



The Wilo Water Kiosk

Simple Access to Safe Drinking Water

In many areas, a central drinking water treatment and distribution infrastructure does not exist. Drinking untreated water leads to water borne diseases like gastroenteritis, cholera, hepatitis, etc. and is the number one reason for infant mortality.

The Wilo Water Kiosk offers a small decentral water treatment solution which can be operated by a local shop owner or a village council with the following benefits:

- It uses water from various sources like wells, rivers and lakes
- A multistep water treatment process¹ removes odour, smell, particles and most important all² pathogens like viruses, bacteria and protozoa
- An RFID card operated dispenser facilitates easy to manage payments
- A system self-test checks for integrity of membranes and safe operation
- It is friendly to the environment with low water loss, low energy consumption and no need for chemicals

That means a simple system produces excellent water quality.

Water Treatment Process

The core of the process is a medical grade ultrafiltration system, which works as a barrier retaining everything bigger than 6 nm. Thus viruses, bacteria and protozoa have no chance to pass the ultrafiltration.

The pretreatment (DMF, ACF, softener) will take care of other contaminants. To keep water quality at a superior level, the system will be serviced by Wilo technicians.



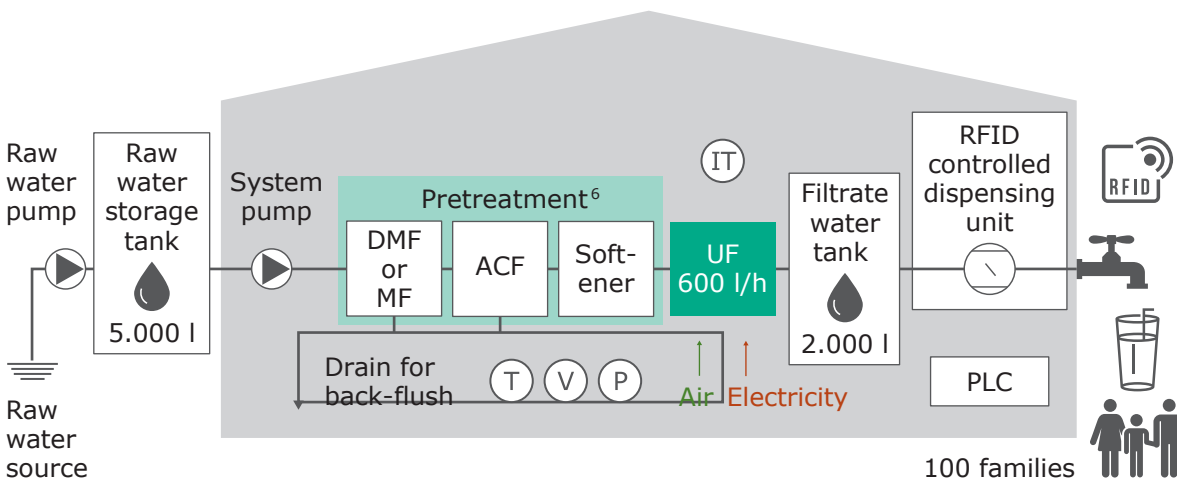
ACF activated carbon filtration; DMF dual media filtration
MF micro filter; UF ultrafiltration

Process and Instrumentation Diagram

The water kiosk is controlled via a PLC which processes temperature, flow and pressure measurements. The system needs raw water supply and electricity. The water quality is ensured through an integrity measurement of the UF membranes according to ASTM D6908 – 06 using compressed air. The water kiosk operates between two tanks with help of a system pump. An RFID card reader & writer controls the dispensing unit. Customers charge their RFID cards with cash payments e.g. in a shop or at the village council.



Wilo water kiosk in an Indian village



PLC Programmable logic controller; DMF Dual media filtration; MF Micro filtration; ACF Activated carbon filtration; UF Ultrafiltration; RFID Radio-frequency identification; IT integrity test; Instrumentation: T Temperature, V Flow, P Pressure

Technical Features

The system can be adjusted in size to demand. A typical system to supply 100 families will have the features below:

- Capacity: 2.000 litres per day
- Water loss: 1 to 5 % depending on feedwater quality
- Pressure loss: 5 bar⁷
- No chemical enhanced backwash (CEB) or clean in place (CIP)
- Water quality: system check via integrity test
- Power consumption: 0.5 kWh per day
- Cost of treated water: 0.01 € per litre⁸

Our scope of supply & services

- Pump to connect water kiosk with raw water source
- Water kiosk system including installation and commissioning
- Service contract with quarterly visit of a certified technician
- Monthly water quality testing
- Training of local operator and families
- Financial services for investment in corporation with a local partner

1 Process will be adjusted to feed water quality, i.e. activated carbon and softener if needed; 2 Log reduction value > 12 for bacteria and > 5 for viruses; 3 Depending on feed water turbidity; 4 In case of odour, smell or other chemical contaminants; 5 If hardness exceeds drinking water limits; 6 Treatment steps according to feed water quality; 7 For all process steps, will be lower if ACF and softener are not needed; 8 Total cost of ownership based on India

