FSA MULTI-BIT
DIGITAL PROCESSORS
MODELS FSA 4000/3500

A BREAKTHROUGH IN DIGITAL SIGNAL PROCESSING

TSI's Flow and Size Analyzer sets the standard in digital signal processing. Firmware-based, it is the fastest, most accurate signal processor ever offered for PDPA/LDV applications. This compact device is available in two versions, the FSA 4000 and the FSA 3500. Both versions are high-performance digital burst processors offering a host of useful features to optimize data collection.
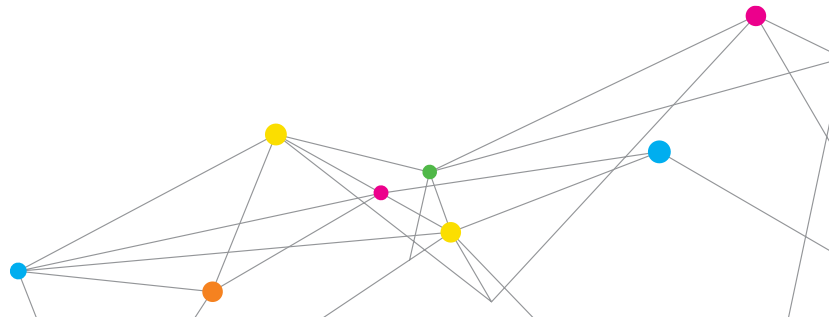
Features and Benefits

+ High accuracy based on a combination of SNR-based burst detection, dynamic burst sampling rate selection, multi-bit sampling, and other techniques to maximize measurement resolution and accuracy

+ High Doppler frequency – up to 175 MHz – is ideal for measurements in supersonic flows, high-speed pulse sprays, and more

+ Dynamic burst centering, a concept developed by TSI, allows the system to capture samples from the best segment (the middle portion) of each burst

+ Optimized accuracy even from poor quality signals through the use of patented processing techniques

+ Fully controlled by the FlowSizer™ Data Acquisition Analysis and Display Software

UNDERSTANDING, ACCELERATED

SPECIFICATIONS

FSA Multi-Bit Digital Processors
Models FSA 4000/3500

Maximum Frequency	
FSA 4000	175 MHz
FSA 3500	100 MHz
Minimum Frequency	
300 Hz	
Digitization	
8-bit	
Sampling Rate	
Dynamically optimized for each burst	
Burst Centering	
For velocity and particle size measurements	
Burst detection	
DFT combined with LUT; SNR-based with amplitude threshold	
Frequency Shift	
Built in with +40MHz	
Data Transfer	
FireWire® (IEEE 1394)	
Input Buffer	
For high temporary data arrival rate	
Maximum sampling rate	
FSA 4000	800 MHz
FSA 3500	400 MHz
High-pass filter	
Software-selectable	
Amplitude Sampling	
12-bit A/D (for intensity validation)	
Analog Output	
0 to 10 V for frequency/phase	
Digital Outputs	
Frequency	16-bit
Phase	12-bit
Time stamp	40-bit
Transit time	16-bit
Calibration Diode Parameters	
Software-selectable	
Indicators	
Saturation, calibration diode ON, burst detected, power	
BNC Inputs	
Burst inhibit, time stamp reset	
BNC Outputs	
Detector out, burst gate, signal out, Bragg amplifier driver	

TO ORDER

Specify either FSA 4000 (175 MHz maximum frequency) or FSA 3500 (100 MHz maximum frequency)

Model	Channels	Measurements
FSA 3500-1	1	Velocity
FSA 3500-2	2	Velocity
FSA 3500-3	3	Velocity
FSA 3500-1P	1	Size and velocity
FSA 3500-2P	2	Size and velocity
FSA 3500-3P	3	Size and velocity
FSA 4000-1	1	Velocity
FSA 4000-2	2	Velocity
FSA 4000-3	3	Velocity
FSA 4000-1P	1	Size and velocity
FSA 4000-2P	2	Size and velocity
FSA 4000-3P	3	Size and velocity

Specifications are subject to change without notice.

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