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Company Overview

Since the inception of the South African prepayment industry in the late 1980s, Conlog has been at the forefront of pioneering solutions that meet the needs of utilities worldwide.

The combination of a superior product range, coupled with a desire to meet and exceed our customer needs has resulted in our leadership position.

Products for today and tomorrow

We specialise in providing prepayment solutions for the delivery of electricity services. Our broad product offer encompasses prepayment meters, vending, revenue management, maintenance, support and consultation, as well as a dedicated and accredited training facility for all aspects of prepayment.

This comprehensive and holistic approach enables customers to reap the full benefit of their investment and ensures sustained success, into the future.

Platform of excellence

We strive for excellence in all areas of our business. To this end, the company’s manufacturing facilities are independently accredited with ISO 9000 (quality), ISO 14001 (environmental) and OHAS 18001 (health and safety) standards.

All products meet and exceed the highest international standards, such as the International Electrotechnical Commission (IEC), the South African Bureau of Standards (SABS) and the Standard Transfer Specification (STS).

The STS organization in particular is a globally accepted standard for prepayment systems, of which Conlog was a founding member. In addition, the company operates a variety of internationally endorsed improvement programmes, such as Six Sigma, Kaizan and Lean.

Our engineering department boasts many experts in their relevant fields, including project management, embedded software engineering, hardware design, validation, mechanical engineering, systems engineering and research and development. Conlog engineers are well equipped with the knowledge and experience required to develop products that constantly outperform the rest.
Supporting your success

Conlog’s wealth of experience and knowledge is unrivalled and the company has hundreds of years of collective experience in prepayment. This provides Conlog with the ability to guide, counsel and mentor customers in the right prepayment solution for their needs, both today and tomorrow. In addition to consulting, we offer a broad array of professional support services, such as:

Infrastructure design
Our specialists create an integrated and technology-proof solution for your site, which encompasses equipment, software, communication and disaster recovery.

Project management
On-site project management personnel are deployed to assist you in the establishment of your prepayment site; providing best practices and, more importantly, instant and accessible support.

Data management
Our data specialists provide high level migration and integration of your existing data into a variety of databases and systems, to ensure you have the information you need, when you need it and where you need it.

Business intelligence
There is an ever increasing demand for information that provides insight and value to the business operation. This is achieved through purpose built reports and data analysis, to ensure you have the information at your fingertips to make those critical business decisions.

Service level agreements
Utilities are assured of guaranteed service through the use of our SLAs, which incorporate defined response times, along with the inclusion of software updates and access to our self-service forum and knowledge base.

Service centre
Our qualified service personnel are available seven days a week, 365 days a year, to provide customers with first-line technical support. Accessible through telephone, internet, email and more, the service centre is also the hub for critical support deployment.

Project engineers
Our dedicated project engineers are available worldwide for the deployment and commissioning of prepayment solutions. With solid backgrounds in IT and prepayment, they ensure our customers’ sites are operating optimally and efficiently.

Training
Complementing the full suite of prepayment products is our dedicated and independently accredited training facility. Customers can receive extensive training in all aspects of prepayment, either at Conlog’s training facility, or on site at the relevant project.
Conlog has the world’s largest installed base of prepaid meters, spanning more than 20 countries on four continents. Furthermore, over 70 utilities worldwide utilise our solutions and consider Conlog their preferred prepayment provider. With systems that are available in English, Arabic, French, Spanish and Portuguese, our products have been able to reach millions. In addition, as a part of the Consolidated Infrastructure Group (CIG), we have access to a network of offices and resources spanning over 100 countries.
At the heart of our business is the production component, dedicated staff work tirelessly to ensure our process runs like a well-oiled machine. The production team at Conlog are committed to ensuring our customers receive their goods timeously without compromising the quality, utilising state of the art technology.

Conlog’s production process comprises the following elements:

**Surface Mount Assembly (SMA)**

> Automated placement and soldering of electronic components on printed circuit board
> Throughput capacity of 55000 components placed per hour
> X-Ray and Optical Inspection equipment ensure accuracy and consistency

**PC Board Assembly (PBA)**

> Manual insertion of through-hole components onto SMA
> Automatic wave solder process
> Intelligent selective spray method for application of conformal coating (protection against environmental elements)

**Final Assembly and Test**

> Mechanical assembly and test at final production
> Through-put capabilities of producing in excess of 130 000 meters per month.

“Our meters are manufactured to the highest quality standards”
Conlog is a global leader in prepaid solutions, our broad product offering encompasses prepayment meters, vending, revenue management, maintenance, support and consultation and training.

1965 Conlog is established in Durban, South Africa as an electronics design company.

1965 - 1980 Focusing predominantly on the industrial sector, Conlog designed and manufactured monitoring and control devices as well as alarms, with a special focus was the refinery industry.

1980 Conlog begins diversifying into new industries such as lighting, automotive alarms, cruise controls and electricity prepayment.

1990 Conlog excels within the automotive products and prepayment solutions

1997 - 2001 The company begin to specialise in prepayment, the industrial automation and automotive division are sold.

2000 Conlog becomes a part of the Schneider Electric group.

2016 Conlog becomes a part of the Consolidated Infrastructure Group (CIG)

**Milestones**

1989 Official Eskom contract supplier of pre-payment electricity meters

1995 Exported 46 000 meters to Tanzania

1998 World first pre-payment solar home system is launched

2000 Conlog ships its 2 millionth meter

2000 ISO 9001:2000 accreditation

2002 Awarded 80% of the Eskom national metering contract

2003 Conlog ships its 3 millionth meter

2008 OHSAS 18001:2007 accreditation
Awards

Conlog has received a number of accolades, listed below are some of the many achievements the company has made through the years.

> The inaugural Innovation Award for the prepayment industry
> Winner of the Best Metering Company award six times out of eight
> Winner of the Exporter of the Year award
> Winner of Best Metering Company for the sixth year out of eight
> Winner of the 2010 Metering Excellence award for our Service Desk
> Silver award from the Electricity Supply Industry for Best Service Provider
> Received the Impumelelo Top 300 Black Empowered Companies award
> Ranked top three in the Technology Top 100 ICT category

Achievements

Conlog has gone where no company has gone before and fearlessly paved the path for others; as a result we have developed many industry firsts.

> Developed the standard for the secure transfer of credit, Standard Transfer Specification (STS), an IEC standard (62055-41)
> Designed the industry’s standard wallbase for electricity meters
> Developed the world’s first commercially available 250A prepayment meter
> Developed the common vending system
> Created the South African Electricity Basic Support Tariff (EBSST)
> Developed the first commercial scratch-card solution for prepayment
Prepayment & Solutions
Overview of a prepayment solution

A prepayment system, or solution, comprises three mandatory components:
> Prepaid meters: the measurement and metering device
> Vending system: a system that consumers visit to purchase their electricity requirements
> Revenue management system: installed at the utility to manage the prepayment infrastructure

There are then additional aspects that are optional, yet highly recommended:
> Support services: comprise service level agreements, maintenance contracts and onsite support as required
> Training: accredited training in all aspects of prepayment, to ensure transfer to knowledge and skills to utility personnel
> Consulting and project management: effective in providing on-the-ground expertise and guidance for the deployment of prepayment

The first step in the process is to install and commission the vending and management system. The vending unit(s) should be installed in close proximity to the customers, while the management and vending server is installed in the utility offices.

Conlog undertakes the installation of the computer software and systems, to ensure that all the necessary elements are incorporated, such as the tariff rates and indexes, any arrears collection or data migration from an existing system. Once this is complete, meter installation can begin.

Consumers can only purchase electricity once the vending system has been installed and can be registered on the management system, by assigning an account and a meter to the individual. The meter is then installed by a qualified electrician and a certificate of compliance/or installation is issued. The consumer information is automatically downloaded into the vending unit, so that purchases can be made by supplying the meter serial number, or account number.

Management System

Using prepayment

Prepayment is a simple and user friendly system, the consumer goes to a vending site and supplies the vendor with the amount of money that they want to purchase electricity for, along with the meter serial number or meter swipe card.
> The vendor creates the transaction on the vending unit and returns a token (often a paper receipt), comprising 20 digits, to the consumer.
> The transaction is automatically recorded in the management system at the utility’s office.

> The consumer takes the token back to their premises, and enters the 20-digits into the meter via the keypad.
> The consumer’s electricity supply should now be connected. As the user consumes electricity, the meter will deplete the credit. When it nears the end of the credit, the meter will alert the user. If no additional credit is purchased, the meter will suspend the supply. The consumer will have to purchase another token before power is automatically reconnected.
Understanding electricity

There are three key areas in the electricity industry:
> Generation
> Transmission
> Distribution

Electricity is generated at a power plant; this electricity must be transported, often over long distances to the consumer. A transformer is used to step up the voltage of the electricity, as this is a more efficient way to transport the electricity over long distances.

The transmission lines carry the high voltage electricity across the country into substations near businesses, factories and homes. At the substation a transformer steps-down the high voltage and changes it to low voltage electricity.

The electricity is then sent to the end user through distribution lines, which have another transformer on the pole top to further step-down the voltage, before being connected to the property.

Distributing electricity to households

Power stations supply three-phase electricity, as this is a more consistent form of electrical power and is easier to transport. Three times the amount of electricity can be transported without having to increase the thickness of the wires.

Three phase electricity is traditionally used for industry, offices and factories, where they require larger amounts of electricity than regular consumers. These businesses would receive a full three-phase supply, along with a neutral. Consumer households only require one phase of the three-phase supply. The three-phase cables come down the street and individual phases are taken to supply electricity into the house, along with a neutral.
Conlog’s AMI solution:

Solutions: Smart enough

What is Advanced Metering Infrastructure (AMI)?

All the pieces have come together in one perfect fit with Conlog’s AMI solution, POWERnova. Conlog has redefined the concept of an advanced metering infrastructure and with that surpassed what the industry thought was possible.

AMI is an infrastructure for two-way communication between the meter and a Utility. The objective of an AMI system is to provide Utilities with real-time data about energy consumption and allow them to remotely manage their metering devices. It also allows consumers to make informed choices about their energy usage.

How it all began

The concept of an AMI system comprises various products each unique in its functionality. Conlog’s AMI system is exceptional in that it caters for current utility requirements, however has accommodated for extensive upgrades as technology advances.

The system was designed around our flagship meter, the wBEC44(09). This product provided the building block for the AMI system, the first wireless meter in its range, the wBEC44(09) communicates with a wireless User Interface Unit (wUIU(09)) via radio frequency (RF). The meter can operate as a prepaid or conventional credit meter and has configurable life-line and administration options amongst its many other features.

The development of the wBEC44(09) has created the platform for many other products to follow. The Wireless Meter Interface (WMI(09)) enables hard wired Conlog split meters to communicate through RF and thus provides a means for your existing meters to be incorporated into the AMI system. The Wireless Extender (WEX(09)) was developed to extend the range between the wUIU(09) and wBEC44(09) as well as meters connected via WMI(09)’s and is ideal for use in built environments, a single WEX(09) can support up to 24 devices.

The next development seamlessly propelled Conlog into the world of AMI, the data concentrator unit (DCU(09)) and the POWERnova communication server opened the door to a world of possibilities. The data collected through our metering devices, could now be processed, read and used in the most efficient way possible. The DCU(09) coupled with the communication server enables two way communications to the meter, enabling token routing, remote meter management and demand side management to mention a few.
What can POWERnova do for you?

POWERnova offers the Utility a wide range of services:

> Meter management
> Token routing
> Consumption profiling
> Remote meter management
> Demand side management
> DCU(09) management
> Event notification
Meter management

Meters are discovered automatically and remotely read by the DCU(09) which maintains a meter device list. POWERnova can then request this data from the DCU(09) or the data can be uploaded at intervals dependant on the configuration of the system. Various information including the meter serial number, GPS coordinates, meter status and meter total to date can be read from the system.

Token Routing

POWERnova has the capacity to route tokens directly to the meter. Credit tokens, management tokens, and Conlog Meter Function tokens can be routed directly from the communication server to the meter, eliminating the need for technicians to physically enter a token into a meter thus reducing labour costs and improving efficiency.

Consumption Profiling

Consumption profiling is one of the highlights of POWERnova, the ability to profile individual meters or a group of meters based on their consumption will equip Utilities with the knowledge to identify potential problems and manage the strain on the grid. These profiles can be used to generate reports to the Utility. Through consumption profiling, energy balancing is possible, which enables Utilities to identify possible electricity theft and other non-technical losses.

Remote meter management

Traditional meter management in itself required a large number of valuable resources and often resulted in the Utility losing money through delayed detection of meter tampering etc. With POWERnova, meters can be remotely connected and disconnected with the click of a button. All tamper events are logged by the DCU(09) and this information is carried through to the communication server.

Demand side management

With an increasing population there is the ever increasing demand for the supply of electricity. Utilities worldwide face this issue and have no option but to restrict the load of consumers. POWERnova controls this process in the form of scheduled load restriction (scheduled peak times) and critical load restriction (extreme peaks). Smart switches fitted in the consumer household will assist by automatically reducing the load during restriction period; however the switch can be configured to selectively reduce the load.

DCU(09) management

Through POWERnova an operator can view all the DCU(09)’s that are listed on the system, together with their geographical location and their status indication. A DCU(09) can be configured from the communication server.

Event notification

The DCU(09) notifies POWERnova of events occurring in metering devices. The events are logged to the DCU(09) file system with date and time stamps and can be retrieved remotely by POWERnova or locally by a technician with a wFST(09). The DCU(09) immediately establishes a connection with POWERnova when an event occurs and reports the type of event on demand. All tamper events are logged by the DCU(09).
Asset Management & Workflow

The introduction of an asset management and workflow solution into an organization can help greatly improve operational efficiencies, reduce costs and improve service quality.

Background

Conlog has received Customer queries regarding an asset management and workflow system. Today businesses are driven by IT solutions to deliver strategic value. Conlog has selected the software package FrontRange HEAT to create an exciting offer for an Asset Management and Workflow System.

The solution is fully customizable to strategically enable our Customer’s to perform, workflow-based service management activities that range from straightforward service desk operations to more complex and configurable service management workflows built on industry standards.

Scope

Customers not only require a system to manage revenue collections but a total solution to manage prepayment assets, like meters, box enclosures, light poles and other peripheral devices. The core function of Conlog’s Ultima suite of products is natively a revenue management system, and with the increasing requirement for an asset management and workflow system Conlog to deliver a customized solution on an Industry leading product. Leveraging on years of expert experience in the metering industry, Conlog is able to offer customized HEAT Service Management to align with our Customer’s specific needs to deliver a robust solution that will suit our Customer’s business ethos.

Theory

The need to manage assets and incidents can easily be achieved with HEAT Service Management. It brings together a comprehensive service and lifecycle products that are designed to improve service levels and productivity, follow industry standard best practices and align the prepayment department to deliver business value. Whether the requirement is for a basic service desk, or more advanced service management processes HEAT Service Management can easily scale to meet the specific needs required to deliver quality service.

With the right solution in place our Customers will be able to:
• Reduce call volumes by maximizing operational efficiencies,
• Reduce customer complaints by ensuring all aspects of work carried out is managed,
• Improve service quality by reducing the number of service calls,
• Manage and track assets throughout its life-cycle.

Incident Tracking and Management

A service management department is driven by effective incident management. Conlog has implemented HEAT which has been customized to manage all service related incidents. This customization can be easily extended at Customers requiring an incident management system.

Extensible Platform

The HEAT Service management solution includes reporting and analytical dashboards, a business process automation platform and easily customizable integration platform. The system and can be easily configured and integrated in to the prepayment systems to meet our Customers business requirements.

Asset Management Lifecycle

HEAT Service Management allows you to take control of your infrastructure with end-to-end change release configuration management workflows and best practice templates, so you can monitor and manage your assets from a single location. Heat can be used for complete asset management lifecycle. For example, a meters status can be tracked throughout its progress in an organization. All other assets like, DCU's, Wex's, light poles can also be managed in the asset management application.
Inventory Control
Heat customisation provides complete inventory control as part of HEAT Service Management. The proper management and control of all prepayment assets will help improve efficiencies and reduce costs.

Audit Logging
It is important to ensure that all changes requested, were implemented correctly. Complete audit logging ensures security can complete control over assets.

Meter Deployment Approval Process
For strict management and control of meters during rollout, a complete workflow can be implemented, controlling the release of assets only once approved for installation/rollout.

Order Processing
The system can be used to effectively control the placing of orders for new equipment due to the accurate management of assets. A workflow can be easily created to trigger the ordering process once stock levels reach a low threshold.

Mobile UI Access
A very useful functionality is the ability to access a customised UI via mobile devices. This is effective for on-site service management. For example, a meter installer can update the status/progress of an installation immediately once the work is complete, rather than having to wait to get to an office workstation to complete the job.

Dashboard
Heat frontend application has a built in dashboard for easy access to vital information and statistics concerning the management of assets. With Heat dashboards and alerts, customers can easily stay in control and monitor KPI’s.

Reporting
On-going analysis is important to understanding how effective a Business is at managing services. HEAT provides flexible and robust KPI reporting to help Customers analyze the information that is needed to make the right decisions and to continuously improve overall service delivery levels, resulting in overall better customer satisfaction.
Business Intelligence

Business Intelligence (BI) is a set of tools, software applications and techniques that is used to manipulate data to provide meaningful and useful information for the purpose of business analysis. The key is to be able to display decision making information in a in the form of a single dashboard that conveys critical information about the business. In a similar way, a dashboard of a car provides the driver with visual information on the critical systems necessary to operate the car. This allows the driver to make decisions based on the information displayed, like short term data for controlling the speed of the car or knowing when to top up on gas. Medium term data is also available, like when the car is due for a service. A business with access to an effective dashboard utilizing effects such as charts and dials will help give meaning to the data available and help monitor the state of the business and gain insightful information to able to confidently make the right decisions when required to do so.

Background

The key to the successful management of a prepayment or AMI solution is the accessibility to quality reports, as and when required. Conlog has developed a range of reports that enable customers to obtain the relevant data, required to manage day to day operations, however to date these reports have been static list style reports that are built using Microsoft SQL Reporting Services. These traditional reports do have a place in the business, but there are a number of disadvantages to static reporting, namely;

- High Level of SQL skill is required to edit reports.
- Long turn around for service requests and changes to customer reports.
- SQL resources are rare and costly.
- Reporting only provides historical data.
- Extracting reports is often time consuming due to IT system limitations.

In today’s fast paced and ever changing climate, just looking back at historical data is not enough to enable an Organization make strategic decisions about the future. Businesses require the ability to interact with the data; to perform multi-dimensional analysis that provides meaningful “Business Intelligence” which supports decisions and strategy. The main commercial benefit this provides to users is SPEED TO ACTION – to identify and respond to changes in the field, economic, competitive, and financial environment. This agility can become a unique competitive advantage as Utilities and Municipalities of all sizes struggle to compete in a constantly changing market.

The Theory

Traditional BI systems use reporting mechanisms that access transactional data, stored in a data warehouse. The theory is that the historical data can be measured to give a view of the status of the Business. However, although a Business can always make certain corrections in behavior by constant rear-view monitoring, if there is a fork in the road, it may not be easily seen. A sudden change in the environment may even cause a major catastrophe, and the warning signs may not be noticed. What is required is a forward looking view, one that could help make strategic decisions about the future.

BI has evolved, and now enters the realm of Predictive Analytics. Finding trends and patterns in historical data that can be extrapolated, and be used to strategically plan ahead. By using the right tools, Utilities can be prepared for and anticipate changes thereby gaining a competitive edge.

The DIKW Pyramid, also known “Knowledge Hierarchy”, the “Information Hierarchy”, and the “Knowledge Pyramid refers loosely to a class of models for representing structural and/or functional relationships between data, information, knowledge, and wisdom. Typically information is defined in terms of data, knowledge in terms of information, and wisdom in terms of knowledge.

Data is raw, and by itself exists but has no meaning. It collects and fills up databases and spreadsheets and can exist in either in a meaningful form, or be unusable. This data must be examined in order to become more meaningful.

Information arises when we examine the data. This provides a framework for understanding what the data represents. Information is data that has been given meaning by some relational connection. Information management can be useful in answering questions and is traditionally the static reporting produced by analyzing the data.

Knowledge is the ability to take an action. It is created when information is transformed through human social interactions. A single individual cannot create knowledge. Individuals within an organization must interact with information created by others to arrive at an action, a decision. This is the key. Individuals and organizations must work with the tacit and explicit information generated by others in order to devise a course of action. Often, this course of action is to generate more data, resulting in a new DIKW cycle. Knowledge leads to action.
Wisdom encompasses the best, most appropriate action. It usually arises from multiple rounds of the DIK cycle. It requires experience. The DIKW cycle often describes an analytical process, one in which simplification is key. Wisdom requires synthesis, often bringing together a wide range of knowledge created from a huge amount of information representing a tremendous amount of data.

Knowledge and wisdom can only be created by an efficient network of humans. Data can be generated with little human intervention. But to become information it must, by definition, be examined by humans. Humans must then disperse and convert this information into tacit and explicit forms for knowledge to be created. This must often be done several times, and sometimes by different groups of humans, for wisdom to be achieved.

The limiting factor for most organizations today is the creation of knowledge. It is the ability of the individuals interacting with each other together with information that is lacking. Knowledge creation, which is necessary to develop wisdom, works best in an organization where collaboration by individuals and interaction with information creates network across which this information moves rapidly.

The faster information flows to individuals, the faster the process of knowledge creation and the easier it is to make appropriate decisions. With the right tool, data generated by our prepaid systems can be used a Business Discovery tool, to expose what is happening within the organization, and be able to make strategic decisions that affect the future.

**Conlog BI Offer**

Conlog has formulated an industry leading solution using QlikView. QlikView was selected as the market leading Analytics and Business Discovery tool. Conlog is now able to migrate the existing static reports to be mapped into the QlikView solution, together with the new dynamic BI Business Discovery Solution. The new solution is presented in ‘views’ which can be accessed by users based on access controlled permissions. The information available can be viewed as:

- Dashboard (KPI management)
- Customer
- Audit
- Finance
- Meter
- Reports

As our products, customers and competitors become more connected and “Smarter”, there is a drive for Conlog to implement technology that will allow us to facilitate these customer requirements and compete effectively in the market. QlikView, an off the shelf product together with our value added reseller, can fast track the Business Intelligence and Analytics required by our customers.

**Benefits of BI**

Here are just a few of the benefits of business intelligence compared to standard reporting:

- Multi-property data selection and analysis
- Multi-dimensional data handling
- Graphical elements with various display options (pie chart, cross-tab, …)
- Analysis of Customer KPIs (revenue collections, tampering, connections)
- Forecasting and trend analysis
- Proactive strategies instead of just retroactive reporting
- Multiple export options (Excel, PDF, …)
- User definable reporting
- Month-to-date and Year-to-date comparison models
- Fully web-based user interface

**Features of Qlikview**

Some of the benefits of using QlikView as a Business Intelligence tool are:

- Use of an in-memory data model
- Allows instant, in memory, manipulation of massive datasets
- Does not require high cost hardware
- Fast and powerful visualization capabilities
- Ease of use - end users require almost no training
- Highly scalable - near instant response time on very huge data volumes
- Fast implementation - customers are live in less than one month, and most in a week
- Flexible - allows unlimited dimensions and measures and can be modified in seconds
- Integrated - all in one solution: dashboards, power analysis and simple reporting on a single architecture
- Low cost - shorter implementations result in cost saving and fast return on investment

With the right Business Discovery tool in place, Conlog is able to move an organization from information management to knowledge management.
Prepaid metering portfolio

Conlog specialises in prepayment solutions and therefore our metering product range is one of the most comprehensive in the industry. Customers are able to select from single phase devices for the residential sector, through to three phase devices for light industrial applications. We also offer a variety of metering footprints, to enable cost effective solutions for the deployment of prepayment into both new and retrofit environments.

Standard features:

All our meters are manufactured to the highest quality standards and are STS approved. In addition, all meters are available with:

- Class one or Class two accuracy
- Enhanced tamper detection
- Reverse energy detection and measurement
- Delayed reconnection
- Programmable under and over voltage trip
- History of tokens entered into the meter
- Variety of consumption information
- Consumption rate indicator
- Galvanic isolation, where applicable

Meter footprints

Most meters are available in a variety of different installation footprints, the most common of which are mentioned here:

- **DIN rail**
  A DIN rail is a standard type of metal rail that is widely used for mounting circuit breakers. This is a popular footprint for prepaid meters as many meters can be installed together in one enclosure. The term DIN derives from the original specification published by Deutsches Institut fur Normung (DIN) in Germany, which was then adopted worldwide.

- **BS footprint**
  Previously referred to as British Standard, this is traditionally used for retrofitting an existing conventional meter, and refers to the wiring of the terminal block as well as the three mounting screws. Our prepaid meters are equipped with a BS terminal block, making them ideal for retrofit installations.

- **Common base**
  Designed by Conlog and now an industry standard, the common base footprint comprises of two parts; a wallbase and the active meter. This configuration allows for the pre-installation of the wallbase and the meter can be clipped into the base when the meter installation is required.

Split / Combo

**Split**

Conlog's split metering technology comprises a metering device and a keypad. The meter is installed outside the premises, whilst the consumer has a keypad installed inside the property. With this solution, the intelligence is housed within the meter, whilst the customer keypad simply reads data from the meter. In order for the two devices to communicate, there are two options available to customers:

- **Wired solution**
  A two core cable, or twinflex, is used between the meter and the customer keypad.

- **Wireless solution**
  The meter and consumer keypad communicate via radio frequency, on the internationally open and accepted license free ISM (Industrial, Scientific and Medical) band.
**Combo**

A combo meter is a term used to describe an installation whereby the meter and keypad are combined in a single unit. The meter is installed in the consumer premises, usually next to the distribution board. These meters are available in single phase and three phase variants.

**Wired and Wireless combos**

![Images of combo meters](image)

**Post-paid**

Conlog meters are configured as pre-paid meters by default, however the (09) range can be configured to operate in either the pre-paid or post-paid mode.

In the pre-paid mode, all accounting functionality is as per standard pre-paid requirements. In the post-paid mode, the meter operates as a credit meter, meaning the consumer would have to have the meter read and be billed in a conventional manner. Pre-paid accounting functionality is not available whilst in post-paid mode.

The benefit for the utility is the added flexibility to the consumer. The consumer can be switched from a post-paid mode to pre-paid mode with just an encrypted token. In addition, a consumer who previously used conventional meters can still make use of post-payment and can still be switched to a pre-paid mode if required.

**Product selection criteria**

<table>
<thead>
<tr>
<th>Considerations</th>
<th>Criteria</th>
</tr>
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<tbody>
<tr>
<td>1. Environment</td>
<td>Type of dwelling: Informal settlement, block of flats, house, building etc</td>
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<tr>
<td></td>
<td>Environmental conditions: high temperatures, dusty areas (IP ratings), high humidity, lightning activity</td>
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<tr>
<td></td>
<td>Possible RF signal interference (if wireless)</td>
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<tr>
<td>2. Consumption</td>
<td>The consumption of the user will assist in selection of the load capability of the meter</td>
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<tr>
<td></td>
<td>Three phase meters are better suited to larger consumers whilst single phase meters can be used on smaller consumers</td>
</tr>
<tr>
<td>3. Split/combo installation</td>
<td>Should the metering device be located on the street or inside the consumer premises?</td>
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<tr>
<td>4. Security</td>
<td>Is the security of the meter an issue?</td>
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<tr>
<td></td>
<td>Will tamper protection be required?</td>
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<tr>
<td>5. Wireless installation</td>
<td>Dependant on the type of meter</td>
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<tr>
<td></td>
<td>A site scoping must be undertaken, take the RF communication distance into account, some applications may require wireless accessories to increase the strength of the RF signal.</td>
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<tr>
<td>6. New/existing installation</td>
<td>Is this a new or existing installation (retrofit)</td>
</tr>
<tr>
<td>7. Footprint</td>
<td>BS</td>
</tr>
<tr>
<td></td>
<td>Common wall base</td>
</tr>
<tr>
<td></td>
<td>DIN rail</td>
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<td>wBEC44(09)</td>
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<td>------------</td>
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**Voltage Ratings**

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**Current Ratings**

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</table>

**Minimum starting current**

| Class 1 | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Class 2  | N | N | N | N | N | N | N | N | N |
| 20mA     | Y | Y | Y | N | N | N | N | N | N | Y | Y | Y |
| 40mA     | N | N | N | N | N | N | N | N | N | Y | N | N |

**Nominal power consumption**

| 1.2W / 9VA | Y | N | Y | N | N | N | N | N | Y | N | N | N |
| 1.6W / 9VA | N | Y | N | Y | Y | Y | N | N | Y | Y | Y | Y |
| 2.5W / 18VA| N | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |

**Accuracy**

| Class 1 | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Class 2  | Y | Y | Y | Y | Y | Y | Y | Y | Y |

**Over voltage rating**

| 1.8 x Nominal Voltage 48h | N | N | Y | N | N | N | N | N | N | N | N | N |
| 420VAC for 48 hours       | N | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| 440VAC for 48 hours       | Y | Y | N | N | N | N | N | N | N | N | N | N |

**Short circuit rating**

| Short-circuit withstand 2.5kA | N | N | N | N | N | N | N | N | Y | Y | N | N |
| Short-circuit withstand 3.0kA | Y | Y | Y | Y | Y | Y | Y | Y | N | N | Y | Y |
| Short-circuit withstand 7.5kA | N | N | N | N | N | N | N | N | Y | Y | Y | Y |

**Protection**

| Power overload | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Current overload| Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Over / under voltage | Y | Y | Y | Y | Y | N | Y | Y | Y | Y | Y | Y |
| Delayed reconnection | Y | Y | Y | N | N | N | N | N | N | Y | Y | Y |
| Galvanic isolation | N | Y | N | Y | N | N | N | N | N | Y | Y | Y |
| Thermal overload  | Y | Y | Y | Y | Y | Y | Y | Y | N | N | Y | Y |
| Line / load reversal | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| Earth leakage     | N | N | N | N | N | N | N | N | Y | N | N | N |
| Phase imbalance   | N | N | N | Y | Y | Y | Y | N | N | N | N | N |

**Communication type**

<p>| Current loop | N | N | N | Y | N | N | N | N | N | N | N | N |
| Galvanic isolation | N | N | Y | N | N | N | N | N | N | N | N | N |</p>
<table>
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<tr>
<th>Environmental</th>
<th>BEC44(09)</th>
<th>BEC44(09)</th>
<th>BEC22(09)</th>
<th>BEC32(08)</th>
<th>BEC62(08)</th>
<th>BEC33(07)</th>
<th>BEC66(07)</th>
<th>BEC23PE(07)</th>
<th>BEC23PL(07)</th>
<th>BEC42(05)</th>
<th>BEC22(05)</th>
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What can our meters do for you?

Benefits for utilities

Conlog meters provide utilities with a cost effective means of metering electricity usage, collecting the revenue and managing the system in such a manner as to reduce fraud, improve cash flow and provide the end user with improved customer service.

1. Consumption is prepaid; revenue is received prior to consumption.

2. Cost savings
   Reduced infrastructure: > No meter reading
   > No billing
   > No credit control department
   > Reduced revenue management overheads
   > Reduction in cash handling
   > No bad debts
   > No disconnection / reconnections on default
   > Improved means to detect fraud

3. Access to development funding
   Many countries can apply and negotiate funding through organisations such as:
   > World Bank
   > French Agency of Development
   > United Nations Development Fund
   > Local industrial investment corporations
   > Sustainability

4. Management of scarce resources:
   > Users become more aware of their consumption
   > Utilities reap the benefits of better grid utilisation
   > Enhanced and customised management reports facilitate utility load planning more effectively.

5. Management control:
   > Improved management information and control with the use of customised Conlog reports
   > High level of security
   > High level of data integrity

6. Cost savings:
   > Ease of use and affordable
   > Usage is budgeted
   > Flexibility – consumer pays according to specific needs
   > No outstanding accounts / penalties
   > No reconnection fees
   > Consumer can easily monitor and manage their consumption
   > Manage wastage
   > Deposit for electricity usage not necessary
Naming Convention

It is quite easy to throw names and model numbers around, however each Conlog meter range has been specifically designed according to the naming convention below.

The example below indicates a BEC22(09), according to the naming convention, this meter is a single phase combo meter with a BS Footprint.

---

Wireless solutions - Radio Frequency explained

One of the most common wireless technologies is Radio frequency (RF). RF is used every day by millions of people, all around the world, from cellphones, GPS devices, central locking devices for cars, even your wireless keyboard and mouse, they all use radio frequency to communicate. It is a technology that has stood the test of time.

To enable two way communications, RF requires a transmitting antenna and a receiving antenna to transmit the signal. It works in the same way that a cell tower transmits a signal to your cellphone, the cell tower acts as the transmitting device and your cell phone acts as the receiving device.

In the metering arena, RF provides a solid and stable means to enable wireless solutions. It is also cost effective in relation to many other available technologies.

Some of the other benefits of RF, in a metering application, include:
> Operates over a large geographical area
> Eliminates cabling costs and potential cable theft
> Rapid deployment of the solution
> Consumer is not limited in the placement of their unit, due to cabling considerations
Wireless options with Conlog meters

Conlog offers a complete wireless solution for consumers including a wireless meter (wBEC44 (09)) as well as wireless accessories which enable the existing hard wired meters to communicate wirelessly.

Wireless Accessories

WMI(09)
The Wireless Meter Interface (WMI(09)) allows a previously hard wired meter to communicate wirelessly to the wUIU(09).

WEX(09)
The Wireless Extender (WEX(09)) is used in some installations, to increase the range between the wUIU(09) and the meter. This is achieved by installing a WEX(09) between the meter and the wUIU(09), to ensure consistent communication between the devices.

wFST(09)
The wireless Field Service Terminal (wFST(09)) puts convenience in your hands by allowing the user access to a multitude of features including meter interrogation, without having to access the meter.

Product Solutions

Wireless Meter

wBEC44(09) + wUIU(09) = Wireless Solution
Wireless Meter: Application where poor range exists between the wUIU(09) and the meter

wBEC44(09) + wUIU(09) + WEX(09) = Wireless Solution

Wired Meter

Conlog Split Meter + WMI(09) + wUIU(09) = Wireless Solution

Wired Meter: Application where poor range exists between the wUIU and the meter

Conlog Split Meter + WMI(09) + wUIU(09) + WEX(09) = Wireless Solution
Scoping the site for installation

To ensure maximum efficiency, it is advisable to undertake a site scoping prior to the installation. This will ensure that potential challenges can be overcome in advance, without delaying the metering installation.

Considerations

- Trees, urban area, concrete meter kiosk, flats with a meter room in the basement, hilly environment,
- We recommend fiber glass housing; however the solution is robust enough to operate effectively within other kiosks and boxes.

Existing Installations

If the meter is located in a metal enclosure and cannot be relocated, consideration must be given to the signal strength and a WEX(09) should be installed to increase the range of the signal. The WMI(09) might have to be moved to a higher location i.e. a pole top. The WMI(09) should be installed to face the house where the wUIU(09) is installed for optimal signal range.

NOTE

Conduct a signal test by entering #075# on the keypad. A signal of 50% and higher is recommended for reliable communication.

The bar graph indicates signal strength of 80%.

Revenue Management products

- **Ultima Plus**: Revenue management solution (next generation)
- **Ultima**: Revenue management solution
- **POWERcard and POWERpin**: Scratch-card tokens redeemed via SMS
- **POWERcomms**: Communication infrastructure solution
- **POWERRecovery**: Disaster recovery system
- **POWERpush**: Free Basic Electricity via SMS
- **POWERhub Integration Services**: Third party merchant network and solution
- **POWERhub**: Switch and integration solution
- **POWERcoder**: Web based tool for key change tokens
- **HOSTEDvending**: Hosted vending infrastructure
- **POWERsale**: Vending software that enables a retailer to sell electricity on behalf of a utility
- **SLICE**: Prepayment solutions for non-utilities

Next generation: Revenue Management System

Conlog is proud to debut its revenue management solution of the future, Ultima Plus.

Serve your prepaid electricity customers faster and at less cost. A web-based solution, Ultima Plus offers customers the same reliability and flexibility that they have become accustomed to with its predecessor Ultima, whilst enjoying the new features and functionality through the use of leading edge technology platforms.

Key Benefits

- Web Browser based client
- Expert designed User Interface and User Experience
- Remote access allows for remote management and maintenance
- Role based user access (access to functionality the user has permission to use)
- Multi-threaded performance
- Scalable server side architecture
- Separate Vending, Management and Reporting
- Databases
A management information system for electrical utilities and service providers, Ultima Plus offers prepaid electricity vending management functions for:

- Tariff and charges
- Prepaid Electrical meters
- Accounts and sub-accounts
- Customer information

Innovative in its engineering, the software has been created to meet global standards, using:

- Expert user interface design
- Web based client (access via browser)
- ASP .NET MVC 4 framework
- SQL Database Architecture
- XML Vend 2.1 compliant
- STS compliant

Ultima Plus software solution offers flexible licensing models to suit your revenue management needs and is designed to take revenue management to the next level and beyond.

**Benefits**

- Simplicity, ease of use for users
- User mobility (login from anywhere)
- Increased speed of transaction processing for system users (expert interface design)
- Reduced IT technical support (no installation files required and updates are immediate using the web hosted solution)
- Improved Vending Performance (separate databases)
- Improved Security (ability to manage user roles and permissions)
- Flexibility to expand the solution as your needs grow
- Improved Business Intelligence with interactive Dashboards and separate Reporting Database
- Improved Efficiency and cost saving:
  - Customer, Account and Meter Administration
  - Reduce user training and support
  - Reduce IT hardware support

Ultima, Conlog’s soon to be retired revenue management solution is a Windows-based application suite that offers customers reliability, stability and scalability; the solution is able to manage over a million customers and their associated transactions.

**Key Benefits**

- Multi operator / supervisor functionality
- Completely scalable solution
- Can interface to a variety of systems
- Management of customers for the Utility
- Multi language support

Another key benefit of Ultima solution is its user friendly intuitive interface, which uses graphic icons with simple menus, to ensure operators are able to easily understand and use the software. In addition, the software is available in a variety of languages, dependent on your requirements. At the heart of the solution is the management system, which comprises a management and vending server. This is responsible for managing both the financial and meter related information, thereby addressing the commercial and technical needs of the utility.

The system allows vending through its own directly controlled vending units, as well as Conlog's vending gateway POWERhub. In addition, Ultima is STS compliant, to ensure compatibility with our full range of products, as well as competitor STS approved products. Another critical function of the Ultima solution is the ability to provide you with a full audit history of all associations between customers, accounts, meters, locations, activities and statistics with the click of a button. Personalised reports can be produced by Conlog, or alternatively customers can develop these directly using SQL Reporting services.
Purchasing electricity

The Ultima Vending Unit is used by a consumer to purchase their electricity tokens. Traditionally this is a PC based point of sale (POS) terminal, which would be housed within a banking hall or an office. The vending unit is able to retrieve customer information to allow for account payments and tariff structures based on a customer’s purchase history.

Conlog’s vending units collect customer transactions, including energy sales, cancellations and account payments; which is then transferred to the management system. However, the vending unit has limited report capabilities as the bulk of the information is secured from the management system. Key reports contained on the vending unit include end of shift sales batch and banking batches, which incorporate a summary of the sales made (cash, cheque etc), as well as the total number of free issues and cancellations.

POWERcard

POWERcard is a simple mechanism that is revolutionising the industry. With POWERcard consumers can now purchase electricity at their convenience, whilst utilities are guaranteed an upfront payment.

Key Benefits

- Rapid deployment
- No high infrastructure, personnel or equipment costs
- Empowering job creation through the use of third party vendors
- Convenient and accessible for all consumers
- 24/7 availability

POWERcard enables electricity to be sold at any retail outlet, 24 hours a day and seven days a week. Another Conlog first, utilising scratch cards and cellphone technology to retail electricity, POWERcard requires no capital outlay and enables utilities to bring vending to the doorstep of their consumers. Consumers simply purchase a card and redeem the value with their cellphone.

How it works

- POWERcards of various monetary denominations are produced.
- These are purchased upfront (prepaid) directly from the utility, by vendors such as retailers or street vendors.
- The vendor sells the card to a consumer.
- To redeem the value of the POWERcard, the consumer simply sends an SMS with their 11 digit POWERpin and meter serial number.
- A 20-digit STS token is returned to the consumer via SMS.
- The consumer is required to enter this token into the meter.
- When the electricity credit is depleted, the consumer simply returns to the vendor and purchases a new POWERcard.

Benefiting your business

- POWERcard brings a wealth of benefits to supply authorities and their customers.
- The primary benefit for authorities is guaranteed payment for services, as the electricity POWERcards are purchased upfront (prepaid) by vendors.
- POWERcard also enables existing prepayment applications to be offered through this product, such as:
  - Free Basic Electricity (FBE): consumers can still receive their free electricity, through SMS services.
  - Re-Issue of Tokens: a simple SMS is all it takes to receive a re-issue of a token.

POWERpin

For utilities wanting to reap the benefits of vending via vouchers, without the overhead of managing the system, POWERpin is the solution. Using Conlog’s ever increasing distribution network, POWERpin allows the utility to turn any vendor with an accredited paypoint, into an electricity retailer.

POWERcomms

Prepayment technologies are evolving at a rapid rate and bringing with it the demand for a stable communication infrastructure. This could present a serious challenge for utilities in order to maintain the technology, processes and associated infrastructure with the available resources.
Conlog’s POWERcomms product provides the ideal solution in these situations. Through our extensive experience and knowledge in the field, we have developed a variety of products that will enable communication for your prepaid infrastructure. We offer three core products (ADSL-Lite; Managed-ADSL and Satellite-APN) which ensure that your prepayment project is always up and running.

In addition, part of the package is enabling redundancy protection if, for example, should your main communication link go down for any reason. This is critical because if the communication network is not operating, your consumers are unable to purchase electricity.

Once a suitable solution and package has been developed for your needs, Conlog’s project engineers will install and configure the system for you. Conlog then manages and resolves any issues relating to the system as the structure is owned and maintained by Conlog’s technical specialists.

This ensures peace-of-mind for utilities that are then able to focus on the business of electricity, whilst Conlog focuses on ensuring your structure is operating smoothly and efficiently by managing your prepaid IT infrastructure.

**Key Benefits**

- Secures your prepayment site
- Protects your revenue and data
- Ensures business continuity
- Consumers can still purchase their electricity

POWERrecovery is your answer to managing potential threats to your revenue management infrastructure. A fire breaks out in your Utility or a virus attacks your system, these are just some of the crippling threats to your business. Minimize your risk by implementing a POWERrecovery system that will ensure consumers are able to purchase electricity in the midst of a disaster.

**Key Benefits**

- Enables stable communication
- Conlog manages communication infrastructure
- Less downtime or offline systems

POWERrecovery offers customers a tailor-made solution to ensure hardware and software protection and redundancy, business continuity and peace of mind. This is achieved through the use of our hosted solutions. Conlog hosts a copy of your vending server database within our protected and secure IT structure.

In the event of a disaster, the vending units connect to the hosted server and resume vending from this hosted database. In addition, the communication infrastructure can incorporate GPRS modems onto the Conlog APN, to protect against the Telkom infrastructure failing.

As soon as your primary vending service is back online, the vending units will resume vending from this server. All transactions undertaken on the hosted server will be synchronised back to your own server. With this solution, all arrears and balances can be configured to always update both the primary server and the Conlog hosted server, so that your arrears collection policy remains in place during a disaster.

**POWERpush**

Conlog’s POWERpush solution enables utilities to meet their commitment of providing Free Basic Electricity (FBE) to qualifying consumers. A key challenge faced by many utilities is the ability to efficiently enable access to FBE. This is now addressed by Conlog.

Targeted at utilities wanting to provide lifeline electricity, or free basic electricity, to selected consumers or indigents, this software automatically distributes a monthly allocation to registered consumers.
Key Benefits

> Reduced queues at vending points
> Access to free electricity
> Cost effective access for consumers
> Improved service delivery

POWERpush is able to distribute an FBE token to all registered consumers at the beginning of each and every month, automatically.

This can be achieved through one, or both of the following mechanisms dependent on your consumer profile:
> Printed FBE scratch cards: These scratch cards can be distributed through your existing vending network
> Push SMS: The FBE token is sent directly to the consumer cellphone

The benefit of Conlog’s POWERpush solution is that consumers are no longer required to travel long distances, sometimes at great cost, to receive their free electricity. The FBE scratch cards can be distributed within the location of the prepaid consumers, whilst the use of cellphone technology enables consumers to receive their FBE wherever they are.

Research has shown that over 80% of the South African population either has a cellphone, or access to a cellphone. By embracing new technologies, such as Conlog’s POWERpush, utilities are able to improve the lives of thousands of people by enabling service delivery to those that need it most. In addition, Conlog’s 24-hour support centre is available to assist consumers in accessing their FBE, for example, to explain how to use the card or to simply resend a token that has been misplaced.

Conlog’s solution enables a utility to immediately access an extensive vending footprint, with little or no effort. There is no extensive administration, high costs and financial risks to be concerned with simply activate the service and enjoy the benefits, quickly and easily. Conlog offers an extensive network of existing merchants, large retailers and retail chains. In addition, Conlog can manage your existing vendors. This means you only deal with one company, one vendor - Conlog; significantly reducing costs, logistics and hassle.

As with all Conlog products, security is assured, and this service is no different. Through our merchant management facility, built into the solution, you are able to receive extensive reconciliations on all the electricity sold through the platform; receive full audit records on the transactions, vendors and consumers; as well as audit the funds transferred into the utility account, to ensure receipt of all payments for electricity sold.

Vending mechanisms

This service provides utilities with a number of value added services to help streamline the operational and management aspects of a prepayment site, whilst enabling a large third party footprint.

Some of the vending mechanisms enabled through our solution, include:
> XML vending clients
> Mobile vending
> Point of Sale (POS) terminals
> Internet vending
> POWERcard
> ATM’s
> Retailers and vendors
> Other third party vending infrastructures
This vending service is an XML interface that seamlessly switches transactions between multiple merchants and payment channels. This means that utilities are now able to unleash the power of thousands of merchants and vendors (third party vending) to retail electricity on their behalf, regardless of their existing STS vending infrastructure.

**POWERhub Credit Management**

POWERhub, Conlog’s XMLvend compliant vending gateway enables customers to expand their vending footprint by providing a means for third party channels such as banks, airtime distributors and online service providers to sell energy tokens their behalf.

The expanded vending footprint means it is easier and more convenient for consumers to purchase energy tokens where and when it suits them. It can also alleviate the financial burden incurred when providing additional vending points during peak buying periods. POWERhub Credit Management is an add-on to POWERhub that gives customer protection and control over the third party partners that connect to the system.

**Credit**

Customers can request that third party partners first deposit money to credit their account on the POWERhub system. This protects the customer’s revenue as they have already received the money for the energy tokens being sold.

**Commission**

This allows the third party partners to make money on the energy tokens they are selling. The commission method and structure can be tailor made to suit both the customer and the third party partner.

These include:
- Commissions based on the number of transactions
- Commissions based on total transaction value
- Commissions based on arrears charges accumulated
- Commissions based on kWh accumulated
- Commissions based on FBE accumulated
- Discount on credit deposit

**Charges**

Additional fees incurred by the customer through the management of money deposited by 3rd party partners can passed back through implementation of additional charges

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POWERcoder is a simple to use and secure web based application that enables the utility to create a number of STS engineering tokens as well as Conlog specific Meter Function tokens in a single application. Tokens supported are:

**STS Engineering tokens (can be used on all STS pre-paid meters)**
- Clear Tamper
- Clear Credit
- Set Power Limit
- Set Phase Unbalance

**Conlog Meter Function tokens (can be used on work on specific Conlog meters only)**
- Administrator mode
- Consumption restriction
- Decommission
- Display negative credit
- Over voltage
- Prepayment to post payment
- Post payment to prepayment
- Random reconnect period
- Remote disconnect
- Remote reconnect
- Tamper detection
- Under voltage
HOSTEDvending is a simple, yet cost effective mechanism for utilities to deploy a prepayment revenue management solution, which is ideal for smaller prepayment sites, or for those utilities that do not have the necessary infrastructure or personnel to manage the system.

The website works on modern browsers and provides a mobile site for engineers to access the system via their smart phones. The system provides the option of delivering tokens via SMS, e-mail or displayed on screen. There is also an option to generate multiple tokens based on a meter serial number list.

The end user will have a user name and password to ensure security. All tokens generated will be stored in the database for auditing purposes.

Key Benefits

- Rapid deployment
- Reduced capital expenditure
- Guaranteed up time
- 24-hour support

Conlog's solution ensures that the prepayment specialists maintain your operational and technological requirements, whilst you focus on the business of electricity. A true win-win for the utility and its consumers.

A complete revenue management infrastructure is established on your behalf, by Conlog in our dedicated and secure hosted environment. This infrastructure comprises the servers required to operate your vending system, whilst vending units are installed in your premises to enable consumers to purchase electricity.

A communication connection is established between the Conlog hosted environment and your site, to enable your vending units to generate electricity tokens from the hosted vending server at Conlog. The communication connection is dependent upon prevailing technologies and accessibility within your site i.e. GPRS, ISDN. Conlog provides all the necessary software, upgrades and associated protection and backup for the hosted infrastructure, to enable guaranteed uptime and business continuity, regardless of the circumstances.

In addition, new meters and connections into your system are just one phone call, fax or email away. Simply send through the details to our dedicated call centre and your customer information is quickly and efficiently updated. For customers preferring to update their information remotely, this is easily achieved through a web portal.

Another benefit of Conlog's HOSTEDvending solution is the automated reports for customers. The predefined reports can be emailed to you each day, week or month, thus saving you time and money. In addition, customers can access reports at their convenience through our secure internet portal. Naturally, the system is completely compatible with other Conlog offers such as POWERcard, POWERpush.

POWERsale

Vending software that enables a retailer to sell electricity on behalf of a utility, using the XML vend platform. This means that any retailer can quickly and easily become a vendor, with minimal financial outlay. Utilities managing their own vending infrastructure can also quickly and easily deploy POWERsale into their merchant network or billing offices, simply and easily.

SLICE

Slice is a brand new initiative offering Southern African customers the ability to purchase prepayment meters to control revenue loss and improve recapitalisation on building/estate projects. The sale of electricity credit is managed via our national network of 3rd party vendors and the reconciliation process is managed on your behalf by our experienced team.

Peace of mind is assured through a comprehensive service bouquet, offering project planning and access to a support portal.
Meter Accessories

Conlog offers consumers the complete solution, below are the various accessories we have available to complement our range of meters.

Enclosures

Conlog enclosures are made from the highest quality materials, which are durable and designed to protect your meter against the outside elements. They are available in many different sizes to suit various configurations. The enclosures can be ordered with the meters installed or by themselves.

Typical configurations: BEC44(09)/wBEC44(09)

- **Description:** Two meters and two breakers (63A only)
- **Part number:** 700070937000
- **Contents:**
  - Front cover
  - Rear cover
  - 2 x cable glands
  - Neutral busbar with cage clamps

- **Description:** Two meters only

- **Description:** One meter only

- **Description:** One meter and one breaker (63/80A)
Description:
One way - BEC44(09)
Part number (Enclosure only): 421104098000

Description:
One way - CB44
Part number (Enclosure only): 700036915000

Description:
Four way - BEC44(09)
Part number (Enclosure only): 421104099000

Description:
Eight way - BEC44(09)
Part number (Enclosure only): 421104117000
Typical configurations: BEC23(05)

Description:
One way - BEC23 (no window)
Part number (Enclosure only): 42110412000

Description:
One way - BEC23 and circuit breaker
Part number (Enclosure only): 421104096000

Typical configurations: BEC62(08)

Description:
One way - BEC62(08)
Part number (Enclosure only): 421104107000

Description:
One way - BEC62(08)
(no window)
Part number (Enclosure only): 421104115000

Description:
BEC62(08) + WMI(09)
Part number (Enclosure only): 421104118000
Typical configurations: BEC32(08)

Description:
One way BEC 32 (08)
Part number (Enclosure only): 421104111000

Boxed solution meter accessories

Description:
Band it band (12.7mm x 0.5mm)
Part number: 421902401000

Description:
Band it buckle (12.7mm)
Part number: 421902402000

Description:
2W Dropwire 0.71mm Copper clad steel
Part number: 421902400000
The Interrogator kit

Conlog’s interrogator kit provides an easy method of retrieving and storing information from prepayment electricity meters. This data can be viewed at any time using the application software, or uploaded for analysis into other applications. The kit also provides a simple mechanism to verify the approximate accuracy of a prepayment meter, quickly and easily.

Features

> Compatible with all meter types
> Simple, intuitive operation
> Check meter accuracy
> Download meter data
> Supports multiple meter types

Interrogator kit contents

> Interface control unit, used to interface various meter probe types to the computer
> RS232 interface cable for connecting the interface control unit to the computer
> External power supply used to power the interface control unit
> CD-ROM with the Conlog interrogator kit software
> Flags probe to extract data from the flags port of a three phase or poly phase meter
> Direct probe to extract data from any STS compliant meter
> Optical probe to extract data from any STS compliant meter installed in the field. Also used for the approximate verification of a meter’s accuracy.

Computer system requirements

Laptop or desktop computer with:
> Processor: Pentium® PI or greater
> Hard Drive: 10Mb free hard drive space
> Memory: 2Mb free RAM
> Video: 1152 x 864 screen resolution
> Mouse / keyboard: any
> 52 x CD-ROM
> 1 x RS232 serial port (use a RS232 to USB converter if not available)
> 2 x USB ports
> Microsoft® Windows® 2000 or XP Professional with SP2
**BEC44(09)**

Single phase, DIN rail, split meter

The BEC44(09) is the world's first and smallest DIN rail mounted prepayment meter, added to that is the ability to operate as either a prepayment or post-payment meter. Galvanic isolation is standard across the range, as is a host of configurable management options such as emergency credit, life line, consumption limiting and administrator modes. Furthermore, the meters are available as wired and non-wired solutions.

### Features
- Operates as prepayment or post-payment meter
- Configurable credit management options
- Reverse energy management
- Thermal shutdown protection
- Delayed reconnection

### Specifications

<table>
<thead>
<tr>
<th><strong>Voltage Ratings</strong></th>
<th><strong>Nominal Voltage (-20% + 15%)</strong></th>
<th><strong>Supply frequency (±5%)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>220 - 240 V AC</td>
<td>50 Hz / 60 Hz</td>
</tr>
<tr>
<td></td>
<td>110 - 127 V AC</td>
<td>60 Hz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Current Ratings</strong></th>
<th><strong>Base current (Ib)</strong></th>
<th><strong>Maximum current (Imax)</strong></th>
<th><strong>Minimum starting current</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 A</td>
<td>100A</td>
<td>20 mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Class 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25 mA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Class 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>130 V</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>120 V AC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Utilisation category</strong></th>
<th><strong>Minimum start up (230V)</strong></th>
<th><strong>Minimum operating (230V)</strong></th>
<th><strong>Nominal power consumption</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>UC2</td>
<td>130 V</td>
<td>120 V AC</td>
<td>1.2 W / 9 VA</td>
</tr>
</tbody>
</table>

| **Accuracy** | Class 1 or 2 (maintained throughout life of product) |

| **Over voltage rating** | 1.8 times the nominal voltage for 48 hours |

| **Short circuit rating** | Short circuit withstand 3.0 kA |

<table>
<thead>
<tr>
<th><strong>Protection</strong></th>
<th>Power overload</th>
<th>Thermal overload</th>
<th>Current overload</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Line / load reversal</td>
<td>Over / under voltage</td>
<td>Extreme over current</td>
</tr>
<tr>
<td></td>
<td>Delayed reconnection</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Environmental** | **Operating temperature** | -10°C to +55°C |
|                  | **Storage temperature** | -25°C to +70°C |
|                  | **Humidity** | 95% non-condensing |
|                  | **IP rating** | IP54 (meter and user interface unit) |
|                  | **RF immunity** | 30 V/m |

| **Status indicators** | Power / load status LED | Rate LED (1000 pulses/kWh) | MCU / UIU communication status LED |

| **Installation** | **Footprint** | DIN rail mounted |
|                 | **Insulation class** | Double insulation |

<table>
<thead>
<tr>
<th><strong>Terminals</strong></th>
<th><strong>Live</strong></th>
<th><strong>Neutral</strong></th>
<th><strong>Common</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td>Cage clamps</td>
<td>Cage clamp</td>
<td>Spring clamp</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td>25mm²</td>
<td>16mm²</td>
<td>0.7mm²</td>
</tr>
</tbody>
</table>

| **Interrogation** | Direct probe, e-USB, flags |

| **Security** | Security seals | Terminal cover | Tamper detection |

<table>
<thead>
<tr>
<th><strong>Packaging</strong></th>
<th>Units per carton</th>
<th>10 per carton</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Carton weight (incl. box)</td>
<td>3.12kg</td>
</tr>
</tbody>
</table>

### Standards

- IEC 62051-1
- IEC 62052-11
- IEC 62053-21
- IEC 62055-21
- IEC 62055-31
- IEC 62055-41
- IEC 62055-51
- IEC 62055-52
- SANS 1524-1
- SANS 1524-1-1
- SANS 1524-1-2
- SANS 1524-4
- SANS 15417
- SANS 1524-4
- STS 201-15.1.0
- DSP 34-1635
- ISO 14001
- OHSAS 18001
- RES/RR/00/11740
- DSP 34-749
- DSP 34-1527
- ISO 9001
- OHSAS 18001
Conlog’s new wBEC44 integrated wireless meter range provides the building block for a revolutionary new smart solution. The compact DIN rail meter is packed with features to enhance customer satisfaction, whilst providing the valuable data needed by utilities worldwide. Added to this is the ability for the meter to operate as a prepayment or post-payment meter, depending on the utility’s requirements. The greatest benefit and cost saving factor is that through the use of integrated radio frequency (RF), the meters are not subject to line interference and don’t require the costly addition of filters, making this a simple, quick and cost effective solution for today and tomorrow.

### Features
- Operates as prepayment or post-payment meter
- Configurable credit management options
- Reverse energy management
- Thermal shutdown protection
- Delayed reconnection

### Specifications

#### Voltage Ratings

<table>
<thead>
<tr>
<th></th>
<th>220 - 240 V AC</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Nominal Voltage</td>
<td>(-20% + 15%)</td>
<td></td>
</tr>
<tr>
<td>Supply frequency</td>
<td>50 Hz / 60 Hz</td>
<td>60 Hz</td>
</tr>
</tbody>
</table>

#### Current Ratings

<table>
<thead>
<tr>
<th></th>
<th>5A</th>
<th>100A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base current (Ib)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Imax)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum starting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>20 mA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>25 mA</td>
<td></td>
</tr>
<tr>
<td>Class 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Utilisation category
- UC2

#### Nominal start up (230V)
- 120 V

#### Minimum operating (230 V)
- 110 V AC

#### Nominal power consumption
- 1.3 W / 9 VA

#### Accuracy
- Class 1 or 2 (maintained throughout life of product)

#### Over voltage rating
- 1.8 times the nominal voltage for 48 hours

#### Short circuit rating
- Short circuit withstand 3.0 kA

#### Protection
- Power overload
- Line / load reversal
- Over / under voltage
- Delayed reconnection
- Thermal overload
- Current overload
- Extreme over current

#### Environmental

<table>
<thead>
<tr>
<th></th>
<th>-10°C to +55°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature</td>
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</tr>
<tr>
<td>Storage temperature</td>
<td></td>
</tr>
<tr>
<td>Humidity</td>
<td>95% non-condensing</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP54 (meter and user interface unit)</td>
</tr>
<tr>
<td>RF immunity</td>
<td>30 V/m</td>
</tr>
</tbody>
</table>

#### Status indicators
- Power / load status LED
- Rate LED (1000 pulses/kWh)
- MCU / UIU communication status LED

#### RF Interface

<table>
<thead>
<tr>
<th></th>
<th>Non-specific SRDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>(ICASA notice 1114 of 2007)</td>
</tr>
<tr>
<td>Frequency band</td>
<td>433.05 MHz to 434.90 MHz</td>
</tr>
<tr>
<td>Modulation type</td>
<td>GFSK</td>
</tr>
<tr>
<td>Maximum power</td>
<td>10mW ERP (10dBm)</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>&lt;0.01%</td>
</tr>
</tbody>
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#### Standards
- IEC 62051-1
- IEC 62052-11
- IEC 62053-21
- IEC 62055-21
- IEC 62055-31
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- STS 101-1
- STS 201-15.1.0
- DSP 34-749
- DSP 34-1527
- IEC 61000-4-2
- IEC 61000-4-3
- IEC 61000-4-4
- IEC 69590-1
- CISPR 22
- SANS 300220-1
- ETSI EN300220-1
- ISO 9001
- ISO 14001

#### Installation
- Footprint: DIN rail mounted (35mm) asymmetrical
- Insulation class: Double insulation

#### Terminals

<table>
<thead>
<tr>
<th>Type</th>
<th>Live</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>25mm²</td>
<td>16mm²</td>
</tr>
<tr>
<td></td>
<td>Cage clamps</td>
<td>Cage clamp</td>
</tr>
</tbody>
</table>

#### Interrogation
- Direct probe, e-USB, radio frequency (RF)

#### Security
- Security seals
- Terminal cover
- Tamper detection

#### Packaging
- Units per carton: 10 per carton
- Carton weight (incl. box): 3.12kg
Conlog once again makes waves in the metering world with the launch of the BEC22(09). The single-phase, prepayment electricity meter with a BS footprint is ideal for retrofit applications. An integrated keypad and LCD ensure all customer needs are met in one compact design. In addition the meter provides a number of innovations, for example, being able to operate as a smart prepayment or post-payment meter. The device has over 50 programmable functions, to provide a high level of customization for each utility. The meter boasts many protection features including thermal overload and line/load reversal, all designed to safeguard the meter in abnormal conditions.

### Specifications

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<th>100A</th>
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<tbody>
<tr>
<td>Base current (Ib)</td>
<td>Class 1</td>
<td>20 mA</td>
</tr>
<tr>
<td>Maximum current (Imax)</td>
<td>Class 2</td>
<td>25 mA</td>
</tr>
<tr>
<td>Minimum starting current</td>
<td>Utilisation category</td>
<td>UC2</td>
</tr>
<tr>
<td>Minimum start up (230V)</td>
<td>130 V</td>
<td></td>
</tr>
<tr>
<td>Minimum operating (230 V)</td>
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<tr>
<th>Nominal power consumption</th>
<th>1.3 W / 9 VA</th>
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</table>

<table>
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</table>

<table>
<thead>
<tr>
<th>Over voltage rating</th>
<th>1.8 times the nominal voltage for 48 hours</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Short circuit rating</th>
<th>Short circuit withstand 3.0 kA</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Protection</th>
<th>Power overload</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Line / load reversal</td>
</tr>
<tr>
<td></td>
<td>Over / under voltage</td>
</tr>
<tr>
<td></td>
<td>Delayed reconnection</td>
</tr>
<tr>
<td></td>
<td>Thermal overload</td>
</tr>
<tr>
<td></td>
<td>Current overload</td>
</tr>
</tbody>
</table>

| Environmental | Operating temperature | -10°C to +55°C |
|               | Storage temperature   | -25°C to +70°C |
|               | Humidity              | 95% non-condensing |
|               | IP rating              | IPS4 |
|               | RF immunity            | 30 V/m |

<table>
<thead>
<tr>
<th>Status indicators</th>
<th>Power / load status LED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rate LED (1000 pulses/kWh)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Installation</th>
<th>Footprint</th>
<th>British standard BS footprint</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Insulation class</td>
<td>Double insulation</td>
</tr>
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<table>
<thead>
<tr>
<th>Terminals</th>
<th>Live</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Cage clamps</td>
<td>Cage clamp</td>
</tr>
<tr>
<td>Size</td>
<td>25mm²</td>
<td>25mm²</td>
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<table>
<thead>
<tr>
<th>Interrogation</th>
<th>Direct probe, e-USB, flags</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Security</th>
<th>Security seals</th>
<th>Terminal cover</th>
<th>Tamper detection</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Packaging</th>
<th>Units per carton</th>
<th>5 per carton</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Carton weight (incl. box)</td>
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<table>
<thead>
<tr>
<th>Standards</th>
<th>IEC 62051-1</th>
<th>IEC 62052-11</th>
<th>IEC 62053-21</th>
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<tbody>
<tr>
<td></td>
<td>IEC 62055-21</td>
<td>IEC 62055-31</td>
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<td>IEC 62056-21</td>
<td>IEC 62065-1-1</td>
<td>IEC 62065-3-1</td>
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<td>IEC 62065-5-1</td>
<td>SANS 1524-1-1</td>
<td>SANS 1524-1-2</td>
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<td>SANS 1524-2</td>
<td>SANS 15417</td>
<td>STS 101-1</td>
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<td>STS 201-15.1-0</td>
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<td>DSP 34-1527</td>
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<td>DSP 34-1635</td>
<td>RES/RR/00/11740</td>
<td>ISO 9001</td>
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<td>OHSAS 18001</td>
<td>ISO 14001</td>
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<td>OHSAS 18001</td>
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<table>
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<tr>
<th>RF immunity</th>
<th>30 V/m</th>
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<table>
<thead>
<tr>
<th>Status indicators</th>
<th>Power / load status LED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rate LED (1000 pulses/kWh)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Installation</th>
<th>Footprint</th>
<th>British standard BS footprint</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Insulation class</td>
<td>Double insulation</td>
</tr>
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<td>Size</td>
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<th>Interrogation</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Carton weight (incl. box)</td>
<td>6kg</td>
</tr>
</tbody>
</table>
### Specifications

**Voltage Ratings**
- Nominal Voltage (-20% + 15%): 220 - 240 V AC
- Supply frequency (±5%): 50 Hz

**Current Ratings**
- Base current (Ib): 10A
- Maximum current (I_max): 100A
  - Class 1: 40 mA
  - Class 2: 50 mA
- Minimum start up (230V): 130 V
- Minimum operating (230V): 120 V AC

**Nominal power consumption**: 1.6 W / 9 VA

**Accuracy**: Class 1 or 2 (maintained throughout life of product)

**Over voltage rating**: 1.8 times the nominal voltage for 48 hours

**Short circuit rating**: Short circuit withstand 3.0 kA

**Protection**
- Power overload
- Current overload
- Over/under voltage
- Thermal overload
- Meter tampering
- Phase imbalance

**Environmental**
- Operating temperature: -10°C to +55°C
- Storage temperature: -25°C to +70°C
- Humidity: 95% non-condensing
- IP rating: IP54
- RF immunity: 30 V/m

**Status indicators**
- Power / load status LED
- Rate LED (1000 pulses/kWh)
- Communication status LED

**Installation**
- Footprint: BS7856 - Asymmetrical
- Insulation class: Double insulation

**Terminals**
- **Type**
  - Live: Cage clamps
  - Neutral: Cage clamp
- **Size**
  - Live: 25mm²
  - Neutral: 25mm²

**Interrogation**
- Flags probe / direct probe

**Security**
- Meter housing
- Terminal cover
- Tamper protection
- Security seals
- Serialised plastic security sprung lock seals
- Tamper terminal cover
- No power tamper (optional)
- Load disconnection on tamper detection

**Packaging**
- Units per carton: 1 per carton
- Carton weight (incl. box): 1.3kg

---

*NOTE:
There are two sizes of terminal covers available, a long and short version. The long cover has cable entry from the back of the meter, where as the short cover has cable entry from the bottom of the meter.*
### Specifications

#### Voltage Ratings

| Nominal Voltage (-20% + 15%) | 110 - 127 V AC | 220 - 240 V AC |
| Supply frequency (±5%)     | 60 Hz          | 50 Hz          |

#### Current Ratings

<table>
<thead>
<tr>
<th>Base current (Ib)</th>
<th>10A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum current (I_max)</td>
<td>100A</td>
</tr>
<tr>
<td>Minimum starting current</td>
<td></td>
</tr>
<tr>
<td>Class 1</td>
<td>40 mA</td>
</tr>
<tr>
<td>Class 2</td>
<td>50 mA</td>
</tr>
<tr>
<td>Utilisation category</td>
<td>UC2</td>
</tr>
</tbody>
</table>

#### Nominal power consumption

| 1.6 W / 9 VA |

#### Accuracy

Class 1 or 2 (maintained throughout life of product)

#### Over voltage rating

1.8 times the nominal voltage for 48 hours

#### Short circuit rating

Short circuit withstand 3.0 kA

#### Protection

| Power overload |
| Thermal overload |
| Current overload |

#### Environmental

| Operating temperature | -10°C to +55°C |
| Storage temperature   | -25°C to +70°C |
| Humidity              | 95% non-condensing |
| IP rating             | IP54 |
| RF immunity           | 30 V/m |

#### Status indicators

| Power / load status LED |
| Rate LED (1000 pulses/kWh) |
| Communication status LED |

#### Installation

| Footprint | BS7856 - Asymmetrical |
| Insulation class | Double insulation |

#### Terminals

| Live | Cage clamps | 25mm² |
| Neutral | Cage clamp | 25mm² |
| Common | Spring clamp | 0.7mm² |

#### Interrogation

| Flags probe / direct probe |

#### Security

| Security seals |
| Serialised plastic security sprung lock seals |
| Tamper terminal cover |
| No power tamper (optional) |
| Load disconnection on tamper detection |

#### Packaging

| 1 per carton |
| Carton weight (incl. box) | 1.3kg |
Conlog’s new BEC62 integrated wireless meter range provides the building block for a revolutionary new smart solution. These meters are packed with features to enhance customer satisfaction, whilst providing the valuable data needed by utilities worldwide. Added to this is the ability for the meter to operate as a prepayment or post-payment meter, depending on the utility’s requirements. The greatest benefit and cost saving is that through the use of integrated radio frequency (RF), the meters are not subject to line interference and don’t require the costly addition of filters, making this a simple, quick and cost effective solution for today and tomorrow.

**Specifications**

**Voltage Ratings**
- Nominal Voltage (-20% + 15%)
  - 220 - 240 V AC
- Supply frequency (±5%)
  - 160Hz

**Current Ratings**
- Base current (Ib)
  - 10A
- Maximum current (Imax)
  - 100A
- Minimum starting current
  - Class 1: 40 mA
  - Class 2: 50 mA
- Utilisation category
  - UC2

**Nominal power consumption**
- 1.6 W / 9 VA

**Accuracy**
- Class 1 or 2 (maintained throughout life of product)

**Over voltage rating**
- 420 VAC for 48 hours

**Short circuit rating**
- Short circuit withstand 3.0 kA

**Protection**
- Power overload
- Current overload
- Over / under voltage
- Phase imbalance

**Environmental**
- Operating temperature
  - -10°C to +55°C
- Storage temperature
  - -25°C to +70°C
- Humidity
  - 95% non-condensing
- IP rating
  - IP54
- RF immunity
  - 30 V/m

**Status indicators**
- Power / load status
- MCU/wUIU communication status
- Rate LED (1000 pulses / kWh)

**Installation**
- Footprint
  - BS7856
- Insulation class
  - Double insulation

**Terminals**
- Live
  - Type: Cage clamp
  - Size: 25mm²
- Neutral
  - Type: Cage clamp
  - Size: 25mm²

**Interrogation**
- Flags probe / direct probe

**Security**
- Meter housing
- Terminal cover
- Tamper protection
- Security seals
- Serialised plastic security seals
- Tamper terminal cover
- No power tamper (optional)
- Load disconnection on tamper detection

**Packaging**
- Units per carton
  - 1 per carton
- Carton weight (incl. box)
  - 1.3kg

**Standards**
- IEC 62051-1
- SANS 1524-4
- SANS 1524-1-1
- IEC 62052-11
- SANS 15417
- SANS 1524-1-2
- IEC 62053-21
- STS 101-1
- OHSAS 18001
- IEC 62055-31
- STS 201-15.1.0
- ISO 14001
- IEC 62055-51
- DSP 34-749
- ISO 9001
- IEC 62055-52
- DSP 34-1835
- SANS 1524-1
- IEC 60950-1
- ETSI EN 300 220-1
- SANS 300 220-1
- DSP 34-1635
- RES/RR/00/11740
- IEC 62056-21
- DSP 34-749
- ISO 9001
- IEC 62056-21
- SANS 300 220-1

**Metering your three phase demand**

Conlog’s new BEC62 integrated wireless meter range provides the building block for a revolutionary new smart solution. These meters are packed with features to enhance customer satisfaction, whilst providing the valuable data needed by utilities worldwide. Added to this is the ability for the meter to operate as a prepayment or post-payment meter, depending on the utility’s requirements. The greatest benefit and cost saving is that through the use of integrated radio frequency (RF), the meters are not subject to line interference and don’t require the costly addition of filters, making this a simple, quick and cost effective solution for today and tomorrow.
Three phase, bracket mounted split meter

The BEC66 range of metering solutions is specifically designed for high current, industrial customers, metering up to 250A per phase. This robust meter provides extensive tamper protection, even in the absence of an incoming supply, as well as protection against power overload and extreme temperatures.

### Features
- Optional intelligent commissioning
  - Programmable power overload functionality
  - Tamper protection
  - Capable of supplying 172.5kW
  - Base current of 30A and starting current of 0.15A
- Thermal protection of terminals
- Calibration retained over life of meter

### Specifications

<table>
<thead>
<tr>
<th>Voltage Ratings</th>
<th>Current Ratings</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Voltage (-20% + 15%)</td>
<td>Base current (Ib)</td>
<td>IEC 62052-11</td>
</tr>
<tr>
<td>230 V AC</td>
<td>30A</td>
<td>NRS 009-6-7</td>
</tr>
<tr>
<td>Supply frequency (±5%)</td>
<td>Maximum current (I(max))</td>
<td>NRS 009-6-8</td>
</tr>
<tr>
<td>50 Hz</td>
<td>250A</td>
<td>ISO 14001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current Ratings</th>
<th>Nominal Power Consumption</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base current (Ib)</td>
<td>2.5 W / 18 VA</td>
<td>Class 2 (maintained throughout life of product)</td>
</tr>
<tr>
<td>30A</td>
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<td></td>
</tr>
<tr>
<td>Maximum current (I(max))</td>
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</tr>
<tr>
<td>250A</td>
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<td>Minimum starting current</td>
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<tr>
<td>Class 1</td>
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<tr>
<td>0.12A</td>
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</tr>
<tr>
<td>Class 2</td>
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<tr>
<td>0.15A</td>
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<td></td>
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<tr>
<td>Utilisation category</td>
<td></td>
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</tr>
<tr>
<td>UC3</td>
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</table>

### Standards
- IEC 62052-11
- NRS 009-6-7
- ISO 14001
- IEC 62053-21
- NRS 009-6-8
- ISO 9001
- NRS 009-4
- NRS 009-6-9
- OHSAS 18001
- NRS 009-6-6
- IEC 62056-21
- ESKOM TRMSCAAP2

<table>
<thead>
<tr>
<th>Nominal power consumption</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5 W / 18 VA</td>
<td>Class 2 (maintained throughout life of product)</td>
</tr>
</tbody>
</table>

### Environmental
- Operating temperature: -10°C to +55°C
- Storage temperature: -25°C to +70°C
- Humidity: 95% non-condensing
- IP rating: IP54
- RF immunity: 30 V/m

### Status indicators
- Rate LED (333 pulses/kWh)

### Installation
- Mounted in a metal box with asymmetrical brackets
- Insulation class: Double insulation

### Terminals
- Maximum cable size:
  - Live: 185mm²
  - Neutral: 185mm²
  - Communication: 0.7mm²

### Interrogation
- Flags probe

### Security
- Meter housing: Security seals
- Terminal cover: Serialised plastic security sprung lock seals
- Tamper protection:
  - Tamper detection terminal cover
  - No power tamper (optional)
  - Load disconnection on tamper detection

### Packaging
- Units per carton: 1
- Carton weight (incl. box): 36kg
Conlog’s BEC23 series comprises two distinct ranges: PL and PE (earth leakage) versions with optional tamper features.

### Single phase, common wallbase, combo meter

The 80A range is a cost effective solution that has a two-part housing consisting of a wallbase and the active meter. This configuration allows for the pre-installation of the wallbase and the ability to remove the meter for maintenance, without disconnecting the supply. The PE version is ideal for low cost housing projects, the integration of an earth leakage protection and a double pole circuit breaker implies there is no need to install a separate distribution box, making installation simpler and more cost effective. The device is designed with a maximum current of 20 Amps and also consists of a two-part housing.

### Specifications

#### Voltage Ratings
- Nominal Voltage (-20% + 15%)
- Supply frequency (+5%)

#### Current Ratings
- **BEC23(07) PL**
  - Base current (Ib): 5A
  - Maximum current (Imax): 80A
  - Minimum starting current: 20 mA
  - Utilisation category: UC2
  - Nominal power consumption: 1.6 W / 9 VA
- **BEC23(07) PE**
  - Base current (Ib): 5A
  - Maximum current (Imax): 20A
  - Minimum starting current: 20 mA
  - Utilisation category: UC2

#### Standards
- IEC 62052-11
- NRS 009-6-7
- ISO 14001
- IEC 62053-21
- NRS 009-6-8
- ISO 9001
- IEC 62055-41
- ESKOM SCSSCAAA9
- IEC 60068-2-6
- ESKOM TRMSCAAP2
- IEC 60068-2-27
- SANS 767-1(BEC23PE/T)
- OHSAS 18001
- SANS 1524-1
- VC 8035 (BEC23PE/T)

#### Features
- Reverse energy detection and disconnection
- Configurable tamper detection
- Programmable overload
- Comprehensive earth leakage protection (PE version)
- Low base current measurement
- List of 10 meter specific tokens
- Common wallbase mounting

#### Installation
- **Footprint**
  - Common wallbase
- **Insulation class**
  - Double insulation

#### Terminals
- **Live**
  - Type: Busbars
- **Neutral**
  - Type: Busbars

#### Interrogation
- Type: MC171 direct probe

#### Security
- Meter housing
  - Security seals
- Tamper protection
  - Terminal cover, Tamper detection

#### Packaging
- **Wallbase**
  - Units per carton: 10
  - Carton weight (incl. box): 4.2kg
- **Meter**
  - Units per carton: 5
  - Carton weight (incl. box): 3.9kg
- **Meter & wallbase**
  - Units per carton: 5
  - Carton weight (incl. box): 8.7kg

### BEC23(07) range

**BEC23PL** - The BEC23PL is an STS single phase prepayment meter with an integrated keypad and a common base. The unit has an internal latch (rated to 100A), which is used to connect/disconnect the consumers’ supply.

**BEC23PLT** - The BEC23PLT serves the same function as the BEC23PL; in addition the unit is equipped with a tamper switch to detect tampering of the meter.

**BEC23PE** - The BEC23PE is an STS single-phase prepayment electricity meter with an integrated keypad. The unit has a built in earth leakage circuit breaker (rated to 20A). The earth leakage serves to protect the meter as well as the consumer premises.

**BEC23PET** - The BEC23PET serves the same function as the BEC23PE; in addition the unit is equipped with a tamper switch to detect tampering of the meter.
The BEC23(09) earth leakage range is the ideal prepayment meter for low cost housing projects. The integration of earth leakage protection and a double pole circuit breaker means there is no need to install a separate distribution box, making installation simpler and more cost effective. The cost of reticulation is also reduced as the meter is designed with a maximum current of 20 Amps.

Conlog’s BEC23 series comprises two distinct ranges: PL and PE (earth leakage) versions with optional tamper protection.

### Features
- > Active and reactive power measurement
- > Power factor measurement
- > Power overload protection
- > Current overload protection
- > Pre-paid and post-paid mode
- > Reverse line/load protection
- > Configurable tamper detection
- > Low base current measurement
- > Programmable overload
- > List of last 10 meter specific tokens
- > Common wallbase mounting
- > Comprehensive earth leakage protection
- > Configurable low credit alarm threshold

### Specifications

#### Voltage Ratings
<table>
<thead>
<tr>
<th>Parameter</th>
<th>BEC23(09) PL</th>
<th>BEC23(09) PE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Voltage (-20% + 15%)</td>
<td>220 - 240 V AC</td>
<td>220 - 240 V AC</td>
</tr>
<tr>
<td>Supply frequency (±5%)</td>
<td>50 Hz</td>
<td>50 Hz</td>
</tr>
</tbody>
</table>

#### Current Ratings
<table>
<thead>
<tr>
<th>Parameter</th>
<th>BEC23(09) PL</th>
<th>BEC23(09) PE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base current (Ib)</td>
<td>5A</td>
<td>5A</td>
</tr>
<tr>
<td>Maximum current (I_max)</td>
<td>80A</td>
<td>20A</td>
</tr>
<tr>
<td>Minimum starting current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 1</td>
<td>20 mA</td>
<td>20 mA</td>
</tr>
<tr>
<td>Class 2</td>
<td>25 mA (Earth Leakage only)</td>
<td>25 mA</td>
</tr>
<tr>
<td>Utilisation category</td>
<td>UC2</td>
<td></td>
</tr>
</tbody>
</table>

#### Nominal power consumption
- 1.6 W / 9 VA for BEC23(09) PL
- 1.2 VA / 9.5 VA for BEC23(09) PE

#### Over voltage rating
- 420 V AC for 48 hours

#### Short circuit rating
- Short circuit withstand 2.5 kA

#### Protection
- Power overload
- Power overload
- Over/under voltage
- Earth leakage
- Current overload
- Current overload
- Line/load reversal
- Line/load reversal

#### Environmental
- Operating temperature: -10°C to +55°C
- Storage temperature: -25°C to +70°C
- Humidity: 95% non-condensing

#### Status indicators
- Rate LED (1000 pulses/kWh)

#### Installation
- Common wallbase
- Double insulation

#### Terminals
- Live: Busbars
- Neutral: Busbars

#### Interrogation
- Type A (direct probe): MC171 direct probe

#### Security
- Provision for lead seals or wire seals
- Plastic seals / Load disconnection on tamper detection

#### Packaging
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Wallbase</th>
<th>Meter</th>
<th>Meter &amp; wallbase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units per carton</td>
<td>10</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Carton weight (incl. box)</td>
<td>4.2kg</td>
<td>4.9kg</td>
<td>8.7kg</td>
</tr>
</tbody>
</table>

#### Standards
- IEC 62051-1
- SANS 1524-4
- SANS 1524-1-1
- IEC 62052-11
- SANS 15417
- SANS 1524-1-2
- IEC 62055-31
- STS 101-1
- OHSAS 18001
- IEC 62055-41
- DSP 34-749
- ISO 14001
- IEC 62055-51
- DSP 34-1635
- SANS 1524-1
- IEC 62055-52
- RES/RRI/00/11740
- SANS 767-1
- VC 8035

Combining protection and energy management
BEC42(05) range

BEC42PL - The BEC42PL is an STS single-phase prepayment electricity meter. It contains one 100 A, 3.0kA single pole disconnection switch.
BEC42PLT - The BEC42PLT serves the same function as the BEC42 PL; in addition it also has a tamper switch to detect tampering of the meter.
BEC42PLG - The BEC42PLG is a STS single-phase prepayment electricity meter. It contains one 100 A, 3.0kA single pole disconnection switch. The device also has galvanic isolation for absolute safety.
BEC23PET - The BEC42PLGT serves the same function as the BEC42 PLG; in addition it also has a tamper switch to detect tampering of the meter.

Specifications

Voltage Ratings
Nominal Voltage (-20% + 15%)
Supply frequency (+5%)

Current Ratings
Base current (Ib)
Maximum current (Imax)
Minimum starting current
Class 1
Class 2
Utilisation category

Nominal power consumption
1.6 W / 9 VA

Accuracy
Class 2 (maintained throughout life of product)

Over voltage rating
420 V AC for 48 hours

Short circuit rating
Short circuit withstand 3.0 kA

Protection
Power overload
Line / load reversal
Current overload
Galvanic isolation
Over / under voltage
Delayed reconnection
Thermal overload

Environmental
Operating temperature
-10°C to +55°C
Storage temperature
-25°C to +70°C
Humidity
95% non-condensing
IP rating
IP51
RF immunity
30 V/m

Status indicators
Rate LED (1000 pulses/kWh)
Load / power status

Installation
Footprint
BS7856

Terminals
Type
Live
Neutral
Communication
Cage clamp
Cage clamp
Cage clamp
Maximum size
25mm2
25mm2
0.7mm2

Interrogation
MC171 direct probe

Security
Meter housing
Security seals
Tamper protection
Terminal cover, Load disconnection on tamper detection

Packaging
Units per carton
5
Carton weight (incl. box)
3.6kg

Features

> Thermal shutdown protection
> Optional audible feedback
> Reverse energy measurement & disconnection
> Programmable current and power thresholds
> Enhanced tamper detection
> Comprehensive consumer consumption data
> Delayed reconnection

Standards
- IEC 62052-11
- ISO 14001
- SANS 1524-1
- IEC 62053-21
- ISO 9001
- ISO 18001
- IEC 62055-41
- IEC 60068-2-6
- IEC 60068-2-27
- IEC 62056-21

BEC42(05) Single phase, BS footprint, split meter
Enhanced security and protection is assured with the BEC 42 range of prepayment meters. In addition to galvanic isolation and enhanced tamper protection, the meter is a split configuration; meaning the metering device is installed outside the premises, whilst the user interface keypad is installed in the consumer’s home. This ensures easy access to the metering device for the utility, whilst privacy and convenience is assured for the consumers – ideal for the retrofit market.

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The wireless Field Service Terminal (wFST(09)) puts convenience in your hands. The small handheld device is packed with features, such as the ability to undertake remote meter readings and interrogation, without ever having to access the meter. The device can distribute STS tokens to a meter, whilst maintaining a full log of all acceptance or rejection commands, for audit purposes. Another key feature is the ability to push GPS co-ordinates to a meter for improved asset control and record keeping. The wFST(09) is versatile in that it serves as an RF modem when connected to a PC or laptop. With a built-in onboard memory, data can be downloaded from the meter and uploaded to the back end system.

### Features
- Remote meter reading
- Extensive diagnostics and interrogation functions
- GPS logging of meters for asset management
- Complete log of activities
- Extensive battery life, with rechargeable battery
- STS compliant

### Specifications

#### Standards
- IEC 61000-4-2
- IEC 61000-4-3
- IEC 62051
- CISPR 22
- STS 101-1
- NRS 049-1:201
- ISO 14001
- OHSAS 18001
- SANS 60950
- SANS 60256-21 / IEC 62056-21
- SANS 62055-41 / IEC 62055-41
- SANS 60529 / IEC 60529
- SANS 300 220-1 / ETSI EN 300 220-1
- SANS 474 / NRS 057

#### Electrical Ratings
- **Battery type**: Li Po (Lithium Polymer) >1.8Ah Rechargeable
- **Battery voltage**: 3.6V
- **Operating voltage range**: 3.3 to 4.2V
- **Typical battery life**: 8 – 96 hours battery usage dependant

#### Display
- **Type**: Dot matrix 64 x 128
- **Charging options**: LCD display
- **Keypad**: Micro USB cable (PC)
- **Audible feedback**: Micro USB mains charger (230V)
- **Communication**: Micro USB car charger (12V)
- **RF communication distance**: 4 x 4
- **Key press feedback**: Yes
- **Audible feedback**: Yes
- **Radio frequency**: RF:433.05 MHz to 434.790 MHz <10mW ERP
- **Communication**: ~ 100m

#### Environmental
- **Operating temperature**: -10°C to +55°C (ambient temperature)
- **Storage temperature**: -25°C to +75°C
- **Humidity**: 75% annual mean, 95% for 30 days a year
- **IP rating**: IP30
- **Impact rating**: IK2
- **Altitude**: Can operate at an altitude of up to 3500m

#### Interface
- **Micro USB**: Interface

#### Antenna
- **External 434 Mhz stubby Antenna**
## Specifications

### Standards
- IEC 62055-41
- IEC 62055-51
- IEC 62055-52
- ISO 14001
- EN 300 220
- IEC 60529
- IEC 60950-1

### Electrical Ratings
- **Operating voltage range**: 80 VAC - 265 VAC
- **Frequency**: 50 - 60 Hz

### Battery Ratings
- **Battery type**: Li Po (Lithium Polymer) >1.8Ah Rechargeable
- **Battery voltage**: 3.6V
- **Battery operating voltage range**: 3.3V - 4.2V

### Solar panel electrical ratings
- **Voltage at maximum output**: 5V
- **Current at maximum output**: 410mA

### Charging options
- Powered via the mains source (85VAC – 265VAC/50 – 60 Hz)
- Battery powered via solar panel

### Mounting
- DIN rail, wall mount and pole top mounting

### Communication
- **RF**:
  - 433 MHz <10mW ERP

### RF communication distance
- ~ 150m to the wUIU(09)

### Devices supported
- Up to 24 devices.

### Environmental
- **Operating temperature**: -10°C to +55°C
- **Storage temperature**: -25°C to +75°C
- **Humidity**: 95% condensing
- **IP rating**: IP55
- **Operating altitude**: 0 to 2500m above sea level
- **Insulation class**: Double insulation

### Protection
- Heat shield

### Accessories
- Solar panel
- 3.6V lithium battery

---

### WEX(09) range

- **WEX(09) (09) Mains Powered**: Permanent AC Mains supply.
- **WEX(09) (09) Street Light Powered**: Permanent AC Mains supply with battery backup.
- **WEX(09) (09) Solar Powered**: Battery powered, charged via solar panel.

---

### Features

- > Extends range up to 150m (line of sight)
- > Supports up to 24 devices
- > Quick and easy installation
- > Cost effective
- > Heat shield
Traditionally split meters have required wiring between the metering device and the user interface keypad. Now, with Conlog’s wireless user interface unit (wUIU(09)), radio frequency is used between the devices, making installation simpler, better and faster. In addition, through the use of RF (radio frequency), users are assured of a working solution with no interference that can operate comfortably at distances of typically 100 metres. An added benefit is that the wUIU(09) is compatible with Conlog’s extensive range of split meters.

**Features**

- Maximum Effective Radiated Power (ERP) of 10mW
- Option of alkaline or lithium batteries
- Quick and easy to install and use
- Reduced installation costs
- Tactile keypad with audible feedback
- Operates on open (ISM) band

**Specifications**

### Standards

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<thead>
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<td>OHAS 18001</td>
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### Electrical Ratings

- **Battery size (Alkaline):** AA
- **Number of batteries required:** 2
- **Battery voltage:** 1.5V
- **Operating voltage range:** 1.8V - 3V
- **Typical battery life:** 3 years

### Customer displayed information

- Status of customers AC supply
- Available credit
- Low credit warning
- Token accept/reject
- Previously entered STS tokens (meter dependant)
- Meter status register
- Range, dependant on environment and installation

### Displays

- **Number of digits:** 7 major / 2 minor
- **Character height:** 410mA
- **Type:** Liquid crystal display
- **Viewing area:** 53mm x 30mm
- **Enunciators:** 6 icons and 10 segment bar graph

### Keypad

- **Columns x rows:** 3 x 4
- **Key press feedback:** Tactile / silicon rubber keys
- **Accessibility:** Visually impaired friendly

### Audible feedback

- **Key presses**
- **Token acceptance / rejection**
- **Low credit warning**

### Environmental

- **Operating temperature:** -10°C to +55°C
- **Storage temperature:** -25°C to +75°C
- **Humidity:** 95% condensing
- **IP rating:** IP45
The Wireless Meter Interface (WMI(09)) allows a previously hard wired meter to communicate wirelessly to the wUIU(09). The communication is two-way between the meter and the wUIU(09), and can be used on all split meters. The WMI(09) is available in different versions, ensure the version you have selected is compatible with the meter you have installed.

**Features**
- Enables a previously hard wired meter to communicate wirelessly
- Range extends from 35m (built environment) to 100m (line of sight)

**Specifications**

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</table>

**Connectivity**

- **Meter**
  - Galvanically isolated or current loop
- **WMI(09)**
  - RF modem

**Electrical Ratings**

- **Current loop (mA) - continuous**
  - 3 mA
  - 2 mA
- **Operating voltage range (VDC)**
  - 20 VDC
  - 12 VDC

**Communication**

- **RF type**
  - 433.05MHz to 434.790MHz (SRD band within the 10mW)
- **RF communication distance**
  - Line of sight: 100m
  - Built up environment: 50m

**Insulation**

- **Insulation system classification**
  - Mechanical
- **Impulse**
  - 6 kV
- **AC Voltage**
  - 4kV (RMS) for 1 minute

**Environmental**

- **Operating temperature**
  - -10°C to +55°C
- **Storage temperature**
  - -25°C to +70°C
- **Humidity**
  - 95% non-condensing
- **IP rating**
  - IP65

**Terminals**

- **Type**
  - Drop wire
- **Maximum size**
  - 0.7

**Mounting**

- **Type**
  - 35mm DIN mount
- **Maximum size**
  - 12.7mm bandit strapping
An innovation in the prepayment industry has been the use of split meters, whereby the metering device is installed outside the consumer’s premises and a User Interface Unit (UIU) is positioned within the premises. The UIU is a small keypad device that enables the consumer to enter their electricity credit and access some functionality, such as a variety of consumption data.

### Features
- Tactile keypad with optional audible feedback
- Large, clear LCD display
- Low credit warning and available credit
- Status of consumer’s supply
- Token accept/reject
- Previous entered STS tokens (meter dependent)
- Enhanced security

### Specifications

#### Standards
- IEC 62051-1
- IEC 62052-11
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- DSP 34-1527
- STS 101-1
- RES/RR/00/1740
- ISO 9001
- ISO 14001
- OHAS 18001
- DSP 34-1635

#### Customer displayed information
- Status of customers AC supply
- Available credit
- Low credit warning
- Token accept/reject
- Previously entered STS tokens (meter dependent)
- Meter status register

#### Displays
- Number of digits: 7 major / 3 minor
- Character height: 15mm / 7mm
- Type: Liquid crystal display
- Viewing area: 52mm x 30mm
- Enunciators: 6 icons and 10 segment bar graph

#### Keypad
- Columns x rows: 3 x 4
- Key press feedback: Tactile / silicon rubber keys
- Accessibility: Visually impaired friendly

#### Audible feedback
- Key presses: Token acceptance / rejection
- Low credit warning

#### Environmental
- Operating temperature: -10°C to +55°C
- Storage temperature: -25°C to +70°C
- Humidity: 95% non-condensing
- IP rating: IP54
It all comes together in the form of Conlog’s Data Concentrator Unit (DCU(09)). An integral link between the front and head-end system, the DCU(09) is responsible for the routine collection, storage and communication of metering data. The DCU(09) is a primary means of remote communication and is capable of reading and writing data to and from metering devices.

Packed with features, the DCU(09) performs various activities as required by the AMI System. These include meter discovery, meter reading, remote disconnection, reconnection of meters and load management processes. In addition, the DCU(09) provides up to date reporting on status changes such as tamper detection in the metering device and is capable of delivering tokens on request.

Communication problems are a thing of the past as the DCU(09) has the ability to collect and store data for subsequent retrieval. Diagnostic features include communication of critical changes to the AMI back end system, through the recording of system logs.

**Features**
- Collection, storage and communication of metering data
- Up to date reporting of status changes
- Recording of system logs for diagnostic purposes
- Automatic discovery of new meters
- STS Token delivery
- Remote disconnection and reconnection of meters
- Automatic reconnect upon link failure

**Specifications**

**Electrical Ratings**
- Nominal voltage (Un): 127/230 Volts AC (50/60Hz)
- Nominal voltage range: 85 to 265 Volts AC
- Minimum start up voltage: 85 Volts AC
- Withstand voltage: 440V / 48 hours

**Communication**
- Ethernet: 10/100 Full-duplex with auto-negotiation IPv4
- DHCP, DNS, or static IP configurations
- Plug-in GSM module: Quad-band GSM850, EGSM900, DCS1800, PCS 1900 Integrated antenna
- Protocol: Conlog proprietary
- Security: 128-bit encryption with CBC

**Functionality**
- Automatic discovery of electricity meters
- Remote meter reading
- Event notification (metering events)
- Tamper detection
- STS Token delivery
- Demand side management (Load shedding)
- GPS for time synchronisation and location
- LCD display for local configuration
- Remotely Upgradeable
- Battery backed-up RTC
- USB interface for system configuration and data retrieval
- Battery backed up – Last gasp communications support
- Plug-in communication module slots - upgradeable

**Keypad**
- Numerical keypad
- Control keys
- Four function key
- Tactile feedback

**Installation**
- Footprint: Wall or DIN rail mounted
- Insulation class: Double insulation
An innovation in the prepayment industry has been the use of split meters, whereby the metering device is installed outside the consumer’s premises and a User Interface Unit (UIU) is positioned within the premises. The UIU is a small keypad device that enables the consumer to enter their electricity credit and access some functionality, such as a variety of consumption data.

**Features**
- Tactile keypad with optional audible feedback
- Large, clear LCD display
- Low credit warning and available credit
- Status of consumer’s supply
- Enhanced security: Token accept/reject
- Previously entered STS tokens (meter dependent)

**Specifications**

**Standards**
- IEC 62052-11
- IEC 62053-21
- IEC 62055-41
- IEC 60068-2-27
- IEC 60068-2-6
- IEC 62056-21
- ISO 14001
- ISO 9001
- ISO 18001
- SANS 1524-1
- ISO 18001

**Customer displayed information**
- Status of consumer’s AC supply
- Available credit
- Low credit warning
- Token accept/reject
- Previously entered STS tokens (meter dependent)
- Meter status register

**Displays**
- Number of digits: 6 major / 2 minor
- Character height: 15mm / 7mm
- Type: Liquid crystal display
- Viewing area: 53mm x 30mm
- Enunciators: 6 icons and 10 segment bar graph

**Keypad**
- Columns x rows: 3 x 4
- Key press feedback: Tactile / silicon rubber keys
- Accessibility: Visually impaired friendly

**Audible feedback**
- Key presses
- Token acceptance / rejection
- Low credit warning

**Environmental**
- Operating temperature: -10°C to +55°C
- Storage temperature: -25°C to +70°C
- Humidity: 95% non-condensing
- IP rating: IP51
Another innovation in the wireless metering world, the wCBU (wireless Common Base Unit) has taken the industry by storm. The wCBU unleashes the opportunity for utilities to enjoy all the benefits of wireless split metering, without the challenge of removing existing common base meters. A cost effective solution, the wCBU is ideal for retrofit applications. The common wall base allows for quick and easy installation together with a large LCD screen and integrated keypad for effortless use. The wCBU PE version has a built-in earth leakage and test button, providing protection through a (20A) double pole circuit breaker ideal for low cost housing projects.

**Features**

- Available with built-in 20A earth leakage protection for added protection
- Quick and easy installation
- Typical battery life in excess of 10 years

**Specifications**

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</table>

**Customer displayed information**

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<td>Meter status register</td>
<td></td>
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<tr>
<td>Variety of consumption data</td>
<td></td>
</tr>
</tbody>
</table>

**Displays**

- Number of digits: 7 major / 3 minor
- Type: Liquid crystal display

**Keypad**

- Columns x rows: 3 x 4
- Key press feedback: Tactile / silicon rubber keys
- Accessibility: Visually impaired friendly

**Audible feedback**

- Key presses
- Token acceptance / rejection
- Low credit warning

**Environmental**

- Operating temperature: -10°C to +55°C
- Storage temperature: -25°C to +70°C
- Humidity: 95% non-condensing
- IP rating: IP51 (ECU/PE) / IP54 (ED/PL)

**Installation**

- Footprint: Common wallbase
- Insulation class: Double insulation
Conlog is proud to introduce **BUSINESS INTEL**, our Smart Data Analytics Solution.

Hosting Analytics through our cloud services allow Utilities to offload their IT burden of infrastructure acquisition, system management and database support, thus specifically addressing resource constraints.

Conlog’s Smart Analytics is the process of collecting and analyzing data in order to make better business decisions, allowing us to serve the customers business needs better.

We believe in providing the right information at the right time to enable managers to make informed business decisions.

Conlog helps to identify the key performance measures that directly affect your strategic objectives, track them and identify those factors that affect them using statistics and other quantitative techniques.

We make sense of unstructured data and provide intelligence to operational data.

Some of the Analytical Tools we use:

- Data Mining
- Statistical Analysis
- Predictive Analysis
- Correlation
- Regression
- Forecasting
- Process Modelling
- Optimization
- Simulation