



Water Resource Management

Smart Water Solutions for Cities & Utilities

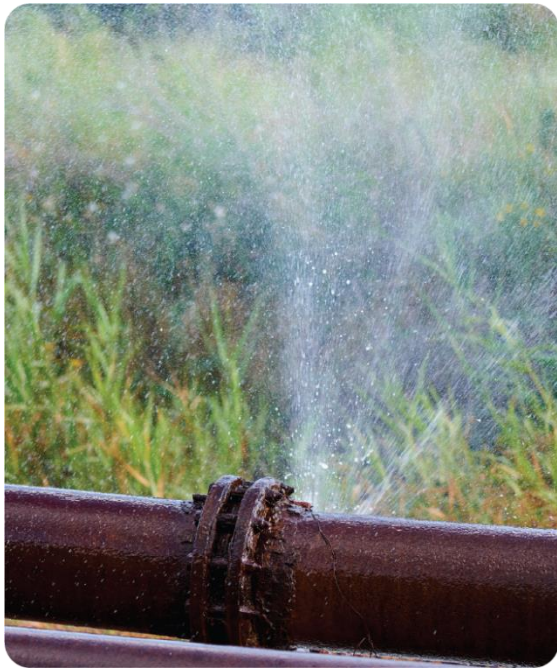
Solution Overview

BrightCity AMI ecosystem delivers an end-to-end water management solution for cities and utilities.

It combines advanced Meter Interface Units (MIUs), wireless communication technologies, and a unified Meter Data Management System (MDMS) to enable real-time monitoring, predictive insights, and operational efficiency.

Designed for both brownfield and greenfield deployments, BrightCity empowers utilities to reduce non-revenue water, optimize resources, and enhance sustainability without costly meter replacements.

Powering A Water-secure City



BrightCity Sienna MX1 solution for water, rainwater, and sewage applications delivers real-time, continuous monitoring of multiple sensors through a fixed-area network, with both walk-by and drive-by capabilities in a single unit.

It also provides water utilities a low-cost alternative to avoid expensive rip-and-replace projects and gain the full spectrum of Water AMI benefits, from field to consumer.



Aging or inadequate sewer networks can overflow during heavy rains, releasing harmful contaminants into waterways and communities.

Proper management of water, rainwater and sewage systems and infrastructure is vital to:

- Maintain water pressures in the municipal system
- Prevent erosion in infrastructure
- Keep sewage from overflowing into public areas
- Protect both the public health and the environment.



Our smart units transmit real-time data and instant alerts, enabling early detection of issues such as blockages, overflows, and leaks. Equipped with abnormal behaviour alarms and notifications feature, they ensure timely responses to abnormal conditions and incidents.

By integrating various sensors, operators gain extensive visibility and control over their networks. This proactive approach enables immediate response and reduces environmental damage, health risks, and costly repairs.

Sienna MX1 Meter Unit Interface



BrightCity Sienna MX1 Meter Interface Unit (MIU) is an endpoint device designed to enable wireless network connectivity for unconnected water meters, converting them to smart wireless water meters through simple plug-and-play.

With wireless network connectivity enabled, it automatically and accurately collects, stores, and transmits meter readings to a Water Advanced Metering Infrastructure (AMI) field network.

When integrated with BrightCity Meter Data Management System (MDMS), Sienna MX1 empowers water utility operations to precisely manage water distribution and operations network.

System Level Benefits

PROACTIVE RISK MANAGEMENT

Prevent flooding, sewer overflow, and infrastructure erosion through early alerts.

REGULATORY COMPLIANCE

Ensure adherence to water quality and environmental standards.

SCALABILITY

Easily deploy across small towns or large metropolitan networks.

ENVIRONMENTAL PROTECTION

Minimize contamination risks and protect ecosystems during heavy rains.

OPERATIONAL EFFICIENCY

Reduce manual inspections and labour costs with automated monitoring.

DATA-DRIVEN DECISION MAKING

Real-time insights for optimizing water distribution and reducing non-revenue water.

COST SAVINGS

Avoid expensive “rip-and-replace” projects by retrofitting existing meters.

CUSTOMER SATISFACTION

Enable accurate billing and transparency for end-users.

SYSTEM LEVEL FEATURES

MULTI-SENSOR INTEGRATION

Supports water meters, pressure sensors, and level sensors in one unified platform.

DRIVE-BY & FIXED NETWORK MODES

Automatic switching between cellular (NB-IoT/CatM) and SRRF for flexible data collection.

REAL-TIME DATA TRANSMISSION

Continuous monitoring with configurable intervals (e.g., every 15 minutes).

ENCRYPTED COMMUNICATION

End-to-end encryption for secure data transfer.

REMOTE FIRMWARE UPGRADES

Supports remote Firmware-Over-The Air (FOTA) for easy maintenance and management.

EVENT & TRIGGERED ALARMS

For leakage, backflow, overflow, pressure anomalies, and tamper detection.

20-YEARS BATTERY LIFE

Long-lasting battery for in-field deployment up to 20 years at 15-minutes reading interval and transmission once a day.

FLEXIBLE IN-FIELD INSTALLATION

Designed for easy deployment, suitable for both pit and wall mounted set-up.

CLOUD-BASED MDMS INTEGRATION

Centralized data management with dashboards and analytics.

IP68 PROTECTION

Designed to withstand harsh pit, outdoor and sewage environments.

OPEN PROTOCOL COMPATIBILITY

Supports multiple meter standards such as UI1203, ARB VI, ARB VII, as well as standard protocols of various sensors.

WIDE APPLICATION AREAS

Add-on sensors enable monitoring for every application, from water pressure and sewage level to water leakages and water quality.

Sienna MX1 NBM – Technical Specifications

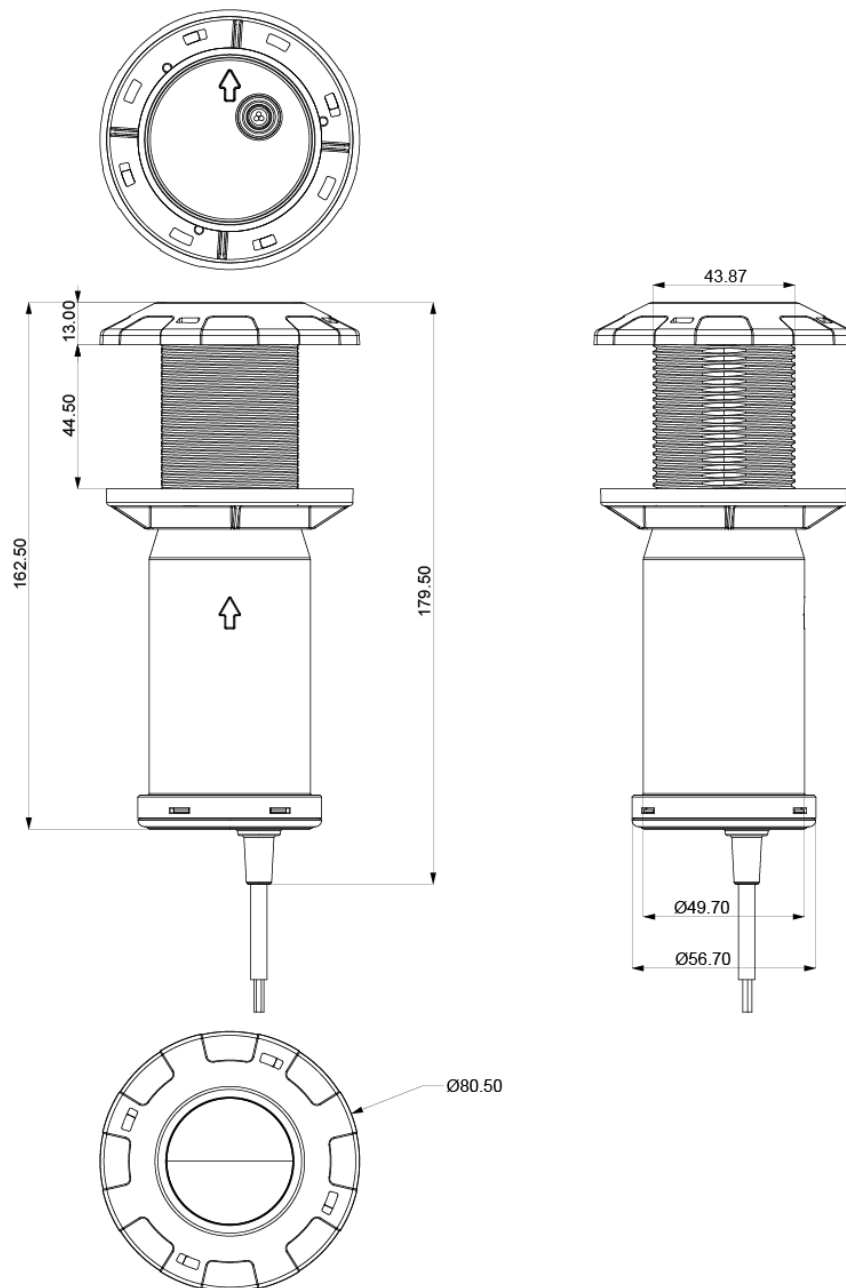
System

Battery Type	Li-ion	Device Activation	Magnetic sense
Operating & Storage	<100% RH	Availability	Semi on-demand
Connectivity	Main: NB-IoT/LTE-M Secondary: SRRF	Frequency Bands	Cellular: LTE bands SRRF: Sub-Giga

Certifications, Standards and Compliance

ISO Quality Standards	ISO9001, ISO27001, ISO14001, ISO45001
Safety	IEC 62368-1
EMC	NB-IoT/LTE-M - ETSI EN 301 489
Radio	47CFR FCC Part 15 NB-IoT/LTE-M - ETSI EN 301 489
RoHS	Yes
Ingress Protection	IP68 per IEC 60529-1

Mechanical Dimension



Sienna MX1 NBM-LKS (Encoder & Valve)

Product Benefits

- ▶ Remote valve control reduces emergency response time.
- ▶ Detect abnormal consumption patterns for leak prevention.
- ▶ Supports dual encoder configuration for cost efficient solution.

Product Features

- ▶ Remotely monitors water usage and valve status with near real-time data and alarms
- ▶ Provide actionable insights to detect leaks and optimize water usage
- ▶ Remote valve actuation (open/close commands)
- ▶ Automatic detection of valve position mismatch



Product Specifications

Battery Life	Up to 20 years
Operating Temperature	-30°C to +70°C
Water Meter Protocol	UI1203, ARB VI, ARB VII
Meter Alerts and Alarms	Leakage, Zero consumption, Battery monitor, Reverse flow, Max flow exceeded, Back flow, Excessive use, Temperature monitor, Tamper
Valve Alerts and Alarms	Position mismatch, remote change, no communication

Sienna MX1 NBM-PRS (Pressure Sensor)

Product Benefits

- ▶ Maintain optimal pressure to prevent pipe bursts.
- ▶ Detect pressure anomalies that indicate leaks or blockages.
- ▶ Improve energy efficiency by optimizing pump operations.

Product Features

- ▶ Monitor water pressure at critical points with real-time alarms for threshold breaches.
- ▶ Help prevent pipe bursts and maintain optimal pressure for efficient water distribution.
- ▶ Configurable pressure thresholds for alarms.
- ▶ Compact design for easy pipeline integration.



Product Specifications

Battery Life	Up to 10 years
Operating Temperature	-30°C to +70°C
Accuracy	PRS: $\leq \pm 1\%$ FSO
Pressure Range	10 Bar to 100 Bar (on request)
Alerts and Alarms	Lower / Upper pressure

Sienna MX1 NBM-LVS (Water Level Float Sensor)

Product Benefits

- ▶ Prevent property damage by detecting overflow early.
- ▶ Ideal for hazardous environments with robust IP68 protection.
- ▶ Flexible cable lengths for diverse installation scenarios.

Product Features

- ▶ Monitor sewage or storm water overflow conditions with real-time alarms.
- ▶ Connect to two float sensors for enhanced functionality
- ▶ Dual float sensor connectivity for enhanced functionality such as two levels or redundancy.
- ▶ Designed for hazardous industrial environments
- ▶ Supports multiple cable lengths (16.4 ft / 32.8 ft / 65.6 ft).



Product Specifications

Battery Life	Up to 10 years
Operating Temperature	-30°C to +70°C
Accuracy	LVS: ≤ 15 degrees
Pressure Range	16.4 ft / 32.8 ft / 65.6 ft
Alerts and Alarms	Lower / Upper float

Your Trusted Partner for City-scale Smart Water Solutions

ST Engineering Telematics Wireless is a leading technology company focused on creating water efficiencies and optimize water conservation through smart water metering solutions.

With 30 years of expertise in wireless communications technology and innovation, ST Engineering Telematics Wireless is known to provide robust city-scale solutions that delivers proven results for its customers around the world. To date, ST Engineering Telematics Wireless has more than 17 million wireless nodes deployed globally, empowering utility operations, from municipalities to cities, in their journey towards a water-secure future.

ST Engineering Telematics Wireless is a fully owned subsidiary of ST Engineering Group, a global technology, defence and engineering group with a diverse portfolio of businesses across the aerospace, smart city, defence and public security segments, serving customers in more than 100 countries.



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