

AQUA CNT TECHNICAL AND GENERAL FEATURES



The AQUA CNT 100 Series devices are used for controlling and monitoring the pumps used in wells and water supply stations as well as monitoring the parameters such as the water level, water flow and pressure in stations such as water tanks and isolated District Metered Areas (DMA).

It can also be used in any station where watering is concerned such as agricultural irrigation and industrial applications. You can easily integrate AQUA CNT devices with AQUA LITE software or Koru1000 WMS water management system or any other SCADA system that is compatible with MODBUS TCP.

- Ultrasonic flow rate module (optional)
- Low Power Microcontroller
- LCD Display (64x128 Graphics) and Membrane Keypad
- GSM/GPRS Modem + Antenna
- Battery Management Unit (DC UPS +Charge)
- 14.8V 12.8A Lithium Battery
- 8 MB Internal Flash Memory
- 3 Analog Inputs (16-bit), 1 Analog Output (12-bit)
- 4 Digital Inputs, 2 Digital Outputs (With Relay)
- MODBUS TCP Master and Slave communication (up to 5 simultaneous connections)
- 24 VDC Input Supply
- Easy installation with ergonomic properties
- ABS polymer external protection against corrosion
- Suitable for operation at temperatures between -20C and +60 C.
- Internet IP filtering and APN support features for security.
- Digital inputs the device can be read via SCADA.
- TS EN 61000-6-1 and TS EN 61000-6-3 with CE compliance certificate.
- RTC (real-time clock) update over GSM
- IP65 Protection Class



ABOUT ENVEST

ENVEST ENERGY AND WATER TECHNOLOGY CO. LTD. founded to develop and manufacture innovative electronic and software products for water management in 2012. Since the day it started its activities, ENVEST has developed web-based, universal, economical, user-friendly software and control devices, unlike traditional (high initial investment and operating cost) automation systems. The systems we develop under the Koru1000 brand sustainably manage all processes from the source of water to the end user.

In today's world where concepts such as Industry 4.0, the internet of things, big data and artificial intelligence come to the fore, we can smartly predict the future of water. In today's world dominated by unlimited consumption, we act knowing that the resources we have are not unlimited as they seem. Based on the principle of sustainability, we offer modern water management systems to protect our world.

CONTACT INFO



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AQUA CNT

SMART PCS

Compact Type
Pressure Controlling
System (SMART PCS)

NON REVENUE WATER



Non Revenue Water is the water that is produced but lost before it reaches the consumer. These losses can be real losses such as the loss caused by leakage, or the losses that is a consequence of the illegal use of water or the faulty measurements. High rates of water losses cause great waste of financial assets with regards to water and energy. The International Water Administration (IWA) uses the following data to evaluate the non revenue water:

- Unbilled Permitted Consumption
- Visible Losses (Illegal use and faulty measurements)
- Real Losses (Looses in the delivery lines, water storage facilities, distribution network or water supply stations)

The components and sub-components of the non revenue water cannot be measured in great detail in most state departments.



KORU1000 WMS V1.6 CLOUD BASED WATER MANAGEMENT SYSTEM

- It is a software system developed to manage thousands of water facilities from a single screen.
- Can communicate with different brands of PLCs and RTUs with dozens of different industrial protocols, including MODBUS TCP and FINS.
- It is a web-based control and monitoring interface.
- Can work redundantly.
- Unlimited numbers of tags.
- Can easily transfer trend graphs to pdf, excel or printer.
- Can define alarms and send them as SMS, e-mail and notification.
- Can perform energy efficiency analysis in pumps.
- By monitoring DMA stations, it can perform loss-leakage management by calculating parameters such as MNF and ILI.



COMPACT TYPE PRESSURE CONTROLLING SYSTEM (SMART PCS)



SMART PCS is comprised of an integrated mechanical and electronics controlling unit which is used to regulate the pressure automatically in a region. It is a novelty device developed to reduce the water losses in the water network due to the high water pressure. Depending on the consumption rates in the region, it can set the water pressure adaptively to the desired pressure value set by the user by using PID methods.

Thus the pressure in the region is optimized which results in a dramatic decrease in the existing water loss levels. The length of the mechanical part of the product, for DN150, is 110 cm. This enables the customers to use it even in narrow manholes.

System Components:

- Pressure Regulation Valve (PRV) with Proportional Actuator Pilot Control.
- AQUA CNT 100S Compact type control device.
- The flowmeter that does not require a space before or after the place of installation (%0.2 sensitivity)
- Compact type strainer (filter)
- 3 pressure sensors (Inlet Pressure, filter outlet pressure and system outlet pressure)
- 2x33Ah CGD Batteries, Solar Panel, Solar Panel Pole and charging regulator.

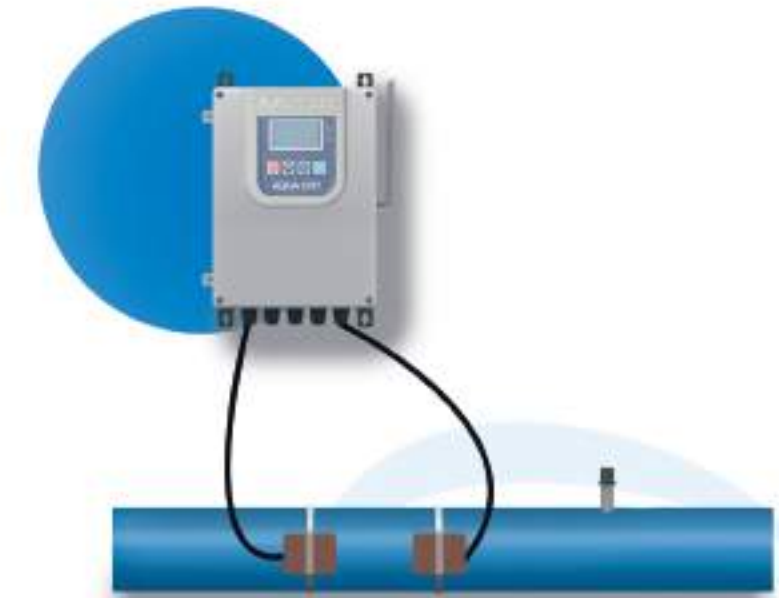
Abilities:

- Manual Operation: The PRV outlet pressure is adjusted automatically according to the set value determined by the user.
- Automatic Operation Scenario:
- Time-based operation : The user can set 12 different time zones and can adjust individual pressure set values for each zone. The pressure of the region is adjusted according to the respective set value automatically. Different pressure set values can be determined for special days and holidays.
- Operate based on the remote point reference pressure value: The pressure is adjusted automatically according to the pressure value that is obtained by an AQUA CNT mounted anywhere on the same water network.
- Safety Features: The device alarms can be triggered by defining the minimum and the maximum limits of the water flow and pressure values. In case of an alarm, the emergency scenarios can be determined such as completely closing the valve or setting the opening of the valve to certain degree etc.
- In case of a power failure the batteries allow the system to work up to 48 hours.

Optional Features:

- In case of the presence of a power line, instead of solar panels, pole and regulator, the device comes with a DC UPS and an SMPS.

DISTRICT METERED AREA (DMA) & FLOW MONITORING SYSTEM (AQUA CNT)



One of the methods used to reduce the losses in a water network is to establish a **DMA (District Metered Areas)** in the region. By this method it is possible to monitor the water flow and the pressure of the water distribution line online.

The hydraulic modeling and the structure of the water network are taken into account when determining the borders of a DMA. The data loggers that can transmit the measured data once in a day can be preferred in such systems, as well as the systems that transmit the data continuously.

The MNF (Minimum Night Flow) is measured by taking the pressure and the water flow values between 02:00 AM and 04:00 AM into account. By comparing MNF and actual water flow, with the help of other parameters, the ILI (Infrastructural Leakage Index) is calculated. By showing the districts in the map, colored according to the ILI value, the districts are put into an order from the worst to the best. Thus, enabling to detect the regions where the loss is more serious. Without DMAs it is not practical to detect the leakages by looking for them street by street.

- With AQUA CNT 100F, the DMAs can be monitored very easily.
- With the help of the clamp-on probes of the built in flow meter (1% sensitivity), it is possible to measure the water flow in a pipe without cutting the pipe.
- An external flowmeter or pressure sensors can be connected.
- Can transmit data to any SCADA system through GSM/GPRS instantly.
- Can be operated with 24V DC. Also, without the need of an external regulator, a 50W Solar Panel can be used.
- In case of power failure, the device can keep operating with the aid of 12Ah lithium battery up to 2 days.
- For the menholeless (buried) applications, the probs and the sensors with the IP68 protection are available.

