

Standard package

DM 4E or DM 4 thickness gauge; or
DM 4DL thickness gauge with on-board Data
Logger including:
carrying case
two 1.5 V AA alkaline batteries
couplant
operating manual

Operating principle

Ultrasonic pulse/echo method with
dual-element probes

Probe zero adjustment

Automatic, manual with 2-point calibration;
selectable: coupled / uncoupled state

V-path correction

Automatic

Measuring range

0.6 mm to 500 mm; 0.025" to 20" (steel) in
standard mode, depending on probe, material
and surface condition

Digital resolution

0.01 mm for thicknesses up to 99.99 mm,
0.1 mm for thicknesses above 99.99 mm;
0.001" or 0.01" up to 9.999 inches,
0.01" above 9.999 inches

Units

Selectable: mm or inch

Display

4-digit LCD with switchable backlight;
digit height 12.7 mm / 0.5"

Measurement update rate

25 Hz in MIN capture mode;
4 Hz in standard measurement mode

Gain (DM 4, DM 4DL)

Automatic or manual: 3 selectable levels

Material velocity range

1000 to 9999 m/s;
35000 to 393700 inches/s

Frequency range

For probes from 0.8 to 10 MHz

Power supply

Two 1.5 V AA alkaline batteries

Operating time

Up to 200 hours (without backlight) with alkaline
batteries, depending on operating mode

Auto shut-off

After 3 minutes of non-use

Operating temperature

-10 °C to +50 °C; +14 °F to +120°F;
specification to -20 °C/-4 °F on request

Storage temperature

-40 °C to +60 °C; -40 °F to +140 °F
(without batteries)

Keyboard

Sealed, dustproof and watertight membrane
keypad

Housing

Impact-resistant, IP 54

Size

150 mm x 77 mm x 33 mm;
5.8" x 3.0" x 1.4" (H x W x D)

Weight

255 g; 9 oz. including batteries

Data Logger capacity (DM 4DL)

Up to 5,390 readings, can be divided into a maxi-
mum of 999 files (user-selectable)

Interfaces (DM 4DL)

Serial RS 232C port in combination with a TGDL
cable; data transfer parameters: 8 bits,
1 stop bit, 1200 / 2400 / 4800 and 9600 baud, no
parity

Report printout languages (DM 4DL)

German, English, French, Italian, Japanese,
Russian, Spanish

Application software (DM 4DL)

UltraMATE: for the transfer, storage, analysis and
documentation of measurement data

Other accessories

Attachable rubber case and field accessory
belt; numerous special probes on request; probe
cables, couplants, high-temperature couplant
DM 4DL: data transmission cable, Seiko thermal
printer for mains and battery operation

Krautkramer DM 4 Family

Ultrasonic Thickness Gauges – Handy, rugged and efficient



The DM 4 instrument family - thoroughly convincing.

They've got what it takes.

DM 4E, DM 4 and DM 4DL provide everything you need for ultrasonic thickness measurement - all of it weighing only 9 oz (255 grams) and packed in a small housing with just a few keys, tailored for the practical single-handed operation.

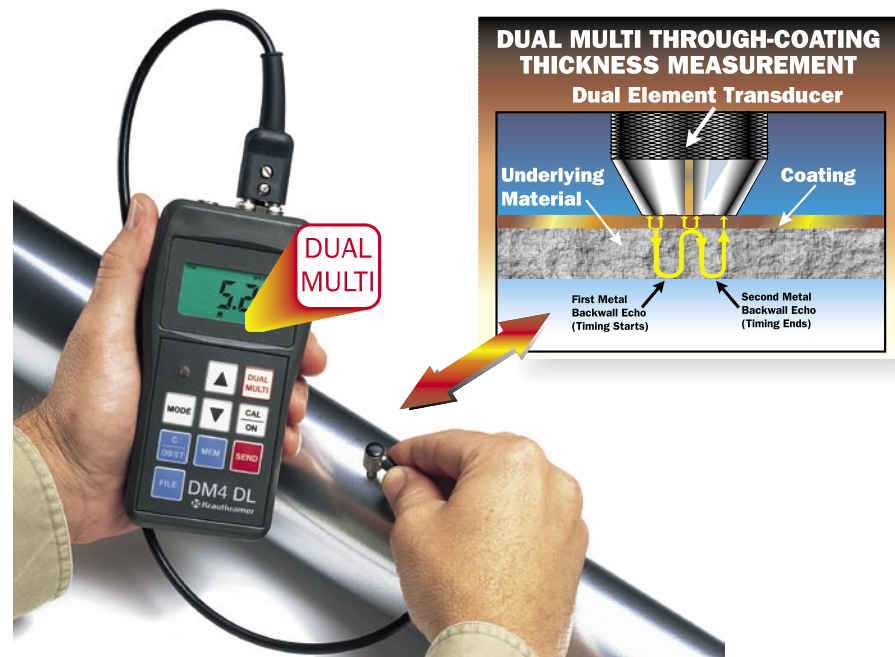
The DM 4E gauges enable you to accomplish a large number of demanding tasks, especially with remaining wall thickness measurements on components subject to wear.

They see through things.

DM 4 and DM 4DL come up with a special highlight: the through-coating measurement. The metal wall thickness, for example on pipelines and tanks, is accurately and quickly measured in spite of surface coating. This applies for example to adherent paint coatings, plastic coatings, or fiber-reinforced plastic sheathings. Any time-consuming and cost-intensive removal of the coating is no longer needed!

A troublesome adjustment of the equipment can likewise be skipped. The operating mode DUAL MULTI enables an unrivalled ease of operation: calibrate DM 4, press the DUAL MULTI key, place the probe and measure without the time and expense of removing protective coatings and reapplying.

In the operating mode DUAL MULTI the measurement is carried out between two successive backwall echoes from the underlying base material; the echoes from the coating are ignored.



Amazing performance with a stunning ease of use.

Field-proven functions

Don't let the fact fool you that you can manage with only four keys on the DM 4E, five on the DM 4, and with only nine on the DM 4DL. Hidden behind them are powerful functions that make your work easier.

- THK, Normal Thickness Measurement and 1-Point calibration mode displays and holds measured thickness reading until another measurement is made. Fast, 1-Point thickness calibration is performed in THK mode.

- 2-Pt, Two Point Calibration allows calibration to two known thicknesses of the material to satisfy special application requirements.
- VEL, Material Sound Velocity mode enables display of the instrument's current calibrated velocity and simple calibration when a material's velocity is known.
- MIN, Minimum Capture mode with increased pulse repetition frequency: the smallest reading of the previously scanned test object is always displayed and saved.

- Backlight allows the user to select OFF, ON, or AUTOMATIC to suit inspection area lighting conditions.
- Probe Zero, Selection of the automatic probe zero adjustment for optimized gauge setting to a large number of probes and test conditions - even with measurements on hot test objects or rough surfaces. Any effects on the measurement results due to changes in the probe, such as wear or temperature variations, are avoided by the zero point correction which can also be carried out continuously during the measurement.

Data management - everything's taken care of.

Extended functions for DM 4 and DM 4DL

- DUAL MULTI Operating mode for an accurate wall thickness measurement in spite of a coated surface.
- DIF, Differential operating mode in which the measured thickness is compared with an adjustable nominal value, and the difference is displayed.
- HI/LO, Adjustable minimum/maximum limit values whose violation activates an alarm signal.
- GAIN mode allows the user to manually adjust the operating gain of the instrument by selecting automatic (AUTO), low (LO), medium (MED), or high (HI) to satisfy the application.
- Selectable receiver bandwidth to optimize the gain for each probe used.
- FLTR, Band pass filter selection of LO or HI to match frequency of probe for best performance.



Reliable data storage with DM 4DL

With its on-board Data Logger and its interfaces the DM 4DL offers you all the possibilities of a modern documentation:

- up to 5,390 readings can be stored in the Data Logger
- Multiple files - data can be stored in 1 to 999 user selectable files
- Obstruct (OBST) can be stored to identify inaccessible locations
- Create test reports quickly via a connected serial printer

Flexible further processing

The DM 4DL makes the measurement data available for further processing; using our special application software, you can:

- transfer measurement data files from the gauge to the PC
- UltraMATE™ software provides color reports, histograms, copy and paste to MS-Word and EXCEL, compare files, and an auto-connect feature
- comment on and analyze measurement data, manage them in a database, and much more...

Wherever the measurement of remaining wall thickness is called for.

In any case

DM 4E, DM 4 and DM 4DL are suitable for numerous test tasks on components subject to wear:

- pipelines, pressure vessels, gas cylinders, storage tanks, vessels for chemical processes
- materials handling systems, pumps
- bridges, hulls, cranes, equipment for shipbuilding and structural steel engineering.

Unbeatable - our probes

This great variety of applications is made possible by the large selection of probe designs which we have tailored for the DM 4 gauges.

- DIALOG Intelligent Transducers are automatically recognized by the instrument for the benefits of quick setup, best performance, and test documentation.
- High-Temperature Probe provides Stable Readings on Hot Surfaces for inservice inspection of steam and process equipment.
- General-Purpose Probes for most frequently encountered applications (i.e. process piping and equipment, tubular goods, plate, boiler tubes, pressure vessels, storage tanks, ship hulls, etc.)

- Thin Materials Probes for thin-wall, small diameter tubes and sheets, plus detection of pitting corrosion and extreme wall loss.
- High-Penetration Probes for coarse-grain or highly attenuative materials (i.e. castings, non-metals like plastics, FRP and rubber).
- Small 3 mm and 5 mm Footprint Probes to measure in the bottom of external pits, small diameter piping and tubing, and areas of limited access.
- in special applications on request: e.g. watertight, with a housing design tailored to the application, etc.