SIGNAL PROCESSOR
FSA 4800 AND FSA 5800

The new TSI® Flow and Size Analyzer (FSA) 4800/5800 signal processors are the complete solution for your laser doppler velocimetry/phase doppler particle analyzer (LDV/PDPA) measurements providing the power to do more for your fluid mechanics research. The processor with integrated photo-detector optics and electronics provides turnkey operation with a single box, allowing you to get measurement results quickly and accurately. The latest innovation from TSI® offers high sampling rates and short processing times to ensure every data point is measured even in extreme environments such as supersonic flows and dense sprays. The FSA 4800/5800 processors give the most accurate results in velocity, droplet size, and higher order flow statistics.

Two versions of the signal processor, the FSA 4800 and the FSA 5800, give different doppler frequency ranges, providing you with the flexibility to select the processor that best fits your application and research requirements.

The processors are powered by a new software, BurstPro™ – Flow and Particle Analysis , that streamlines data acquisition, allows for quick optimization of data analysis, and provides beautiful visualization
and presentation of publication-ready results. Intelligent selection of critical parameters for optimization of the data acquisition both LDV and PDPA measurements is a built-in function of the software. This provides you with accurate and consistent measurement results, without spending a lot of time learning the software.

In addition to the integrated photo-detector optics and electronics, the FSA processors include many additional hardware components, such as analog inputs and rotating machinery resolver (RMR) inputs for LDV or PDPA measurement. A processor set up for LDV can be easily reconfigured to a PDPA arrangement, and there is a simple upgrade path from 1-Channel to 2- or 3-Channel configurations.

+ Integrated photodetector optics, electronics and removable color-bar for light signal input
+ Frequency shift signal output
+ Synchronization with external trigger input
+ Analog input signals
+ Encoder input for rotating machinery resolver (RMR)
+ Test signal input for independent test of processor

The FSA 4800/5800 processors are designed to be used with a variety of LDV and PDPA optical arrangements, including the use of a wide range of lasers. The processors contain an easily removable color-bar and can accommodate many laser transmitters, including the PowerSight module, the Itasca laser module and independent solid-state lasers.

+ PowerSight modules with laser wavelengths of 532, 561 and 515 nm
+ Itasca laser modules with laser wavelengths of 532, 546 and 520 nm
+ Solid state lasers with wavelengths of 514, 488 and 532 nm

SPECIFICATIONS

SIGNAL PROCESSOR
MODELS FSA 4800 AND FSA 5800

Doppler Frequency

FSA 4800	0.3 kHz to 125 MHz
FSA 5800	0.3 kHz to 210 MHz

Date rate
Up to 4 MHz per channel, 300 kHz sustained

Minimum time between burst
60 ns

Downmix frequency
0, 5 to 50 MHz

Calibration diode frequency (635nm)

FSA 4800	1 kHz to 125 MHz
FSA 5800	1 kHz to 210 MHz

Analog External input
4 channels at 14 bit (-5 to +10 V)

Rotating Machinery input:
Once per Revolution mode

Frequency Range	1 to 150,000 rpm
Resolution	0.1 degree
Degrees per Cycle	360 or 720

Rotating Machinery input:
Shaft Encoder mode

Degrees per Cycle	360 or 720
Frequency Range	minimum - 0 rpm maximum - shaft encoder limited

Test signal input

Input Voltage Range	±0.5V
Max Input Voltage	±2.5V
Input Impedance	50 ohm

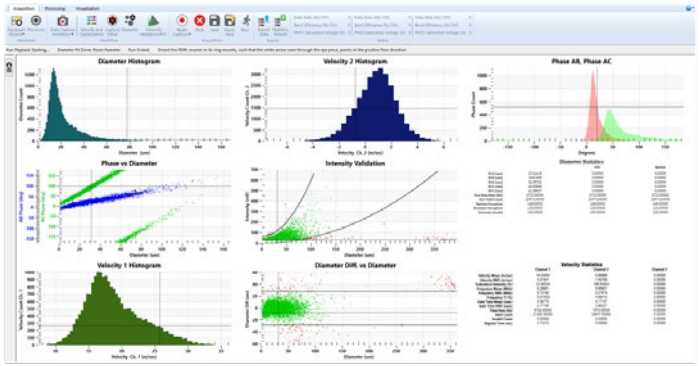
Sync/OPR and Inhibit Inputs

Max Input Voltage	5 to 10 V
Input Impedance	10K ohm

Communication and data transfer ports
USB

Line voltage
100 to 240 VAC (50-60 Hz)

Model	Channel	Doppler Frequency Range
FSA4800-1, 1P	1-channel LDV, PDPA	0.3 kHz to 125 MHz
FSA4800-2, 2P	2-channel LDV, PDPA	0.3 kHz to 125 MHz
FSA4800-3, 3P	3-channel LDV, PDPA	0.3 kHz to 125 MHz
FSA5800-1, 1P	1-channel LDV, PDPA	0.3 kHz to 210 MHz
FSA5800-2, 2P	2-channel LDV, PDPA	0.3 kHz to 210 MHz
FSA5800-3, 3P	3-channel LDV, PDPA	0.3 kHz to 210 MHz



Display of BurstPro™ - Flow and Particle Analysis

UNDERSTANDING, ACCELERATED

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Specifications reflect typical performance and are subject to change without notice.

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