Making your home Green & Smart

Questions List

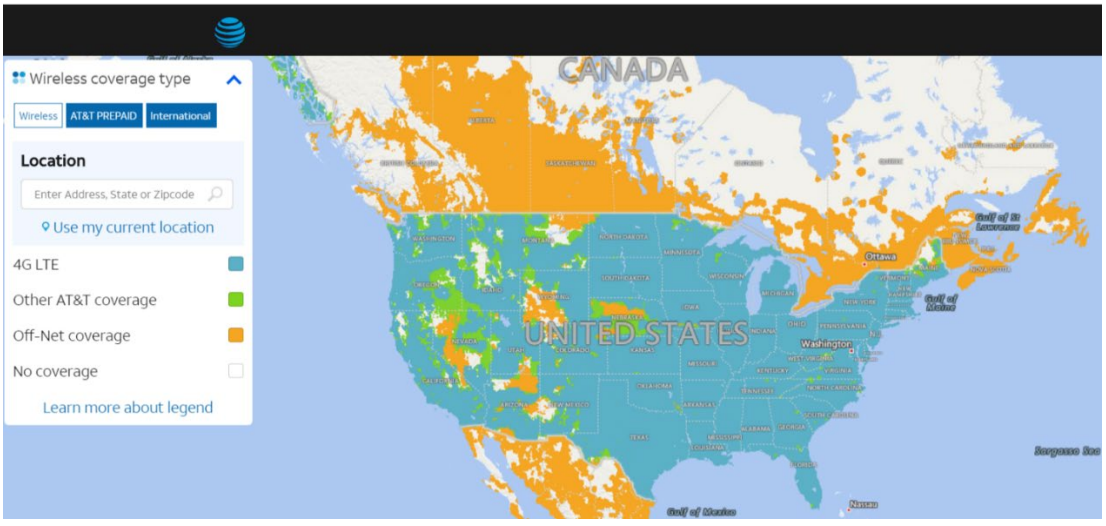
1. **What makes Ecoer so flexible as an inverter?**
   Ecoer has 8 sensors built in the outdoor unit (2 pressure and 6 thermistors) which tell the PCB what is happening in the refrigerant cycle. Ecoer outdoor units can be used with most other 3rd party indoor coils or air handlers. Coils must have a TXV and rated for R410A. This is a non-communicating inverter system, so no communication wire required other than standard thermostat wire. Most 24v thermostats will work with our system, do not need to use Ecoer's.

2. **Why are there only 2 Outdoor Condensers?**
   Ecoer only has 2 outdoor units because of the true variable speed Mitsubishi compressor with more than 30+ stages. It modulates down, so a 5 ton condenser can cover 3.5-5tons, and the 3 ton condenser can cover 1.5-3 tons. Also, with the flip of a dipswitch the heat pump can switch to straight AC if needed.

3. **How does the system use smart technology?**
   Ecoer's patented technology uses the information received from the 8 sensors, sends that info to our simplified PCB, which send it to the IoT Gateway and using 4G LTE (like a cellphone), pings that info to a cell tower, to our server (the cloud), and then to the Ecoer Smart Service Pro App for contractors to monitor the customers units.

4. **What type of signal is the IoT Gateway using?**
   Ecoer gateways use AT&T 4G LTE (cell towers).
   They activate automatically when you energized the condensing unit. It needs several minutes (Max. 12min) to initialize in the first time. The normal working state of gateway should be blue LED (No.1) is blinking with other LEDs are OFF.

5. **How does the gateway work when a unit is installed in an area that has no cellphone coverage?**
   The Gateway will not work without cell tower coverage. However, our IoT gateway operates with such low bandwidth (just 9600 Baud), that in most areas where there is no cellphone signal, our gateway will still transmit data. The contractor can troubleshoot via fault codes on the board by pressing (BS3) button to get pressure and temperature values. Multi-meter, pressure gauges may be required at the same time.
   Ecoer provides detailed function and control, troubleshooting in the service manual. There is also a "Tool Box" option which enables the contractor to ensure important updates, the IoT gateway would normally facilitate, get to all condenser's control boards, they've installed.



6. **Can the contractor use an existing line set (assuming it is the correct size)?**
   Yes- as long as the line set is properly flushed. You can use up to 100ft of line set with 50ft being vertical.
   Need to ensure the refrigerant lines are free of leaks, acid and mineral oil.
   When replacing R-22 system with a new R-410A system, be sure the existing lines can endure R-410A pressure which is 50~70% higher than R-22 system. Use flush like Rx11 to remove the old mineral oil, sludge, moisture, acid and other contaminants out of the line set.

7. **What are the voltage tolerances of the boards? Is it automatic reset or manual reset for low voltage alarm?It's suggested to install surge protector on all Ecoer Inverter Systems.**
   Basically it's +-10% of the nominal voltage. (i.e. 187Vac to 253Vac)
   H6: Low voltage alarm AUTO reset for this alarm
   E8: System locks up when P8 (Low compressor voltage protection) has occurred 3 times within 60 minutes. Need to manually reset after that.

8. **What's refrigerant coefficient? How to judge the system has been charged properly by this number?**
   The refrigerant coefficient is used to evaluate the refrigerant level.
   0.4-0.6 is acceptable if SH is no greater than 20 °F.
   0.5 is the optimal setting.

9. **Is the recommended method to weigh-in the charge during heating season installation?**
   It's recommended to use **AUTO charge mode** when the ambient temperature is between 50~120F, weigh-in method in heating mode according the charge amount table.
   If using weigh-in method in heating mode, make sure the compressor discharge superheat (DSH=TD-SC-TL-1.8ºF) is larger than 25 ºF . Query TD, SC, TL data by (BS3) button to get live data from ESS APP. Once the system has been registered properly from APP, Ecoer service team will notify the technician if there is undercharge or overcharged, based on the running data.

10. **Is it ok to insulate the liquid line?**
    It is not a problem if the liquid line has to be insulated per local code, etc. It should be better for the performance, but not necessary.

11. **Will the WiFi thermostat communicate with IoT Gateway in the future?**
    No- the new Ecoer Wi-Fi thermostat will not communicate with the IoT Gateway, but does communicate with our E series Air Handlers for control of blower speed, effectively turning our AHU into a two stage.

12. **How to switch to HP with the existing two wires from ODU to thermostat.**
    Using the new Ecoer thermostat, we can get HP functionality using only the C & Y terminals (2 wires) on the ODU to the Ecoer thermostat.
    As duel-heating function is a basic characteristic for Ecoer condensing unit, so if there are no other wires, it would not allow for the ODU to send a 24Vac (W signal from CN5) to the indoor unit to energize the electric heater when the outside temperature is below specific values. Other brand air handlers/thermostats are also compatible to connect with ODU W terminal.

14. **Is there a subscription for the homeowner to be able to monitor the system?**

    The homeowner cannot have access to the Ecoer ProApp. The APP is designed for contractors only, and is free of charge. The IoT Gateway comes with 3 years monitoring included in its price. An additional 7-year monitoring package, or annual renewal of monitoring can be purchased. The selling of the IoT service package past the initial 3 years is up to the contractor.

    *The only app available for the homeowner is the app that works with our EST01 Thermostat.

15. **Where does the error code display on the app, so the contractor knows what's going wrong?**

    The alarm will be sent to the phone/tablet from the Apps. Ecoer Apps give detailed instructions on how to do the troubleshooting before going to the jobsite. All you need to do is follow the instructions step by step.

16. **Does the error code give a fail part # if a part failed so he knows what to order before he goes to the home owners house?**

    No, not at this moment, but it's high on our list to eventually offer.

    Contractor can check the parts list in the apps. The route is: Files->Parts List

17. **Why doesn't the compressor have a crankcase heater?**

    Ecoer systems use power to heat the motor inside the compressor when the conditions satisfy.

18. **What controller signals have to be connected? Does the 4-way valve energize in cooling or in heating?**

    C/Y/O/W signals are provided at CN5 terminal.

    Cooling only systems: C/Y

    Heat pump systems: C/Y/O, W signal is optional to use for dual-heating. 4-way valve energizes (208/230Vac) in heating.

    Ecoer uses O signal for cooling (Low voltage), but de-energizes the 4-way valve (0Vac for the 4-way valve coil).

19. **How long line set has been pre-charged?**

    Factory charges up to 25ft.

    But some air handler combinations have to be charged additional amount.

20. **What can the contractor do from "SW1"?**

    No.1 nothing

    No.2 sets the model capacity. Factory default is 3Ton for EODA18H-2436, 5Ton for EODA18H-4860.

    No.3 provides the selections of heat pump(default) or AC only.

    No.4 Default setting will allow Ecoer Service Team to send special commands for customized functions or remote troubleshooting.

    Have to cycle power to activate all the setting change!

21. **Is it required to use a TXV for indoor coil? What kind of TXV has to be used?**

    Adjustable heat pump TXV is recommended (Two-way)

    Non-bleed VS Bleed TXV.

    1) Efficiency.

    Non-bleed TXV will increase the efficiency. We do want our customers to have a higher efficiency with Ecoer systems.

    2) Reliability.

    Ecoer uses soft start-up with low compressor speed (RPS) to use non-bleed TXV. We have tested that our systems could start-up when the pressure difference was 100psig. Fixed systems with PSC compressors would need a bleed TXV, because the torque is pretty large for it to start-up with pressure difference. Or a non-bleed TXV with hard-start kit for fixed system.

3) Comfort.
The bleed type TXV would allow the refrigerant to go back to low pressure side rapidly.
But our control looks at low pressure in cooling, so it may require the unit to adjust RPS and outdoor Fan speed often, resulting in less comfort for the homeowner.

22. **What are the requirements for liquid line sub-cooling and compressor suction superheat (SH) in AUTOcharge mode?**
Recommended SC is 6-18F, SH is 7~20F.

23. **Can the micro-channel indoor coil be matched for Ecoer heat pump?**
No micro channel indoor coils can be matched with our condensers, if running in heat pump mode. It can only be usedin a cooling only application.

24. **With new E series and Ecoer thermostat, could it control airflow volume depending on a zone controldampers?**
E series AHU and the Ecoer thermostat will control the speed of indoor fan only in cooling mode for a betterdehumidification control. The control logic is built into the Ecoer thermostat varying the signal from G to G2 terminal.It won't control airflow volume depending on zone control dampers, because there will be no feedbacks from zoneboard.

25. **Are there any restrictions on cleaners that can be used on the coils?**
Nothing special, same as compared with other R410-A systems in the US market. The contractor can do what he hasdone before for copper line and aluminum fins.

26. **Warranty claim rate for Ecoer so far? Does parts warranty transfer to new owner if the home is sold?**
Less than 2% in the last 2 years.
Claims have typically come from install errors per mech codes, etc. The IoT Gateway greatly reduces warrantyclaims.
The parts warranty will transfer to the next owner as long as the unit stays at the original install location. Customershould notify Ecoer at purchase of home if possible.