

## Infra-Red Based Snow Surface Temperature Probe

Prediction of avalanche occurrence demands the measurement of snow and meteorological parameters of the avalanche formation. For this purpose, specific kind of state-of-the-art instruments and systems are needed. All the objects emit infrared radiations, which are generated by vibrations and rotations of atoms and molecules within the matter. As the temperature of the object increases, the molecular activity in the object increases causing the object to generate more energy. By using this concept, CSIR-CSIO has designed and developed an infrared technique-based snow surface temperature sensor which measures the snow surface temperature using non-contact remote sensing method. It can be easily interfaced with any automatic weather station.



### Features & Specifications

- Probe is directly interfaced to different data acquisition systems.
- Operable 100% RH and wind speed of the order of 200 Km/h.
- $\pm 50^{\circ}\text{C}$  measurement range with  $0.1^{\circ}\text{C}$  resolution,  $\pm 0.5^{\circ}\text{C}$  accuracy &  $\pm 0.1^{\circ}\text{C}$  repeatability.
- Spectral band pass:  $8 < \text{wavelength} < 14 \mu\text{m}$ .
- $4^{\circ}$  Field of view sighting: Line of sight.
- 0 to +5Vdc output signal.
- 10.5 to 14.0 Vdc, 20mA operating power.

### Applications

- Snow cover modelling for forecasting of snow avalanche, flood & water rise.
- It used to measure snow surface temperature of glaciers round the clock.

### Status

In-house development under DRDO-SASE sponsored project, deployed in the field.

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