



# A Smart Alternative!



*IUSA makes the difference with New  
**Water Meters** with our  
**Smart Self Managed  
Metering System***

## **Water Meters**

*Patent Granted in Mexico*

*Patent Granted and/or Pending in Several Countries of the World*



## Innovating in the present, looking to the future...

IUSA, a company with more than 70 years' experience devoted to innovation and development of technologies in metering and communications, has created an innovative system for the efficient operation and management of the process of metering and marketing water: the Smart Self Managed Metering System.

### Description

The IUSA Smart Self Managed Metering System was created with the aim of making customer service processes more efficient and lowering financial and operative costs of water supply companies, while giving users control over their usage and offering them more accessible forms of payment.

This system is patented internationally and operated by means of a multifunctional electronic meter, a two ways smart card, and software that administers the process.

It has a two ways user-company communication, which allows the operator to "monitor" the user and obtain statistics on frequency of use, usage, and other technical information useful for the water supply company. Also, the company can program functions in the meter through its smart card.

Its security system secures and reliably protects all essential information for users and the company.

### Payment Mode

One of its advantages is that it can operate in prepayment or post-payment mode and is easy to administer given that both modes are configured using the smart card.

In prepayment mode, the meter informs the user that the balance is running low by means of a visual alarm, a blinking led. The user goes to the nearest point of sale with his card to buy water. There, the user requests the m<sup>3</sup> he wants to buy and makes the appropriate payment. Points of sale are located in areas near users and have convenient business hours. The user can also choose to recharge his smart card through internet, by means of a card reader. When the balance has been credited to the card, the user can set it on top of the meter and transfer the balance, which will then allow him to use water.



In post-payment mode, when the company's preset consumption cycle ends, the user must set his card on top of the meter to record his usage.

The meter will display the usage of the past month in m<sup>3</sup> and the amount due in monetary units.

The user takes his smart card to a point of sale to pay the cost of his usage. He may also make his payment through internet. Then, the user must return to the meter and set the smart card to inform it of the payment in order to avoid suspension of service.

### General Description of the IUSA Smart Self Managed Water Meter (STELLUM-MAPP-VOL 1/2):

This meter was developed and is manufactured in Mexico with the highest standards of quality and leading edge technology at IUSA's plants located in Pasteje, State of Mexico, and therefore it is considered a precision instrument for application in metering domestic water usage. Its design and the materials used, guarantee reliable performance over time.

Unlike traditional meters, the IUSA Smart Self Managed Water Meter has a shutoff valve to open or close the water flow that functions directly with the meter's digital counter. The valve can:

- Limit service when the balance runs out (Prepayment).
- Limit service if there is any debt (Post-payment).
- Limit or open service at predefined times.

The meter can keep a separate record of cubic meters in the totalizer with an independent rate to support lower income users.

The meter has the capacity to record events and report them to the Self Managed System indicating date and time of occurrence, such as:

- Opening or limitation of service due to recharge (Prepayment).
- Opening or limitation of service due to payment of debt (Post-payment).
- Opening or limitation of service at predefined times (Prepayment/Post-payment).
- Opening or limitation of service at the customer's option (Prepayment/Post-payment).
- Maintenance.
- Monthly usage in m<sup>3</sup> up to 12 months.
- Load profile every 15 minutes during a month.
- Change of operating mode Prepayment or Post-payment.
- Tampering such as:
  - Removal of covers.

It also has a Smart Self Managed device that works with recharges, usage, and balances in m<sup>3</sup> built into the meter display, which interacts with a contactless rechargeable card, that is capable of communicating with the meter without the need for additional hardware devices or slots and without the use of batteries.

Also, the Water Meter is designed under the technical and metrological specifications of Standard NOM-012-SCFI-1994, Standard AWWA C700, Standard ISO-4064-1995 and IP68.

The meter's functional autonomy is achieved by means of a long-lasting battery, which is guaranteed for 10 years' normal operation.

### Meter Metrological Characteristics:

- Volumetric meter.
- 5/8" Class B.
- N 1.5
- PN 10 bar.
- 1 bar pressure loss.
- Liquid crystal display with 8 digits, 4 indicating cubic meters and 4 liters.
- Alarms for unauthorized opening of covers.
- Shutoff or restricting valve with 10-Bar capacity.
- Long-lasting battery (10 years' normal operation).
- Contactless two ways communication smart card.
- Record of water flow always positive, regardless of flow direction.

### Contactless Two Ways Smart Card

Information (reading, charge, profiles, etc.) is transferred by means of contactless cards, which offer greater efficiency by eliminating the need to introduce codes or cards in the meter. Each user receives a unique and permanent card that is linked to his meter.

This card's communication with the meter is in two ways. This means that information can be transmitted from the card to the meter and from the meter to the card simultaneously, with no restriction on the number of operations, and above all, with no contact between them. This communication is carried over a RFID.

The card incorporates the strongest security measures to prevent duplication or misuse, with all the data stored on it encrypted with

security standards like those of the banking system.

### Management Software

The system includes a management software that is installed at the company's branch offices or authorized points of sale. The functions that can be performed using this software include:

- Sale of m<sup>3</sup>.
- Replacement of lost cards.
- Registration, cancellation, and change of users.
- Restore misplaced sales.
- Generate reports.
- Configure meter operation.
- Configure rates applicable to sales.
- Administer system operators by means of authorization levels.

The management software installed at branch offices adapts to the different rates of the utility.

### Features and Benefits of the IUSA Smart Self Managed System:

- Contactless two ways communication card.
- Two-ways communication.
- User autonomy in payment for service.
- Exchange of data and creation of databases to generate statistics and reports on:
  - Consumer profiles.
  - Tampering detection.
  - Sales.
- Total control of supply and automatic suspension or restriction of service.
- Replacement of lost cards.
- Only one card per meter.
- High security levels.
- Configurable rates for sales.
- Monetary unit record of the previous and current month water usage based on the utility's rates.
- Load profile every 15 minutes during a month.
- Multi-operator management software.
- Lower operative and administrative costs.



## Advantages of the System

### Users

- Total control of water usage.
- Flexibility that allows the user to decide when and how much to buy.
- Convenience, because services can be purchased at authorized establishments near the user's home, with longer business hours and without the need to wait in line. Also payments and purchases of water can be done through internet
- Security, because the smart card is nontransferable and works only with the meter to which it is assigned.

### Water Supply Company

- Guarantees revenue from advance and on time payments of water sales, with the financial benefits it entails, completely eliminating delinquent users and bad accounts.
- Lower administrative costs; expenses related to periodic readings, as well as issuance and distribution of bills, disappear completely. Consequently, the number of users attended at the company's offices is reduced considerably.
- With the online management software IUSA has developed, water supply company executives will be able to access all kinds of information and reports designed in accordance with their needs. Water sales, number of recharges, value of recharges, consumer profiles, demand profiles, suspension for lack of balance, water outages, failure reports, and tampering will be reported to service providers. The field information reported by the system will allow them to make better decisions to control, analyze, plan, and administer the services they provide.



**The IUSA Smart Self Managed Metering System is unquestionably the most innovative solution for water marketing.**

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