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.
### Innerspec PowerBox H

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultrasonic Channels</td>
<td>1</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>100kHz to 6MHz</td>
</tr>
<tr>
<td>Pulse Repetition Rate</td>
<td>up to 300 Hz</td>
</tr>
<tr>
<td>RF Pulser</td>
<td>Spike, Toneburst Waveforms 8 kW Power Output 1200Vpp @ 25App into 50 Ohms 0.1% Maximum Duty</td>
</tr>
</tbody>
</table>
| 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