ULTRASONIC THICKNESS GAUGE
UTG-27

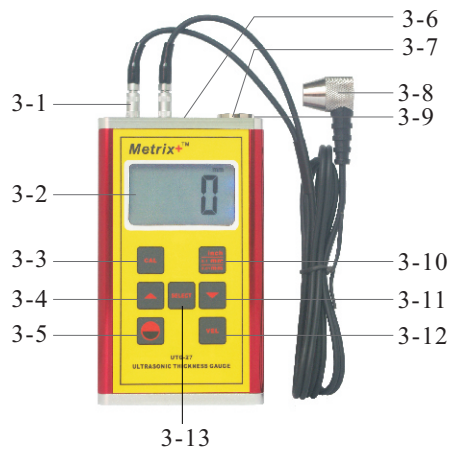
1. FEATURES

* Used the exclusive Micro-computer LSI circuit and crystal time base to offer high accuracy measurement .
* With high power of emission and broad band of receiving sensitivity, the gauge can match probes of different frequencies. That makes it easy to measure the rough surface, even cast iron. It is widely used in almost all kinds of industries.
* Applicable to measure the thickness of many materials, e. g. Steel, Cast iron, Aluminum, Red copper, Brass, Zinc, Quartz glass, Polyethylene, PVC, Gray cast iron, Nodular cast iron.
* Automatic power off to conserve power.
* Can communicate with PC computer for statistics and printing by the optional cable and the software for RS232C interface .

2. SPECIFICATIONS

Display: LCD
Range: 0.75~400mm (45# steel)
Resolution: 0.1 mm/0.01inch
Accuracy: ±(0.5%n+0.1)
Sound velocity: 1000 ~9000 m/s
With: Bluetooth interface
Power supply: 2x1.5V AA (UM-3) battery
Operating condition:
Temp. 0~40℃
Humidity <80%
Size: 130x76x32mm
Weight: about 340g (not including batteries)
Accessory:
Carrying case.....1 pc.
Operation manual.....1 pc.
Ultrasonic sensor.....1 pc.
Optional accessories:
Cable & software for RS232C

3. FRONT PANEL DESCRIPTIONS



3-1 Sensor Plug
3-2 Display
3-3 Calibration key
3-4 Plus key
3-5 Power key
3-6 RS232C interface
3-7 Standard block
3-8 Ultrasonic sensor
3-9 Battery Cover
3-10 0.1mm / 0.01mm / inch convert key
3-11 Minus key
3-12 Velocity key
3-13 Material selection key

4. MATERIAL SELECTION

4.1 Press the power key 3-5 to turn on the unit.

4.2 Press the Material Selection key 3-13 and the display 3-2 will show the code `cdxx` or `xxxx`. `cd` is the abbreviation for `code` and `xx` is one number among 01~11. `xxxx` is a 4-digit number which is the sound velocity of material defined by the user.. The `cdxx`-material relationship is as follow.

No.	CODE	Material
1	cd01	Steel
2	cd02	Cast Iron
3	cd03	Aluminum
4	cd04	Red copper
5	cd05	Brass
6	cd06	Zinc
7	cd07	Quartz glass
8	cd08	Polyethylene
9	cd09	PVC
10	cd010	Gray cast iron
11	cd011	Nodular cast iron
12	xxxx	Sound velocity

4.3 Press the Plus key 3-4 or Minus key 3-10 to select the material code to measure and then press the Material Selection key to confirm. The display will show `0`. If you select a material code but do not confirm the selection, the code will automatically change to `0` after several seconds. In such case, the meter will still reserve the material code before exiting.

4.4 A 4-digit number will be shown on the Display if pressing the Plus key 3-4 when displaying `cd11` or pressing the Minus key 3-11 when displaying `cd01`. The 4-digit number is last sound velocity to define by the user. By selecting this velocity, you could measure the thickness of the same material as last.

4.5 It is unnecessary to select the material code once the material code is confirmed (automatically stored to the memory of the meter) unless the material to measure is different from that before.

4.6 To browse the material code selected, if only press the Select key 3-13. To quit

browsing, if only press the Select key 3-13 again or wait till the code automatically change to `0` after several seconds or the meter will automatically return to measurement state if measuring.

5. CALIBRATION

5.1 Drop a little oil on the 5 mm standard block 3-7 .

5.2 Press the Calibration key 3-3, the `CAL` be shown on the Display. `CAL is the short for calibration.

5.3 Press the sensor 3-8 on the standard block. The coupling symbol ((●)) is on if coupling well. `5.0` mm (or `0.197` inch) and `CAL` will be shown on the Display in turn. When steady, press CAL key 3-3 to confirm and then the unit return to the state of measurement.

5.4 The calibration result will be auto-saved to the unit once confirmation. It is unnecessary to calibrate often unless you suspect the accuracy of measurement.

6. MEASURING PROCEDURE

6.1 Press the power key 3-5 to turn on the unit.

6.2 Press the 0.1mm/0.01mm/inch convert key 3-10 to select the right measurement unit and resolution.

6.3 Press the Sensor 3-8 onto the material surface to measure on the premise that the material code selected is right. Be sure that coupling is well and the symbol ((●)) is on. The reading on display is the measurement value.

6.4 The reading is held till a new measurement value is coming. The last value is held on the display till the power is off.

6.5 2 modes to turn off the power.

Manual off at any time by pressing the power key or Auto power off after about10 minutes from last key operation.

7. MEASURING BY VELOCITY SETTING

7.1 Press the VEL key 3-12 and the display shows the velocity set last time.

7.2 How to measure its thickness by the velocity known ?

The velocity can be changed by pressing the plus key or minus key to the value of known velocity. The increment is 10m/s every time when pressing the plus or minus key. And the increment is 100m/s if depressing the key formore than about 4 seconds.

7.3 Drop a little oil onto the material to measure and press the Sensor onto the surface. The reading on the display is the thickness if coupling well. So if we have known the velocity of a certain material, it is easy to measure the thickness by 7.2.

7.4 How to measure the thickness by a sample of known thickness?

Just get a sample of known thickness. Then repeat 7.2 and 7.3 till the measurement value is totally same as the known thickness. In such a case, the set value is the velocity of the material to measure, by which you can measure any unknown thickness of same material .

7.5 To browse the velocity, just press the VEL key 3-12. To quit browsing, just press the VEL key 3-12 again or wait till the meter automatically show `0`.

7.6 By use of velocity measurement, it is easy to measure the thickness of any hard materials.

8. BATTERY REPLACEMENT

8.1 When the battery symbol appears on the display, it is time to replace the batteries.

8.2 Slide the Battery Cover away from the instrument and remove the batteries.

8.3 Install batteries paying careful attention to polarity.