



283 Veterans Boulevard • Carlstadt NJ 07072
Tel: (201)933-6300 • Fax: (201)933-3801
E-Mail: phase2@comcast.net
Web Site: <http://www.phase2plus.com>

Digital Coating Thickness Gauge

Model No. PTG-3500 & PTG-3550





283 Veterans Boulevard • Carlstadt NJ 07072

Tel: (201)933-6300 • Fax: (201)933-3801

E-Mail: phase2@comcast.net

Web Site: <http://www.phase2plus.com>

Features:

* The PTG-3500 & 3550 are capable of measuring the thickness of non-magnetic materials (e.g. Paint, Plastic, enamel, copper, zinc, aluminum, chrome, etc) on magnetic materials (e.g. Iron, Nickel, etc.) It is often used to measure the thickness of a galvanized layer, lacquer, porcelain, phosphide, copper tile, aluminum tile and some alloy tiles, paper, etc.

* Both models are also capable of measuring the thickness of non-magnetic coatings on non-magnetic metals. It is used on anodizing, varnish, paint, enamel, plastic coatings, powder, etc. applied to aluminum, brass, and non-magnetic stainless steel, etc.

- This unit is suitable for laboratories or out in harsh field conditions.
- Utilizing a state of the art micro computer circuitry, this gage will deliver high accuracy measurements along with quick reading response time.
- This model has a wide measuring range coupled with high resolution
- Digital display eliminates guessing and /or errors
- The PTG-3500&3550 are made of a durable light weight ABS plastic housing assuring maintenance free performance for many years.

Specifications:

- Display: 4 digits, 10mm LCD
- Range: 0-1000 μ m / 0-40 mil
- Resolution: 0.1 μ m / 3.93 μ in (0-99.9 μ m)
1 μ m / 39.37 μ in (over 100 μ m)
- Accuracy: +/- 1-3% or 2 μ m (whichever is greater)
- Power Supply: 2- AAA Batteries
- Operating Condition: 0-50 $^{\circ}$ c Humidity < 80%
- Size: 161 x 69 x 32mm (6.3" x 2.7" x 1.2")
- Weight: approx 9oz. (260g)

PTG-3500 & PTG-3550 come complete with set of calibration foils, 2 substrates, AAA battery set and a carry case.



PTG-3500/3550

- 3-1 Sensor
- 3-2 Display
- 3-3 Zero Key
- 3-4 Plus (up)Key
- 3-5 Minus (down)Key
- 3-6 Power Key (Multi-Functional)



283 Veterans Boulevard • Carlstadt NJ 07072
Tel: (201)933-6300 • Fax: (201)933-3801
E-Mail: phase2@comcast.net
Web Site: <http://www.phase2plus.com>

Measuring Procedure:

(PTG-3550 only)

- 1) *Plug in the external contact probe.*

(Both Models)

- 2) Press the power key 3-6 to turn on the unit. The display will show "0".
Note: the gage will automatically calibrate itself when turning the power on. Be sure to keep the probe away from any metallic material for 2 seconds immediately after power up.
- 3) **Select the measurement unit Mil or μm by pressing and holding (approx. 6 seconds) the 3-6 Power key. The display will show "Unit". Press the "Zero" button to change from Mil to μm or μm to Mil. The new value will be shown on the display**
- 4) Place the probe 3-1 on the coating layer to be measured. The reading on the display is the thickness of the coating layer. The reading can be corrected by pressing the plus key 3-4 or the minus key 3-5 while the probe is away from the substrate or measured item.
- 5) To take the next measurement, lift the probe 3-1 off the test object and then repeat step 4.
- 6) To change measurement mode from **Single** to **Continuous**, press the 3-6 Power key (approx. 9 seconds) and do not release until "SC" is shown on the display. Then immediately press the 3-3 Zero key to confirm. The "S" symbol stands for single measurement mode and the (()) symbol means Continuous mode is activated.
- 7) If you suspect the accuracy of the measurement is questionable, you should calibrate the unit before taking your next measurement. Please see Calibration for procedure.
- 8) The gage can be switched off by pressing the power key 3-6. Also shuts off automatically after approx. 1 minute.

Calibration:

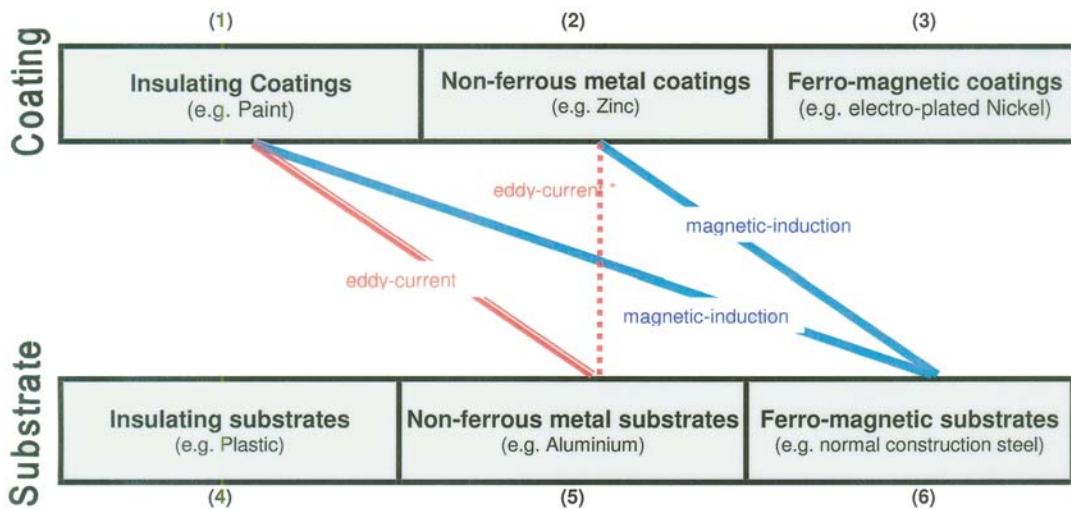
- 1) Zero Adjustment: Place the probe 3-1 on the one of the supplied substrates or on an **uncoated** standard. Press the zero key 3-3 and "0" will be on the display BEFORE lifting the probe.
- 2) Select an appropriate calibration foil that is similar in thickness to your application.
- 3) Place the foil on top of the supplied substrate or uncoated standard.
- 4) Place the sensor 3-1 lightly on the foil and hold until measured value is shown on display. The displayed reading can be corrected with the plus 3-4 key or the minus key 3-5 while the probe is away from the substrate or measured item.
- 5) Repeat step 4 until result is correct.

Battery Replacement:

- 1) When the battery symbol appears on the display, it is time to replace the battery
- 2) Slide the battery cover away from the instrument and remove the batteries.
- 3) Install 2 AAA batteries paying careful attention to polarity.

Typical application for coating thickness measurements using the magnetic-induction and the eddy-current principle

The picture below shows the various Coating / Substrate – combinations and the necessary measuring principle.
 The lines between the upper and lower boxes indicate the measuring principles to be used.



REMARKS:
 eddy-current *

: Restricted application!

With the eddy current principle

Coating / Substrate – combinations are measurable only:

- Chromium on copper, maximum coating thickness 40µm / 1.6mils
- Chromium on aluminium, maximum coating thickness 40µm / 1.6mils
- Tin on copper, maximum coating thickness 40µm / 1.6mils

NOTE: for the above Coating / Substrate – combinations special marked calibration foils are necessary. Please specify the required Coating / Substrate – combination.



283 Veterans Boulevard • Carlstadt NJ 07072

Tel: (201)933-6300 • Fax: (201)933-3801

E-Mail: phase2@comcast.net

Web Site: <http://www.phase2plus.com>

Typical coating materials:

(1) Insulating coatings

- Paint
- Plastic
- Enamel
- Anodising (on Alum.)
- Ceramic

(2) non-ferrous coatings

- Brass
- Bronze
- Chromium
- Copper
- Lead
- electroless Nickel (with more than 10% phosphor)
- Tin
- Zinc

(3) ferro-magnetic coatings

- Electro-plated Nickel

Typical substrate materials:

(4) Insulating substrates

- Plastic
- Ceramic
- Epoxy
- Glass

(5) Non-ferrous substrates

- Aluminium
- Brass
- Bronze
- Copper
- Lead
- Titan
- Zinc

(6) Ferro-magnetic substrates

- Steel (St33 – St60 or C15 - C45)
- some kind of stainless steel, which are ferrous

Special Coating / Substrate – combinations

- Chromium on copper or on aluminium: see remarks under the picture on page 1.
- Tin over copper: see footnote under the picture on page 1
- Micaceous iron ore coatings (ferromagnetic) over steel: see "Compendium to Coating thickness measurement"

cannot measure:

- Electro-plated Nickel on steel or on non-ferrous metal substrates or on insulating substrates
- insulating coatings (as paint) on insulating substrates (as plastic)
- non-ferrous metal coatings on non-ferrous metal substrates, exceptions see remarks on page 1
- non-ferrous metal coatings (as copper) on insulating substrate (as epoxy)

**Phase II Machine & Tool, Inc.
283 Veterans Blvd
Carlstadt, NJ. 07072
(201) 933-6300
www.phase2plus.com**



283 Veterans Boulevard • Carlstadt NJ 07072
Tel: (201)933-6300 • Fax: (201)933-3801
E-Mail: phase2@comcast.net
Web Site: <http://www.phase2plus.com>

Global Connections



Main Headquarters: U.S.A

Phase II Machine & Tool, Inc.

283 Veterans Blvd
Carlstadt, NJ. 07072 USA
Tel: (201) 933-6300
Fax: (201) 933-3801
General E-Mail: phase2@comcast.net

BEIJING, CHINA

Phase II Measuring Instruments (Beijing) Ltd.

Room 1204,Bldg 13,Yong Tai Yuan,Qing He,Haidian District, Beijing 100192,China
[Tel:+86-10-82752121](tel:+86-10-82752121)
Fax:+86-10-82750352
General E-mail: info@phase2china.com.cn

MEXICO

Phase II de Mexico

Calle A No. 4 Promer Piso
Col. San Marcos Azcapotzalco
C.P 02020 Mexico
Tel: 011-525-5538-39771
Fax: same
General E-mail: phase2mexico@hotmail.com

VENEZUELA

Phase II Herramientas Universales EDCM. CA.

Av. Francisco Lazo Marti CC
Plaza Santa Monica PB Local
Santa Monica, Caracas 1040 Venezuela
Tel: 212-690-28-21
Fax: 212-693-29-16
E-mail: edcphm@movistar.net

• Machine Accessories • Precision Tools • Cutting Tools • Material Testing Instruments