



# SpireTap™ Series

## RESIDENTIAL ULTRASONIC WATER METER

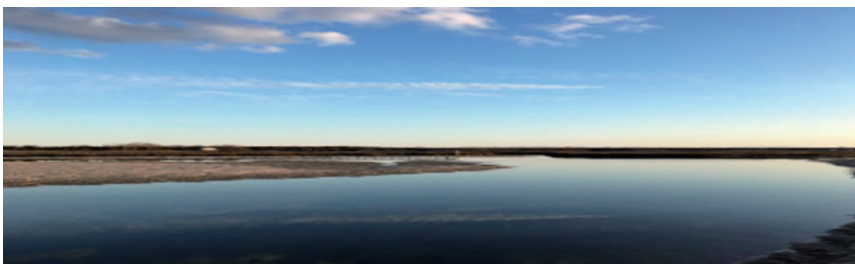
### Applications

- Revenue metering
- Residential submetering
- Commercial buildings
- Leakage detection
- AMR / AMI and billing
- Drive-by metering
- Smart water, smart city



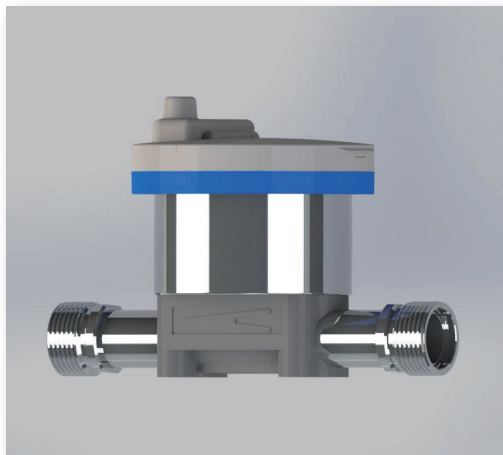
### Features

- Residential potable water consumption metering
- Complies with applicable portions of ANSI / AWWA C715 Standard
- Durable, proven Stainless Steel 304 sensor body  
Solves the challenges of harsh environments
- No moving parts. Wear-free ultrasonic technology
- Lead-free, Complying with NSF / ANSI 61, Annex G
- Patented sensor design. Provides precise signal, robust performance, and not impacted by water impurity
- Excellent long-term stability with consistent performance. Accuracy does not degrade over time
- Tamper-proof design, tampering detection is recorded by the meter
- More than 10 year battery life. Replaceable battery
- Not affected by magnetic interference
- Various alarms available: reverse flow, pipe burst, leakage, battery low
- Wide dynamic range, low starting flowrate
- Detects water leakage
- Unique straight-through sensor design with no obstruction and very low pressure drop
- Large LCD, 9 digit display
- Totally encapsulated, water-proof design
- Data Logger with 700 daily totals and 24 monthly totals
- AMR / AMI ready with optional encoder, pulse and wireless interfaces for drive-by and fixed network meter reading
- NB-IoT ready for smart water, smart city





## SpireTap™ Series RESIDENTIAL ULTRASONIC WATER METER



The SpireTap™ Series Residential Ultrasonic Water Meter is specially designed for domestic water metering applications, where conventional water meters fail due to harsh environment, solids in water, performance degradation, magnetic vandalization or inability to detect leaks.

The SpireTap™ is a solid state water meter. It offers the most advanced water flow measurement by using state-of-the-art ultrasonic technology. Its flow sensor does not have any moving parts that can wear or tear, which provides a robust and accurate meter with no maintenance.

Unlike the other ultrasonic water meters on the market which have a reflector support fixture in the middle of the flow tube, the SpireTap™ uses a unique straight-through sensor design. No measuring components intrude into the flow path, thus it causes no obstruction to the flow and offers very low pressure drop.

The SpireTap™ complies with the applicable portion of the AWWA C715 standard. It can be used for either new installation or retrofitting AWWA water meters. The performance of the SpireTap™ far exceeds that of a conventional mechanical water meter. It provides accurate measurement over a wide flow rate span, and the accuracy does not degrade over time.

The SpireTap™ comes with a large LCD which can display the flow total, leakage alarm, reverse flow, and more. The meter also has a remote readout which can be provided as Encoder, Modbus or LoRa wireless.

Spire Metering's SpireTap™ Residential Ultrasonic Water Meter stands out among its competition due to its robust performance, patented sensor design, tamper-proof feature, NB-IoT ready and capability to detect very low flowrate. It works reliably even when the water has particles and the environment is harsh. Residential installations can profit from the advantage of the wear-free water flow measurement, namely, precision, operational security and long service life.



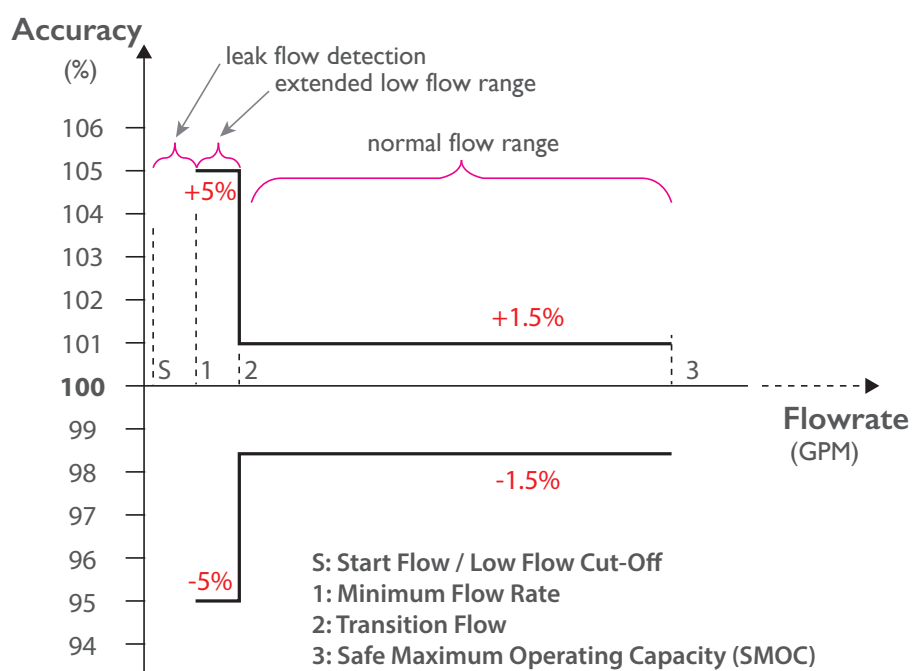


# SpireTap™ Series

## RESIDENTIAL ULTRASONIC WATER METER

### Technical Specifications

Size	Safe Maximum Operating Capacity (SMOC)	Normal Flow Range (100% ±1.5%)	Minimum Flow (100% ± 5%)	Start Flow	Head Loss at SMOC	Connection on Meter	Laying Length
Inch	GPM				PSI	NPSM Thread / Flange	Inches (mm)
5/8	20	0.2 - 20	0.13	0.015	4.1	3/4"	7 1/2" (190)
5/8 x 3/4	20	0.2 - 20	0.13	0.015	4.1	1"	7 1/2" (190)
3/4	30	0.5 - 30	0.15	0.015	3	1"	7 1/2" or 9" (190 or 229)
1	50	0.8 - 50	0.30	0.04	4	1 1/4"	10 3/4" (273)
1 1/2	100	2.0 - 100	0.60	0.06	8	2"	12 5/8" (321)
1 1/2	100	2.0 - 100	0.60	0.06	8	1 1/2" flange	13" (330)
2	160	2.5 - 160	1	0.22	2	2 1/2"	15 1/4" (387)
2	160	2.5 - 160	1	0.22	2	2" Flange	17" (432)





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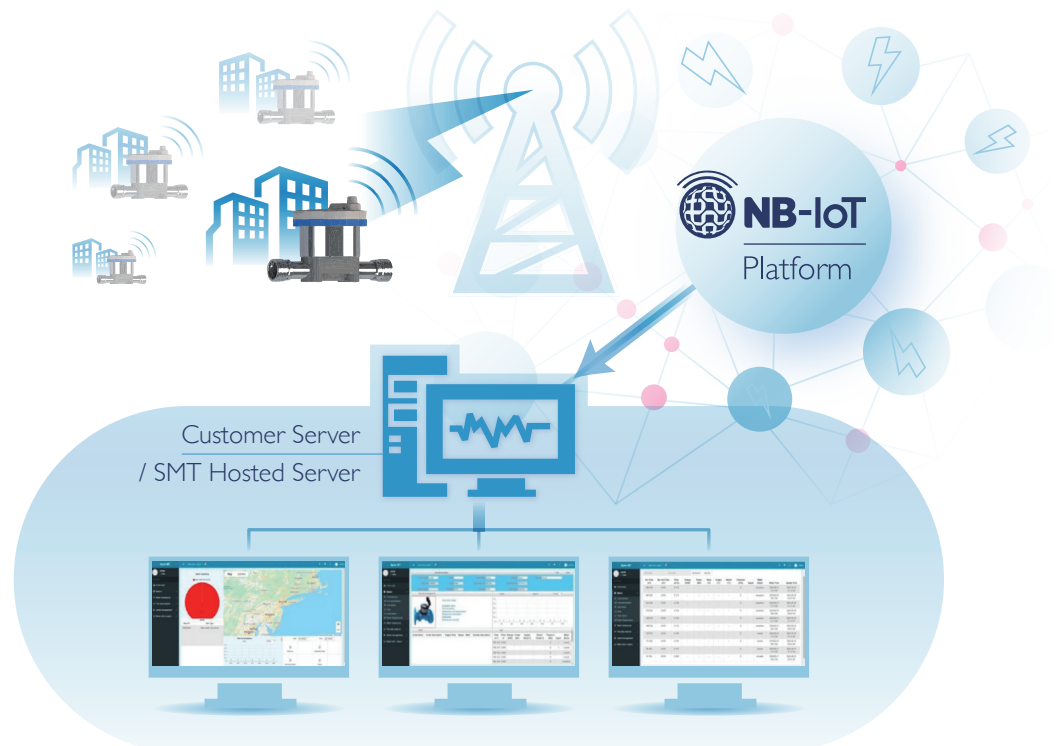
### NB-IoT

PTCRB Certification

MODEL: **SpireTap / ST-280WD**  
Antenna: **internal**



Regulatory Approvals



**Total system management information:**  
distribution status, individual meter detail, account usage,  
maintenance tracking, customer care at your desk



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### Order Specifications

Base Unit

ST - 280W - D -  -

Meter Size	ID
5/8" (threading)	1
5/8" x 3/4" (threading)	2
3/4" (threading)	3
1" (threading)	4
1 1/2" (threading)	5
1 1/2" (flange)	6
2" (threading)	7
2" (flange)	8

Interface	ID
None (Default, TTL Serial)	0
Built-in NB-IoT wireless	B
Built-in LoRa wireless for drive-by and AMI, 915MHz	L

**Attention**

Please note that we do not offer tail pieces. Our meters use the standard NPSM threading or 2-hole oval flange, compatible to any AWWA tail piece of same size.

#### Non-Optional Components

Non-return Valve of size x (refer to the next page for details)	280AP-46835-x
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Optional Components	(For Base Unit with Interface option A only)
Output Interface Module (Choose One)	Model No.
RS485 / Modbus Module	280AP-MOD
Encoder Module for English Unit	280AP-E-INxx
NB-IoT Endpoint with Mushroom Antenna	280AP-MR-NBI
LoRa 915MHz Wireless Endpoint with Mushroom Antenna for drive-by and AMI	280AP-MR-LR2915
Pulse Output (dry contact, requires external 12-24VDC)	280AP-P2
BACnet / MSTP (requires external 12-24VDC)	280AP-MSTP





## SpireTap™ Series RESIDENTIAL ULTRASONIC WATER METER

### Threaded Non-Return Valves for Drinking Water

These valves meet NSF/ANSI 61 for drinking water service. They open to allow flow in one direction and close when flow stops or reverses.

**SPVC Plastic Body - Spring-loaded piston check valves** reduce slamming and vibration in quick shut-off applications

- For Use With: Drinking Water
- Piston Material: PVC Plastic
- Spring Material: 302 Stainless Steel
- Seal Material: EPDM Rubbe



Pipe Size	Max. Pressure	Min. Opening Pressure, psi	Temperature Range, °F	End-to-End Lg.	Model#
NPT Female x NPT Female					
½	150 psi @ 70°F	0.5	35° to 140°	4 ⅞"	280AP-NRV-46835-2
¾	150 psi @ 70°F	0.5	35° to 140°	4 ⅞"	280AP-NRV-46835-3
1	150 psi @ 70°F	0.5	35° to 140°	5 ¼"	280AP-NRV-46835-4
1 ½	150 psi @ 70°F	0.5	35° to 140°	6 ⅜"	280AP-NRV-46835-6
2	150 psi @ 70°F	0.5	35° to 140°	7"	280AP-NRV-46835-7

**Note:** The size difference between meter and non-return valve. For example, a 1/2" meter has a thread of 3/4" (male),



but a 1/2" non-return valve has thread of 1/2" (female). To connect a 1/2" non-return valve to a 1/2" meter, you would need a tail piece for the meter.

## About Spire Metering Technology

Spire Metering is a global leader in flow and energy management solutions. Through continuous innovation, we transform complex ultrasonic technology into affordable, reliable solutions for accurate flow and energy measurement. Spire Metering offers water, heat, electricity and gas meters as well as AMR/AMI solutions. To find out how we can help today, please tell us about your application.

You can contact us by email at [solutions@spiremt.com](mailto:solutions@spiremt.com) or by phone at +978 263 7100.