Fluke HVAC/R Solutions
**Gas heat solutions**

**Air temperature difference**
Check the temperature difference across the heat exchanger with the Fluke 52 II, with the burner working. Expect a 40-75 °F temperature difference (TD). If the TD is low, then the fan is running too fast. If the TD is high, then the fan is running too slow or there is restricted air flow.

**Control voltage**
Use the VoltAlert 2AC to test for energized 24 V ac contacts.

**Flame rod μA test**
Verify proper operation of the flame rectification circuit with the Fluke 116 in the μA mode. Compare measured value against flame control module specifications. Typical values are between 0.6 to 5.0 μA depending upon furnace manufacturer. If the μA reading is below specification, the flame rod may need to be repositioned, cleaned, or replaced.

**Carbon monoxide**
Use the Fluke CO-220 to check for CO leaks around the heat exchanger, flue and other points within a building.

**Flue gas**

**Heated air**

**Cold air**

**Heated air**

**Flue gas**

**Primary voltage**

**Test overall vibration on motors and pumps with the 805 FC Vibration Meter**

**CO-220**
Fluke TiS10 Infrared Camera
Easy to use, point and shoot entry level infrared camera with 80x60 resolution—ideal for quick scans and inspections.

Fluke 52 II Dual Input Digital Thermometer
The Fluke 52 Series II Thermometer provides high accuracy and performance in one of the most advanced, yet affordable dual input thermometers in the industry. Compatible with any J, K and many other type thermocouples. Ideal for differential temperature measurement.

Fluke CO-220 Carbon Monoxide Meter
The CO-220 Carbon Monoxide Meter allows quick and reliable testing for carbon monoxide. The unit is easy to use with a large display and automatic backlight. An audible beeper ticks faster as the CO level increases. Accurately measures from 0 to 1000 PPM of carbon monoxide.

Fluke 805 FC Vibration Meter
The reliable, repeatable, accurate way to check bearings and overall vibration and stay in contact with your team using Fluke Connect with ShareLive™.

Fluke 2AC VoltAlert™
The 2AC is the latest addition to the VoltAlert™ AC non-contact voltage tester family from Fluke and is designed to be pocket-sized and easy to use. The 2AC tests for energized circuits and defective grounds, whether it’s for an electrician on the factory floor or the do-it-yourselfer around the house.
Heat pump solutions

**Coil ΔT**
Check the temperature differential across the coil with the Fluke S2 II

**Heater element**
Measure amps, volts with the Fluke 902 FC

**Cold air**

**Fluke 902 FC**

**Primary voltage**

**Fan amps**

**Fluke 116**

**Check valve**
Check temperature difference across check valve

**Fluke 805 FC**

**Check valve**
Controls direction of refrigerant flow

**Fluke 116**

**Suction line temperature**
Check suction line temperature with a multimeter and the Fluke 80AK and 80PK-8 pipe clamp

**Fluke 52 II + 80 PK-8**

**Outside unit**
Condenser during the summer and evaporator during the winter

**Inside unit**
Evaporator during the summer and condenser during the winter

**Heated air**

**Auxiliary heat**

**80 AK-A**

**80 PK-8**

**Inside unit**
Condenser during the summer and evaporator during the winter

**Outside unit**
Condenser during the summer and evaporator during the winter

**Inside unit**
Evaporator during the summer and condenser during the winter

**Heated air**

**Auxiliary heat**

**80 AK-A**

**80 PK-8**

**Inside unit**
Evaporator during the summer and condenser during the winter

**Outside unit**
Condenser during the summer and evaporator during the winter
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Easy to use, point and shoot entry level infrared camera with 80x60 resolution—ideal for quick scans and inspections.

Fluke 116 Digital Multimeter
With the ability to take temperature and microamp measurements, the Fluke 116 Digital Multimeter has everything you need to help you quickly troubleshoot problems with HVAC equipment and flame sensors. The Fluke 116 measures resistance, continuity, frequency and capacitance.

Fluke 902 FC True-rms HVAC Clamp Meter
The Fluke 902 FC True-rms HVAC Clamp Meter, a wireless Fluke Connect® enabled meter, improves the productivity of HVAC technicians in the field. The rugged dual rated—CAT III, 600 /CAT IV, 300 V—meter performs the essential measurements of HVAC systems.

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Air conditioning and refrigeration solutions

**Fluke 52 II**
Record evaporator temperature differences as well as minimum/maximum temperatures.

**Evaporator**

**Fluke 805 FC**
Test overall vibration

**Fluke 902 FC**
Measure fan motor current with a clamp meter

**Transformer check**
Confirm the presence of voltage on both the primary and secondary sides of the transformer with non-contact voltage indicators

**Current imbalance**
Use a clamp meter to check for current imbalance on 3Ø systems

**Suction filter**
Fluke 279 FC

**Fluke TiS10**
Check levels
Evaluate liquid levels in the accumulator with the Fluke TiS10

**Fluke 805 FC**
Measure superheat at the evaporator. Superheat is the heat added to the refrigerant above the boiling point.

**Suction pressure**
Use a multimeter and a pressure module to quickly and accurately determine suction pressure. The suction pressure is required to determine Superheat.

**Check levels**
Evaluate liquid levels in the accumulator with the Fluke TiS10

**Fluke 279 FC with iFlex®**

**Fluke 116**

**Fluke 279 FC**

**Fluke 179**

**Fluke 52 II**

**Fluke 805 FC**

**Fluke 902 FC**
Sight glass/moisture indicator

Liquid line filter drier

Compressor

Condenser

Capacitors

Fluke 1587 FC

Fluke 805 FC

Fluke 116

Ambient air temperature

Fluke 116

Subcooling

Check levels

Piping color code

High-pressure gas

High-pressure gas/liquid saturated mixture

High-pressure liquid

Low-pressure liquid/gas saturated mixture

Low-pressure gas

Discharge line temperature

Liquid line filter drier

Capacitors

Measure capacitance or resistance and insulation resistance of the windings on the motors on PSC-Permanent Split Phase Capacitor motors.

Fluke HVAC/R Solutions Fluke Corporation
Electric heat solutions

**Calculate airflow**
Calculate CFM easily from systems with electric heat:

\[
\text{CFM} = \frac{(\text{Volts} \times \text{Amps} \times 3.412)}{(\Delta T \times 1.08)}
\]

where Volts and Amps are the measured values of electric heat elements and \(\Delta T\) is the air temperature difference across the furnace.

**Air temperature difference**
Check the temperature difference across the heating elements with the Fluke 52 II.

**Sequencers:** A special time delay relay with low voltage control circuit and line voltage switching. Causes staging of heating elements.

**Heater elements**
5 kw each provides 17,000 BTU’s @ 240 volts.

**Electric heat BTU’s**

\[
\text{Electric heat BTU’s} = \text{volts} \times \text{amps} \times 3.412
\]

8 Fluke Corporation  Fluke HVAC/R Solutions
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Fluke 279 FC Thermal Multimeter
The 279 FC is a full-featured digital multimeter with integrated thermal imaging and is designed to increase your productivity and confidence.

Fluke 805 FC Vibration Meter
The reliable, repeatable, accurate way to check bearings and overall vibration and stay in contact with your team using Fluke Connect with ShareLive™.

Fluke T5-600 Voltage, Continuity and Current Tester
Fluke T5 Series Electrical Tester is a flexible design for the basic measurements of volts, amps, and ohms, which is a safer alternative to traditional solenoid testers. Compact OpenJaw™ technology makes current measurement simple and reliable from 100 A down to 0.3 A ac.
Oil heat solutions

**Air temperature difference**
Check the temperature difference across the furnace. (Similar to the gas furnace TD check.)

**Carbon monoxide**
Use the Fluke CO-220 to check for CO leaks around the heat exchanger, flue and other points within a building.

**Net BTU’s** = **Gross BTU’s** × efficiency rating
Fluke 279 FC Thermal Multimeter

The 279 FC is a full-featured digital multimeter with integrated thermal imaging and is designed to increase your productivity and confidence.

Fluke 116 Digital Multimeter

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Receive a FREE gift with purchase when you buy Fluke tools. Learn more at www.fluke.com/promotions today.