A/C System Vitals Report

Jane Smith
264 Harding Court
Loveland, CO 80538

Date of Service: 6/12/2022
Time of Service: 11:09:08 PM

What Are Your System Vitals?
Just like your health vitals, temperature, pulse, blood pressure etc, your A/C system vitals show the overall health of your air conditioning system. These vitals account for both the refrigerant and air delivery side of the system. System targets that are out of range are typically related to a system diagnostic listed below. Correcting the diagnostic faults, if possible, should put the system vitals back in the normal range.

YOUR SYSTEM SCORE

93% A-

Refrigerant Charge

In Range — Out of Range

Superheat: 10.3 °F

Low	Normal (6.0 - 24.0)	High

Subcooling: 11.9 °F

Low	Normal (8.9 - 14.9)	High

Heat Transfer

Condenser Approach: 10.0 °F

Low	Normal (1.5 - 12.8)	High

Temperature Split: 20.0 °F

Low	Normal (16.5 - 22.5)	High

Air Distribution & Filtration

Total External Static Pressure: 0.50 inH2O

Low	Normal (< 0.7)	High

Filter Face Velocity: 480.7 FPM

Low	Normal (< 500.0)	High

Subsystem Review

Not yet reviewed

System Diagnostics

No system-wide issues were detected.

Note: The Vitals Score and report can be generated as soon as the system is stable or after 10min.

Score Breakdown

Age & Efficiency Losses

The system age scoring is based upon the initial system SEER, capacity, installation date and climate zone. Larger higher capacity systems in hot climates have been shown to age at a faster rate.

-7

Temperature Split Losses

Split losses are directly tied to sensible capacity. Systems with a low temperature split may have a refrigerant charge issue, or more common, a return duct leak that could result in excessive run times and substantial energy losses.

0

Static Pressure Losses

High system static pressure can result in high fan watt draw (electrical usage) and/or low airflow as well as premature blower motor failure, especially with ECM/Constant Torque motors. The system can have high total static, supply static, return static or a combination of all three. High static can also exacerbate return air duct leakage and contribute to poor indoor air quality.

0

Approach Losses

A system with high approach has heat rejection issues. This can be the result of a dirty condenser, non condensibles, condenser clearances, and/or condenser air recirculation. Systems with a high approach may also have a low temperature split due to heat returning to the metering device through the liquid line.

0

Refrigerant Charge Losses

Refrigerant charge losses can be the result of a refrigerant undercharge, overcharge and/or non-condensibles. measureQuick considers the deviation in charge from superheat/subcooling targets as well as the metering device type. Fixed/piston metering devices will result in high capacity losses when the system is undercharged.

0

Your System Score

Using data from several studies that correlate system faults, and system degradation due to age, measureQuick uses a proprietary scoring system to grade the system based upon age and system fault intensity. New systems when properly installed should easily score 95-100%.

93% A-

Report Information

A/C System Vitals Report

measureQuick A/C System Vitals Score™ combines the cooling performance, age degradation, initial SEER and capacity, refrigerant charge, and static pressure of the duct system into a single grade.

Your system is comprised mechanical equipment and several subsystems including the control, electrical, air distribution, air filtration, and condensate disposal systems. Servicing and or replacing the mechanical equipment without addressing the subsystems only assures premature equipment failure.

Modern A/C systems are designed to last between 10 and 15 years but only when properly installed*. System life is dramatically shortened due to poor installation or long deferred maintenance.
• Systems scoring 80 or more are typically considered excellent candidates for repair.
• Systems scoring under 50 may require significant repairs. These systems may be better candidates for replacement.

Refrigerant Charge (Superheat and Subcooling)

A/C equipment works by using expensive refrigerant to remove heat from inside a room. Superheat and Subcooling are used to determine the precise amount of refrigerant to sufficiently "charge" the equipment. Moreover, these same calculations may further indicate refrigerant leakage and contamination.

Contaminated refrigerant causes unwanted chemical reactions like forming acids, which literally eat your system alive. Likewise, the incorrect refrigerant charge increases energy consumption while reducing equipment life, cooling capacity, and humidity removal.

Heat Transfer (Approach and Temperature Split)

Fundamentally, air conditioners transfer heat from places where it's not wanted (inside your home) to other places (outside your home). This is accomplished by blowing inside air across cold coils (the evaporator). The evaporator is filled with refrigerant. The refrigerant is raised in temperature pumped to the condenser unit (the unit outside) to cool thereby transferring the heat outside.

The efficiency of condenser heat transfer is determined by subtracting the temperature of the refrigerant coming out of the condenser (the cooled refrigerant) from the outdoor temperature; this is called the "approach". A high approach means the refrigerant is not cooling efficiently.

The performance of the evaporator is determined by comparing the temperature of cool air blowing out of your vents and the temperature of the air returning to the system; this is called the temperature split.

Temperature splits that are too high indicate low airflow and can cause the evaporator coil to freeze up. A low temperature split may indicate a refrigerant undercharge, possible leak, or return air duct leakage. Either way, the system will run excessively reducing the equipment life and increasing energy consumption.

Air Distribution and Filtration (TESP and Filter Face Velocity)

Total External Static Pressure (TESP) is a measure of the resistance to airflow in an air conditioning system by components external to the rated appliance.

Typically, the evaporator, air filter, filter grill, registers, supply and return ducts all reduce the airflow. We can measure the resistance by measuring static pressure i.e., pressure in the ducts.

A high TESP means low airflow. Low airflow means longer system run times causing higher energy costs, premature failures, expensive repairs.

Filter face velocity is the speed of the air flowing across the filter. It's measured to assure proper air filter sizing. An undersized air filter permits dirt to flow to the evaporator coil. Evaporator coils, wet from condensation, will attract dirt sticking too and eventually clogging the evaporator coil reducing the cooling efficiency.