



**Design, Development and
Manufacture
of Electronic Equipment**

STS COMPLIANT DOMESTIC & COMMERCIAL PREPAID WATER CONTROLLER

Model: PWC 200

The PWC 200 (Prepaid Water Controller) is a smart electronic device for the delivering of prepaid water to residential and commercial installations. The PWC works in conjunction with the 220C pulse output water meter from Sensus, fitted in a secure above-ground or wall-mount meter box. A wireless Consumer Interface Unit (CIU) installed inside the house provides credit and consumption information to the consumer as well as entering of prepaid credit tokens. It is the ideal system for delivering prepaid water as well as free basic water to private residences, complexes, estates, low cost housing developments and landlords.

The PWC features an 868 MHz bi-directional encrypted radio communications link, enabling remote meter interrogation, Automated Meter Configuration (AMC) for remote mass meter re-configuration, Automatic Meter Reading (AMR) for walk-by or drive-by data collection or fixed network access. For AMR the user has the ability to pre-select only the required data fields to be uploaded from the meter. Data is uploaded in CSV format for easy integration to third party systems or Microsoft Excel. AMC allows for mass meter re-configuration without physically attending to each meter, using drive-by or walk-by methods.

Modes of Operation

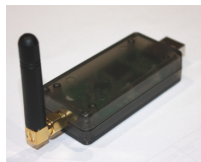
In Prepaid Mode the PWC needs to be loaded with credit before water is delivered. Debit Mode allows the consumer to use water first, before having to load new credit. Fixed Water Dispenser mode delivers a pre-set daily or monthly allowance, without the option to load any credit. In Conventional Mode the PWC turns the mechanical meter into a smart water meter, with an optional daily delivery restriction, using AMR to upload meter readings for import into a billing system.

Programmable to:

- deliver daily or monthly Free Basic Water (FBW) automatically based on a preset volume or time period. Optional accumulation of un-used water.
- close the meter once a preset daily Water Conservation Limit is reached, regardless if there is credit on the meter.
- allow for Lifeline Credit if the consumer cannot immediately purchase credit. The PWC dispenses a limited daily volume, for a limited number of days, until such time new credit is loaded. Lifeline Credit consumed is recouped from the purchased credit.
- deliver Emergency Water in needy situations such as fire. A preset annual allowance is available at no charge, activated from the CIU.
- allow Social Grant Tokens. A specially designed token that loads credit with an expiry date. Once the expiry date is reached the Social Grant credit is removed from the meter. Contact the manufacturer for more information on this feature.

Accessories

The PWC400 is a USB enabled device used to perform remote interrogation while being in close proximity of the meter. Using the Field Maintenance Terminal (FMT) software running on a rugged portable device, the configuration of the PWC can be modified as well as basic diagnostic and historic data can be retrieved. This device is also used for walk-by and drive-by AMR data collection.



PWC400 Data Collector



Specifications

- Large 1.8" LCD with user friendly icons
- Optical Communications Port
- 868 MHz bi-directional radio communications
- Radio range up to 500m line of sight
- Internal Antenna
- IP68 (Submersion 1 meter for 2 hours)
- Operating Temperature -10 °C to 55 °C
- Field replaceable battery with up to 10 year life
- Max flow rate 3600 Litres/hour
- Totalizer resolution 0.0005m³
- Measurement – Cubic Meters (m³) or Gallons (GAL)
- Pressure Range: 0.5 to 15 Bar.



PWC200 Control Unit with Water Shut-off Valve

PWC 200 Features

- Split Meter System
- Daily or Monthly Free Basic Water
- Lifeline Credit
- Emergency Water
- Leak Detection
- 90 Days Hourly Data Logger
- AMR / AMI / AMC
- Secure Encrypted Communications
- Water Conservation Limit
- Up to 10 Year Battery Life
- 15 Bar Pressure Rating
- Tamper Detection on Meter Box
- Utility and Consumer Lock



Surface or Wall mount with
Sensus 220C meter



Above Ground
Prepaid Water Metering System

Customer Interface Unit (CIU)

The PWC 250 CIU is wall-mounted inside the consumer house, linking up with the PWC via radio secure communications link. The CIU indicates the credit remaining on the PWC and facilitates the entering 20 digit prepaid credit tokens. The CIU refreshes itself automatically every hour or on demand. A number of user commands are available on the CIU as a tool to manage credit and water usage.

Optionally, the CIU may be fitted with an additional Sigfox certified radio, connecting to the Sigfox network. A preset packet of data is sent daily, which includes the meter reading, consumption, leak size, valve & credit status and possible error flags. This information is uploaded to an online portal for utilities and management companies to access their meter information remotely.

STS Compliant Vending

The Standard Transfer Specification (STS) has become recognized as the only globally accepted open standard for prepaid electricity, water and gas, ensuring interoperability between vending platforms and utility meters from different manufacturers. The application of the technology is licensed through the STS Association, this ensuring that the appropriate encryption key management practices are applied to protect the security of the prepayment transactions of utilities operating STS systems.

The tried and tested STS prepayment specification, has over the years established itself as a preferred and renowned technology and is being used for electricity, water and gas prepayment, initially in South Africa and subsequently in many developed and emerging economies. To date, over 30-million STS-compliant meters have been installed at more than 400 utilities in 86 countries around the world, supported by over 200 STS Association members.

The PWC is approved by the STS Association to conform to the IEC 62055-41 and 62055-51 standards. The system allows for multiple vending options from any participating STS

Water Management Tools available on PWC250 CIU

- Credit type being delivered Paid Credit, Free, Lifeline, etc.
- Loading of prepaid water tokens
- View unique Prepaid Number to purchase more credit
- View electronic meter totalizer reading
- History of last 10 tokens, with credit value and date entered
- View consumption for the current day and month
- View average monthly consumption
- Monthly consumption history over the last 3 months
- Warns of possible water leaks on property
- Lock and unlock the meter, stopping water delivery when not at home
- Resettable User Totalizer for event specific measurement
- View total credit-to-date and consumption-to-date totals
- Activate Emergency Credit



Wallmount solution using Sensus 220C



PWC 250 CIU




PWC 250 CIU Features

- Sigfox Ready
- Icons indicating Valve Status, Water Leak & Battery Low
- STS Prepaid Water Credit Tokens
- Credit Low indication
- Wall-mount or Handheld
- Secure Encrypted Communications
- Keypad Lockout
- Up to 5 year Battery Life
- User Replaceable Batteries

Specifications

- Large 1.5" LCD with user friendly icons
- Dimensions: 78mm(w) X 142mm(h) x 21mm(d)
- Radio range up to 500m Line of Sight
- Wall mount or Handheld
- Mounting: 2 Wall plugs & screws or Double Sided Tape
- Dust / Water Resistant Rating: IP52
- Operating Temperature -10 °C to 55 °C
- User replaceable battery with up to 5 year life
- Battery Type: 2 x AA Size Alkaline
- Keypad: Silicon pushbuttons with tactile feedback

REV4

 <p>sigfox READY</p>	 <p>STS ASSOCIATION IEC62055-41 & IEC62055-51 Certificate: STS658</p>	<p>N.R.C.S. SANS152901:2006 & SANS1529-9:2008 Certificate:SA1453-AA5</p>	 <p>ICASA EN300 220, EN301 489-1, 3 & EN60950 Certificate: TA 2017/2033</p>
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