

The Channel Streamline Pro CTA System is research grade anemometer solution for advanced flow and turbulence diagnostics it is mainly here is used in very clean water velocity and turbulence measurements near walls and boundaries.

Its design is in developing constant current and constant temperature anemometers.

The system is compatible with a comprehensive collection of probes with wire and film sensors. Channel setup, probe traversing, velocity and directional calibrations, data acquisition and reduction, are performed in an automated fashion in order to bring the actual research problem into focus. The velocity measurements can be performed with high spatial and temporal resolution, high dynamic range and good accuracy.

The frame is computer controlled and can house up to 6 channels. Each channel is equipped with 3 different Wheatstone bridge configurations. This makes StreamLine Pro system extremely versatile and CTA measurements possible in very demanding applications. The velocity and directional calibrations are performed effortlessly by the automatic hotwire calibrator, which can also operate as a stand-alone unit for calibration of self-made or third party probes.

Features and specifications

- High temporal resolution: Fluctuations up to 450 kHz can be measured
- High spatial resolution: Eddies down to fractions of a mm can be resolved • High dynamic range: from a few cm/s to supersonic.
- Real-time continuous output signal: Provides full information in the entire frequency range
- Application software supports set-up, automatic calibration, data acquisition and data reduction
- Turbulence statistics in both amplitude and frequency domain based on velocity time series

Applications

- Single- or multi-point measurements of velocity and turbulence
- Measurement of fluctuating temperatures
- Gas and liquid flows
- Transient and cyclic flow phenomena
- 1-, 2- and 3-velocity components
- Both freestream and near-wall measurements
- Internal flows
- High temperature environments
- Boundary layer transition
- Wall shear stress

Parts:

The StreamLine Pro System components StreamLine Pro is an analog anemometer system with computerized set-up supported by a data acquisition and data analysis software package. The system combines the advantages of the classical high quality hot-wire anemometer, high accuracy converters and graphical user interface. The system comprises:

- Frame with controller and temperature monitor
- CTA anemometer modules
- Optional Temperature module
- Automatic probe calibrator
- Hotwire and Fiber-film probes
- Analog to digital converters
- StreamWare Pro application software