Emerson Climate Technologies
Scroll Start Components

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Due to the inherent design of the Copeland Compliant Scroll, the internal compression components start unloaded, even if system pressures are not balanced. Since the compressor's internal pressures are balanced at startup, low voltage starting characteristics are excellent, and starting components are not required.

However, in applications where a poor power supply is encountered, starting current on any compressor may result in a significant "sag" in voltage. The low starting voltage reduces the starting torque of the compressor and subsequently increases the start time. This could influence the rest of the electrical system in the building by lowering, for a period of 300-to-400 milliseconds, the voltage to the lights etc. This momentary low voltage, caused by inadequate power supplies, could cause "light dimming". In addition supply lines pulled through hard conduits could experience a "buzzing" during this period of high inrush current. Piston compressors with high torque start kits will not see this delayed start although the current draw will be comparable.

The approved start components listed below will substantially reduce the compressor start time, and the magnitude and duration of both dimming lights and conduit buzzing. This start time is then equivalent to piston compressors with high torque start kits.

Approved start components for Scroll Compressor :

(ASPEN) ZR18K1 through ZR40K1 (also previously approved for ZR46K2-ZR61K2)

start capacitor	014-0036-03	88-108 mfd/330 vac	
potential relay	040-0001-68	pu 240-260 volts do 60-121 volts 420 coil volts	GE: 3ARR3CT6V5

STAR) ZR16K4/KC through ZR24K4/KC
(QUANTUM) ZR18K3/KC through ZR42K3/KC, ZR45KC & ZR47KC, ZP23 to ZP44

start capacitor	014-0036-03	88-108 mfd/330 vac (max 230 mfd)	
potential relay	040-0001-79	pu 170-180 volts do 40-90 volts 332 coil volts	GE: 3ARR3CT3P5

(QUEST) ZR46K2 through ZR61K2

start capacitor	014-0006-10	270-324 mfd/330 vac	
potential relay	040-0001-69	pu 320-340 volts do 60-135 volts 502 coil volts	GE: 3ARR3CT4D5

(QUEST) ZR46K3/KC-PFV/PFJ through ZR68K3/KC-PFV/PFJ, ZP54K3E-PFV

start capacitor	014-0006-10	270-324 mfd/330 vac	
potential relay	040-0001-79	pu 170-180 volts do 40-90 volts 332 coil volts	GE: 3ARR3CT3P5

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