

AS-1250FE Datasheet

Dynamic Signal Acquisition Front-End for Rotating Machinery Monitoring and Analysis



HIGH PERFORMANCE ACQUISITION

The AS-1250FE is a high performance, compact and flexible data acquisition hardware platform used by Alta Solutions' powerful machinery monitoring and analysis software products.

STATE OF THE ART HARDWARE

This unit can simultaneously capture up to 40 dynamic signals using highly accurate 24-bit analog to digital converters. The AS-1250FE can be configured to have multiple phase marker inputs to tackle multi-speed applications such as split-shaft machines or gearboxes. These phase marker inputs provide both position and speed.

COMPACT AND INDUSTRIAL DESIGN

Specifically designed for industrial applications, this rugged unit can be ordered with rubber bumpers for portable applications or with DIN rail or bulkhead mounts for installations close to the machinery skid; minimizing sensor wiring, reducing ground loops, cable attenuation and cross talk.

ETHERNET CONNECTIVITY

The AS-1250FE communicates to a PC via a standard 10/100Mb Ethernet port connection (RJ45). An optional fiber optic Ethernet port is available allowing long distance transmission of data up to 2 km (1.2 miles).

SENSOR SUPPORT

This unit supports a wide range of industrial sensors, including accelerometers, displacement (proximity) probes, and pressure transducers. Each channel incorporates anti-aliasing, overload protection and configurable coupling (AC, DC or IEPE).



AS-1250FE Specifications

ANALOG INPUTS

Number of Analog Inputs	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, or 40
A/D Resolution	24 Bits
Sampling	All inputs simultaneously sampled
Dynamic Range	110 dB (typical)
Signal-to-Noise Ratio	110 dB (typical)
Input Voltage	-24 V to +24 V
Input Voltage Protected	-30 V to +30 V
Input Impedance	100 KOhm
Frequency Spans	10, 20, 40, 50, 100, 200, 400, 500, 1000, 2000, 4000, 5000, 10000, 20000
Amplitude Error	Less than 1%
Phase Error	$\pm 1^\circ$ between channels
Connector Type	Option IB = BNC Option IT = Terminal Strip
Input Circuit	Single ended
Programmable Coupling	AC, DC, and IEPE
IEPE Power	3.5 mA from 24 VDC
Over-Voltage Detection	LED indication per channel
AC Coupled Cutoff Frequency	Variable - Frequency Span / 6400

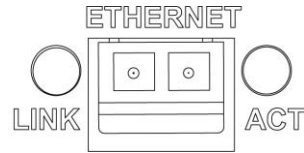
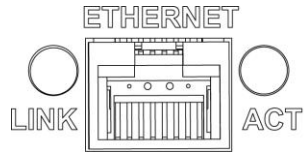
PHASEMARKER INPUTS

Number of Tachometers	0, 2, 4, 6, or 8
Speed Range	1 to 1,000,000 RPM
Minimum Pulse Width	1 microsecond
Voltage Range	-24 V to +24 V
Trigger Threshold	-24 V to +24 V
Trigger Slope	Rising or Falling
Pulses Per Revolution	0.01 to 10,000
RPM Error	< 0.01% (24 – 60k rpm) < 0.13% (60k – 1,000k rpm)
Input Impedance	100 KOhm
Connector Type	Option IB = BNC Option IT = Terminal Strip
Programmable Coupling	AC or DC
Programmable Hysteresis	0.2 V or 0.5 V

AS-1250FE Specifications

COMMUNICATIONS

Protocol	Ethernet 10/100Mbit Full Duplex
Speed Range	Option EC = RJ45 (CAT 5/6 cable) Option EF = Fiber Optic LC receptacle (62.5/125um multimode fiber)



ENVIRONMENTAL

Operating Temperature	0 °C to 60 °C (32 °F to 140 °F)
Storage Temperature	-55 °C to 80 °C (-67 °F to 176 °F)
Relative Humidity	10 to 85%
Vibration (Sine wave)	5 G (5 -500 Hz)

INPUT POWER

Input Voltage	10 – 24 Vdc
Input Power	Typical 8W for 10 inputs

OPTIONAL POWER ADAPTER

Input	100 – 240 Vac, 50 - 60 Hz auto sensing
Output	+24V @ 1.25A
Approvals	CE Mark

AS-1250FE Specifications

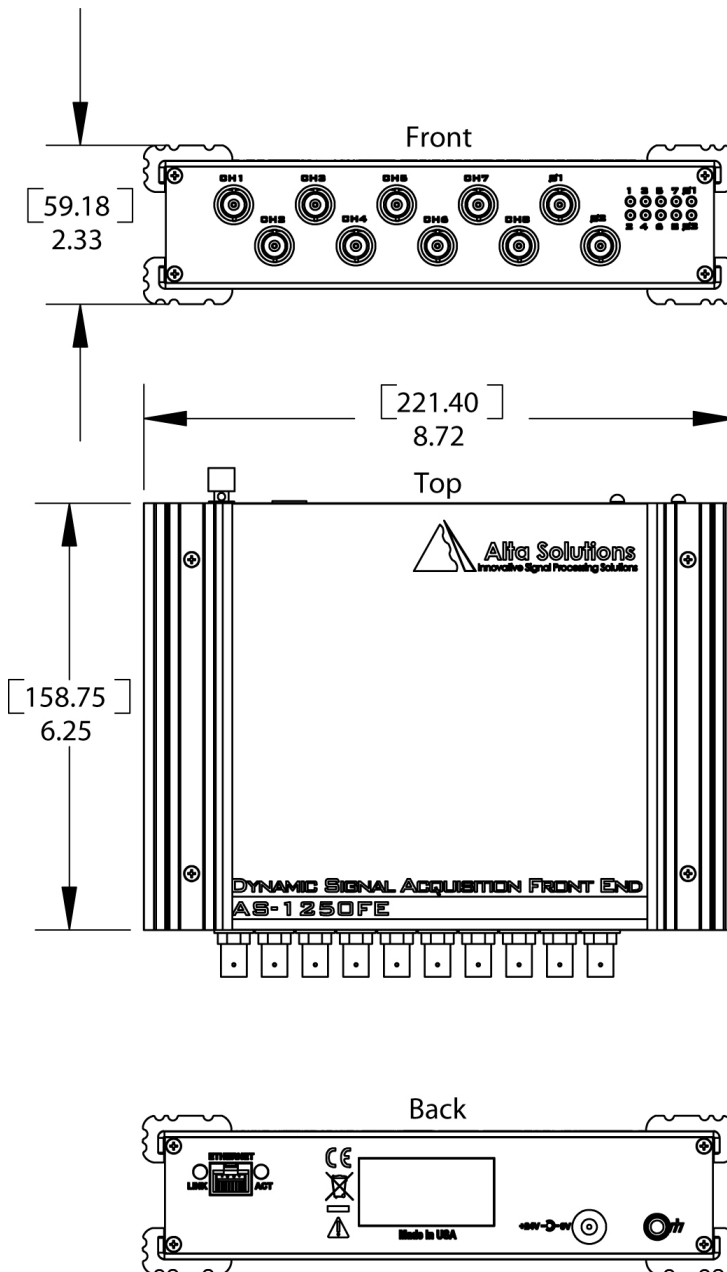
CE MARK DIRECTIVES

Harmonics	EN61000-3-2
Voltage Fluctuation	EN61000-3-3
Electrostatic Discharge	EN61000-4-2 EN61326
Radio Frequency Electromagnetic Field	EN61000-4-3 EN61326
Electrical Fast Transients	EN61000-4-4 EN61326
High Energy Surge Transients	EN61000-4-5 EN61326
Conducted Radio Frequency	EN61000-4-6 EN61326
Power Frequency Magnetic Field	EN61000-4-8 EN61326
Voltage Dips and Interruptions	EN61000-4-11 EN61326
Radiated Emissions	EN55011
Conducted RF Emissions	EN55011

AS-1250FE Specifications

AS-1250FE - Single Stack

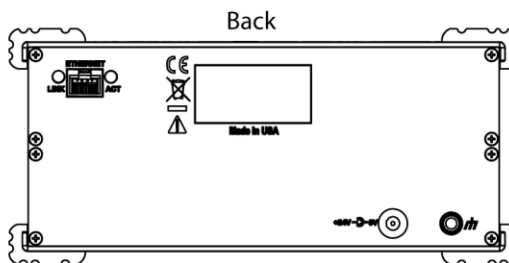
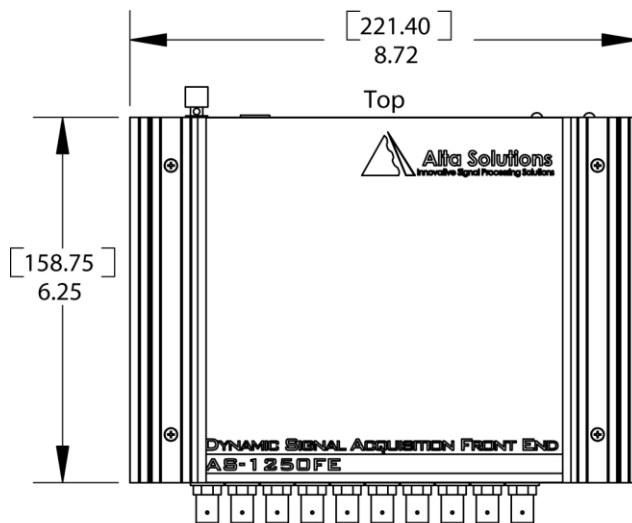
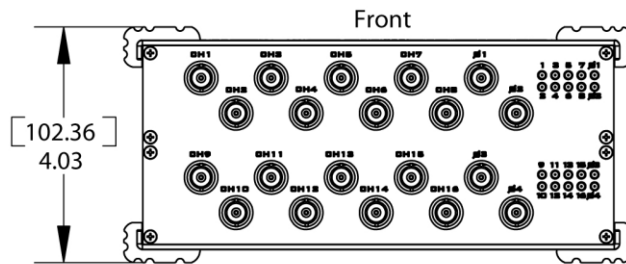
Dimensions (Width)	221 mm (8.72")
Dimensions (Depth)	159 mm (6.25")
Dimensions (Height)	59 mm (2.33")
Weight	1 kg (2.2 lbs)
Construction	Anodized Aluminum Chassis



AS-1250FE Specifications

AS-1250FE – Dual Stack

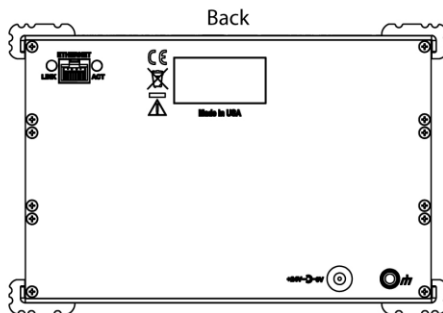
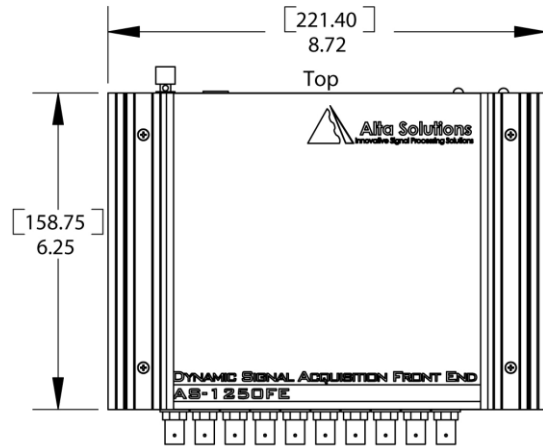
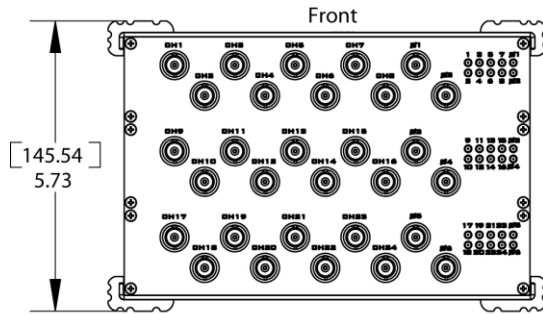
Dimensions (Width)	221 mm (8.72")
Dimensions (Depth)	159 mm (6.25")
Dimensions (Height)	102 mm (4.03")
Weight	1.6 kg (3.5 lbs)
Construction	Anodized Aluminum Chassis



AS-1250FE Specifications

AS-1250FE – Triple Stack

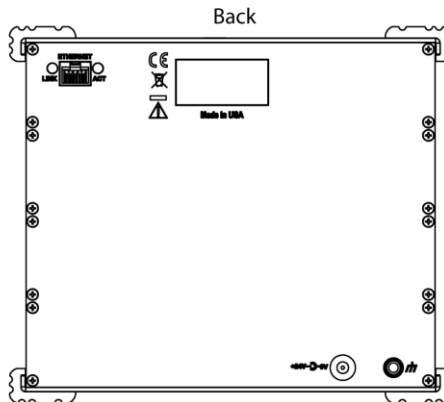
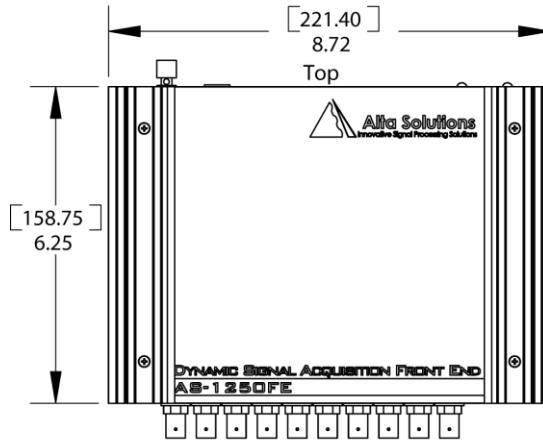
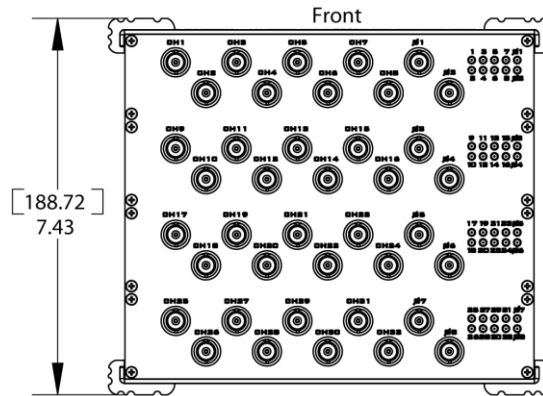
Dimensions (Width)	221 mm (8.72")
Dimensions (Depth)	159 mm (6.25")
Dimensions (Height)	146 mm (5.73")
Weight	2.2 kg (4.8 lbs)
Construction	Anodized Aluminum Chassis



AS-1250FE Specifications

AS-1250FE – Quad Stack

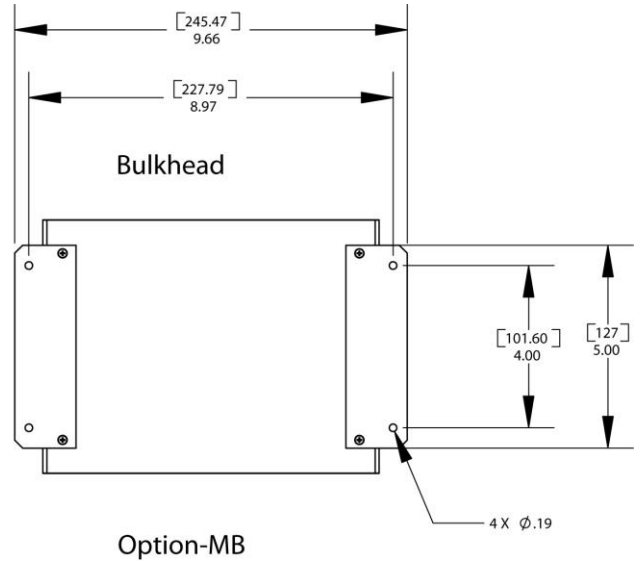
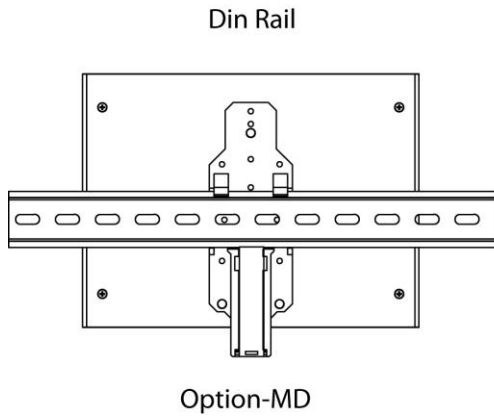
Dimensions (Width)	221 mm (8.72")
Dimensions (Depth)	159 mm (6.25")
Dimensions (Height)	189 mm (7.43")
Weight	2.8 kg (6.1 lbs)
Construction	Anodized Aluminum Chassis



AS-1250FE Specifications

Mounting Options

Option -MD	DIN Rail
Option -MB	Bulkhead



AS-1250FE Specifications

ORDERING INFORMATION

Ordering Model Number Format: AS-1250FE-CXX-PX-IX-EX-PX-MX

Analog Channels Inputs	C02, C04, C06, C08, C10, C12, C14, C16, C18, C20, C22, C24, C26, C28, C30, C32, C34, C36, C38, C40 <i>Note: Combined analog and phase markers cannot exceed 40 inputs.</i>
Phase Marker/Speed Inputs	P0, P2, P4, P6, P8
Input Type	IB = BNC IT = Terminal Strip
Ethernet Connector Type	EC = Copper EF = Fiber Optic
Power Input	PJ = Power Jack PT = Terminal Strip
Mounting	MR = Rubber Bumpers MB = Bulkhead MD = DIN Rail



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