

AquaLink II

SMART GSM/GPRS Metering System



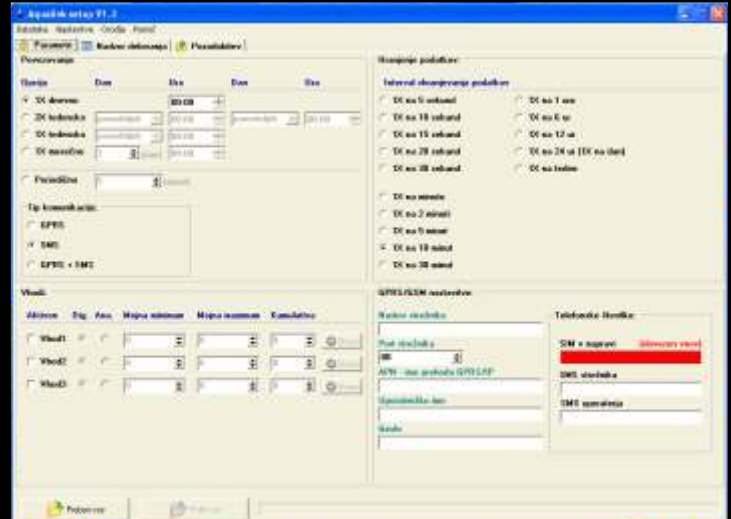
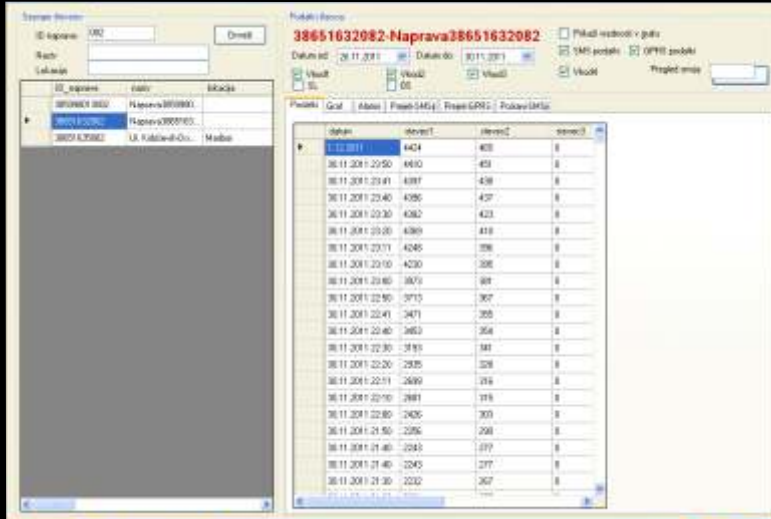
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Technical Document AQUALINKII

Aqualink II is an automatic meter reading device (AMR). The device can be connected to different meters (water, gas, temperature, pressure, electricity, water level...). The device is battery powered and it periodically sends data via SMS/GPRS to a processing server.

The processing server receives and stores data to a SQL database. An authorized user can then access the data through the internet. The data is presented numerically and graphically in tables and graphs. The data can also be exported to different formats. Alarms can also be set, which, when triggered, are then sent as a SMS or an email to the user.



Basic device operation

The device is designed for minimum power consumption while ensuring precise impulse counting and data transfer to the server. That is why most of the time the device is in sleep mode. As soon as it detects a change it wakes up, registers the pulse and goes back to sleep mode. Once a day (or more often, based on the configuration) the devices goes into a transmitting mode in which it sends the accumulated data via SMS or GPRS to the server. In case there is not enough signal for a GPRS connection (if configured) the device sends SMS instead. Due to battery conservation the device uses a "smart" algorithm that monitors the amount of tries and limits if needed.

The device can also be re-programmed or re-configured through the server without intervention on the field. When it connects to the server it checks if the software or parameters need updating and does so, if necessary.

SMS/GPRS configured parameters

- Data storage mode for each input: interval, input type and alarm values for an interval
- Number of active inputs
- The number of GPRS connections per day with a specified interval
- The number of SMS messages per day with a specified interval
- Telephone number, SMS center number, SMS server number, SMS operator number
- GPRS server configuration
- Serial number of a meter and the input it is connected to

Data that is sent during communication

- Device ID (unique number)
- Battery voltage
- Meter index in specified time intervals (from device memory) and meter serial numbers
- If needed the index of other analogue inputs (current state)

Special characteristics

Aqualink II is compatible with all devices with impulse output, inductive output (HRI, Cybel...) or probes, sensors with current outputs 4-20ma and 50-1000 mV. Three devices can be connected to Aqualink II in different combinations.



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- Housing IP65 (ip68 in development)
- Firmware upgrade through GPRS or USB cable
- Two-way communication
- Lifetime without battery change: up to 6 years
- SMS once a day shows the index for each hour
- Minimum time interval for sending data: 5 min (SMS/GPRS)
- Minimum time interval for storing data 5 s
- Device archive: up to 6 months
- Installation and setup through the internet server or with a PC with a USB cable
- Online data review
- Internal antenna SMA (can be replaced with another, for better reception)
- SIM card replaceable
- Battery replaceable
- Can be connected to mains power
- Wall mounted
- Output option (opening/closing of a valve)

Technical specification of the product

Product:	Electronic counter of water flow
Operation:	Counting of pulses and analogue values and data transfer through GSM/GPRS network (SMS or M2M)
Dimensions:	122,2mm x 64,5mm x 82,7mm without mounting inserts; 162mm x 64,5mm x 82,7mm with mounting inserts;
Weight:	460 g
Mounting:	With screws or bands
Protection class:	IP65 (ip68 in development)
Operating temperature:	-15°C do +55°C
Power supply:	2x Li-SOCI2 battery; 3,6V; together 28.000mAh
Power usage:	State: <ul style="list-style-type: none">- Sleep (RTC on) : 145uA- Data collection: 5,5mA- Data transfer: <300mA
Interface:	3x digital input or analogue (configurable) 2x relay output (max.: 2; 60W) 1x Reed 1x USB port 1x RS232 Port
Display:	3x LED diode TBD
GSM Modem:	Quad Band; GSM 850, EGSM900, DCS 1800, PCS 1900
Antenna:	External or internal, SMA connector
SIM holder:	classic SIM holder

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