

# windRASS™

## RASS Wind and Temperature Profiler

Photo and data courtesy of Servei Meteorològic de Catalunya



The Scintec *windRASS™* upgrades the sodar models SFAS or MFAS to work in radio-acoustic mode for precise measurements of both wind and temperature. This differs from conventional RASS where radio-acoustic sounding is used for temperature measurements only.

With *windRASS™*, acoustic and electro-magnetic beams are emitted in vertical and tilted directions. The electromagnetic waves are backscattered at the acoustic waves and a Doppler analysis is performed. Wind and temperature are derived via their influence on the speed of sound. *windRASS™* is the first wind and temperature profiler that works anywhere, anytime. It is immune to ground clutter and ambient noise, making it a perfect

solution for urban or industrial environments. Since *windRASS™* does not depend on the existence of atmospheric turbulence, it operates at full performance in the marine boundary layer (coastal sites), foggy conditions or calm nights, each characterized by low turbulence levels. In addition, *windRASS™* is not compromised by precipitation.

The Extended-Sweep Inversion technique (ESI) significantly increases the signal-to-noise ratio and allows for measurement ranges far wider than those of traditional RASS systems.

*windRASS™* is operated using APRun with extensive graphical display options and remote access support.

### FEATURES

- immune to ground clutter and noise
- tolerates precipitation
- tolerates turbulence-free atmospheres
- ESI technology increases data availability
- maximum range up to 600 / 800 m with Sodar SFAS / MFAS
- monitors inversion heights with 5 / 10 m precision with Sodar SFAS / MFAS
- easy installation
- fully-automated self-test
- various remote access options

### APPLICATIONS

- atmospheric dispersion
- air quality
- nuclear power plant safety
- airport wind and temperature profiling
- fog forecasting
- military
- micrometeorology
- climate change
- urban climate
- wind energy

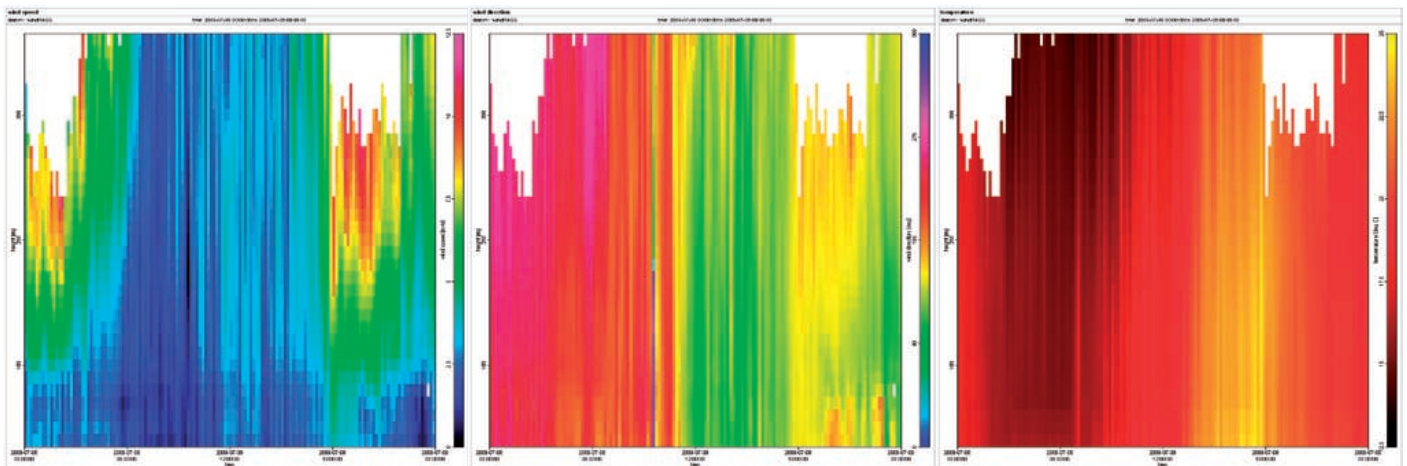
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## Data output (in addition to Sodar output)

- wind speed and direction (RASS mode)
- standard deviations of wind components (RASS mode)
- standard deviation of wind directions (sigma phi, sigma theta) and stability class for air quality applications (RASS mode)
- wind shear for airport applications (RASS mode)
- temperature and virtual temperature
- inversion identifier
- data quality (RASS mode)

| Description                         | Specifications                 | Remarks  |
|-------------------------------------|--------------------------------|--|
| Radio antenna                       | dual-bar antenna               | easy disassembly for transport                     |
| Radio frequency                     | 1290 MHz                       | others on request                                  |
| Vertical resolution                 | 5 / 10 m with SFAS / MFAS      | depending on Sodar model                           |
| Minimum range                       | 40 m                           | depending on settings, environment and atmosphere  |
| Maximum range                       | 600 / 800 with SFAS / MFAS     |  |
| Averaging time                      | 1 - 60 min                     | user-defined                                       |
| Accuracy of horizontal wind speed   | 0.3 to 0.5 m/s                 | depending on mode, average over varying conditions |
| Accuracy of temperature             | 0.2 °C                         | virtual temperature                                |
| Measurement range                   | -50 °C to +60°C                |  |
| Operating temperature               | -35 to +50 °C (-30 to +120 °F) |  |
| Power requirement DC operation      | + 14 VDC, 7 A                  | depending on mode                                  |
| Power requirement AC line operation | 100 to 240 VAC, 500 W          |  |



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Specifications are subject to change without notice.  
Patent pending

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