WATER LEVEL MONITORING SYSTEM

AQUA LOGGER HS

MAIN FEATURES

Ultra-low power - very long operating time without battery charging or replacement

Built-in GMS/GPRS data transmission

Full remote configuration

Data accessed through every web browser

Possible data transfer directly to user's server

Text and email notifications

Cabinet door open alerts

Increase of measurement and data transfer intervals when threshold values are exceeded

Embedded solar charger and optional PV panel installation

Aqua Logger HS measuring station is a device dedicated to water level monitoring in natural environment and in changing weather conditions. Measurement is made with the use of a hydrostatic probe calibrated with the data logger. The measurement of water level is made by calculating the hydrostatic pressure of the liquid column on the probe placed by the bottom of a water basin. Measured data is sent to data server via GSM. In standard configuration, the station is powered with a 12V 35Ah AGM battery.

In most operating modes this application is ready to work continuously for several years without battery charging or replacing. For examaple, if the measurement is made every 10 minutes and data is updated every 60 minutes, the station will work for 5 years minimum. An additional 3W PV panel will enable continuous measurements in all possible settings of data sampling and GSM transmission intervals.

Ultra-low power consumption of the station marks it out among similar devices used for water level measurement.

One battery set provides long working time which excludes other than standard maintenance of the station. In comparison with grid powered solutions, Aqua Logger HS generates significantly lower installation cost

Full online access to measuring and transmission intervals configuration as well as the wide range of adjustable email and text alerts enable professional and economic measurements campaigns. Aqua Logger HS is recommended as a reliable and easy-to-install alternative to standard water level stations which are grid powered or use large PV panels.

EXEMPLARY DAILY POWER CONSUMPTION FOR CHOSEN SETTINGS

Data transmission interval	Measurement Interval	Approx. daily power consumption*	Approx. operation time with AGM 12V 35Ah**
1/24h (once a day)	24/24h (every 60 minutes)	0,011 Wh	> 100 years
1/24h (once a day)	144/24h (every 10min)	0,016 Wh	> 70 years
6/24h (every 4 hours)	144/24h (every 10min)	0,036 Wh	> 30 years
24/24h (every 60min)	144/24h (every 10min)	0,108 Wh	> 10 years
144/24h (every 10min)	144/24h (every 10min)	0,587 Wh	715 days
144/24h (every 10min)	1440/24h (every 1minute)	0,637 Wh	658 days

* Calculation for good GSM signal and low network usage conditions. When weak GSM signal or BTS overload, the given values will be higher.

** Approximate time assuming the use of full nominal capacity of the battery. In reality, energetic efficiency of a battery is lower than the nominal capacity given by manufacturer. It depends on working temperature, self-discharging and process of wearing out. Together with level measurement, the logger always measures power supply voltage. The voltage should not drop below 11,5V.

SPECIFICATION

Measurement range	0 … 4m; 0 …. 8m or 0 … 20m
Probe type	Ceramics, Al_2O_3 (96%)
Sensor output signal	4 … 20mA
Accuracy at 25°C	± 0,3% of measuring range
Probe working temperature	-10°….+70°C
Long-term stability (1 year)	± 0,2%
Probe's housing	Stainless steel 1.4404 (AISI316L), IP 68 (2.0 bar; 20 m), dimensions 96 x Ø 25mm
Probe's wiring material	PUR
Data transfer type	GSM / GPRS
Power supply	10 - 30V DC
Standby power consumption	<250µW
GPRS transfer power consumption	~360mW
Measurement power consumption	~100mW
Single measurement time	<2s
Average data transfer modem activity time	18 … 22s typically
Battery	35 Ah, 12V, AGM or 24 Ah, 12V, AGM with PV panel
Optional PV panel	Built-in solar charger enables direct connection of a PV panel up to 5W
Approx. working time without battery (35Ah) replacement/recharging	data update – 60min, data sampling – 10min >5 years data update – 10min, data sampling – 10min >2 years
Data transfer interval	in range: (1min)….(24h)
Measurement interval	in range: (1min)….(24h)
Internal memory	50 000 records
Registered technical parameters	Electronics' temperature, power supply voltage, GSM signal, modem activity during last data transfer, cabinet door open
Text alarms	Possible for medium level and chosen technical parameters
Data logger housing	ABS, IP67, 195x125x60mm
Cabinet material	polyester thermoset fortified with fiberglass, non- hygroscopic material
Data Logger working temperature	-40°….+60°C
Cabinet parameters	IP67, 400x300x200 mm, IK 10 - mechanical impacts scale, second class of protection
Cabinet door locking method	patent key (lower), padlock (upper)
Cabinet foundation dimensions (optional)	height 500x750x1000 x width 265 x depth 170