CTSEI–01SI
Sequence of Operations
Single Package Rooftop Units
for 7–Eleven®

Carrier
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Installation Instructions

SEQUENCE OF OPERATION

Run Conditions – Scheduled:

The unit will run according to a user definable time schedule in the following modes:

- Occupied Mode: The unit will maintain
  - A 75 °F (adj.) cooling setpoint.
  - A 66 °F (adj.) heating setpoint.
- Unoccupied Mode (night setback): The unit will maintain
  - A 90 °F (adj.) cooling setpoint.
  - A 55 °F (adj.) heating setpoint.

In stand-alone mode unit is set to be occupied 24/7.

Supply Fan:

The supply fan will run anytime the unit is commanded to run, unless shutdown on safeties. To prevent short cycling, the supply fan will have a user definable (adj.) minimum runtime.

Cooling Stages:

The controller will measure the zone temperature and stage the cooling to maintain its cooling setpoint. To prevent short cycling, there will be a user definable (adj.) delay between stages, and each stage will have a user definable (adj.) minimum runtime.

The cooling will be enabled whenever:

- Outside air temperature is greater than 60 °F (adj.).
- AND the zone temperature is above cooling setpoint.
- AND the supply fan status is on.

Gas Heating Stages:

The controller will measure the zone temperature and stage the heating to maintain its heating setpoint. To prevent short cycling, there will be a user definable (adj.) delay between stages, and each stage will have a user definable (adj.) minimum runtime.

The heating will be enabled whenever:

- Outside air temperature is less than 65 °F (adj.).
- AND the zone temperature is below heating setpoint.
- AND the supply fan status is on.

Economizer:

The controller will measure the zone temperature and modulate the economizer dampers in sequence to maintain a setpoint [1] °F less than the zone cooling setpoint. The outside air dampers will maintain a minimum adjustable position of [20] % (adj.) open whenever occupied.

The economizer will be enabled whenever:

- Outside air temperature is less than [75] °F (adj.).
- AND the outside air enthalpy low switch is on.
- AND the outside air temperature is less than the zone temperature by 3°F.
- AND the supply fan status is on.

The economizer will close whenever:

- Mixed air temperature drops from [40] °F to [35] °F (adj.).
- OR on loss of supply fan status.

The outside and exhaust air dampers will close and the return air damper will open when the unit is off. If Optimal Start Up is available, the mixed air damper will operate as described in the occupied mode except that the outside air damper will modulate to fully closed.

Minimum Outside Air Ventilation – Carbon Dioxide (CO_2) Control:

When in the occupied mode, the controller will measure the space air CO_2 levels and modulate the minimum outside air damper position open on rising CO_2 concentrations, overriding normal minimum damper position to maintain a CO_2 setpoint of [750] ppm (adj.).

Filter Status:

The controller will monitor the filter status.

Mixed Air Temperature:

The controller will monitor the mixed air temperature and use as required for economizer control (if present) or preheating control (if present).

Return Air Carbon Dioxide (CO_2) Concentration Monitoring:

The controller will measure the return air CO_2 levels.

Return Air Temperature:

The controller will monitor the return air temperature and use as required for economizer control (if present).

Supply Air Temperature:

The controller will monitor the supply air temperature.