



Advanced Test Equipment Rentals
www.atecorp.com 800-404-ATEC (2832)

CL3/CL3 DL

Handheld Ultrasonic Precision Thickness Gauge



Precision thickness measurement performance you need...and the simplicity you want

The CL3 and CL3 DL ultrasonic thickness gauges are handheld, microprocessor controlled instruments for measuring a wide variety of fabricated parts, especially where conditions allow access to one side only. Whether you're spot checking thickness of incoming material, performing quality control on finished parts, or monitoring machining operations, the CL3 and CL3 DL shorten inspection time and reduce costs.

Choose the appropriate model to match your inspection needs. The CL3 has only 5 keys to control all instrument functions

for simple operation. The additional on-board Data Logger feature of the CL3 DL improves reliability of the test results by avoiding errors of misread and misrecorded data. Four additional orange keys provide all necessary functions to store readings and transfer data files.

Precision measurement performance

The CL3 and CL3 DL are compatible with an assortment of delay line and contact style transducers. Accurately measure as thin as 0.010 in (0.25 mm) in steel and down to 0.005 in (0.13 mm) of plastic with resolution to 0.0001 in (0.001 mm).



On-truck inspection of steel coils for confirmation to incoming QC specifications

Just touch, read, and record

Following simple calibration, just touch the probe to one side of the part and the thickness is instantly displayed in large, easy-to-read digits. One press of the CL3 DL's SEND key stores the reading in its on-board memory. A total of 1200 readings can be stored and divided into 99 separate files in the CL3 DL's data-logger memory.

Benefits of Ultrasonic Testing


The ultrasonic pulse/echo principle uses the roundtrip travel time of a soundwave through the part wall to measure thickness. Sampling, cutting coupons, disassembly, or destroying your part are no longer necessary. And you can measure thickness anywhere on your part with access to only one side.



Choose from basic or data logger models

Inspector preferred features and unmatched inspection versatility

Don't let the compact size and simple keypads fool you. The CL3 and CL3 DL are powerful measurement tools with MODE SELECT to activate all their features:

- **THK**, Normal thickness measurement mode displays and holds the measured thickness reading until another measurement is made.
- **VEL**, Material sound velocity mode displays the gauge's current calibrated velocity and allows simple calibration when the material's velocity is known.
- **PRB**, Probe selection automatically sets up the gauge for thickness measurement with delay, contact, or plastic probes.
- **DIF**, Differential mode compares the measured thickness with an operator specified offset value and display the +/- difference.
- **HI/LO (CL3 DL ONLY)**, HI/LO tolerance mode visually alerts the operator when the measured thickness is outside of a preset tolerance range.
-  Display backlight mode allows the user to select OFF, ON, or AUTO to suit the lighting conditions of the inspection area.

CL3 DL for Accurate Data Collection and Simple Data Management

Using the on-board data logger makes collecting data with the CL3 DL an easy operation for one inspector. In the THK and DIF modes, readings are automatically stored in the on-board data logger by pressing the SEND key. Data Logger features include:

- Storing and dividing 1,200 readings into 99 individual data files. Header information, gauge settings, statistics and individual readings are included with each file.
- Transfer of data files to IBM compatible PC's. Optional UltraMATE software program simplifies the transfer of the ASCII text files.
- Connection to printers provides fast hardcopy reports in English, German, French, Italian and Spanish.

The multipurpose serial I/O port also provides interconnection to SPC collection devices.



When an SPC peripheral (using Mitutoyo protocol) or an RS232C compatible data recorder is connected the serial I/O port, readings are sent directly when the transfer is initiated at the SPC device.

Rugged, Reliable. Reliability and low, infrequent service costs are ensured by a sealed membrane keypad, impact-resistant housing, gasket seal, isolated battery compartment, a single surface mount printed circuit board, and a two-year warranty on parts and labor. The CL3/CL3 DL operate on three AA alkaline batteries that are easily replaced without interrupting inspection. A bulky battery charger and the associated headaches of proper discharge/charge cycles for NiCad batteries are eliminated.

Application Support. Our thickness applications group will answer your questions and evaluate submitted samples. Contact us at (717) 242-0327 or E-mail infolink@krautkramer.com today.



CL3/CL3 DL Accessories and Specifications

Base Instrument Package

CL3 or CL3 DL Thickness Gauge
 Three 1.5V AA Alkaline Batteries
 Carrying Case
 Operating Instruction Card
 Operating Manual
 Certificate of Calibration

Accessories

C-604 Probe Cable, Right Angle Lemo to MD
C-925 Probe Cable, Straight Lemo to MD
LC-E Leather Instrument Case with neck strap
XL-820 XL Couplant (8 oz. bottle)
H-007 Spring-loaded DFR Holder

CL3DL accessories only:

SPCCBL-603 SPC Cable
PCCBL-841 Serial PC Cable
PCCBL-842 Parallel Printer Cable
PRTCBL-518 Serial Printer Cable
U-MATE UltraMATE Data Control Software Program



Specifications

Operating Principle

Ultrasonic Pulse/Echo

Probe Zero Adjustment – Contact Mode

Push button, keyed to instrument probe zero block

Thickness Calibration – All Modes

One point, off block

Measurement Modes

Normal and Differential Thickness

Measuring Range

Delay: 0.0100" to 1.000" in mild steel
 0.25 to 25 mm
 Contact: 0.080" to 15.00" in mild steel
 2.0 to 381 mm
 Plastic: 0.0050" minimum in plastic
 0.13 mm

Resolution – Default Auto-ranging

Delay Mode: 0.0001, 0.001 in.
 0.001, 0.01 mm
 Contact Mode: 0.001, 0.01 in.
 0.01, 0.1 mm
 Plastic Mode: 0.0001, 0.001 in.
 0.001, 0.01 mm

Material Velocity Range

10,000 to 590,000 in/s
 254 to 15,000 m/s

Display Update Rate

4 Hz

Display Type

4 digit, 0.5" (12.7 mm) high with electroluminescent backlight; Auto, On, or Off modes

Power Supply

3 ea. 1.5V AA alkaline batteries

Battery Life (operating time)

Over 35 hours at 25% duty cycle

Auto Shut-Off

After 3.5 minutes of non-use

Data Logger Memory (CL3 DL)

Up to 1200 readings

Number of Data Files (CL3 DL)

Up to 99 files (user selectable)

Data Output Port (CL3 DL)

Serial: asynchronous; 0, +5V TTL, 8 bit, 1 stop bit, 1200 baud RS232C: Bipolar logic levels provided by serial PC and printer cables SPC: Mitutoyo protocol

Direct Report Languages (CL3 DL)

English, German, French, Italian & Spanish

Operating Temperature Range

+15°F to +125°F

-10°C to +50°C

Dimensions (L x W x D)

6.5" x 3.0" x 1.6"

165 mm x 72 mm x 41 mm

Weight

14.5 oz. (0.4 kg) including batteries

CL 3 and CL3 DL Compatible Transducer Specifications

Model	Product Code	Transducer Type	Contact Diameter	Nominal Frequency	Measuring Range (steel unless noted)
Alpha 2DFR	113-527-660	Delay, Standard Housing	0.30 in. 7.6 mm	15 MHz	0.010 to 1.0 in. 0.25 to 25 mm
Alpha 2A, Mini DFR	113-518-655	Delay, Small Housing	0.19 in. 4.8 mm	20 MHz	0.010 to 0.200 in. 0.25 to 5 mm
CA211A	113-544-000	Contact, Standard	0.75 in. 19.1 mm	5 MHz	0.080 to 15.0 in. 2 to 381 mm
CA215	113-124-011	Contact, Standard	0.50 in. 12.7 mm	5 MHz	0.80 to 2.0 in. 2 to 51 mm
Alpha 2F	113-526-000	Contact, Fingertip	0.38 in. 9.7 mm	10 MHz	0.80 to 10.0 in. 2 to 254 mm
Alpha DFR-P	113-118-661	Plastics, Delay Line	0.30 in. 7.6 mm	22 MHz	0.005 to 0.150 in. 0.13 to 3.8 mm

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Our facility's quality system conforms to ISO 9001. ANSI/ASQC Q91.



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