

Copeland solutions for energy storage application

Engineered to deliver exceptional reliability, meeting the high-demand and mission-critical needs of energy storage facilities.



Copeland variable speed solutions for energy storage application

Copeland, a global provider in sustainable heating, cooling, refrigeration, and industrial solutions, offers a comprehensive portfolio of high-efficiency technologies designed for applications like commercial air conditioning, data centers, and critical sectors such as transportation and shipping.




To address the growing demand for energy storage, Copeland delivers advanced variable speed solutions designed for precise thermal management. Our compressors and air conditioning components provide reliability, safety, and energy efficiency, even in the most demanding environments.

Temperature control management are vital to maintaining the safety and stability of energy storage systems. With over a century of expertise in scroll technology and thermal management, Copeland offers energy-efficient compressors and components that are purpose-built for these requirements. Featuring an extensive product line, we provide vertical and horizontal compressors with a range of refrigerant options, accommodating both standardization and customized needs. These innovations enable precise temperature control and deliver consistent, long-term performance.

Committed to sustainability, Copeland drives innovation to accelerate the energy transition, adopt low-GWP refrigerants, and safeguard essential goods with a sustainable cold chain. We remain steadfast in helping our customers achieve their goals while building a better future for generations to come.



Key features

 Variable speed compressor	 Inverter drive	 Programmable system controller (iPro Lite)
<ul style="list-style-type: none"> • Specialized envelope for energy storage that requires mandatory liquid-out temperature and low pressure ratio operating conditions. • Superior efficiency performance at both full and part-load conditions • Large displacement capable to meet high-load demand. • Available in multi-refrigerant option and environment-friendly low GWP refrigerants • High IP rating for protection against exposure in harsh environments • Wide ambient temperature coverage for meeting all-year cooling demand • Compact design suitable for limited space in energy storage systems and meeting mobility requirements • Good oil circulation management to reduce oil impact for system with micro channel heat exchanger 	<ul style="list-style-type: none"> • Optimized performance - perfectly matched with Copeland variable speed scroll compressor • Enhanced start/stop algorithm with comprehensive software testing • UL certification implemented 	<ul style="list-style-type: none"> • Built-in optimized control logic • Integrated dual EXV drivers • Capability for expansion and connection to monitoring systems • Ready for customization • UL certification implemented



Key benefits



Superior
reliability



Market-leading
system performance



Helping customers
respond faster
to market
demands



One-stop shop
- qualified
integrated
solution

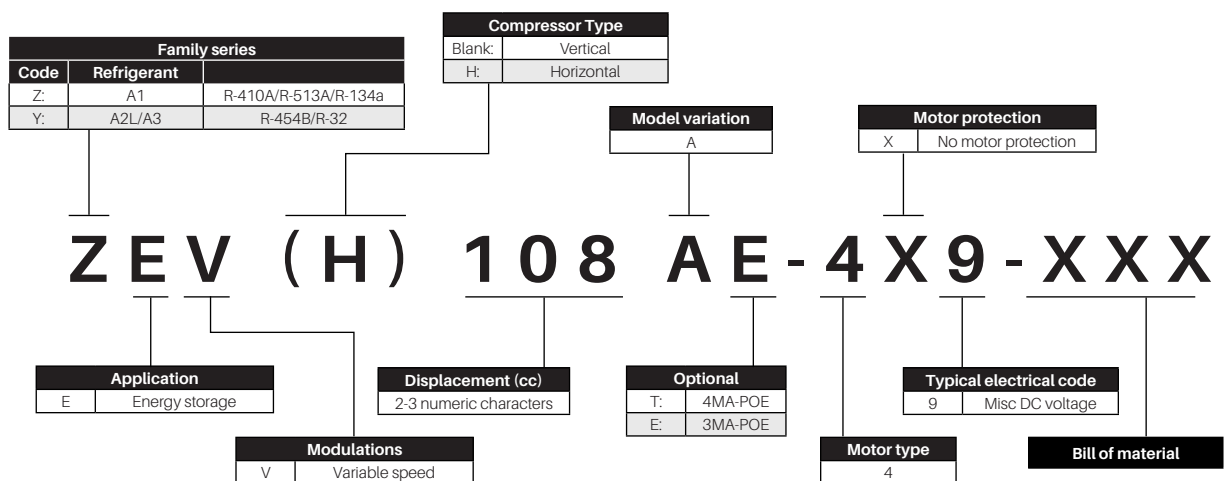


Trusted Copeland
brand with decades
of cooling expertise

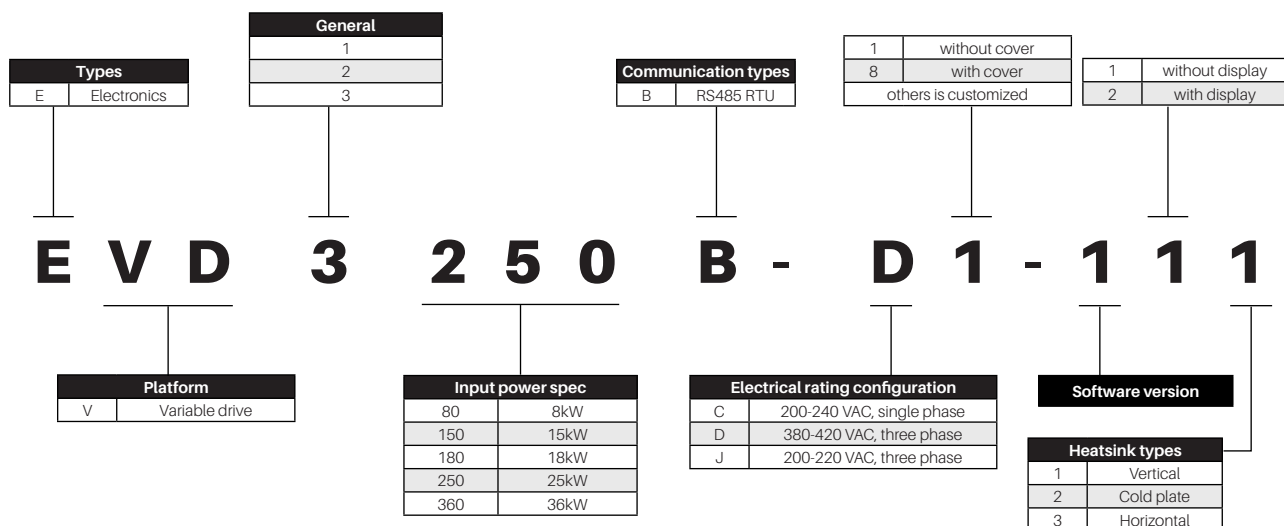




Energy storage variable speed compressor nomenclature




Inverter drives



Technical specifications

Variable speed compressors

Vertical Compressors	98cc					110cc					130cc				
Frame Size	70Fr					70Fr					70Fr				
Model	ZEV098AE-4X9	YEV098AT-4X9	YEV098AE-4X9	ZEV098AE-4X9	ZEV098AE-4X9	ZEV112AE-4X9	YEV112AT-4X9	YEV112AE-4X9	ZEV112AE-4X9	ZEV112AE-4X9	ZEV130AE-4X9	YEV130AT-4X9	YEV130AE-4X9	ZEV130AE-4X9	ZEV130AE-4X9
Refrigerant	R-410A	R-32	R-454B	R-513A	R-134a	R-410A	R-32	R-454B	R-513A	R-134a	R-410A	R-32	R-454B	R-513A	R-134a
Capacity* (kW)	33.8	37.0	32.6	15.2	15.2	38.2	41.9	35.0	17.5	17.5	44.8	49.7	42.0	20.9	20.8
Power* (kW)	9.8	10.2	9.1	4.6	4.5	11.0	11.7	9.9	5.3	5.1	12.6	13.4	11.6	5.9	5.7
COP*	3.5	3.6	3.6	3.3	3.4	3.5	3.6	3.5	3.3	3.4	3.6	3.7	3.6	3.5	3.6
Speed Range (rps)	20-100			20-120		20-100			20-120		20-100			20-120	
Motor Code	380-420V, 3 Phase BPM motor														
IP Grade	BOM GNA/GNB: IP55														
Weight (kg)	54														
Certification															
Plant	Suzhou														

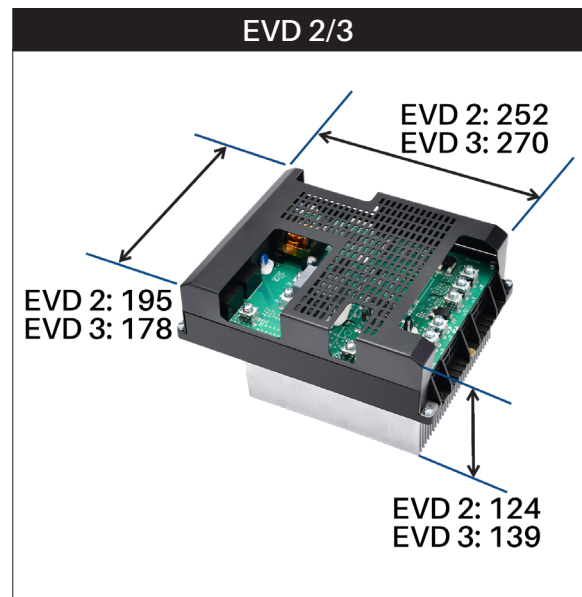
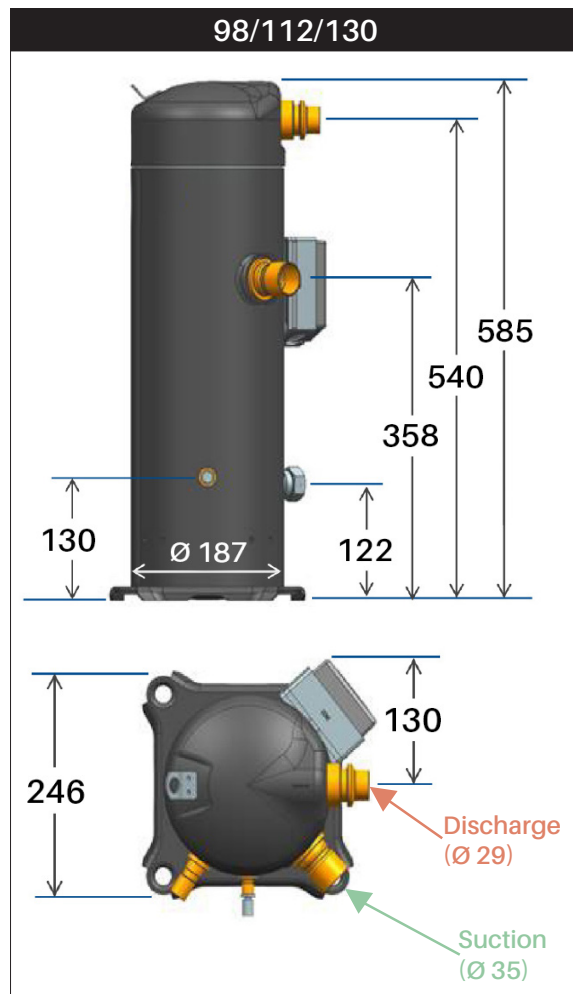
*ARI condition, 60rps

Inverter drives

Inverter Drive Model	Drive Size (kW)	Input Voltage	Drive Input/Output Current (Arms)	Certification	Compressor Match
EVD3250B-D8-111	25	340/440V, 3ph	40 / 48	UL	130cc 110cc
EVD3180B-D8-111	18		38 / 38	UL	98cc

Dimensions

Note: All dimensions in mm





Horizontal compressor



- Leverage Copeland years of experience in transport area, offering inequivalent reliability and performance
- Horizontal compressor especially fit for compact system, saves more space for battery storage
- With unique oil management design, good OCR ensures reliability and efficiency in micro channel system

Horizontal Compressors *	68cc	108cc	
Frame size	63Fr	70Fr	
Refrigerant	R-410A	R-513A	R-134a
Motor code	380-420V, 3 Phase BPM motor		
IP grade	IP67		

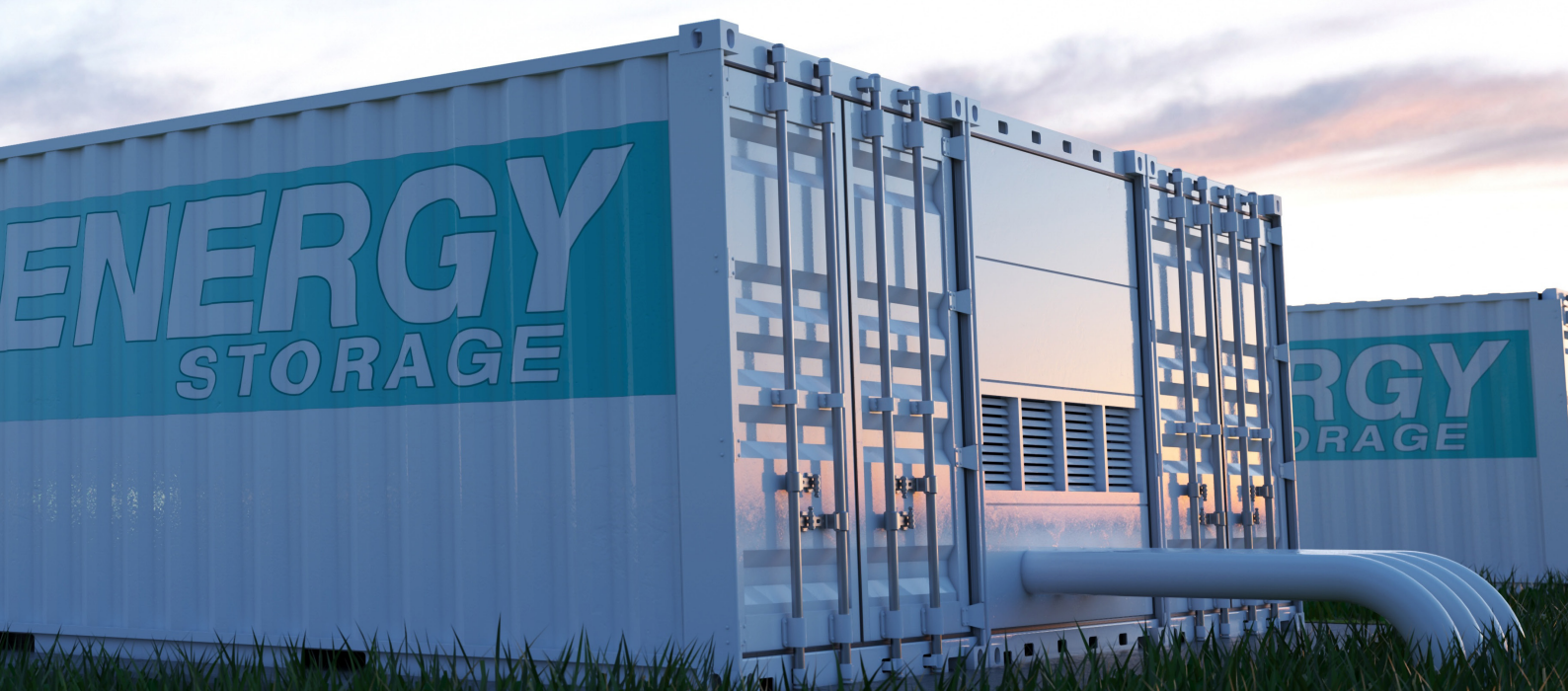
*More information, pls check with our sales and application engineer.

Digital compressor



Modulation capability optimized for high-load performance condition:

- No EMI/EMC interference & harmonic effects
- No inverter drive required
- UL Certified
- Simple and efficient oil management system



Copeland integrated solutions package for energy storage

- Scroll compressor
- Drive board
- Capacitor board
- Filter board
- Choke
- Controller
- HMI
- Electronic expansion valve & coil
- High/Low pressure transducer
- High/Low temperature transducer

EVD drive

- Optimized control for reliable performance and sound
- Perfectly matched with compressor
- Build-in protection for secure package reliability



IPRO-lite controller

- Build-in dual EXV driver support
- Optimized control logic for precision cooling to provide best performance and reliability
- Programmable controller to address various needs and customization
- 7" touch screen HMI available



Variable speed scroll compressor

- Superior reliability
- High COP and AEER
- Low running sound
- Broad operation envelope

DX3 EXV

- Unipolar stepper motor
- Bi-flow design
- High reliability, 250k full cycles
- IP65/IP67 protection



HP/LP/HT/LT Sensor

- +/- 1% accuracy
- IP67 protection





About Copeland

Copeland is a global leader in sustainable heating, cooling, refrigeration and industrial solutions. We help commercial, industrial, refrigeration and residential customers reduce their carbon emissions and improve energy efficiency. We address issues like climate change, growing populations, electricity demands and complex global supply chains with innovations that advance the energy transition, accelerate the adoption of climate friendly low GWP (Global Warming Potential) and natural refrigerants, and safeguard the world's most critical goods through an efficient and sustainable cold chain. We have over 18,000 employees, with feet on the ground in 50 countries - a global presence that makes it possible to serve customers wherever they are in the world and meet challenges with scale and speed. Our industry-leading brands and diversified portfolio deliver innovation and technology proven in over 200 million installations worldwide. Together, we create sustainable solutions that improve lives and protect the planet today and for future generations. For more information, visit copeland.com.

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