



Benefits of Maintaining Low Compressor Discharge Temperatures

With the advanced design of the LPP, correct refrigerant selection, appropriate capacity sizing, and Sensori™ control strategies, the benefits of maintaining low compressor discharge temperatures align with improved system efficiency, reliability, and longevity.

Enhanced Compression Efficiency

The compression ratio, which is the ratio of the discharge pressure to the suction pressure of a compressor, affects the efficiency of the compressor. A lower compression ratio indicates that the compressor is working more efficiently, as less energy is required to compress the refrigerant. Keeping compressor discharge temperatures low helps maintain a lower compression ratio, resulting in improved efficiency, reduced energy consumption, and ultimately, energy savings and lower operational costs over the system's lifespan.

Reduced Discharge Superheat

Discharge superheat refers to the temperature difference between the refrigerant gas as it leaves the compressor and the saturation temperature of the refrigerant at the corresponding discharge pressure. Lower discharge temperatures result in reduced discharge superheat. This reduction in superheat is beneficial because it indicates that the refrigerant is closer to its optimal operating condition, which minimizes unnecessary heating and energy use. When discharge superheat is

lower, the refrigeration system operates more efficiently, as the compressor doesn't have to work as hard to cool the refrigerant back down to the desired temperature.

Longer Equipment Life and Reduced Leak Potential

Lower compressor discharge temperatures help reduce stress on the compressor and associated components. This can lead to longer equipment life and less potential for leaks, as the lower temperatures contribute to less thermal expansion and contraction of materials over time.

Cooler Running Compressors

Cooler running compressors experience less wear and tear, reducing the likelihood of breakdowns and extending their operational life. This is particularly important in maintaining reliable and consistent refrigeration operations.

Less Damage to Oils and Windings

High temperatures can degrade the quality of compressor oils and potentially harm motor windings. Lower discharge temperatures help preserve the integrity of these crucial components, reducing the risk of operational issues and breakdowns.

