

Thermistor String Buoy

Thermistor string buoys (also referred to as ice mass balance buoys, IMBs) measure temperature and thermal conductivity through air, snow, sea ice and seawater. They are also often called SAMS IMBs, referring to the developer (Scottish Association for Marine Science). The 4.8 m long thermistor string features 240 embedded thermistors at a spacing of 2 cm (custom length/spacing also available) and 3m tail to aid deployment.. The temperature measurements and the response to cyclic heating of resistors enable the determination of snow depth and sea-ice thickness. The data are transmitted via Iridium at varying intervals.



Buoy description

Manufacturer:	SRSL, Oban, UK
Manufacturer's name:	SIMBA (SAMS Ice Mass Balance buoy)
Data provider	SRSL, Oban, UK
Length of chain	4.8 m with thermistors every 2 cm
Weight	approx. 20 kg (depends on battery package)
Deployment type	Installation on sea ice, chain lowered through 5cm auger hole

Technical Details

Measured parameters	Sensor
- Temperature (°C)	240 x Maxim DS28EA00 (calibrated to: $\pm 0.125^{\circ}\text{C}$ at 1°C)
- Barometric pressure (hPa)	Freescale Semiconductor MPL115A1 (accuracy ± 1 hPa)
- GPS position	Fastrax UP501 GPS receiver (accuracy: ± 2 m)
Measurement interval	2-hourly GPS, 6-hourly temperature and daily heating data (default)
Data transmission	same as measurement interval
Data transmitter	Iridium 9602 SBD Transceiver
Power supply	Alkaline batteries (life time >1 year)