

ZX1 & ZX2

Fixed Velocity Thickness Gauges

HIGHLIGHTS:

- ▶ Easy to operate.
- ▶ Pulse-echo measurement.
- ▶ Dual element transducers (1-10MHz options).
- ▶ 120MHz FPGA timing.
- ▶ 150 volt square wave pulser.
- ▶ Low temperature custom LCD display (-22°F / -30°C).
- ▶ Adjustable material velocity.
- ▶ Selectable material list (ZX2 only).
- ▶ 5 year limited warranty.

DAKOTA ZX1 & ZX2 THICKNESS GAUGES

The ZX-1 & 2 are basic fixed velocity gauges that require no special training to operate. Calibration is done by simply scrolling to a known material velocity, or selecting a common material from a list of material types in the ZX-2. The gauges were designed and built to withstand the roughest industry conditions, are affordable, and backed by a 5 year limited warranty. If you're looking for a quality instrument to reliably meet or exceed your application expectations, look no further.

SPECIFICATIONS

PHYSICAL

Weight:

11 ounces (with batteries).

Size:

Width (2.5 in / 63.5mm)

Height (5.17 in / 131.3mm)

Depth (1.24 in / 31.5mm)

Operating Temperature:

-22 to 167°F (-30 to 75°C).

Case:

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

KEYPAD

Sealed membrane that is resistant to both water and petroleum products.

Seven or eight tactile-feedback keys.

TRANSDUCER

Dual-element (transmit and receive).

1 to 10MHz frequency range.

Locking quick disconnect LEMO connectors.

4 foot cable.

Custom transducers available for special applications.

POWER SOURCE

Two 1.5V alkaline, 1.2V NiCad, or 1.5V Lithium AA cells.

Typically operates for 45 hours on alkaline and 23 hours on NiCad.

Low battery indicator on display. Unit turns off automatically when battery is too low to operate reliably.

DISPLAY

Multi-function 7 segment 4.5 digit liquid crystal display with 0.500 in digit height. Two 0.125 in 14 segment fields for labels and values, and one 7 segment field for labels and values. Additional icons to indicate features and modes.

Backlight is selectable on/off/auto, and selectable brightness (Lo, Med, Hi) options.

Bar graph indicates stability of reading.

CERTIFICATION

Factory calibration traceable to NIST & MIL-STD-45662A.

WARRANTY

5 year limited.

REPLACEMENT

ZX1 replaces ZX-1

ZX2 replaces ZX-2

MEASURING

Range:

Measures from 0.025 to 36.00 inches (0.63 to 914.4mm). Range dependent on material and transducer type.

Units:

English & Metric

Resolution:

0.001 inches (0.01mm)

Velocity Range:

0.0120 to .7300 in/μs
(305 to 18,542 m/sec)

PRF: 200Hz

Display Update Rate: 10Hz

Velocity Settings:

ZX1: Adjustable on keypad.

ZX2: Adjustable on keypad and selectable from 8 factory presets and 2 programmable custom velocity options.

Velocity Chart

	in.	/ mm
1. Steel 4340	.2330	/ 5918
2. Stainless 303	.2230	/ 5664
3. Aluminum 2024	.2510	/ 6375
4. Cast Iron	.1800	/ 4572
5. Plexiglass	.1060	/ 2692
6. PVC	.0940	/ 2388
7. Polystyrene	.0920	/ 2337
8. Polyurethane	.0700	/ 1778
9. Custom		
10. Custom		



MADE IN THE USA

Dakota NDT
an Elcometer company

ZX3, ZX5 & ZX5-DL Thickness Gauges

HIGHLIGHTS:

- ▶ Powered by: 120MHz FPGA timing.
- ▶ 150 volt square wave pulser.
- ▶ Pulse-echo measurement.
- ▶ Adjustable gain (40-52dB), in 3dB steps vlow, low, med, high, vhi).
- ▶ Selectable manual or auto zero.
- ▶ Dual element transducers (1-10MHz options).
- ▶ USB-C connectivity (ZX5 series).
- ▶ CDC compatible serial over USB
Optional serial RS232 or Bluetooth® module (ZX5).
- ▶ Data Storage: 32 megabit flash memory (ZX5-DL).

DAKOTA ZX3, ZX5 & ZX5-DL THICKNESS GAUGES

The ZX series of thickness gauges offer a performance solution built to withstand the roughest industry conditions. The features included in the ZX Series offer a quality tool that will meet or exceed your application requirements. Our 5 year limited warranty indicates how we feel about the reliability and durability of the ZX Series gauges.

Applications: Corrosion & Pitting - Tube & Pipe - Tanks - Boilers - Glass - Variety of Applications

SPECIFICATIONS

PHYSICAL

Weight:

11 ounces (with batteries).

Size:

Width (2.5 in / 63.5mm)

Height (5.17 in / 131.3mm)

Depth (1.24 in / 31.5mm)

Operating Temperature:

-22 to 167°F (-30 to 75°C).

Case:

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

KEYPAD

Sealed membrane that is resistant to both water and petroleum products.

Nine tactile-feedback keys.

DATA

Sequential data storage, 40 files of 250 readings per file, for 10,000 readings (ZX5-DL).

POWER SOURCE

Two 1.5V alkaline, 1.2V NiCad, or 1.5V Lithium AA cells.

Typically operates for 45 hours on alkaline and 23 hours on NiCad.

Low battery indicator on display. Auto shut-off after 5 minutes of inactivity.

Line power USB-C connected to PC or power adapter (ZX5 series).

DISPLAY

Multi-function 7 segment 4.5 digit liquid crystal display with 0.500 in digit height. Two 0.125 in¹⁴ segment fields for labels and values, and one 7 segment field for labels and values.

Additional icons to indicate features and modes.

Backlight is selectable on/off/auto, and selectable brightness (Lo, Med, Hi) options.

Bar graph indicates stability of reading.

SOFTWARE

Comes complete with USB download cable (ZX5-DL). No software required, comma separated file type (.csv).

TRANSDUCER

Dual-element (transmit and receive).

1 to 10 MHz frequency range.

Locking quick disconnect LEMO connectors.

4 foot cable.

Custom transducers available for special applications.

WARRANTY

5 year limited.

CERTIFICATION

Factory calibration traceable to NIST & MIL-STD-45662A.

REPLACEMENT

ZX3 replaces ZX-3

ZX5 replaces ZX-5

ZX5-DL replaces ZX-5 DL

MEASURING

Range:

Measures from 0.025 to 36.00 inches (0.63 to 914.4mm). Range dependent on material and transducer type.

Units: English & Metric

Resolution:

0.001 inches (0.01mm)

Velocity Range:

0.0120 to .7300 in/ μ s

(305 to 18,542 m/sec)

PRF: 200Hz

Display Update Rate: 10Hz

Gain: 40-52dB range in 3dB steps.

FEATURES

Zero:

Manual or auto zero option.

Probe Diameter:

Selectable probe diameter for improved linearity.

High Speed Scan:

Display the lowest reading found during a scan. Scan speed at 100Hz.

Differential Mode:

Display the +/- difference from a nominal value entered (ZX5 series).

Alarm Mode:

High & low alarm limits with audible and visual indications (ZX5 series).

VX velocity:

Measure in terms of velocity for nodularity testing (ZX5 series).



MADE IN THE USA

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ZX6 & ZX6-DL

Multi-Echo Thickness Gauges

HIGHLIGHTS:

- ▶ Powered by: 120MHz FPGA timing.
- ▶ 150 volt square wave pulser.
- ▶ Pulse-Echo (flaw) & Echo-Echo (thru-paint) measurement modes.
- ▶ Adjustable gain (40-52dB), in 3dB steps vlow, low, med, high, vhi).
- ▶ Time dependent gain (TDG).
- ▶ Selectable manual or auto zero.
- ▶ Dual element transducers (1-10MHz options).
- ▶ USB-C connectivity.
- ▶ CDC compatible serial over USB
Optional serial RS232 or Bluetooth® module (ZX6).
- ▶ Data Storage: 32 megabit flash memory (ZX6-DL).

DAKOTA ZX6 & ZX6-DL THICKNESS GAUGES

The ZX6 series gauges are at the top of the ZX line of basic thickness gauges. They combine a standard pulse-echo flaw detection measurement mode with a multi-echo through paint mode for use on materials with epoxy based coatings, and eliminate the error from the coating without having to remove it. They are equipped with adjustable gain, as well as auto Time Dependent Gain in both measurement modes. Our 5 year limited warranty indicates how we feel about the durability and reliability of the ZX6 Series.

SPECIFICATIONS

PHYSICAL

Weight:

11 ounces (with batteries).

Size:

Width (2.5 in / 63.5mm)

Height (5.17 in / 131.3mm)

Depth (1.24 in / 31.5mm)

Operating Temperature:

-22 to 167°F (-30 to 75°C).

Case:

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

KEYPAD

Sealed membrane that is resistant to both water and petroleum products.

Nine tactile-feedback keys.

TRANSDUCER

Dual-element (transmit and receive).

1 to 10MHz frequency range.

Locking quick disconnect LEMO connectors.

4 foot cable.

Custom transducers available for special applications.

CERTIFICATION

Factory calibration traceable to NIST & MIL-STD-45662A.

WARRANTY

5 year limited.

POWER SOURCE

Two 1.5V alkaline, 1.2V NiCad, or 1.5V Lithium AA cells.

Typically operates for 35 hours on alkaline and 23 hours on NiCad.

Low battery indicator on display. Auto shut-off after 5 minutes of inactivity.

Line power USB-C connected to PC or power adapter.

DISPLAY

Multi-function 7 segment 4.5 digit liquid crystal display with 0.500 in digit height. Two 0.125 in 14 segment fields for labels and values, and one 7 segment field for labels and values.

Additional icons to indicate features and modes.

Backlight is selectable on/off/auto, and selectable brightness (Lo, Med, Hi) options.

Bar graph indicates stability of reading.

DATA

Sequential data storage, 40 files of 250 readings per file, for 10,000 readings (ZX6-DL).

SOFTWARE

Comes complete with USB download cable (ZX6-DL).

No software required, comma separated file type (.csv).

REPLACEMENT

ZX6 replaces ZX-6

ZX6-DL replaces ZX-6DL

MEASURING

Pulse-Echo (P-E):

0.025 to 36.00 in (0.63 to 914.4mm).

Echo-Echo (E-E):

0.100 to 6.00 in base metal, and coating 0.001 to 0.075 in (0.0254 to 1.905mm).

Range dependent on material and transducer type.

Units: English & Metric

Resolution:

0.001 inches (0.01mm)

Velocity Range:

0.0120 to .7300 in/μs
(305 to 18,542 m/sec)

PRF: 200Hz

Display Update Rate: 10Hz

Gain: 40-52dB range in 3dB steps.

Time Dependent Gain (TDG):

Used in both pulse-echo (P-E) and Echo-Echo (E-E) modes depending on transducer and frequency selected.

FEATURES

Zero:

Manual or auto zero option.

Probe Types:

Selectable probe frequency & diameter for improved linearity.

High Speed Scan:

Display the lowest reading found during a scan. Scan speed at 100Hz.

Differential Mode:

Display the +/- difference from a nominal value entered.

Alarm Mode:

High & low alarm limits with audible and visual indications.

VX velocity:

Measure in terms of velocity for nodularity testing.



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