

# Flood Warning Station

Limnigraf and rain gauge stations for Flood Warning Systems.

3.2



- Level limit and gradient alarms
- Alarms triggered by torrential rain
- Automatically send an SMS warning
- Regular transfer of data to the server via GSM / GPRS networks
- Access to graphs via web browser or mobile phone
- Replying to an SMS query
- Retention of data in a database on a server
- Continuous operation without mains power
- Compact and mechanically rugged

## Basic description

The basic element of local flood warning system consists of telemetry stations M4016-G3 with built-in GSM / GPRS modem, pressure or ultrasonic level sensor, spare rechargeable battery, solar panel or AC power supply, depending on what place the warning station installed. Assembly can be supplemented by rain gauge.

The whole system can be further expanded to measure the temperature of water and air, wind speed and monitoring other physical quantities.

Part of the warning system is also software support for server [www.hladiny.cz](http://www.hladiny.cz) to which they are regularly sent data from the stations and where they are generated weekly charts and small two-day graphs suitable for display on the screens of mobile phones. Administrators stations have unlimited access to all data, including diary station, which are archived as all sent and received SMS.

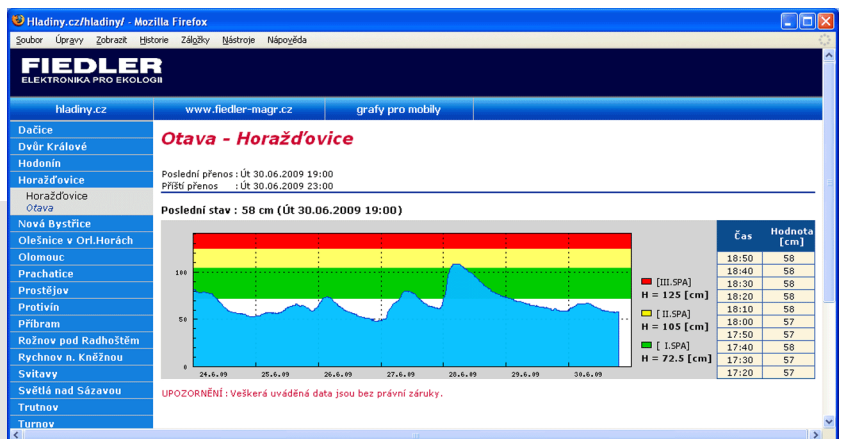
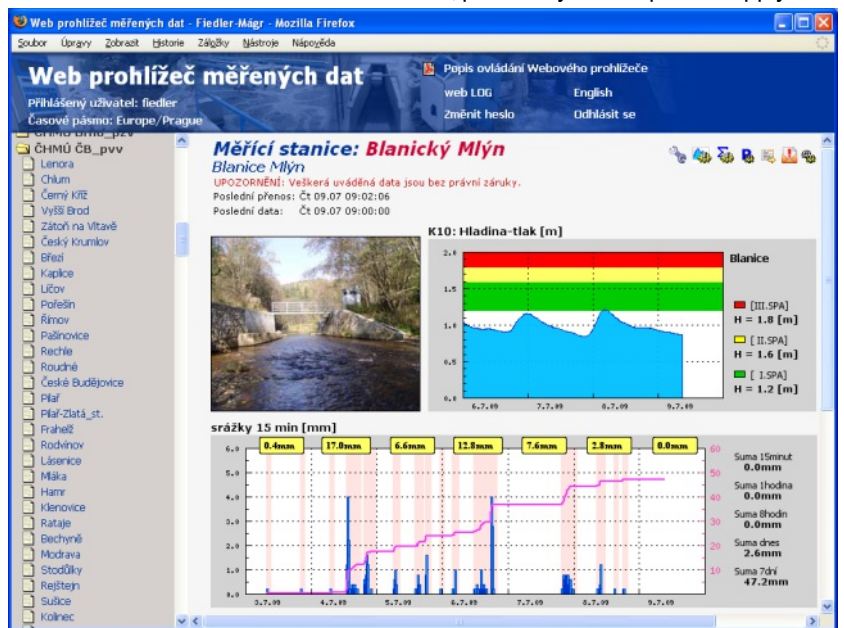
Under normal operating, station continuously measures the water level and set other variables. After reaching the alarm level from the station to automatically transmit a first warning from the list of SMS recipients. Parameters set stations allow up to 30 SMS alert not only for different levels of limiting the flow of the reference level, but also for rapid growth levels, the torrential rain, drops of blood, etc..

More than 300 stations M4016-G3 we have yet installed the premier category of profiles A and B for Hydrometeorological institut in Czech Republic a

## Installation

Water level sensor is placed in a protective embedded in adhering to the shore or bridge pillars or other solid support in the flow. The ultrasonic sensor is usually installed on the bridge structure.

Station M4016-G3 can be removed from the sensors measuring hundreds of meters in a convenient accessible location, preferably near of power supply.



FIEDLER

reliable  
warning system  
measuring stations  
with software  
support server

Low cost  
and operating costs

SMS warning system

Easy expansion

Self-diagnostics

GPRS communication

Datahosting on  
server

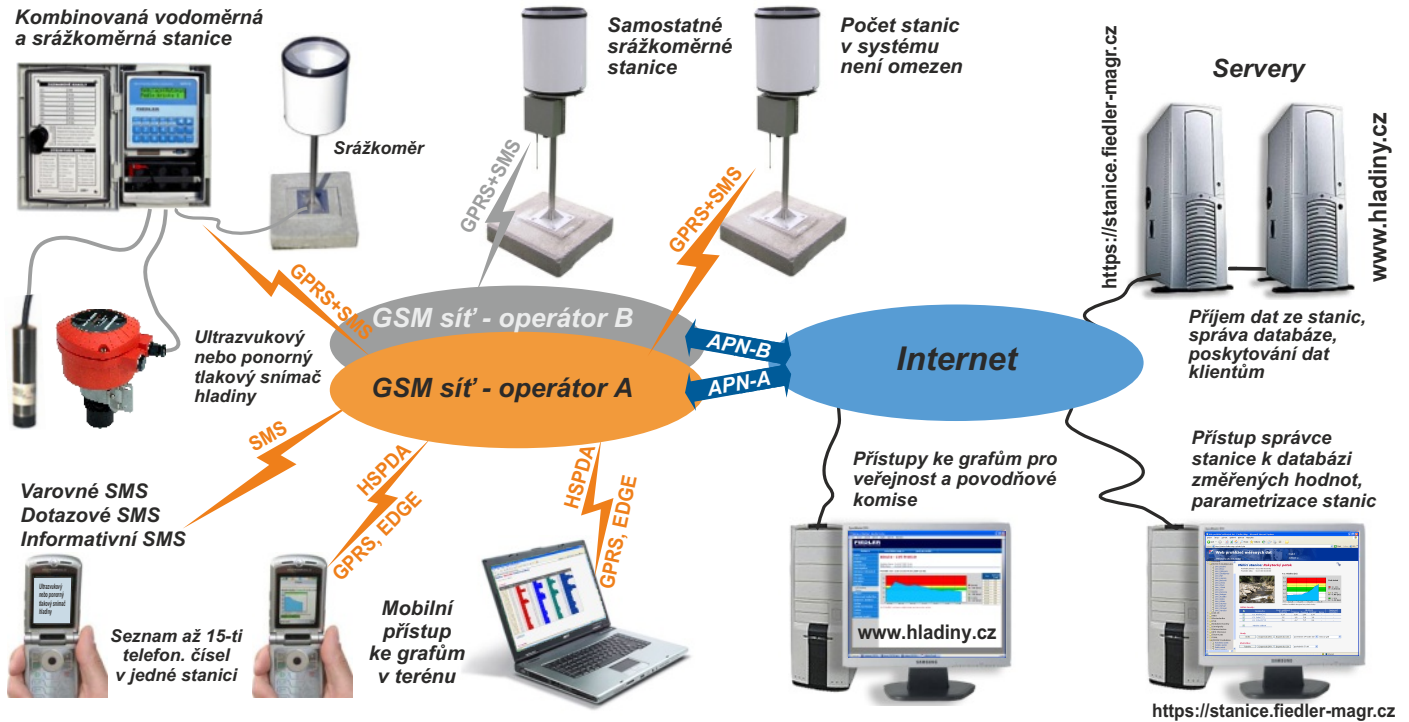
Long-term operation  
no external power supply



Obce a města  
ČHMÚ a Povodí  
Věda a výzkum

FIEDLER-MÁGR elektronika pro ekologii  
Grünwaldova 18, 370 01 České Budějovice  
Tel.: 420/386 358 274, 420/603 569 565

The full list of products, access demonstration  
the data server and a complete price-list on  
[www.fiedler-magr.cz](http://www.fiedler-magr.cz)



## Transfer and Data Visualization

WWW

- Regular sending of measured values to the database on the server via an internal GSM / GPRS modem.
- After evaluation of the alarm condition is possible, for the duration of elevated levels, more frequent sending data set.
- The database on the server along with the measured data is transferred and operational station diary (text received and sent SMS, including telephone numbers, senders and recipients, faults, failures in the external power supply, information about the underlying data transmissions, etc.).
- Registered users have the option to view data stored in a database on a server through a standard Web browser. Individual users have their access to areas separated from each other.
- Graphs of selected stations can be accessed and unregistered users on the Internet freely accessible server [www.hladiny.cz](http://www.hladiny.cz) or pass them on websites of municipalities and cities.
- Basic web screen hydrometric station includes in addition to the statistical summary (current value, reached highs and lows) is also a graphic representation of the level in the last 7 days.
- For more detailed overviews can draw graphs of each individual measuring channels as well as historical charts archived in any month. Each graph is accompanied by a table of values.
- Special web site shows the monthly tables of statistical values (minimum and maximum daily, flowed volumes).
- The data from the database server can be exported from the Internet directly into Excel or MOST for further processing.
- After reaching the limit values can be measured stations, in addition to sending SMS messages of warning, make an exceptional data transfer to the server.

## SMS warning system

SW

- Activation of warning SMS messages after reaching the preset level. The possibility of setting the current limit of several different levels.
- Fast rising water levels may cause sending an SMS warning prior to reaching the limit level (gradient alarm).
- After connecting the rain gauge can also activate a warning SMS or prolonged torrential rain.
- Adjustable hysteresis and time condition of limit values to prevent false alarms.
- Automatic SMS sending warnings to 15 phone numbers. Addresses can be organized into groups.
- Apart from mobile phones can also send warning messages to the e-mail addresses or electronic signaling devices.
- The warning text messages the station can enter the actual values.
- Built-in self diagnostics station status alerts via SMS at a low voltage battery power supply, failure or restoration of power supply voltage drop prepaid SIM cards below the set value, the failure of the connected water level sensor and the like.
- The station sends an informative text in response to a query SMS or authorized user of the system periodically at a set time. Custom units system time is synchronized by a time server from the Internet.
- The contents of selected variable is automatically sent by SMS (current value, reached highs and lows, the trend decline or rise, flowed volumes, ...).

## Acquisition and operating costs

Price per set of warning local hydrometric station varies according to type of sensor and method of an external power supply around 45,000,- CZK without VAT. Surcharge for rain gauge is 13,600,- CZK. Separate rain gauge station is 33,200,- CZK without VAT.

Server and its software is not necessary to obtain, because the manufacturer provides stations for a fee from 30,- CZK / month / station lease space on its own secure server and all related services (datahosting, graphs on [www.hladiny.cz](http://www.hladiny.cz) etc.).

Operating costs for the GPRS data services to prepaid SIM cards is around 1,- CZK / day / station. The tariff SIM cards are roughly half the cost (excluding tariff payments).



Flood warning system