

# DAKOTA ULTRASONICS

## THE PVX

## Ultrasonic Precision A-Scan Thickness Gauge

The physical size, weight, and display resolution are just a few of the benefits of the PVX

- ▶ Adjustable square wave pulser provides the flexibility necessary for both high resolution and penetration requirements.
- ▶ Selectable viewing options provide the user with additional flexibility during operation: (RF waveform, +/- Rectified waveform, and Large Digits with Scan Bar).
- ▶ Time based B-Scan feature displays a cross section of the test material. Displays the profile of the opposite surface of the material.
- ▶ Ability to use a variety of single element transducers for specific applications: Standard Delay Line (acrylic and graphite tips for metals and thin plastics), Pencil Delay Line (tough access areas on thin materials), and Contact transducers (variety of applications).
- ▶ Hardware AGC gain control for multiple echo and thru-paint measurement.
- ▶ Multiple calibration options: One-Point, Two-Point, or selection from a Material List.
- ▶ 16 factory setups and 48 user-defined setups. User-defined setups can be edited for custom applications.
- ▶ PVX is equipped with an alpha-numeric data logger to provide increased versatility for those custom reporting needs.
- ▶ The High Speed Scan feature speeds up the inspection process by taking 32 measurements per second. Remove transducer from the test material and display the minimum measurement scanned.
- ▶ Adjustable resolution settings add to the PVX's flexibility.
- ▶ PVX comes complete with our Windows® PC software for transferring data to and from a PC.
- ▶ Auto Find feature locates the detection point(s) and adjusts the display settings to bring the waveform into view.
- ▶ Visual and audible alarm with Hi and Lo limit settings for specific application tolerances.
- ▶ Multiple language support.
- ▶ 2 year limited warranty.



## Physical

### Size:

Width (2.5 in/63.5 mm)  
Height (6.5 in/165 mm)  
Depth (1.24 in/31.5 mm)

### Weight:

13.5 ounces (with batteries)

### Keyboard:

Membrane switch pad with twelve tactile keys.

### Operating Temperature:

14° to 140°F (-10°C to 60°C)

### Case:

Extruded aluminum body with nickel-plated aluminum end caps (gasket sealed).

### Data Output:

Bi-directional RS232 serial port; Windows® PC interface software.

### Display:

1/8 inch VGA grayscale display (240 x 160 pixels); Viewable area 2.4 x 1.8 inch (62 x 45.7mm); EL backlit (on/off/auto/invert)

## Ultrasonic Specifications

### Measurement Modes:

Pulse-Echo (Precision—General purpose).  
Interface-Echo (Precision—Thick materials).  
Echo-Echo (Precision—Thin materials & thru-paint).

### Pulser:

Square wave pulser with adjustable pulse width (spike, thin, wide).

### Receiver:

Manual or AGC gain control with 40dB range, depending on mode selected.

### Timing:

40 MHz with ultra low power 8 bit digitizer.

## Warranty

2 year limited

## Power Source

Three 1.5V alkaline or 1.2V NiCad AA cells.

Typically operates for 150 hours on alkaline and 100 hours on NiCad (charger not included).

Auto power off if idle 5 minutes.

Battery status icon.

## Measuring

### Range:

**Interface-Echo Mode:** Steel .050–1.0 inch (1.27–25.4mm); Plastics from .005 inch (.127mm)

**Echo-Echo Mode: Steel** .006–.500 inch (.152–12.7mm)

### Pulse-Echo Contact:

Steel .040–10.0 inch (1–254mm); Plastics from .010" (.254mm)

### Echo-Echo Contact:

Steel thru-paint .100–3.0 inches (2.54–76.2mm)

### Resolution (selectable):

+/- .001 inch (0.01 mm)  
+/- .0001 inch (0.001 mm)

### Velocity Range:

.0492 to .3936 inches/μs  
1250 to 9999 meters/sec  
One and Two Point calibration option, or selection of basic material types.

### Units:

English & Metric

## Display

### Display Views:

#### A-Scan—

Rectified +/- (half wave view)  
RF (full waveform view).

**B-Scan**—Time based cross section view. Display speed of 15 secs per screen.

**Large Digits**—Standard thickness view. Digit Height: 0.400 inch (10mm).

**Scan Bar Thickness**—6 readings per second; Viewable in B-Scan and Large Digit views.

**Repeatability Bar Graph**—Bar graph indicates stability of reading.

## Data Logger (Internal)

12,000 readings and waveforms (alpha numeric storage).

OBSTRUCT to indicate inaccessible locations.

### Memory:

16 megabit non-volatile ram.

## Transducer

### Transducer Types:

Single Element (1 to 20 MHz).

Locking quick disconnect "00" LEMO connector.

Standard 4 foot cable.

Custom transducers and cable lengths available.

## Features:

### Setups:

16 factory and 48 custom user-defined setups.

### Gates:

Single gate in contact mode; Single gate with holdoff in interface-echo, echo-echo, and plastics mode; Adjustable threshold.

### Multiple Measurement Modes:

Selectable modes for use with a variety of applications.

### Alarm Mode:

Set Hi and Lo tolerances with audible beeper and visual LEDs.

### Fast Scan Mode:

Takes 32 readings per second and displays the minimum reading found when the transducer is removed. Display continuously updates while scanning.

## Certification

Factory calibration traceable to national standards.