



Technical Data Sheet of Smart Water Meter Reading



Model: S2021
LoRaPS™

First version



RETROFIT

LoRaPS™ water meter sensor enables the acquisition of water consumption data and transmits it wirelessly to the available LoRaPS™ network.

LoRaPS™ water meter sensor is meant to be attached to the existing water meter



OVERVIEW

Efficient

LoRaPS™ water meter is a bidirectional, battery-operated (battery-powered) and long-range transceiver with low power consumption.

Intelligent

Real-time data is transmitted to your LoRaPS™ device wirelessly to be processed by the software program automatically.

*PS= privacy system



Water metering

A regular and detailed report is provided

Leakage and usage detection

LoRaPS™ water meter sensor can be configured as a detector to send alerts when leakage/usage is detected.

Tampering detection

Sensor sends an alert when optical and magnetic tampering is detected.

APPLICATIONS



FEATURES

Long range wireless data transmission	Long wavelength with high permeability
Information aggregator	Temperature and consumption
Optical detection of the water meter	Infrared (Sensor Privacy)
Magnetic detection of the water meter magnetic dial movement	Sensor Privacy
Pre-installed long-life battery	Rechargeable with one charge
Water metering	No contact
Thermometer	0 ~ 45 Degree
Backflow detection	Invert the meter
Removal detection	Sensor removal detection on the meter
Tamper alert	To office center
Leakage/usage detection	Using a probe
Configurable reporting interval	Software
Easy installation	fasten with a buckle
Secure communication	Hardware and software
Average life 8 years	*
Modbus Output	Protocol RS485 & 232
Operating voltage of 3.7 volt	with the ability to charge the battery through USB
The ability to be connected to the current software of the water company	Through the interface software
Alarm for defining domestic use from the business one	Intelligence in the type of reading
Without the need for constant connection with the center and the intermediaries	1.Standby 2.receiving 3.sending
Internal memory to keep the information up to 10 years	Internal memory

* Battery lifetime depends from the reading method and device location and reporting interval. With magnetic reading and according to the table reporting the minimum expected lifetime is 4 years.

SPECIFICATIONS

Diameter	120.0 mm
Height	36.0 mm
Water meter front panel diameter	71.0mm
Weight	55 g
Operating temperature	-35°C ... +75°C
Communication range	up to 12km*
Tx power	up to +30dBm
Rx Sensitivity	-149dBm
MAC Layer	LoRaWAN™
Communication	LoRa _ GFSK _ FSK
Body material	Polycarbonate
IP Rating	IP65
Air data rate	62.5 Max

* An environmentally friendly communication protocol is planned


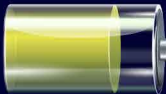


* Communication range is dependent on the location of the sensor and nearest base station.

COMMUNICATION

Bit order	LBT _ RSSI
Usage reporting	confirmed messages
Status reporting	Confirmed messages
LoRa spread spectrum	Forward error correction
Broadcast monitoring	Parameter saving



BATTERY OFFSET CHART

Mode & Years	Standby	Receiver	Sender	Connection time per day
3000 mA/t Rechargeable				
1	----	----	Full time = OK	8 Seconds
2	----	Full time = OK	----	240 Seconds
3	----	----	Full time = OK	4 Seconds
4	----	Full time = OK	----	120 Seconds
6	----	----	Full time = OK	2 Seconds
8	----	Full time = OK	----	60 Seconds
10	----	----	----	----
12	Full time = OK	----	----	86400 Seconds



SOFTWARE INFORMATION

Preparing report and plot for consumption information monthly and yearly

Preparing report for consumption information classified per city area monthly and yearly

Battery and sensor alarms (when removing sensor or draining battery)

Showing the water meter information grouped by date and time

A detailed balance report

Update the software with the server automatically

Configuration of sensors by the customers themselves (water and sewage company)

Adding new admins and users (unlimited)

SQL Server database

Adding a new subscriber without removing the previous one

Saving history of transactions for a long time

Controlling the subscribes by enabling and disabling the service remotely

Two-way communication with all sensors

The possibility of changing the send and receive bandwidths

Show the history of events

The automatic check-out

Inserting a new page info (e.g., new customer, sensor number, etc)

Easy set-up and training

Possibility of working with an interface software connecting the water meter to the mobile platform

Using two-way encryption approach to improve the security

Adjustable recalls



SOFTWARE SETTING

OS	Win 10
Programming language	Visual studio C++/ SDM
Wireless communication	Lora/ FSK/GFSK
Internet gateway	Portable
Supervisor software	Yes
IOT platform	Supportable (on request)

The screenshot displays the 'New Subscriber' window of the SOMITRA software. The interface is organized into several panels:

- Subscriber Information:** Includes fields for Subscriber Number (with a dropdown), First Name, Last Name, National Id, Purchase Date (2021-02-09), Area, and Address. A blue person icon is shown next to these fields.
- Define New Water Meter:** Includes fields for Body Number, Counter Number, Number Of Counter Digits, Pipe Diameter, Prescaler, Type Of Branch (dropdown), Credit, Serial Port Id, ReadyToSendTime, Area, and Address. A water meter icon is shown next to these fields. A 'Save Subscriber' button is at the bottom.
- WaterMeter Configurations:** Includes fields for New WaterMeter Id, WaterMeter Counter, WaterMeter Prescaler, and Number Of Digits. A 'Program' button is at the bottom.
- Financial Process:** Includes fields for Remain Charge, Date (2021-02-09), and Charge Amount. A 'Charge' button is at the bottom.
- Communication Configurations:** Includes fields for Address, Key, Net Id, Air Data Rate, Power Send, and Channel. 'Program' and 'Set' buttons are at the bottom.
- Recieve Configurations:** Includes a ReadyToSendTime field and a 'Program' button.
- Date and Time Settingd:** Includes Date Settings and Time Settings, each with 'Program', 'Set', and 'Auto Program' buttons.

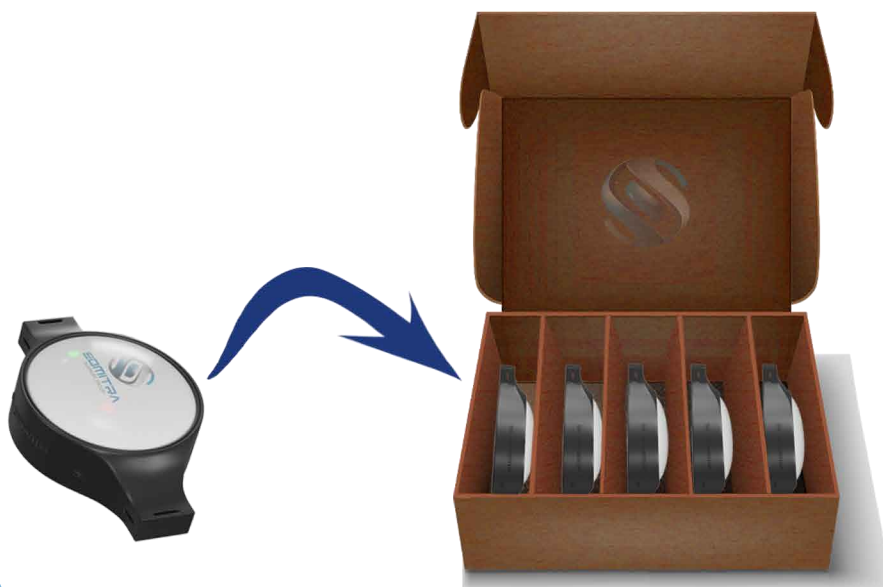
At the top of the window, there is a header bar with the SOMITRA logo, Date (2021.02), Time (10:19:42), Operator (Sam Patham), and a Logout button. A 'Warning Message' area is visible at the bottom left.



DIMENSIONS



PACKAGING



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