

SecureStart™

Overview Presentation

June 6, 2011



Copeland[®]
brand products



EMERSON[®]
Climate Technologies

Application

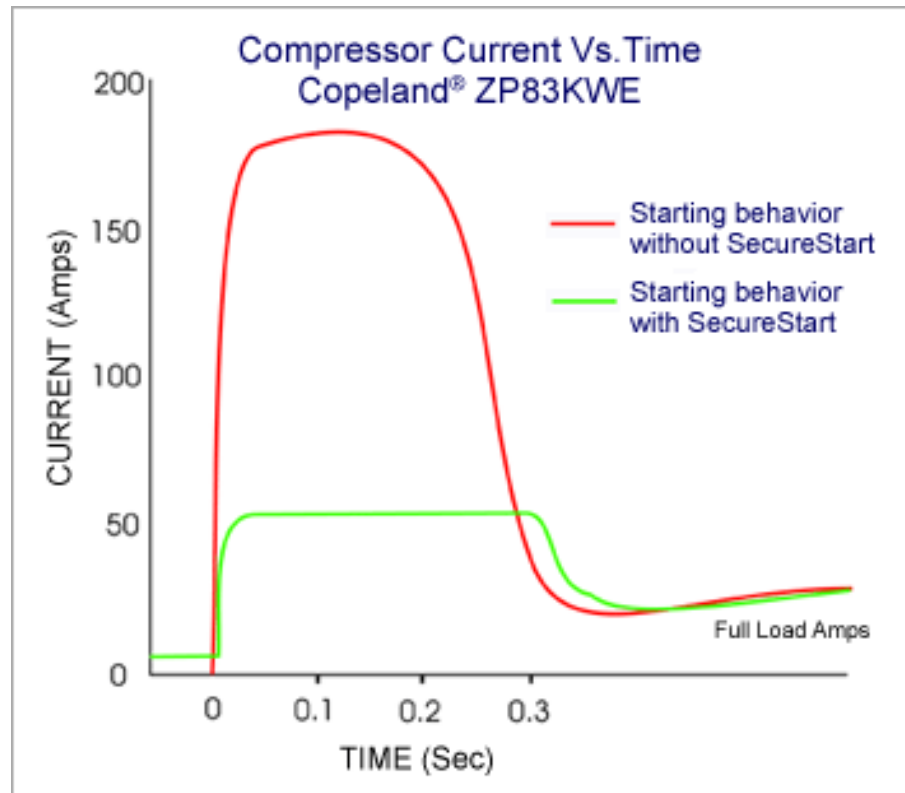
- **Single-Phase Compressors (50/60Hz, 208/230V)**
- **Ideal For Applications Where In-Rush Current Is Regulated Or Where Current Variations Are Common**
- **SecureStart can be applied with the Copeland® compressors listed below.**

R410A	R22	R407C
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

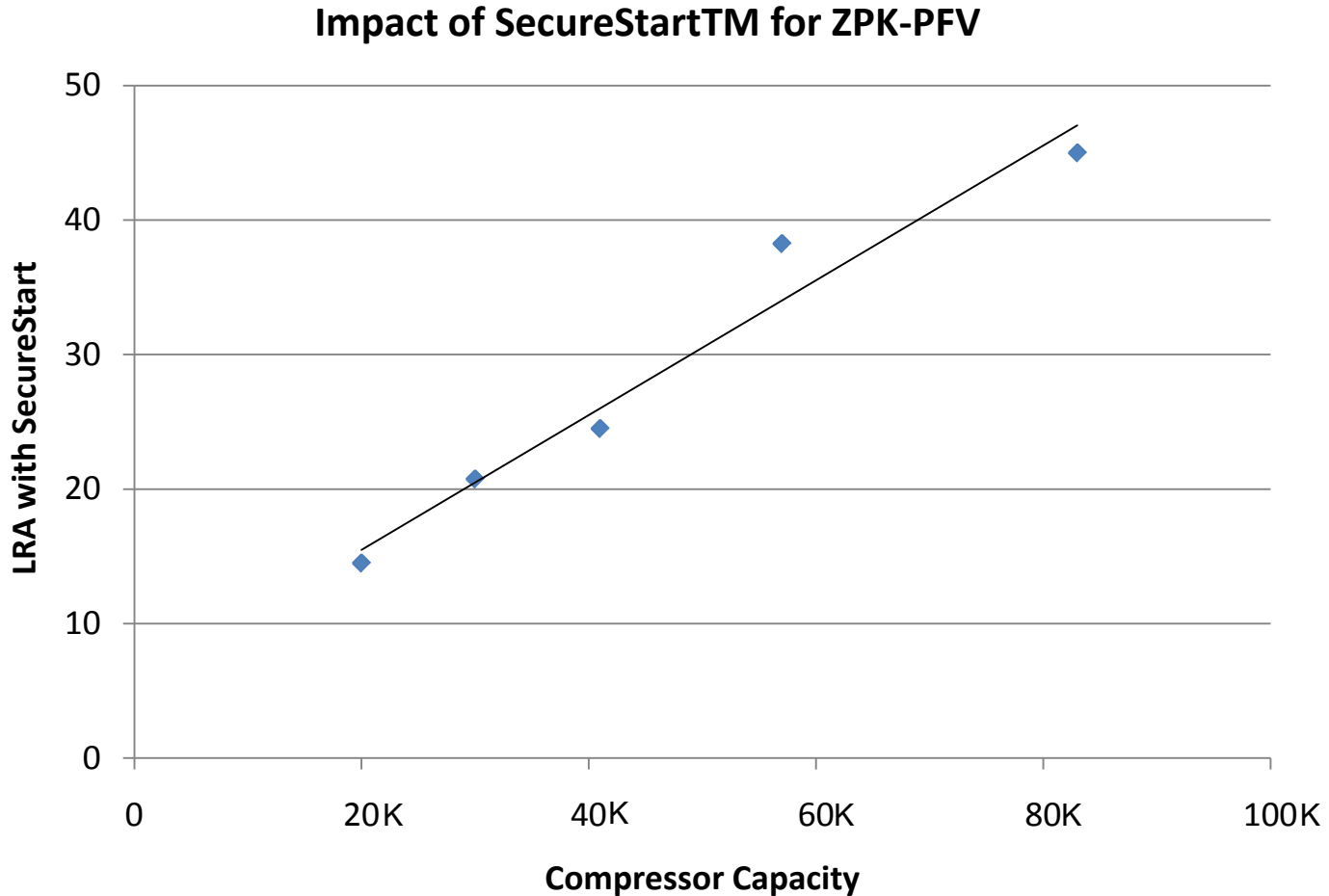
- ***Note: Use of SecureStart with compressors that have nameplate RLA values above 32 amps must be tested by the system designer to ensure that the application of the compressor does not exceed the current limitations of the SecureStart module.***

Design

- Single-Phase Compressors (50/60Hz, 208/230V)
- For Motors With Up To 32A Max RLA
- Self-Adjusting To Motor Current – No Manual Calibration



Impact of SecureStart™ on ZP20K – 83K PFV Compressors



Note: Current reduction is variable across the range of compressors, largely due to the different motor designs. This graphs assumes the maximum potential current reduction.



SecureStart™ Provides Value Across The Supply Chain

Benefit	Value	End User	Contractor	OEM	Utility
Reduction in start-up noise.	\$N/A (customer satisfaction)	X	X		
Reduction in light flicker	\$N/A (customer satisfaction)	X	X		
Increased starting reliability in rural areas or in adverse power conditions	\$N/A (customer satisfaction)	X	X		
Reduction in breaker or wiring size	\$25 – 50 (replacement part)	X	X	X	
Reduces instances of contactor failure associated with chatter/arcing during brown out conditions	\$12 – 20 (replacement part)	X	X	X	
Reduces the size of generators (8HP → 3HP)	\$500 – 1500 (downsizing)	X			
Reduction in nuisance trips and failures in schools, churches, or other public institutions	\$150+ (contractor visit)	X	X		

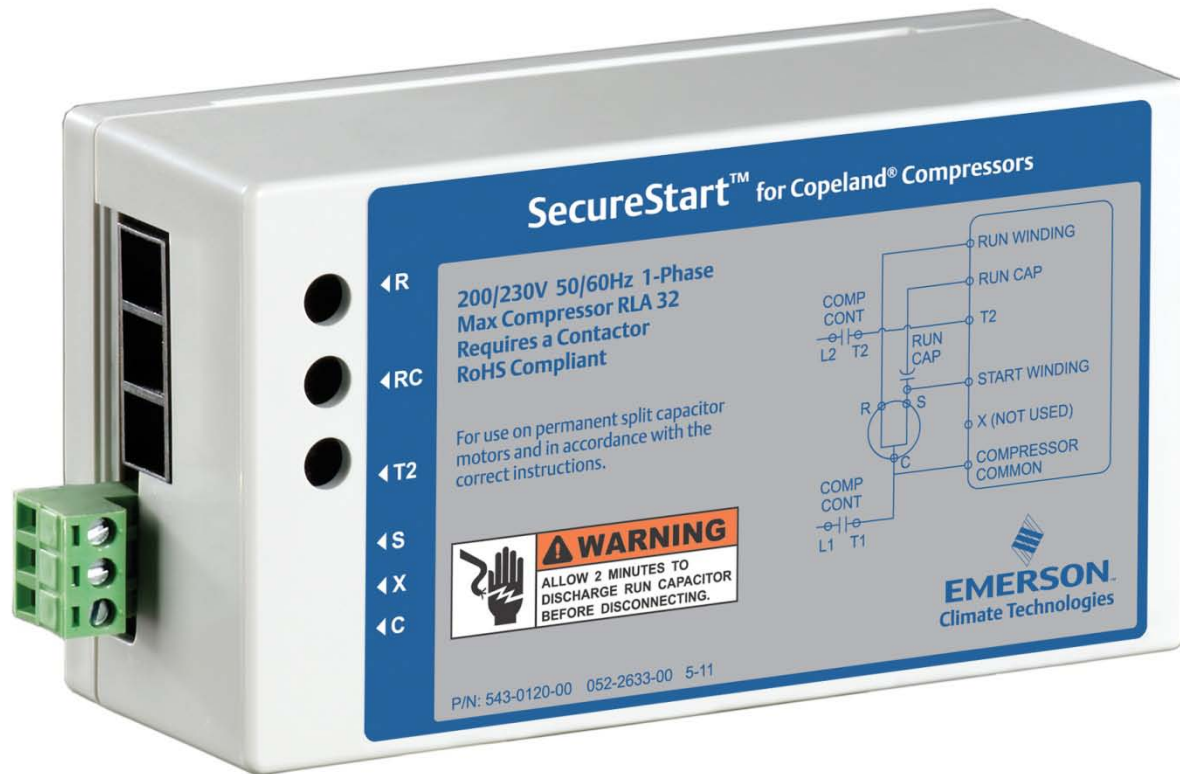
SecureStart™ Provides Value Across The Supply Chain Cont'd...

Benefit	Value	End User	Contractor	OEM	Utility
Reduction of nuisance trips and failures of home appliances: computer systems, telecom equipment	\$150+ (contractor visit)	X	X		
Protection against backward running of compressor	\$N/A (warranty savings)	X	X	X	
Low voltage protection reduces instances of compressor motor failure	\$N/A (warranty savings)	X	X	X	
Module meets certain requirements and/or regulations	\$200? (fine for non-compliance)		X	X	
Up to 75% reduction in start current	\$N/A (load reduction)	X	X	X	X
Reduction in local power supply overload and failure	\$N/A (load reduction)	X			X
Avoid hard-start kit failures*	\$75-125 (replacement part)	X	X		
Avoid the use of costly inverters (military applications)	\$500-1500 (replacement part)	X	X	X	

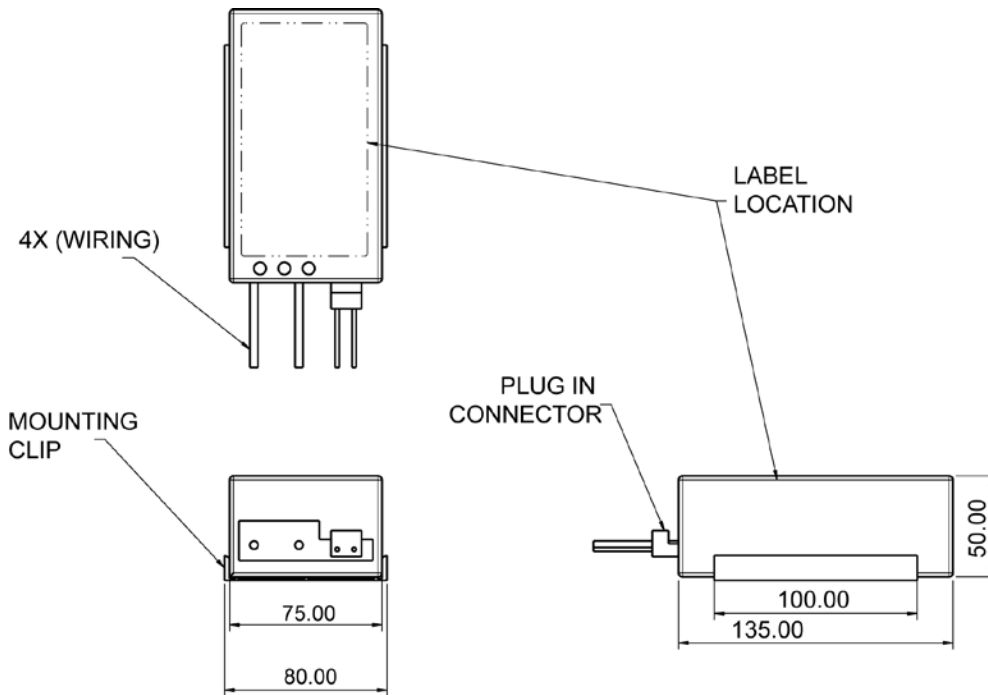
*Note: Hard-start kits do not reduce starting current nor do they offer any protection for themselves or the compressor.



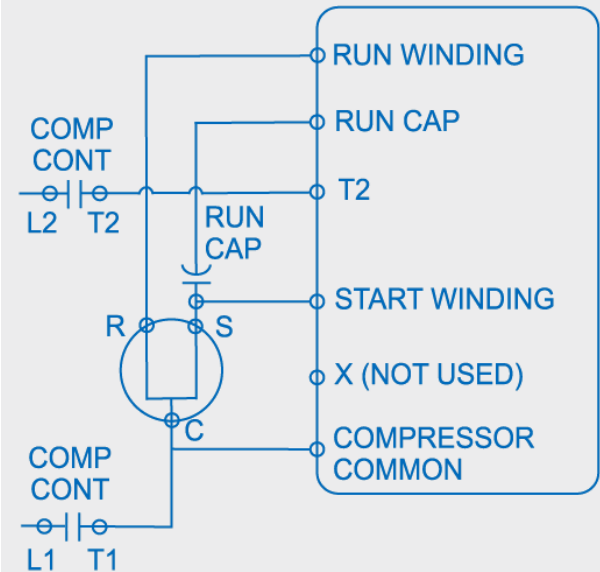
Product



Product Dimensions & Wiring Diagram



SecureStart Wiring Diagram



Features

- **Self-Adjusting To Motor Starting Current**
- **Monitors Supply Voltage While Compressor Is Running And Protects Against Low Voltage Or Locked Rotor**
- **Delay Function Protects In The Event Of Emergency Shutdown**
- **Compact, Light Weight, And Self Contained**
- **Flame Retardant ABS Plastic Enclosure**
- **UL, CE, and RoHs Compliant**
- **Proven Performance In The Field**
- **Easy To Install**

Benefits

- **Improved Motor Starting Performance**
- **Start Current Reduction**
- **Allows Systems To Meet Certain Utility Requirements**
- **Reduces Supply Line Voltage Drop During Start**
- **Protects The Compressor From Damaging Low Voltage**
- **Reduced Stress And Heating Of Compressor**
- **Light Flicker Reduction**
- **Can Reduce The HP Required In Mobile Power Generation**

How To Order?

- Part Number:
 - OEM: 543-0120-00
 - Aftermarket: 943-0120-00
- Place Orders Via Distribution Services:
 - Customer Portal Or Contact: Aaron Nuss
- Prices Loaded In System (50 Pack, Single Pack)
- Marketing Collateral:
 - Marketing And AE Bulletin
 - Overview Presentation
 - Press Release
 - Emerson Climate Product Website
 - FAQs