Product Summary

ANavS snow monitoring station for remote locations

Overview

The ANavS snow monitoring stations provide accurate snow pack information based on Global Navigation Satellite System (GNSS) signals. The Snow Water Equivalent (SWE), snow height and Liquid Water Content (LWC) are determined with innovative algorithms within the stations.
The snow pack properties are transferred via satellite communications or cellular networks. Access to the snow information is provided via email or web service. The stations operate autonomously with an integrated solar-power supply and wireless communication, and can be set up permanently or temporarily.

Application

- Meteorological information systems
- Optimized operation of hydro-power plants enabled by accurate run-off prediction
- Monitoring of roof load caused by snow
- Scientific research on snow pack modeling and avalanches

Installation

- Compact design of all components for easy transportation and installation
- Station components can be easily carried by two persons and set-up within 2 hours
- Standalone installation or Integration in existing mast infrastructure
- No special mechanical tools required

Maintenance

- No maintenance during winter operation
- Clearance of measurement spot, visual and manual inspection advisable before winter season
- Battery replacement every 3-5 years recommended

Key Features

- Accurate determination of SWE, snow height and LWC based on differential GNSS measurements
- Cost-efficient monitoring instead of time-consuming manual measurements
- Weather-independent operations by no use of optical sensors/ lasers
- Outperformance of snow scales as GNSS measurements are independent of bridging effects
- Solar power supply for remote installations
- Efficient power management with extremely low power sleep mode and configurable schedule
- Iridium or cellular wireless communication for remote installations
- Access to GNSS raw measurements
- Processing of GNSS raw measurements within snow monitoring station
- Remote re-calibration of station via satellite communication (Iridium)

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Technical Data for Standard Configuration

Power Supply	Internal 12V system with 3 x 20-Watt Solar Panel + 20 Ah Battery
	External 5 – 20 Volts
Power Consumption	Peak: (during calculation & communication) < 5 Watt
	Standby 0.01 Watt / Sleep 0.001 Watt
	Daily consumption for typical measurement cycles (e.g. 1 X SWE per day): 2.5 Ah
Temperature Range	-40° to + 40° Celsius
Measurement Range	Up to 5.000 mm SWE (dry snow) 0.0 – 10.0 Vol.% LWC
Measurement Accuracy	SWE < + - 10 mm (good conditions)
Area of measurement	Integrative spot: diameter of 0.5 m to 5 m (depending on snow depth)
Measurement Cycles	1 - 4 times per day for SWE (typically: 1) 1 - 4 times per day for LWC (typically: 4)
Data transmission	Embedded Iridium satellite communication module or GSM/ LTE module, allows wireless transmission of snow parameters from station to snow monitoring facilities, data access via web-service
Dimensions	Mast: 3 m x 0.05 m (typically), can be extended Core electronics Unit: 225 x 165 x 55 mm Box with Power Supply and Electronics: 375 x 270 x 125 mm Antennas: 38 x 38 x 12 mm Ground Plate: 160 x 160 x 5 mm
Packaging	1200 x 400 x 400 mm (full system incl. mast and solar power)

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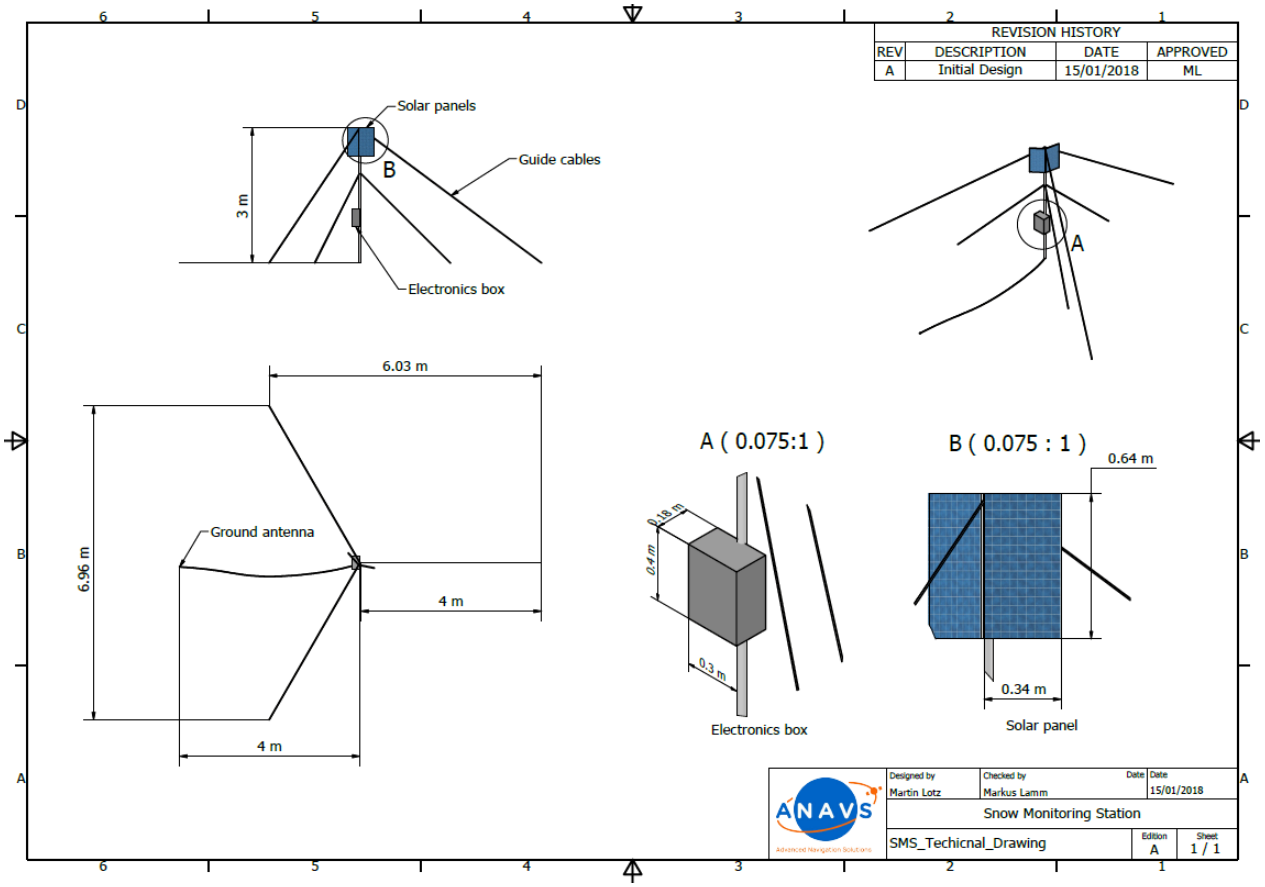

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