of Wenatchee, Washington, our products are built with American quality and ingenuity.

#### WORKS IN TOUGH APPLICATIONS

Our transducers auto-adjust ultrasonic power output depending upon pipe and fluid conditions—giving you more frequent measurements when things get tough (e.g., corroded pipe or murky fluid).






#### LONG LIFE / LOW MAINTENANCE

SoundWater products are built to last using the highest quality materials, gasketed & double O-ring seals, and silicone gel to protect electronics.

#### SERVICE & ACCOUNTABILITY

We establish long-term customer relationships based on trust and service. We will respond to your needs and requests within 24 hours.

## Industries

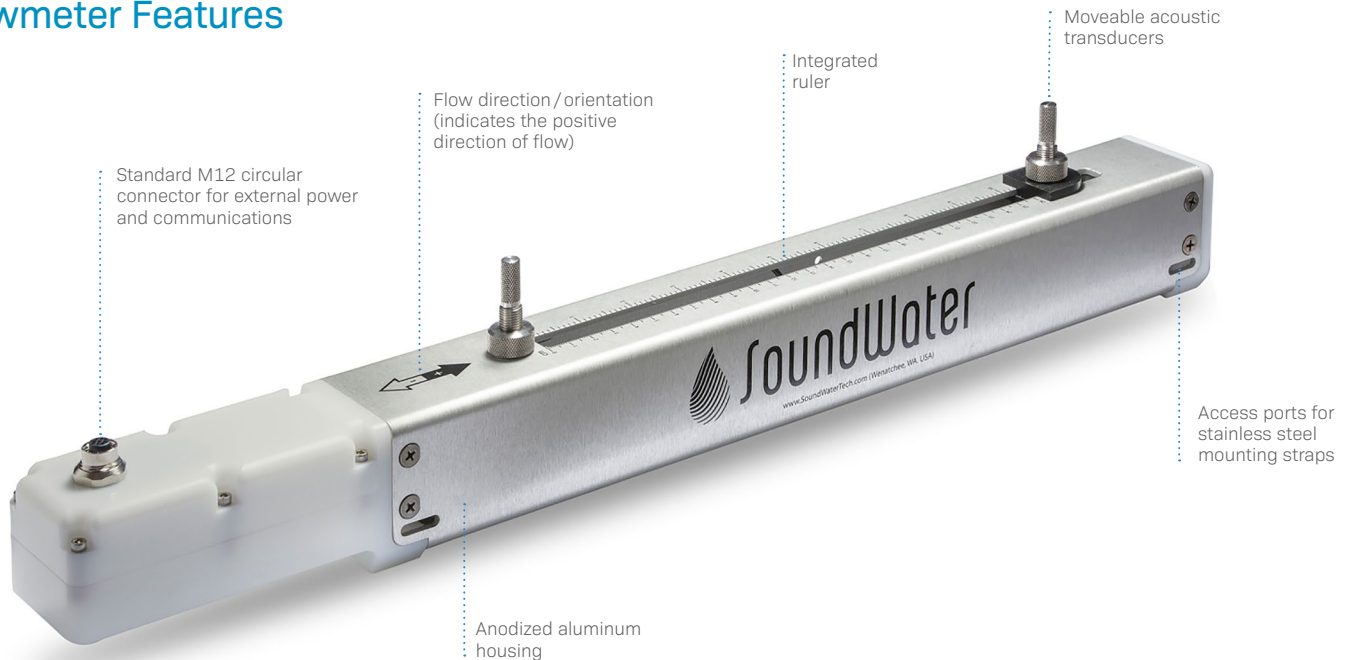
-  **Water & Wastewater**
-  **Agriculture**
-  **Building Water Management**
-  **Oil & Gas**
-  **Chemical & Pharmaceutical**

# Advantages & Features

- Long-term flow monitoring
- Connects with your SCADA/PLC
- SoundWater Reciprocity Architecture
- Auto-Adjusting Ultrasonic Power
- Compatible with Mobile Orcas App or SoundWater Flow Computer; intuitive setup and use
- One-piece construction; no assembly
- Gel-free transducers (optional)
- Wireless design



## Flowmeter Features



## Orcas App Features

Interactive smartphone/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
- Languages: English, Spanish, Portuguese
- Easy-to-use data logging
- Select liner and liquid types—or define your own



## Flow Computer Features

Interactive mounted screen for long-term flow monitoring.

- Connects with one or two flowmeters
- No contact with fluid
- Calculate analytics from two flowmeters
- Standard industrial outputs
- Touchscreen and intuitive app
- Install indoors or outdoors
- May be installed long distances from flow sensor



## Dimensions

### Cypress Txxx-C5



### Cypress Txxx-C11



### Cypress Txxx-CM5



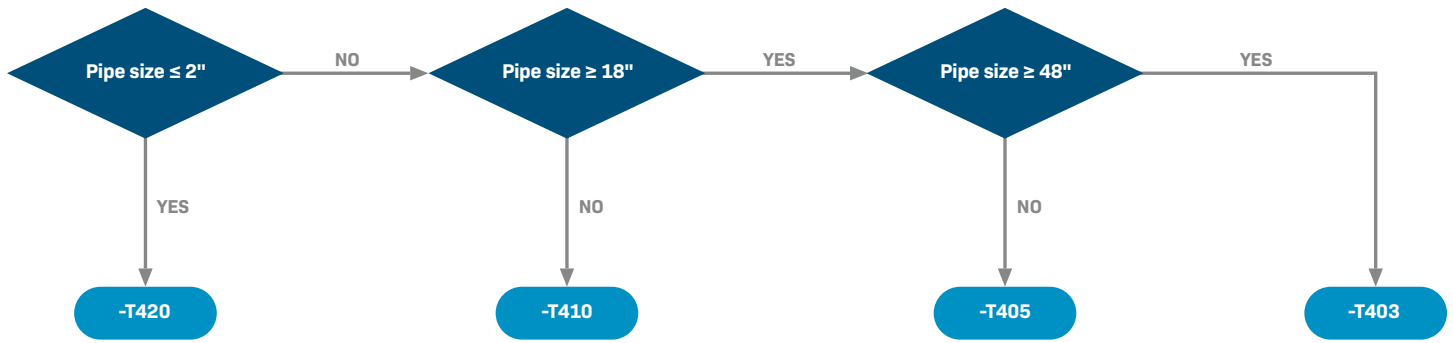
### Cypress Txxx-CM11



### Cypress -CM Single Traverse



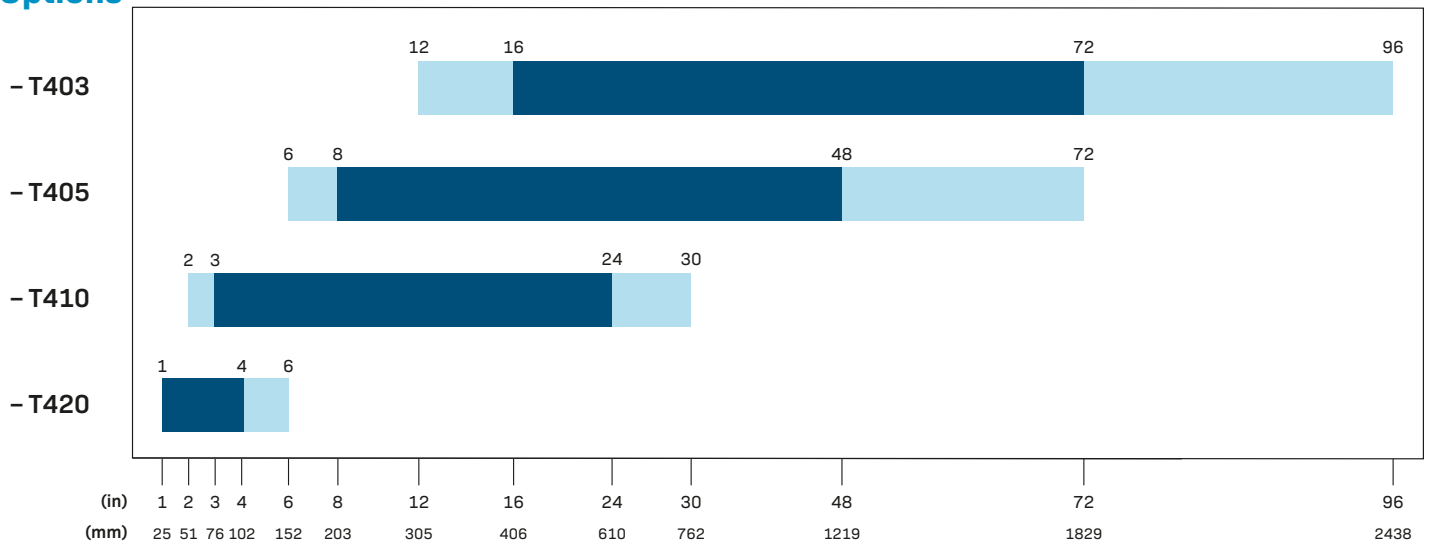
# Transducer Selection



## Transducer Selection Table

### Transducer Options

■ Possible
 ■ Recommended



### Pipe Diameter

<b>Pipe Materials</b>	<b>Metal:</b> Steel, Stainless Steel, Copper, Brass, Aluminum, Ductile Iron <b>Plastic:</b> PVC, CPVC, HDPE, LDPE, PE, PIP, FRP, PEX			
<b>Installation</b>	Installs on pipe from 1" to 96" nominal diameter depending on hardware selection 15 pipe diameters upstream, 5 diameters downstream for optimal performance (typical)			
<b>Flow Detection Range</b>	Bi-directional; 0 ft/s to 64 ft/s (0 m/s to 20 m/s)			
<b>Min. Wall Thickness</b>	<b>-T420:</b> 0.05"	<b>-T410:</b> 0.10"	<b>-T405:</b> 0.20"	<b>-T403:</b> 0.4"
<b>Performance</b>	<b>PIPE SIZE RANGE</b> 3" to 96" 1" to 2"	<b>ACCURACY (% OF READING)</b> ±1.0% to 2.0% typical ±2.0% to 3.0% typical	<b>REPEATABILITY</b> 0.5% 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.			
<b>Outputs (OPTIONAL)</b>	<b>CURRENT</b> (4-20 mA) Current proportional to flow; user programmable. <b>PULSE NFET</b> (NPN type) open drain output; frequency proportional to flow; user-programmable; Max 39,000 (Hz) <b>MODBUS RTU</b> RS485, user programmable port settings.			
<b>Display</b>	SoundWater Flow Computer (optional; wall mount display) SoundWater Orcas™ App (iOS or Android) connected wirelessly to Cypress with Bluetooth 4.0 (BT LE) Metric and English units; Rate, Total, Velocity, Sound Speed			
<b>Data Logger</b>	Store up to 365 days, 10,000 measurements, 50,000 datapoints			
<b>Security</b>	Six digit password protection restricts unauthorized users from accessing or changing flowmeter setup, data logger, and totalizer			
<b>Languages</b>	English, Spanish, Portuguese (app only)			
<b>Flowmeter Kit</b>	Flowmeter, silicone based coupling gel, mounting straps, power-communication cable			
<b>Hardware</b>	<b>MODEL</b>	<b>PIPE SIZE RANGE</b>	<b>LENGTH</b>	<b>FREQUENCY (MHZ)</b>
	Cypress T420-C2	1" to 3"	12.0"	2
	Cypress T420-CM5	2" to 6"	16.6"	2
<b>DOUBLE TRAVERSE</b>	Cypress T410-C5	2" to 6"	16.6"	1
	Cypress T410-C11	2" to 14"	22.6"	1
	Cypress T410-CM5	4" to 14"	16.6"	1
	Cypress T410-CM11	4" to 24"	26.6"	1
<b>SINGLE TRAVERSE</b>	Cypress T405-CM5	6" to 14"	16.6"	0.5
	Cypress T405-CM11	6" to 48"	23-39"	0.5
	Cypress T403-CM14	12" to 96"	30"	0.3
<b>Power</b>	12-24 VDC external power for continuous use; 0.6 W Typical (100 mA max current) <b>REQUIRED:</b> The cover must be installed on the equipment before use. <b>REQUIRED:</b> UL/CSA 62368-1 Listed Class 2 supply			
<b>Turndown</b>	200:1			
<b>Environmental</b>	Liquid/pipe temperature -40° to 140 F (-40° to 60° C); Ambient temperature -40° to 140° F (-40° to 60° C) NEMA 4/6P indoors or outdoors, wash-down environment, corrosion resistance, and occasional submersion			
<b>Materials</b>	<b>BODY:</b> Anodized aluminum channel, PVC electronics housing and footings <b>MOUNTING STRAPS:</b> Stainless Steel <b>HARDWARE:</b> Stainless steel, acetal, ultem <b>FASTENERS:</b> Stainless steel <b>CONNECTOR:</b> M12, nickel plated brass			

(Specifications continue, next page)

<b>Manufacture</b>	SoundWater Technologies, Wenatchee WA, USA
<b>Zero Stability</b>	Reciprocity based hardware for measurement stability and low flow performance.
<b>Auto-Ranging</b>	Auto-adjusting ultrasonic transducer power, and auto-adjusting transducer receiver gain. Maximizes usable signal and measurement quality.
<b>Technology</b>	Transit Time Ultrasonic

**Regulatory Certification** Class I, Division 2, Groups A-D T4, -40°C to +60°C  
 Complies with UL61010-1, UL121201, CSA C22.2 No 61010-1, CSA C 22.2 No. 213



**WARNING: EXPLOSION HAZARD. DO NOT REMOVE OR REPLACE CONNECTOR WHILE CIRCUIT IS LIVE UNLESS THE AREA IS FREE OF IGNITIBLE CONCENTRATIONS**

**AVERTISSEMENT: RISQUE D'EXPLOSION. NE PAS RETIRER NI REMPLACER LE CONNECTEUR PENDANT QUE LE CIRCUIT EST SOUS TENSION, À MOINS LA ZONE EST EXEMPT DE CONCENTRATIONS INFLAMMABLES**

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-LE4S2. CAN ICES-1/NMB-1; CAN ICES-3 (B)/NMB-3(B) MODEL: SWT ORCAS-01

