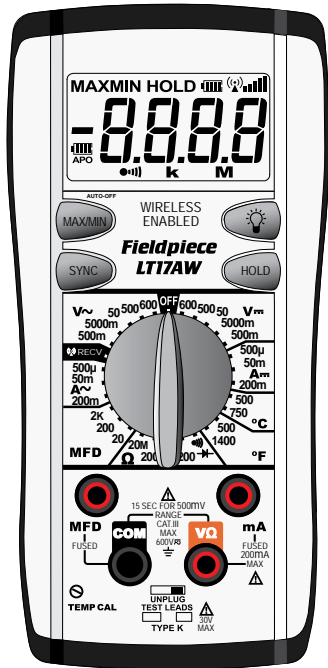


# Fieldpiece

## Wireless Digital Multimeter

### OPERATOR'S MANUAL

Model LT17AW

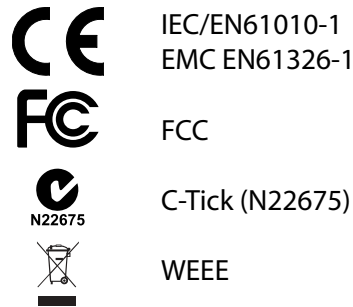


## Quick Start

### Receive a Wireless Reading

1. Select RECV on main dial.
2. Hold SYNC for one second.
3. Set partner device to transmitting switch position.
4. Hold SYNC on partner device for one second. When connection is made and icons will display on the top of LT17AW screen.
5. Enjoy the wireless goodness!

## Certifications



IEC/EN61010-1  
EMC EN61326-1  
FCC  
C-Tick (N22675)  
WEEE

RoHS compliant  
CATIII: Is for measurements performed in the building installation.

## Description

As a proud owner of the first wireless digital multimeter, LT17AW, you are well on your way to eliminating tangled wires. LT17AW will give you the power to receive measurements wirelessly from anywhere on the jobsite. For instance, you can transmit indoor wet bulb measurements over-the-air while you work at the condenser.

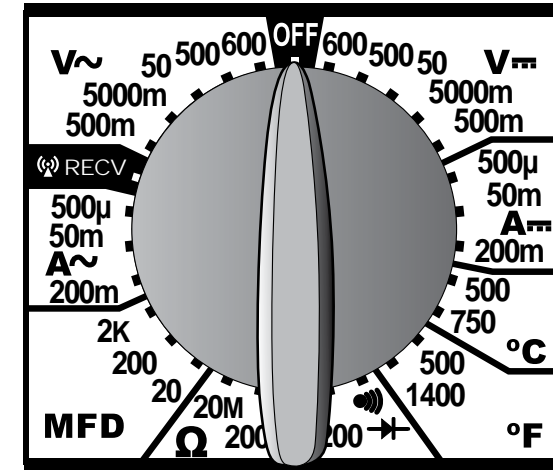
Your LT17AW can receive measurements wirelessly from any Fieldpiece accessory head connected to a Fieldpiece wireless transmitter like ET2W or EH4W.

In addition, your LT17AW can also transmit wirelessly any measurement range on the dial to any Fieldpiece wireless receiver, like EH4W, HG3, or another LT17AW.

Your LT17AW easily syncs with compatible wireless Fieldpiece transmitters and receivers. LT17AW has a wide wireless range to cover the whole jobsite.

Your LT17AW remembers the last meter it was synced with, so there is no need to constantly resync the same pairs. Note: this feature is available when synced to single-link receivers such as the LT17AW, ET2W, and EH4W.

## Controls

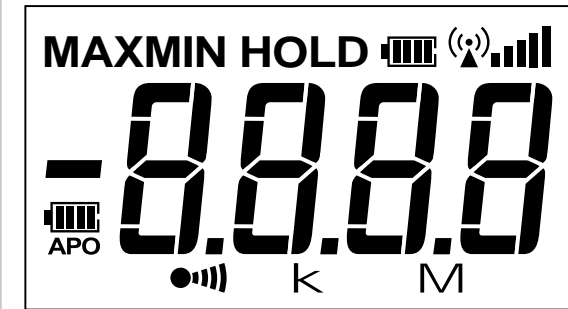


Rotate dial to the function you want to use.

- Hold to connect to other Fieldpiece wireless products.
- Press to activate MAX or MIN. Hold to return to normal mode.
- Press to freeze reading on display.
- Press to toggle backlight on and off.

## Display

- Battery Life (replace 9V if blinking)
- Auto Power Off Enabled
- Wireless Icon
- Singal Strength Bars
- HOLD (freezes current reading)
- MAX (displays maximum reading)
- MIN (displays minimum reading)
- Continuity Test
- Kilo Unit ( $10^3$ , one thousand)
- Mega Unit ( $10^6$ , one million)



## Specifications

- Wireless range:** Up to 75 feet (23m) line of sight
- Minimum Wireless Distance:** Up to 1 foot (30cm)
- Wireless Frequency:** 910MHz to 920MHz (US), 868.1MHz to 868.5MHz (European)
- Display:** 5000 count liquid crystal display with backlight
- Overrange:** (OL) or (-OL) is displayed **Zero:** Automatic
- Measurement rate:** 2.5 times per second, nominal
- Operating environment:** 32°F to 122°F (0°C to 50°C) at <70% RH
- Storage temperature:** -4°F to 140°F (-20°C to 60°C), 0 to 80% RH (with battery removed)
- Accuracy:** Stated accuracy @ 73°F±9°F (23°C±5°C), <75%RH
- Temperature coefficient:** 0.1 x (specified accuracy) per °C [0°C to 19°C (32°F to 66°F), 28°C to 50°C (82°F to 122°F)]
- APO (Auto Power Off):** Approx. 30 minutes. Disable APO by holding the MAX/MIN button while turning on the meter. APO will not show on the LCD. APO is disabled in any wireless mode.
- Backlight:** Bright blue backlight. Approx 3 minutes.
- Power:** Single standard 9-volt battery, NEDA 1604, JIS 006P, IEC 6F22
- Battery life:** 100 hours typical alkaline
- Low battery indication:** Battery icon will be empty (). "bAtt" displays along with a continuous beep when the battery voltage drops below the operating level. Meter shuts off in 5 seconds.
- Dimensions:** 165mm(H) x 78mm(W) x 50mm(D)
- Weight:** Approx. 315g including rubber boot
- Overload protection:** 600 VDC or 600VAC rms unless otherwise stated. 15 seconds on 500mV range.
- Test leads:** Use the test leads that are supplied with the meter or UL listed test leads rated CATIII 600V or above.
- Safety:** Designed to meet IEC 61010-1(EN 61010-1), CAT III 600V, Class II, pollution degree 2, indoor use and comply with CE. UL61010-1.

## Functions

### Wireless Receiver Mode

Use your LT17AW to wirelessly receive measurements from any Fieldpiece wireless transmitter you have set up on the jobsite.

#### LT17AW

1. Select RECV switch position. Hold SYNC button for one second. Search pattern initiates.

#### Fieldpiece Transmitters

2. Connect any Fieldpiece accessory head to a Fieldpiece transmitter.
3. Select DC switch position for all accessory heads except ACH4 (AC switch position).
4. Hold SYNC button for one second.

Note: When a connection is made, the signal strength and battery life of the partner device will be displayed on top of the LT17AW screen. If no partner device is found within two minutes, the LT17AW will stop searching.

### Wireless Transmitter Mode

Transmit measurements wirelessly direct from LT17AW or from an attached Fieldpiece accessory head to Fieldpiece wireless receivers, which lets you be in multiple places at once.

### LT17AW Sending Direct Measurements

1. Select any switch position other than RECV.
2. Hold SYNC for one second until meter beeps.

Search pattern will initiate on LCD.

#### Fieldpiece Receivers

3. Select RECV switch position. Hold SYNC button for one second. For HG3, highlight the test line and hold SYNC button for one second.

Note: When a connection is made, the signal strength to the partner device will display on LT17AW. If no partner device is found within two minutes, the LT17AW will stop searching.

#### LT17AW Transmitting Accessory Head Reading

1. Connect any Fieldpiece accessory head to the LT17AW by removing the probe tips from test leads and plugging into accessory head plugs. Insert test leads to COM and VΩ ports.
2. Select a mVDC range for all accessories except for ACH4 (mVAC range).
3. Hold the SYNC button for one second.
4. Follow "Fieldpiece Receivers" section above.

### Wireless Auto-Connection

When powered on, LT17AW will search and connect to the last connected single-link partner device (LT17AW, ET2W, or EH4W).

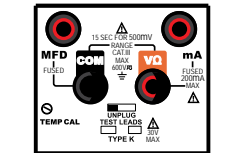
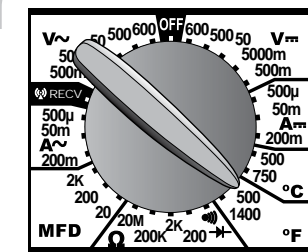
### Temperature (°F/°C)

Plug any K-type thermocouple directly into the meter to measure temperature. Cold junction is located "inside meter" and allows for extremely accurate measurements even in rapidly changing ambient temperatures (going from rooftop to freezer). No adapter is required. See Temp Calibration section for calibration instructions.

**Range:** -30°F to 1400°F, (-35°C to 750°C) **Resolution:** 0.1°  
**Accuracy:** ±(1°F) 32°F to 120°F, ±(1°C) 0°C to 49°C  
±(1%+1.5°F) 32°F to 750°F, ±(1%+1°C) 0°C to 399°C  
±(3%+4°F) -30°F to 32°F, ±(3%+3°C) -35°C to 0°C  
±(3%+4°F) 750°F to 1400°F, ±(3%+3°C) 400°C to 750°C

**Sensor type:** K-type thermocouple

**Overload protection:** 30 VDC or 30VAC rms



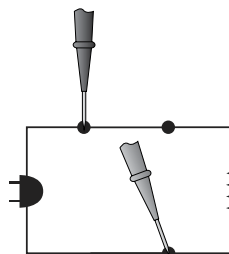
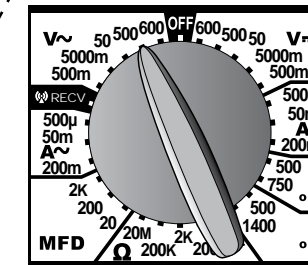
Unplug Leads and Slide TEMP Switch to the Left

### Voltage AC (VAC) (50Hz-500Hz)

Test power lines (120, 220, 480), test 24V going to controls, and test for transformer failure.

**Ranges:** 500mV, 5000mV, 50V, 500V, 600V **Resolution:** 0.1mV  
**Accuracy:** ±(1.2%+6) 500mV to 50V ranges  
±(2%+6) 500V and 600V ranges

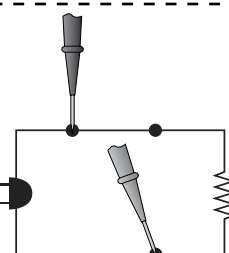
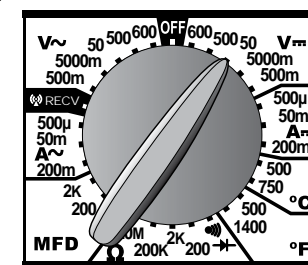
**Input Impedance:** 10MΩ



### Voltage DC (VDC)

Select VDC and the range will automatically be selected to give the best resolution.

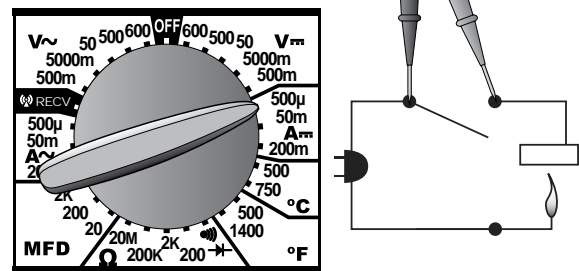
**Ranges:** 500mV, 5000mV, 50V, 500V, 600V **Resolution:** 0.1mV  
**Accuracy:** ±(0.5%+3)  
**Input impedance:** 10MΩ



## Amps DC (ADC) Test Leads

Microamps for flame rectifier diode test on a heater control. Connect leads between flame sensor probe and control module and turn heating unit on to read  $\mu$ A measurement. When the flame is on, there should be a measurable  $\mu$ ADC signal, typically under 10 $\mu$ ADC. Compare measurement to manufacturer's specification to determine if replacement is necessary.

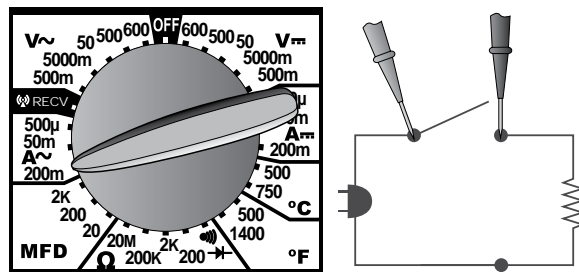
**Ranges:** 500 $\mu$ A, 50mA, 200mA **Resolution:** 0.1 $\mu$ A  
**Accuracy:**  $\pm(1.0\% + 3)$  **Voltage burden:** 800mV  
**Input Protection:** 0.25A / 500V fast blow ceramic fuse



## Amps AC (AAC) Test Leads

Measure amps AC directly in the circuit. Measure small amperages in fine circuitry.

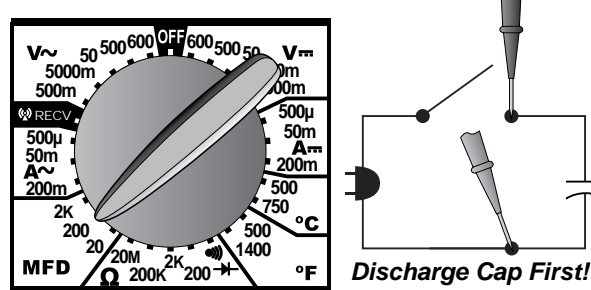
**Ranges:** 500 $\mu$ A, 50mA, 200mA **Resolution:** 0.1 $\mu$ A  
**Accuracy:**  $\pm(1.5\% + 6)$ , 50Hz to 500Hz  
**Voltage burden:** 800mV  
**Input Protection:** 0.25A / 500V fast blow ceramic fuse



## Capacitance (MFD)

Set to MFD to test motor start and run capacitors. Capacitors are one of the most failure prone components in a HVAC/R system. Discharge capacitor and disconnect from power and resistors between terminals before testing.

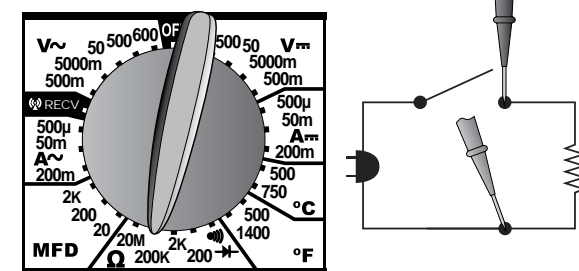
**Ranges:** 20 $\mu$ F, 200 $\mu$ F, 2k $\mu$ F **Resolution:** 0.01 $\mu$ F  
**Accuracy:**  $\pm(4\% + 10)$   
**Input Protection:** 0.25 / 500V fast blow ceramic fuse



## Resistance ( $\Omega$ )

Used for "ohming out" a motor. 0.1 $\Omega$  resolution is necessary to test the resistance between the motor poles because the values are typically very low.

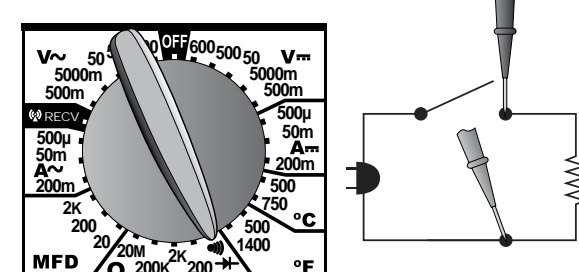
**Ranges:** 200 $\Omega$ , 2k $\Omega$ , 200k $\Omega$ , 20M $\Omega$   
**Resolution:** 0.1 $\Omega$  **Overload Protection:** 500VDC/VAC rms  
**Accuracy:**  $\pm(1.0\% + 4)$  200 $\Omega$  to 200k $\Omega$ ,  $\pm(2\% + 4)$  20M $\Omega$  range  
**Open Circuits Volts:** 0.3VDC typical, (2.5VDC on 200 $\Omega$  range)  
**Overload Protection:** 500VDC or AC rms



## Continuity (•••)

Use the continuity feature to test if a circuit is open or closed. Use this feature to check fuses as well. A steady "beep" to indicate continuity in a circuit.

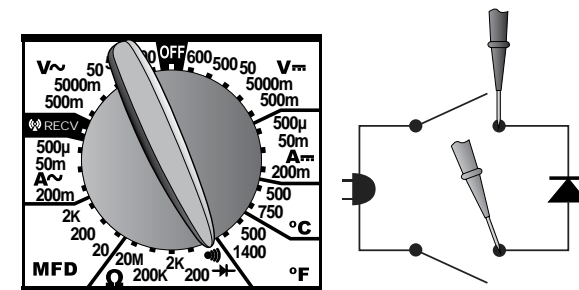
**Response time:** 100ms  
**Audible beep:** <100 $\mu$ s  
**Overload Protection:** 500VDC/VACrms



## Diode Test ( $\rightarrow$ )

Test diodes for proper forward and reversed-biased functions.

**Test current:** 0.5mA (Approx.) **Accuracy:**  $\pm(1.5\% + 3)$   
**Open Circuit Volts:** 2.5VDC typical  
**Overload Protection:** 500VDC/VACrms

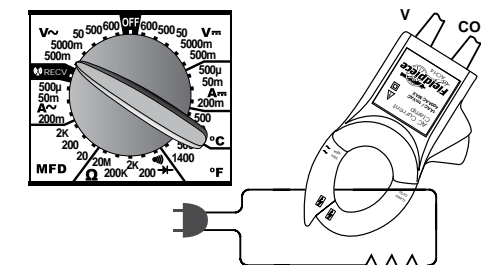


## Amps AC (AAC) Through the Clamp

Test any isolated power line. Turn the dial to 500mVAC switch position. Plug tests leads into COM and V $\Omega$  ports on meter. Remove probe tips from test leads and plug leads into ACH4 banana plugs.

**Range:** 1-400A **Resolution:** 0.1A **Frequency:** 50-60Hz  
**Jaw Opening:** 1.2in (30 mm)  
**Accuracy:**  $\pm(2.7\% + 8)$  on 1-20AAC  
 $\pm(3.7\% + 9)$  on 20-100AAC  
 $\pm(4.7\% + 11)$  on 100-400AAC

Note: Above stated accuracies are a system accuracy combining both the ACH4 and LT17AW accuracies.



## Safety Information

- Never ground yourself when taking electrical measurements. Do not touch exposed metal pipes, outlets, fixtures, etc., which might be at ground potential, while taking measurements. Keep your body isolated from ground by using dry clothing, rubber shoes, rubber mats, or any approved insulating material.
- Disconnect the test leads before opening the case. Inspect the test leads for damage to the insulation or exposed wire. Replace if suspect. Keep your fingers behind the finger guards on the probes while taking measurements.
- When disconnecting from a circuit, disconnect the "RED" lead first, then the common "BLACK" lead. Use one handed testing when possible. Work with others.
- Turn off power to the circuit under test before cutting, unsoldering, or breaking the circuit.
- Do not measure resistance (ohms) when circuit is powered. Isolate load by disconnecting from circuit.
- Disconnect the meter from the circuit before turning any inductor off, including motors, transformers, and solenoids. High voltage transients can damage the meter beyond

- repair. Do not use during electrical storms.
- Do not apply more than rated voltages between input and ground.
- Isolate capacitors from system and discharge them safely before testing.
- Temp switch to prevent leaving thermocouple plugged in while measuring voltage.

**All voltage tests:** All voltage ranges will withstand up to 600V. Do not apply more than 600VDC or AC rms.

Symbols used:

- ⚠ Caution, risk of electric shock
- ⚠ Caution, refer to manual.
- ⚡ Ground
- ☐ Double insulation

**⚠ WARNINGS ⚠**

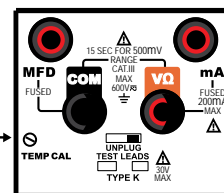
DISCONNECT AND UNPLUG TEST LEADS before opening case. DO NOT APPLY VOLTAGE greater than 30VAC or 60VDC to the thermocouple or the jacks when the rotary dial is on °F. (Use only k-type thermocouples)

REMOVE THE THERMOCOUPLE when taking voltage measurements. DISCONNECT TEST LEADS when measuring temperature. DO NOT APPLY VOLTAGE TO THE JACKS when the rotary dial is on microamps. Even low voltages can cause a current overload and potentially harm the meter.

## Temp. Calibration

For accuracies of  $\pm 1^\circ$ F, calibrate to a known temperature. A glass of stabilized ice water is very close to 32 $^\circ$ F (0 $^\circ$ C) and is usually very convenient but any known temperature can be used.

1. Select the 500 $^\circ$ F range.
2. Plug thermocouple to be calibrated into the K-type jack.
4. Stabilize a large cup of ice water. Stir the ice with the water until temperature stays at 32 $^\circ$ F (0 $^\circ$ C).
5. Immerse the thermocouple probe and let it stabilize. Keep stirring to prevent micro-environments.
6. Use a small screwdriver to adjust calibration pot to the lower left of the COM port as close to 32 $^\circ$ F as you would like.



## Battery Replacement

The battery in the LT17AW must be replaced when the lower left battery icon (🔋) is empty. The LT17AW will display "bAtt" on the LCD accompanied by a continuous beep. The meter will turn off in 5 seconds and no further measurement will be allowed until the battery is replaced.

## Maintenance

Clean the exterior with a dry cloth. Do not use liquid.

## Limited Warranty

In the USA, this meter is warranted against defects in material or workmanship for one year from date of purchase. Fieldpiece will replace or repair the defective unit, at its option, subject to verification of the defect.

This warranty does not apply to defects resulting from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use of the instrument.

Any implied warranties arising from the sale of a Fieldpiece product, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the above. Fieldpiece shall not be liable for loss of use of the instrument or other incidental or consequential damages, expenses, or economic loss, or for any claim of such damage, expenses, or economic loss.

State laws vary. The above limitations or exclusions may not apply to you.

## Obtaining Service

In the USA, call Fieldpiece Instruments for one-price-fix-all out of warranty service pricing. Send check or money order for the amount quoted. Send the meter freight prepaid to Fieldpiece Instruments. Send proof of date and location of purchase for in-warranty service. The meter will be repaired or replaced, at the option of Fieldpiece, and returned via least cost transportation. Outside of the USA, please visit [www.fieldpiece.com](http://www.fieldpiece.com) for service contact information.

**Fieldpiece**  
Designed in USA  
MADE IN TAIWAN

**[www.fieldpiece.com](http://www.fieldpiece.com)**

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