

MicroAmps DC (μ ADC)

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 μ A measurement. When the flame is on, there should be a measurable μ ADC signal, typically under 10 μ ADC. Compare measurement to manufacturer's specification to determine if replacement is necessary.

Ranges: 500 μ A **Resolution:** 0.1 μ A
Accuracy: $\pm(1.0\% + 2)$ **Voltage burden:** 1V
Overload Protection: 600VDC or 600VAC rms

Frequency (Hz) through Leads

Check Variable Frequency Drives. Check incoming voltages to ensure they are cycling at 60Hz or desired frequency.

Ranges: 500Hz, 5kHz, 50kHz, 500kHz, 1MHz **Resolution:** 0.1Hz
Accuracy: $\pm(0.1\% + 5)$ **Sensitivity:** 10Hz to 1MHz: >3.5 Vrms

Duty Cycle (%)

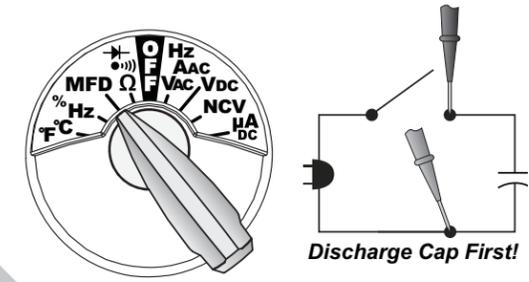
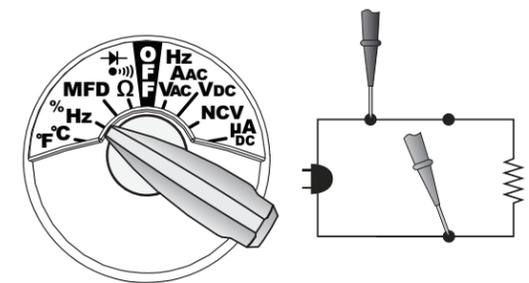
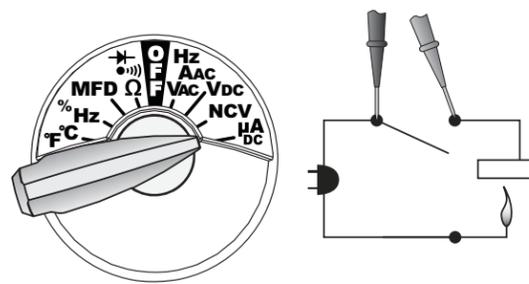
Duty cycle shows the % of the AC waveform which has positive amplitude. **Ranges:** 5%-95% (40Hz to 20kHz) **PW:** $>10\mu$ s

Resolution: 0.1% **Accuracy (5V logic):** $\pm(2\% + 10)$

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. If dI.S.C is displayed, discharge the capacitor.

Ranges: 5 μ F, 50 μ F, 500 μ F, 5mF **Resolution:** 1nF
Accuracy: $\pm(3\% + 15)$ 5 μ F, $\pm(3\% + 5)$ 50 μ F to 500 μ F,
 $\pm(5\% + 20)$ 5mF
Overload Protection: 600VDC or 600VAC rms



Voltage DC (VDC)

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

Ranges: 500mV, 5V, 50V, 500V, 600V **Resolution:** 0.1mV
Accuracy: $\pm(0.5\% + 2)$
Input impedance: $>100\text{M}\Omega$ (500mV), 10M Ω (5V),
 9.1M Ω (50V-600V)

Resistance (Ω)

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

Ranges: 500 Ω , 5k Ω , 50k Ω , 500k Ω , 5M Ω , 50M Ω
Resolution: 0.1 Ω **Overload Protection:** 600VDC/VAC rms
Accuracy: $\pm(1.0\% + 5)$ 500 Ω to 500k Ω , $\pm(1.5\% + 5)$ 5M Ω , $\pm(3.0\% + 5)$ 50M Ω

Continuity (•••)

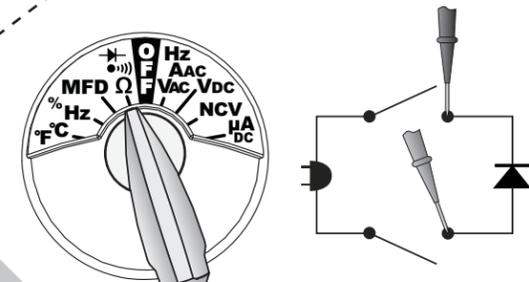
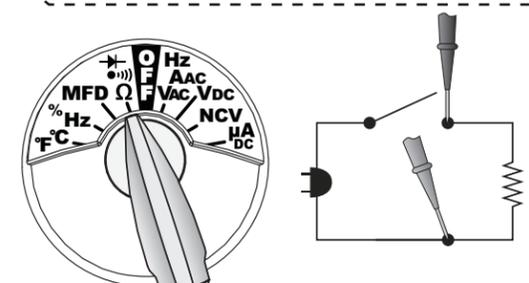
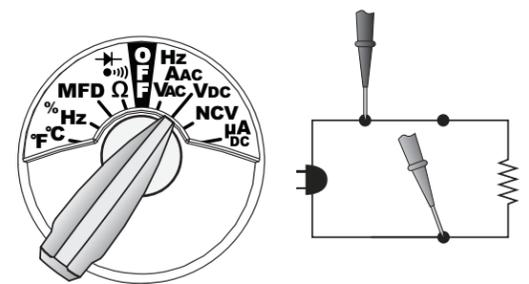
Use the continuity feature to test if a circuit is open or closed. Use this feature to check fuses as well. A steady "beep" and green LED indicate the circuit is good. Turn dial to Ω position and press SEL button once.

Range: 500 Ω **Resolution:** 0.1 Ω **Response time:** 100ms
Audible beep: $<30\Omega$ **Overload Protection:** 600VDC/VACrms

Diode Test (\rightarrow)

Test diodes for proper forward and reversed-biased functions. Turn dial to Ω position and press SEL button twice.

Test current: 0.8mA (Approx.) **Accuracy:** $\pm(1.5\% + 5)$
Overload Protection: 600VDC/VACrms



Amps AC (AAC)

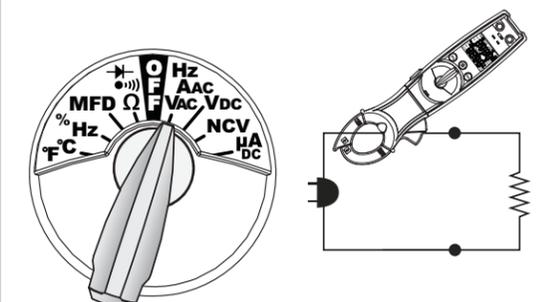
Test any isolated power line. Press SEL on VAC/AAC/Hz position. AAC will display in the upper display. True RMS on model SC56 only.

Ranges: 50A, 400A **Resolution:** 0.01A **Crest factor:** ≤ 3
Accuracy: $\pm(2.0\% + 10)$ 50-60Hz **Jaw Opening:** 1.2in (30mm)

Frequency (Hz) through Clamp

Measure frequency without using test leads, just use the clamp. Turn dial to VAC/AAC/Hz and press SEL twice. Clamp Hz upper display.

Range: 10Hz to 400Hz **Accuracy:** $\pm(0.1\% + 5)$
Minimum current range: >5 AAC **Overload Protection:** 400AAC
Resolution: 0.1Hz



Inrush Current (SC56 only)

Inrush feature captures current at start of first 100ms period of a motor start. This can help diagnose a motor before it fails.

To activate Inrush, turn dial to VAC/AAC/Hz position, press SEL to show AAC on top display, then press the INRUSH button on the side of the meter once for 50AAC range and twice for 400AAC.

Inrush measurement period: 100-milliseconds
Minimum input: >2 A on 50A range; >20 A on 400A range

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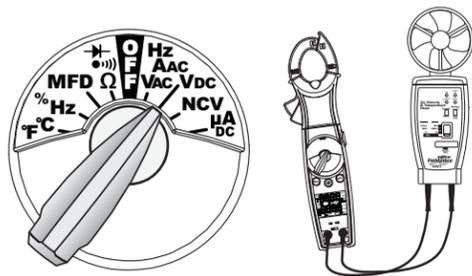
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Modular Expandability

Your new Swivel Clamp Meter is compatible with all Fieldpiece Accessory Heads. With Fieldpiece Accessory Heads, you can measure any available parameter, and read the measurement on your new meter's display in real-time.

Just set the range to VDC and press the RANGE button until mV is displayed. Remove the probe tips of your test leads, and connect your accessory head (model AAV3 shown).

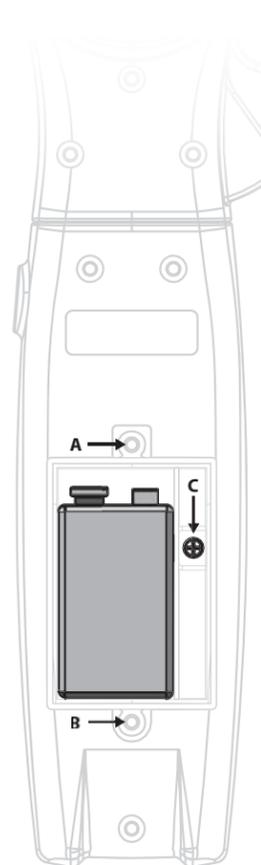


Visit www.fieldpiece.com to see all of the different accessory heads that Fieldpiece offers.

Temp. Calibration

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

1. Select the 400 $^\circ\text{F}$ range.
2. Plug thermocouple to be calibrated into the K-type jack.
3. Unscrew A and B and remove the battery cover.
4. Stabilize a large cup of ice water. Stir the ice with the water until temperature stays at 32 $^\circ\text{F}$ (0 $^\circ\text{C}$)
5. Immerse the thermocouple probe and let it stabilize. Keep stirring to prevent micro-environments.
6. Use a small screwdriver to adjust calibration pot C to the right of the battery as close to 32 $^\circ\text{F}$ as you would like.



Safety Features

1. Bright LED and beeper warn you when testing voltages above 30V.
2. Switch to the NCV function (non contact voltage) and point clamp claw towards suspected voltage source. Monitor the bright LED and beeper to see if the source is "hot."
3. Rotate the clamp to the angle that best suits the situation.
4. Temp switch to prevent leaving thermocouple plugged in while measuring voltage.
5. LED flashlight automatically shines when clamp jaw is opened (model SC56 only).

Battery Replacement

The battery must be replaced when the battery icon is empty and blinking. The icon will blink for 30 seconds, then the meter will display LO.bt and further measurement will not be allowed until battery is replaced. Disconnect and unplug leads, turn meter off and remove battery cover. Replace the battery with a standard NEDA type 1604 9V battery.

Maintenance

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

Limited Warranty

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

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.

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 MADE IN TAIWAN

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