utilitysystems

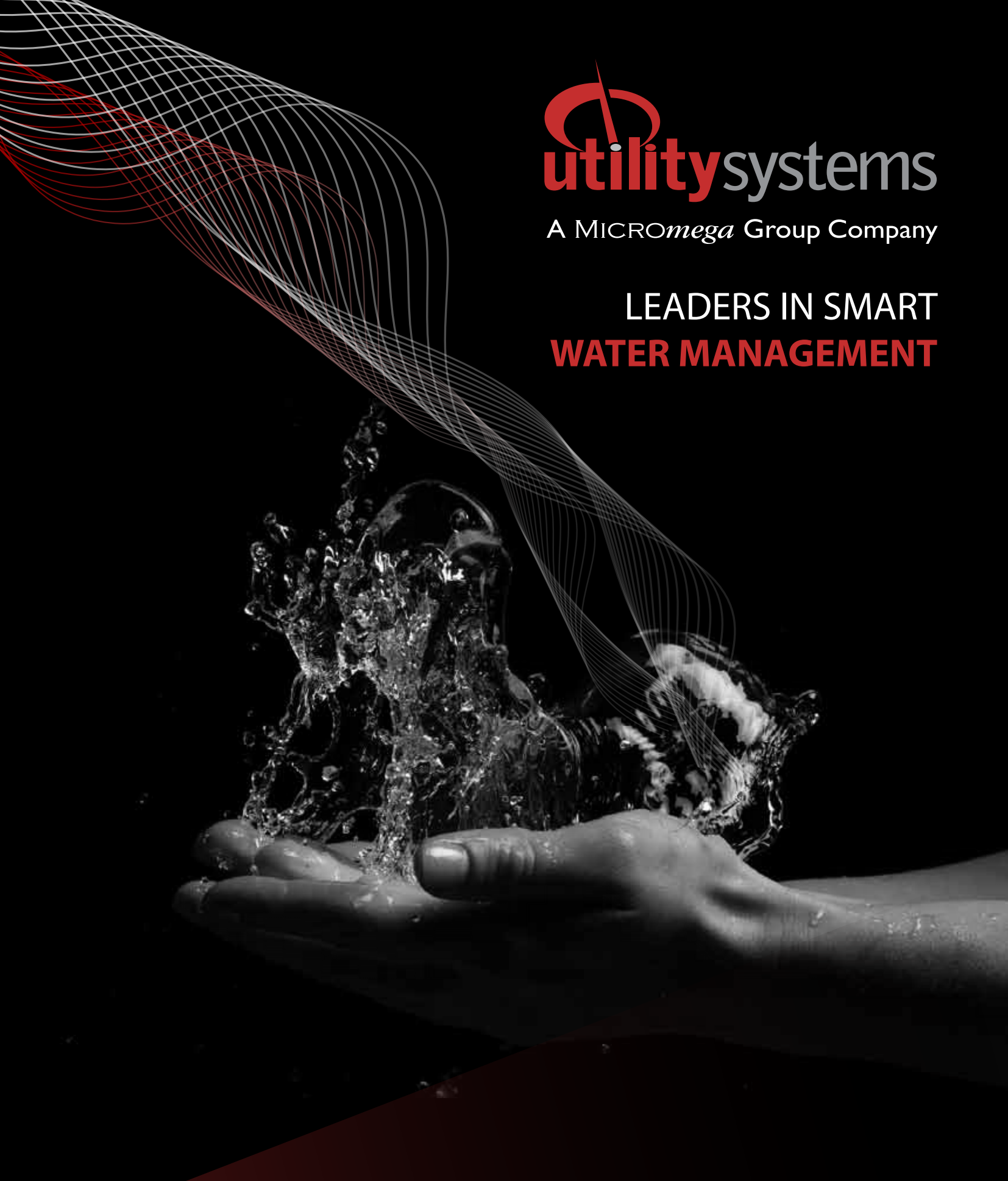### A Micro*mega* Group Company

LEADERS IN SMART
WATER MANAGEMENT

Utility Systems caters for a wide range of tailor-made metering options for water service providers and their customers through the application of cutting-edge, smart, digital technologies.

DOMESTIC, SMALL COMMERCIAL AND BULK METERING SYSTEMS

METERING SOLUTIONS

Prepaid Water Metering

Utility Systems developed the world's first commercially available and proven prepaid water metering system, approved by the STS Association. The Utility Systems prepaid water metering system is not proprietary token or card-based, but is an open architecture system complying with IEC standards (IEC 62055-41 and 62055-51) used in over 90 countries worldwide.

Free Basic Water

A number of countries have a policy of providing a minimum service to consumers, which is known as free basic water. Utility Systems is able to offer a system that addresses this policy through the limitation of water on a daily or monthly basis. The WMD can be programmed to meet the water service provider's policy, usually in the form of a daily or monthly allocation. Once that allocation of water is used, the valve will close and only open again at the specified time the following day or month. An option does exist for more than one allocation per day.

Automated Meter Reader or Reading (AMR)

AMR Walk-by/Drive-by

Using a Mobile Data Collector (MDC) by either walk-by or drive-by, data is collected from the WMD units and captured and downloaded to a local Field Service Terminal (FST) or laptop. The data can either be viewed in Excel format on the FST to check for valve status, tamper status, leak detection, monthly and current readings; or by using a data collector through Global Systems for mobile communication (GSM) and then to a remote server.

AMR GSM network

Data is collected by an MDC through a drive-by, walk-by or by a Fixed Data Collector (FDC). The data goes from the WMD to the data collector and then by GSM to a remote server.

Bulk Water Management

Utility Systems has integrated the control unit from its highly successful WMD into larger meter valves up to 50mm delivering solutions for bulk and prepaid water management. The Bulk WMD is the solution for the management of bulk water supply for customers using larger bore meters, such as zonal meters in both suburban areas and housing estates, schools, offices, factories and state departments.

A variety of cost effective applications

Utility Systems is a leader in the field of smart water metering. Based in South Africa, with its head office in Durban, KwaZulu-Natal, the company is the country's premier supplier of Standard Transfer Specification (STS) prepayment smart water meters and electronic water management devices to a global customer base.

Utility Systems' products can be used in conjunction with a variety of meters and housings to suit specific market requirements. The application caters for a wide range of smart water metering options to suit, not only the requirements of water service providers, but also the consumers.

All design and manufacturing are undertaken in accordance with our ISO 9001:2008 certification, where the focus is on producing high quality products.

The Utility Systems domestic, small commercial and bulk metering systems include:

• Automated Meter Reading or Reader (AMR)
• Advanced Metering Infrastructure (AMI) built around the water management device (WMD): smart, two-way communication, automated remote meter reading with electronic valve control, leak and tamper detection
• STS-approved prepaid water metering
• Free basic water based on a negotiated daily or monthly allowance

A large, proven deployment

The family of products is focused on the original WMD: there is a large and proven deployment of Utility Systems WMDs in the field and it is currently the only electronic flow-limitation device that has South African Bureau of Standards (SABS) and National Regulatory of Compulsory Specifications (NRCS) approval for flow limitation. It also has NRCS approval for prepayment and was the first prepayment device to be approved by the STS association.

The Utility Systems STS prepayment water metering system allows for multiple vending options through a variety of STS approved utility vendors, which means that water service suppliers are not tied in to just one option. Our unique "top-up" facility means that customers with free basic water can still receive this, without having to purchase credit.

The WMD can also be programmed to meet the water service provider's free basic water delivery responsibilities. Once the specified allocation of free basic water is used by a household, the valve will close and only open again at a specified time. It can also be used as the basis for a prepayment System to manage problematic customers, as well as for automated meter reading and gathering consumption data for water balancing, billing or capacity planning.

Partnering

While indisputably lying at the forefront of the global evolution of smart water management, Utility Systems' management is the first to encourage partnerships with other local companies – including metering companies, those involved in billing systems and the manufacture of meter boxes – to provide tailor-made, smart metering solutions for their particular location.

Training

Utility Systems product training is an interactive course designed to equip all levels of users, from the technical staff to management, on the various metering solutions Utility Systems have on offer.

Water Management Device (WMD)

The Utility Systems water management device, the (WMD), is the original remote communication electronic water control valve and STS approved prepayment water management device.

Bulk Water Management Device (Bulk WMD)

Based on our highly successful water management device (WMD), the Utility Systems Bulk WMD provides a large bore water management and prepaid metering solution. When connected to an approved pulse output meter and latching valve, the Utility Systems Bulk WMD is able to perform a number of water management and metering functions, including those associated with prepaid metering and AMI.

Aquadata

The Utility Systems Aquadata AMR is a low-cost, intelligent device that enables utilities to remotely read and monitor the metered consumption of water. The Aquadata is compatible with most makes of pulse output water meter and provides meter readings via a walk-by, drive-by, or fixed data collector. The automated reading capability reduces labour costs, improves meter reading accuracy, and records hourly water consumption data, leak and tamper detection

User Interface Unit (UIU)

The UIU is a remote display unit mounted inside the home which interacts with the WMD, Bulk WMD and Aquadata, which are generally installed in a meter box outside a consumer's home. This unit has a lifespan of up to 10-years and is very user friendly. It is a lightweight, wall-mounted device with an easy-to-read digital display, a touch keypad and has the following functionality:

•Remotely display the meter reading as reflected by the WMD
•Display remaining allocation available to the consumer
•Allow for top-up / credit entry for pre-payment applications
•Provide various alarms for the consumer, such as leak indication and low credit
•Display the WMD serial number required for top-up
•Indicate battery life
•Indicate valve status
•Access to emergency water via the WMD

Field Service Terminal (FST)

The FST is an integral part of the Utility Systems Water Management Solution, providing a software based in-field support tool for products such as the WMD, Bulk WMD and Aquadata.

The FST facilitates configuration, testing, data collection and data analysis using either an infrared probe (which connects directly onto the WMD) or a radio frequency probe, enabling AMR and AMI.

Mobile Data Collector (MDC)

The MDC is used to collect data from Utility Systems products. As the name suggests, it is a mobile device that is carried by a meter reader or installed in a vehicle and is the basis of the AMR system. The MDC can store several thousand meter readings at a time. The MDC in its simplest application is targeted at closed communities that are responsible for their own revenue collection. In this implementation the data is collected by the MDC and transferred via USB cable to the terminal.

The data is downloaded to the terminal and is presented in a spreadsheet format listing date and time, meter number, meter reading and other control data. This can then be sorted by meter number and compared to a previous meter data file. The difference between the corresponding records is then automatically calculated, and the appropriate amount billed.
The MDC can also be used to gather/collect data on a number of functional states, including leaks and tampering. In an alternative configuration, the data can be downloaded on a time schedule via GSM to a central server. This alleviates the need to return to a centralised location to download the captured

Fixed Data Collector (FDC)

This device is used for the same purpose as the MDC, but in a fixed network application. The Utility Systems FDC is a robust, weather-proof unit that can be wall or pole mounted. The FDC is supplied as solar panel powered or mains powered. The FDC collects data from units in the field (WMD, Aquadata, Bulk WMD) via Radio Frequency (RF) communication and automatically sends the data to the web via GSM communication. The FDC can be configured to send data as often as required and can store several thousand records.

Infrared Probe (IR Probe)

The IR Probe is used to communicate with the WMD using an infrared port on the WMD to read and configure the device via the FST.

Radio Frequency Probe (RF Probe)

The RF Probe is used to communicate with the WMD using a wireless connection to read and configure the device via the FST.

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