

XFAS

Powerful High-Performance Sodar Wind Profiler



Photo courtesy of Nuclear Power Corporation of India Ltd. (NPCIL)

Features

- maximum range up to boundary layer height (nominal > 2000 m)
- vertical resolution down to 20 m
- powerful low-frequency antenna
- can be transported and installed without special equipment
- easy-to-use
- multi-frequency technology (sequential and polyphonic)
- simultaneous multi-beam technology
- low noise-emission with active tapering
- fully-automated self-test
- various remote access options
- RASS extension available (RAE2)

Applications

- airport wind profiling
- air quality
- nuclear power plant safety
- atmospheric dispersion
- micrometeorology
- optical propagation studies
- defence weather
- severe weather
- fog forecasting

The Scintec XFAS is a high-performance, long-range acoustic profiler for the measurement of wind and turbulence within the atmospheric boundary layer.

The operation is based on the reflection of acoustic pulses at temperature inhomogeneities in the air with subsequent doppler analysis.

The instrument can replace towers, tethered balloons or radiosondes at a fraction of the operational costs. The system can be easily transported and installed. Low power consumption facilitates operation in remote areas.

With its proprietary Flat Array Antenna and patented technology, the Scintec XFAS has significant advantages in accuracy, data availability, energy efficiency, lifetime and serviceability – even over systems which are much larger and require more power.

The versatile but easy-to-use operation software APRun satisfies the most demanding needs. Its configurability, graphical display and output options, quality control features, statistical analysis tools, remote access support and self-test functions define today's standard in wind profiler operation software.

Scintec 

XFAS

Acoustic Wind Profilers

Data output

Data output includes (but is not limited to):

- wind speed and direction
- standard deviations of wind components
- turbulence intensity for wind energy applications
- wind shear for airport applications
- standard deviation of wind directions (sigma phi, sigma theta) and stability class for air quality applications
- structure parameter of temperature C_T^2 for wave propagation studies
- turbulent kinetic energy
- eddy dissipation rate
- mixing height estimation
- data quality (signal-to-noise ratio)
- data confidence (consensus level)
- wind roses
- frequency distribution of wind speeds for power-curve calculations

| Description | Specifications | Remarks |
|--|--|--|
| No. of antenna elements | 52 | |
| Electric (acoustic) output power | 500 W (35 W) | maximum, user selectable |
| Frequency range | 825 - 1375 Hz | auto-configuration or user-defined |
| Multi-frequency | sequential and polyphonic | |
| Multi-beam operation | up to 9 beams in two configurations | |
| Beam angles | 0°, ±9°, ±16° or 0°, ±22°, ±29° | selectable |
| No. of range gates | 256 | maximum setting |
| Vertical resolution | 20 m | finest setting |
| Minimum height | 40 m | depending on settings, environment and atmosphere, limited to height of boundary layer |
| Maximum height | > 2000 m | |
| Averaging time | 1 - 180 min | user-defined |
| Accuracy of horizontal wind speed | 0.1 to 0.3 m/s | depending on mode, average over varying conditions |
| Accuracy of vertical wind speed | 0.03 to 0.1 m/s | |
| Accuracy of wind direction | < 1.5° | at wind speeds > 2 m/s |
| Measurement range of horizontal wind speed | 0 to 50 m/s | nominal |
| Measurement range of vertical wind speed | -10 to 10 m/s | |
| Operating conditions | Temperature: -35 to +55 °C (-30 to +130 °F) Relative Humidity: 0% to 100% | |
| Power requirement DC operation | ± 18 VDC, 75 to 300 W average | depending on settings |
| Power requirement AC line operation | 85 to 264 VAC, 200 to 500 W | 1500 W peak |
| Power requirement antenna heating | 18 VDC, 1040 W | |
| Size | 145 x 145 x 33 cm | Antenna without Enclosure |
| Weight | 144 kg | |

Scintec AG

Willhelm-Maybach-Str. 14
D-72108 Rottenburg
Germany

Tel. +49 74 72 9 86 43 0
Fax +49 74 72 9 80 87 14
info@scintec.com

Scintec Corporation

1730 38th Street, Boulder,
Colorado 80301
USA

Tel. +1 303 666-7000
Tel. +1 303-666-8803
ussales@scintec.com

www.scintec.com

Specifications are subject to change without notice.
Patent: DE 19805328

Scintec 