SecureStart™ module
for Copeland® compressors
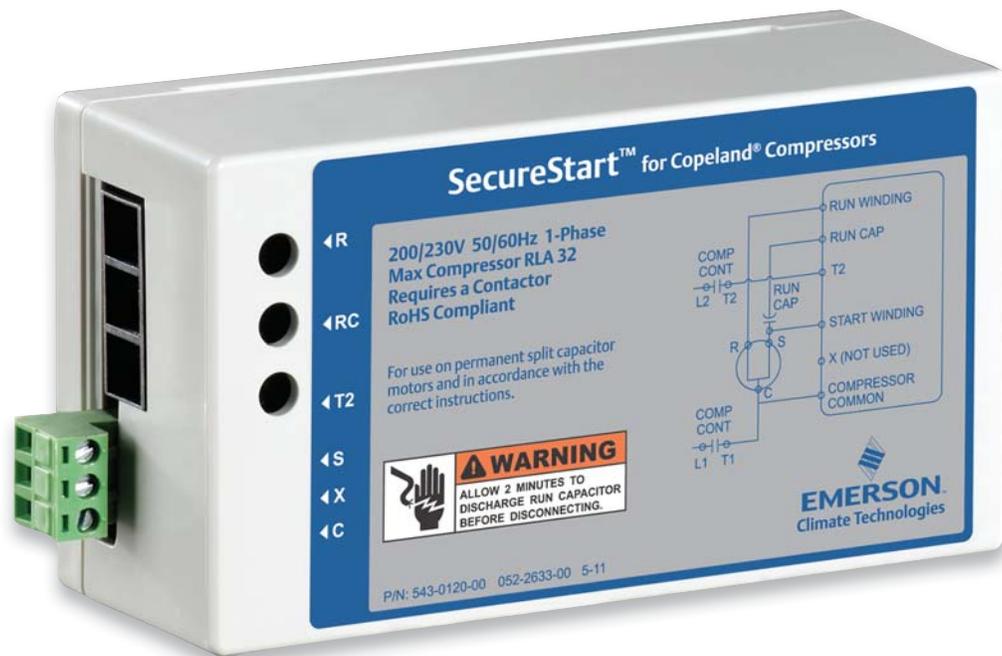
## Start-up performance and protection you can count on

Emerson's SecureStart module uses state of the art technology to provide a safe and consistent start-up for the compressor. By limiting the starting current by up to 75%, compressor start characteristics are improved and nuisances caused by current variations are reduced. The SecureStart module delivers a new level of protection and start-up consistency, providing reliable system performance and longevity.

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Why use the SecureStart module?

Upon start-up, electric motors consume large amounts of current as they accelerate and build a magnetic field. Starting currents may reach five to eight times the levels of nominal operating currents (see **Figure 1**). The SecureStart module dramatically reduces the in-rush current and renders light flicker nearly imperceptible.

Additional benefits

• Improved starting during low voltage conditions

• Compressor low voltage protection

• Compliance with certain local utility requirements for reduced in-rush current

• Reduced stress and heating of compressor

• Can reduce the HP required in mobile power generation
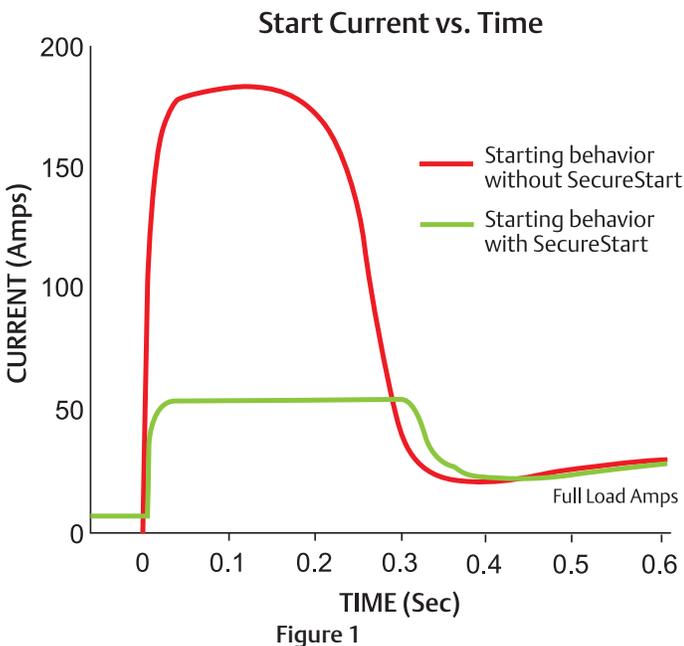
How it works

Once installed, the SecureStart module will detect and reduce run winding current while adjusting the start winding current to provide optimal starting torque. The module provides an additional benefit of continuously monitoring supply voltage to prevent motor stalling under low voltage conditions. When conditions such as low supply voltage or locked rotor exist, the module will switch off the motor, thereby protecting the compressor. A delay function provides additional protection in the event of an emergency shutdown.

SecureStart modules are designed for use with permanent split capacitor, single phase compressors with Rated Load Amps (RLA) of 32 or less. SecureStart can be used with Copeland® compressors designed for pool heaters, mobile power generators, or geothermal applications. The corresponding Copeland® compressors are listed below in **Table 1**.

Start Current vs. Time

Legend:
— Starting behavior without SecureStart
— Starting behavior with SecureStart

Figure 1

Copeland® compressors compatible with SecureStart™ modules

R-410A	R-22	R-407C
ZP16 to ZP54K3E-PFV	ZR22 to ZR61K3-PFV	ZR16 to ZR54K5E-PFV
ZP16 to ZP54K5E-PFV	ZR16 to ZR54KA-PFV	ZR22 to ZR61K3E-PFV
ZPS20 to ZPS60K4E-PFV	ZR67 to ZR80KW-PFV	ZR48 to ZR68KCE-PFV

Table 1

To learn more about the SecureStart module and how it can protect and improve compressor performance, visit **EmersonClimate.com**.

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