

COMMERCIAL TRAINING TOOLBOX TIPS

Economizer Control Types

Back to Basics

Helpful Resources

1. Lennoxcommercial.com or LennoxPros.com.

A common use of economizers is to provide free cooling to the building. Free cooling increases the HVAC system's efficiency by providing cooling and/or dehumidification without operating the unit's compressor.

Determining when outdoor air is suitable for free cooling is the job of one or more temperature or enthalpy sensors.

Single Temperature (TMP) Control

- Single temperature sensor control means that one temperature sensor is used to monitor outdoor air temperature. This is sometimes called a "Sensible" Economizer. The unit uses outdoor temperature based on a setpoint to deem outdoor air suitable for free cooling.

Dual (Differential) Temperature Control

- Dual, or differential, temperature sensor control means that two temperature sensors are used, one to monitor outdoor air temperature and one to monitor return air temperature. The unit compares the outdoor temperature sensor to the return air temperature sensor. The technician chooses a differential during the unit setup, maybe 5 or 10 degrees. When outdoor temp is cooler than indoor temp by the differential setpoint, outdoor air is deemed suitable for free cooling.

Single Enthalpy Control

- Single enthalpy sensor control means that one enthalpy sensor is used to monitor outdoor air enthalpy. Enthalpy is a measurement of total heat in a volume of air including sensible temperature and moisture to determine if outdoor air is suitable for free cooling.

Dual (Differential) Enthalpy Control

- Dual, or differential, enthalpy sensor control means that two enthalpy sensors are used, one to monitor outdoor air enthalpy and one to monitor indoor air enthalpy. Enthalpy is a measurement of total heat in a volume of air including sensible temperature and moisture. The unit compares an outdoor enthalpy sensor to the indoor enthalpy sensor. When outdoor enthalpy is better than indoor enthalpy, by the differential set by the technician, outdoor air is deemed suitable for free cooling.



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