Snow Melt Analyser SMA

Analysing the snowmelt and ascertaining the water run-off

The Snow Melt Analyser (SMA) constitutes the ideal measuring solution for the analysis of snowmelt. With its help, melting processes in the snow can be detected and the water run-off can be ascertained and used for flood forecasts or for water management.

Features and advantages

- Forecasting of the water run-off during snowmelt
- Recording of the snow parameters snow water equivalent (SWE), snow density, liquid water content and ice content
- Early recognition of an increase in the liquid water content in the snow pack
- Simple installation and configuration, no calibration necessary
- Low energy consumption, solar-powered operation is possible

Fields of application

The Snow Melt Analyser (SMA) is an innovative sensor for automatic and continuous measurement of diverse parameters of the snow pack, as for example snow density, liquid water content and ice content. With those data, a reliable prediction of the snowmelt as well as the expected water run off can be determined. The measurement data of the SMA are very helpful for avalanche and flood warning services, power plant operators as well as water reservoir management or water management in general.

Implementation

The SMA sensor combines the measurement technologies of the SPA sensor and the snow scale. The system is installed horizontally at ground level and analyses in particular the bottom layer of the snow pack, as this is the most interesting layer regarding the water run-off. An increase in the liquid water content signalizes the beginning of snowmelt. A useful extension for a snow measuring station with SMA would be the USH-8 snow depth sensor.

Technical details

- **Resolution** 0,1 %
- **Dimensions** aluminium frame: 3,000 x 600 mm, switch cabinet: 70 x 100 x 55 mm
- **Protection** IP 65
- **Power supply** 10.5 ... 15 VDC
- **Power consumption** max. 50 mA (for 5 sec.), < 2 mA (stand-by)
- **Operating temperature** -35 °C ... +80 °C

- **Output** serial interface RS 485, SDI-12
- **Parameters measured** liquid water content, ice content, air content, snow water equivalent