High-Power Portable Ultrasonic Instrument

Innerspec PowerBox H

Go Paperless.

The **Innerspec PowerBox H** is designed for ultrasonic applications that require very high voltages and/or long bursts of energy such as non-contact techniques (EMAT, Air-Coupled) and inspection of highly-attenuating materials. The instrument is capable of generating up to 1200V or 8kW of peak power at speeds of up to 300Hz. It incorporates integrated digitizer and broadband pulsers/receivers to perform a variety of flaw inspection, thickness, and material property measurements in factory or field environments. Spike and tone-burst pulses at frequencies from 100 kHz to 6MHz can be generated to excite a full range of ultrasonic wave modes, including bulk and guided waves in pulse-echo and pitch-catch arrangements. For pulse-echo operation, a built-in transmitter/receiver switch permits connecting the sensor directly to the instrument with no additional hardware. A thermocouple port permits taking temperature readings of the part inspected to correct Time-Of-Flight measurements, and a one-axis encoder input can be used for integration with an automated or manual scanner.

The instrument can be used with EMAT and piezoelectric sensors from Innerspec Technologies and other manufacturers. A setting of 600Vpp (approx. 3kW) is also available to maximize battery life if the application does not require full power.

Embedded software permits the user to modify triggering and receiving patterns, use advanced filters to enhance signal-to-noise, and present the information on A, B, C and Line Scan formats. Screen captures, device settings and data can be downloaded to a PC using additional software provided with the instrument.

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Innerspec
High-performance NDT solutions

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Innerspec Technologies Inc. is ISO 9001 certified

Innerspec PowerBox H	
Ultrasonic Channels	1
Bandwidth	100kHz to 6MHz
Pulse Repetition Rate	up to 300 Hz
RF Pulser	Spike, Toneburst Waveforms 8 kW Power Output 1200Vpp @ 25App into 50 Ohms 0.1% Maximum Duty
Receiver	**Pulse-Echo Mode** 1 kΩ Input Impedance 30 dB to 70 dB Gain <0.05 dB Gain Resolution **Pitch-Catch Mode** 50 Ω Input Impedance -20 dB to 60 dB Gain <0.1 dB Gain Resolution
Pulse / Receive Modes	Pulse-Echo, Pitch-Catch
Analog / Digital Converters	12-bit, 100MHz
Filtering	FIR Digital Filters
Rectification	Full-wave, +/- half-wave, and RF mode
Evaluation Gates	Interface plus 2 Gates Amplitude and Time Measurements
Encoder Interface	A/B Quadrature
PC Communication	USB 2.0 Drag-n-drop
Software	Embedded Software with A, B, C and Line Scans plus PC Interface Software
Probe Connector	2-Pin Lemo 0B
Operating Temperature	0°C (32°F) to 40°C (105°F)
AC Power Input	100-240VAC, 50-60Hz
Other I/O	Magnet Pulser Trigger Thermocouple Input (Type K) General Purpose I/O (5V TTL) Encoder/Signal Cond. Power VGA output Ethernet 10/100 SD Card
Dimensions	8”W x 9”H x 4”T
	203mm x 229mm x 100mm
Weight	2.72Kgs (6lbs)
Battery Life	4-8 Hours

Available Sensors

EMAT

- Shear Horizontal and Longitudinal Normal Beam (up to 200˚C)
- Shear Horizontal and Shear Vertical Angled Beam (up to 200˚C)
- Surface and Volumetric Guided Waves (up to 200˚C)
- High Temperature Spot Thickness Probes (Up to 650˚C)
- Measurement of Material Properties (Stress, Nodularity, and Bolt Load)

Piezoelectric

- Air-coupled
- Dry-coupled
- Low-frequency

Accessories

- Magnet Pulser, **Innerspec PowerBox MP**
- Multiplexer / Signal Conditioning Box
- Sensor Roller Kit
- Thermocouple
- Piezoelectric Attenuator
- External Battery Charger
- Sensor Encoder

Innerspec
High-performance NDT solutions