# **Environmental Monitoring**

Variable monitoring system with wide software

Low purchase and operational costs

Wide selection of sensors

**GPRS** communication

Warning SMS system

Auto diagnostics

Data hosting on producer's server

Long-term operation without external supply



Water Supply Hydro-meteorology Science & Research

## **Basic desribtion**

Gagin station Tetrevčí potok Operates: PF UK in Prague Mounting: M4016-G3, US1200

FIEDLER-MAGR Company produces field data loggers and telemetric stations with build in GSM/GPRS+SMS module in tough and mechanically resistant design, that is suitable for longterm measuring in outdoor world. Machines work reliably in a wide temperature range; they endure wet and dusty surrounding, are usually supplied from its own batteries or from charging accumulator and are characterized by great number of universal inputs and measuring channels and by wide software.

For application that needs more connected detectors and sensors or where there is a need to connect sensors with higher current consumption is suitable M4016 measuring station. This might be completed with solar panel for permanent recharging of build-in, service-free accumulator.

Long term measuring of one or two values is more suitable for a small telemetric set STELA, which is possible to do an everyday transfer of measured data to server, with no need of battery exchange.

## Characteristics of monitoring system

- Compact mechanical design with high protection
- Modern electronics with low electricity consumption
- Great number of universal inputs and recording channels
- Wide software and easy parameterization
- Automatic data transfer into the Internet and data hosting provided on producer's server including exports
- Safety access to data through web browser
- Possibility of warning SMS sending





Station M4016

**Telemetric configuration STELA** 

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## **Examples of monitoring stations**



ČHMÚ gagin station-Stodůlky area Mounting: M4016-G telemetric station



Combined meteorological station HBÚ AVČR, supplemented with water level monitoring in holes and in open flows, it also measures water chemism

W1 Winter speed sensor

Drainage water measuring Area: Kojčíce **Operator: VUMOP Prague** 

Environment monitoring

### Gagin stations

- Water level measuring of instantaneous flow, quantity of water that flew through and water temperature is possible to enlarge of pH monitoring, conductivity monitoring, cataract monitoring and absorbed oxygen monitoring....
- Automatic data transfer to server and sending of warning SMS after achieving of presented intervals enables to incorporate stations into an anti flooding system

EasyTREK

Ultrasonic

water level

measuring

to 15 m

sensors with

scale from 4m

LMP307

Immersion

applications

including underground

waters monitoring

pressure water level sensor

suitable for most

More than 150 installations on big rivers and on small local flows till this time.



Ultrasonic water level sensor with small current consumption designated for smaller rivers

#### Psychrometric stations

- Shuttle psychrometer SR03 and SR02 with collecting board 500cm2(200cm2) and with distinction 0.1 mm (0.2mm) of waterfalls might have itself recording unit and automatic data transfer on server
- Beside waterfalls, temperatures, water levels and other values might be measured
- Transit calculation of sliding waterfalls total might activate warning SMS sending in case of rainstorm.
- Heated type of psychrometer is designated for a yearlong operation **SR03/V** SR03/V



Self-heated funnel cuts fumes

Heat regulator controls independently both heating sections

#### Meteorological stations

**RV12** 

- Meteorological station based on M4016 registered unit enables measuring of air temperatures, soil or water in several levels, speed and air set monitoring, monitoring of relative soil moisture, global radiation incident and reflected, water falls and eventually other physical values as water levels, water flows, electromechanic water features etc are.
- All data from station are whenever acessible throughout the web browser.



Sensor of relative air moisture and relative air temperature in radiation cover **Rk10** 

#### SG002 Sensor of

global radiation · pyranometer

**W2** Sensor of winter speed and winter direction

## Special monitoring stations

Some special measuring stations mainly equipped with telemetric data transfer were built for different research institutes and universities.

- Floating station for monitoring of up to 16 water temperatures in different depths, supplemented with measuring of basic meteorological values and radiation flows.
- Small telemetric STELA sets suitable for example for monitoring of water levels in drill holes.
- Measurement of soil temperatures and soil moisture in different depths and for different soil structures.

#### **Controlled irrigation system**

Other M4016 application are some extensive watering systems adjustable through the Internet, that might operate many independents valve sections and simultaneously monitor soil moisture and other values.



VIRRIB Soil Moisture Sensor