

# WiMBex

## Energy Autonomous Water Meter

**Wimbex provides water utility companies with an automatic remote water meter reading solution to increase company competitiveness and customer satisfaction.**

It addresses the special needs of home utilities by providing a remote metering solution independent from the electricity infrastructure, both in terms of data communication and in terms of power supply.

The WiMBex ARM system provides a cost-effective solution that suits existing and emerging industry requirements by using wireless technology combined with a novel hardware and software approach. This approach overcomes important limitations associated with the state-of-the-art where access and the use of an electrical grid for power and/or data transmission is costly and where the alternative battery powered wireless network approach is associated with regular maintenance.

### Energy Harvesting:

A rotational, radial-flux energy harvester incorporating a three-phase generation principle converts energy from water flow in domestic water pipelines. The energy harvester together with a power management circuit and energy storage is used to power the smart metering system installed underground making it independent from external power supplies or depleting batteries.

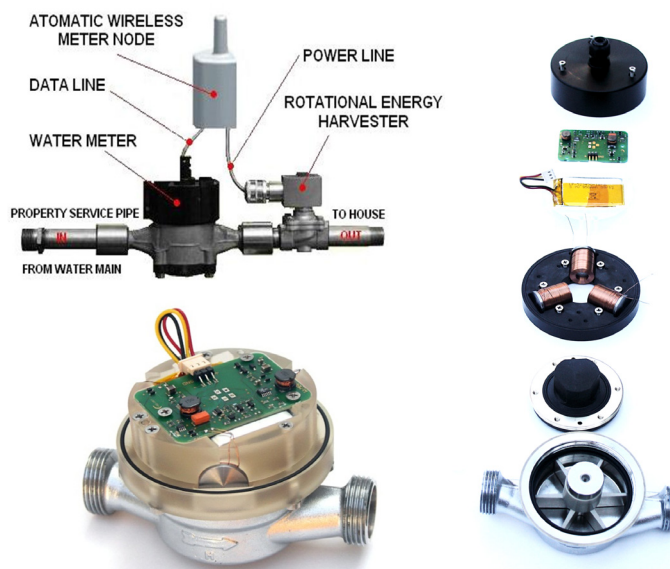


Fig. 1: Turbine system for the energy autonomous power supply of a water metering system.

### Key features

- Frequency bands: 169 MHz or 868 MHz
- Up to 5 Km range (LOS)
- Wireless M-Bus EN13757 part 4
- RF output power 14 dBm
- Ultra Low Power Consumption
- Integrated Energy Harvesting power supply

### Additional services

- Upgradable and configurable Over-the-Air
- Active inspection service
- AES128 data encryption
- Security Suite
- Maintenance Services with sniffer tools
- Network Simulation Tool

The design of the radial-flux energy harvester is adapted to the housing of a conventional mechanical water flow meter enabling the use of standard components such as housing and impeller. The energy harvester is able to generate up to 720 mW when using a flow rate of 20 l/min (fully opened water tab). A minimum flow rate of

3 l/min is required to get the harvester started. In this case a power output of 2mW is achievable.

See more at: [www.wimbex.com](http://www.wimbex.com)

