

# Copeland variable speed solutions for air conditioning





# Center for world-class manufacturing excellence

## Karad Engineering Lab, India

The center showcases psychrometric and integrated variable speed laboratories for R-32 and R-290 refrigerants. Full range testing compressor systems include reliability, performance, energy efficiency and sound level tests.



## Dammam, Saudi Arabia

State-of-the-art manufacturing facility serving the region's ever-growing market.



## Dubai, United Arab Emirates

Technology hub and gateway to Middle East and Africa.



## Suzhou Research & Solutions Center, China

Founded in 2002, the center is instrumental in the development of new compressors and innovative HVACR solutions for the Asia Pacific region. Equipped with state-of-the-art simulation laboratories, the R&D center boasts of the largest reliability testing lab in Asia.



## Rayong Solutions Lab, Thailand

Established In 1997, the Rayong facility is the first highvolume scroll compressor manufacturing plant in Asia.





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*Sustainable and Innovative HVACR solutions for a greener future*

To achieve the goals of the Paris agreement, countries and companies worldwide must have their greenhouse gas emissions by 2030 and reach net zero emissions by 2050. Fulfilling these decarbonization objectives requires innovative solutions, collaboration, and stakeholder commitment. Sustainable infrastructure characterized by its superior energy efficiency and use of environmentally friendly refrigerants advances decarbonization efforts by supporting the requirements of green buildings.

Packaged Copeland solutions enables best-in-class sustainable solutions to solve the toughest air conditioning challenges in an evolving HVAC industry. We help customers determine what upcoming changes mean for their business while helping them prepare for tomorrow’s challenges today.



## Copeland variable speed solutions

Delivering up to \*30% energy savings unparalleled comfort with precise temperature and humidity control

With an unparalleled commitment to engineering excellence, innovative design, and an extensive range of modulated solutions, Copeland not only establishes the benchmark for compression technology but also pioneers its evolution. Each Copeland variable speed solution consists of a meticulously engineered Copeland variable speed scroll compressor seamlessly integrated with a perfectly matched inverter drive, accompanied with essential agency approvals. This comprehensive package significantly minimizes development efforts and accelerates time to market, empowering businesses to thrive in a rapidly evolving HVAC industry.

### Why choose variable speed over fixed speed?

The choice between a variable speed and a fixed speed solution has never been more critical in driving operational success in HVAC applications.



Integrated solutions



Premium comfort



Reliability



Energy efficiency



Environmentally friendly refrigerants

Variable speed technology outshines fixed speed systems by dynamically adjusting the compressor's performance to match real-time demand, offering significant benefits:



#### Energy efficiency

- By scaling output during off-peak times, variable speed compressors reduce energy use, cutting costs and supporting sustainability imperatives.



#### Precision control

- Achieves greater temperature stability, enhancing system reliability and extending equipment life.



#### Reduced carbon footprint

- Lower energy consumption directly translates to reduced environmental impact, enabling businesses to align with global sustainability goals.



#### Improved comfort

- Variable speed systems ensure quiet operation and optimized comfort at all times.

Compared to traditional fixed speed systems, which run at full capacity regardless of demand, variable speed solutions offer a smarter, more agile approach to HVAC challenges.

### Breakthrough performance

Copeland Variable Speed compressors are engineered to provide optimal cooling and heating efficiency precisely when it's needed. Whether it's improving split air conditioning systems for high ambient temperatures, developing a packaged air conditioner tailored for four seasoned regions, or designing a chiller suited for unique climate, our innovative variable speed technology enables system manufacturers and building owners to attain unparalleled performance and value.



#### Optimized scroll set with variable compression ratio valve technology

- Enables best peak load and part load efficiency



#### Expansive 900-7800rpm with highly efficient brushless permanent motor (BPM)

- Supports seamless capacity modulation and load matching, reducing inrush current



#### Enhanced vapor injection

- Helps deliver +30% capacity and enhanced efficiency at extreme low ambient condition



#### Low GWP refrigerant

- R-32 & R-454B environment friendly solutions



#### Better energy savings for tandem applications

### Expansive control & flexibility

Copeland Variable Speed compressors are designed to enable system manufacturers, building owners experience a new level of control and operational flexibility.



#### Broad operating envelope

- Supports flexibility to apply solutions for multiple applications



#### Pre-qualified tandems

- Facilitates capacity extension and proves best applied cost



#### Available with a perfectly matched inverter drive

- Reduces system development time and efforts, drive controls motor stator heating - eliminates the need for crankcase heater

### Built on proven Copeland scroll platform

With a legacy of over 100 years in design and manufacture of energy-efficient and dependable compressors, Copeland takes pride in continuously innovating its products. By leveraging the power of variable speed technology, Copeland compressors are further optimized, helping ensure greater efficiencies and performance.



#### Low oil circulation rate and oil injection

- Delivers best system performance



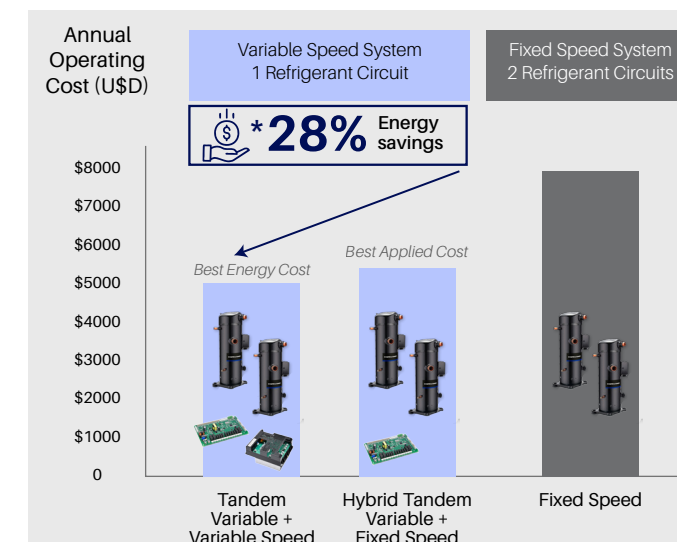
#### Copeland tried and tested axial and radial compliance

- Enhanced liquid & debris handling capacity



#### Rigorous and extensive development and manufacturing line testing

- Ensures high quality and reliability

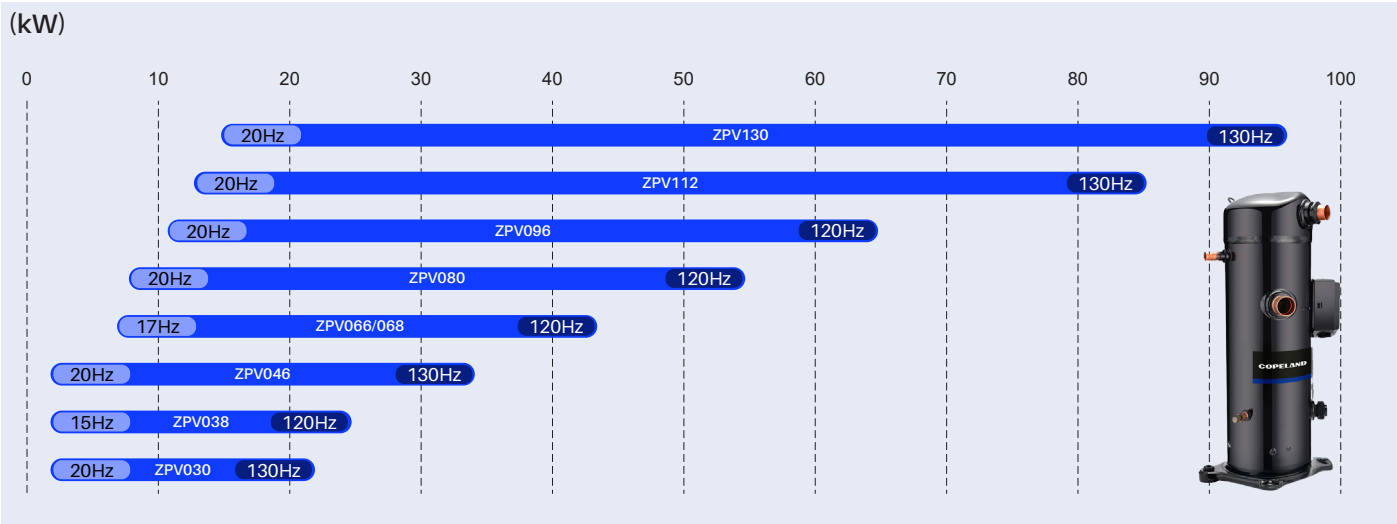


\* Data taken from 130kW chiller simulation using 110cc variable speed scroll compressor.

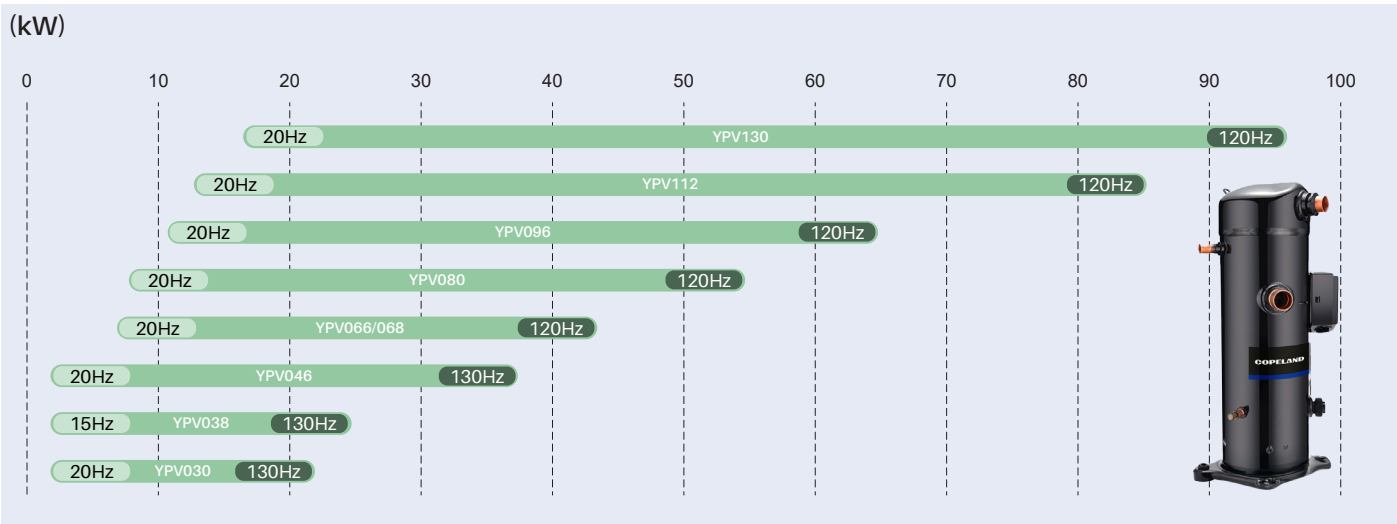


Capacity range

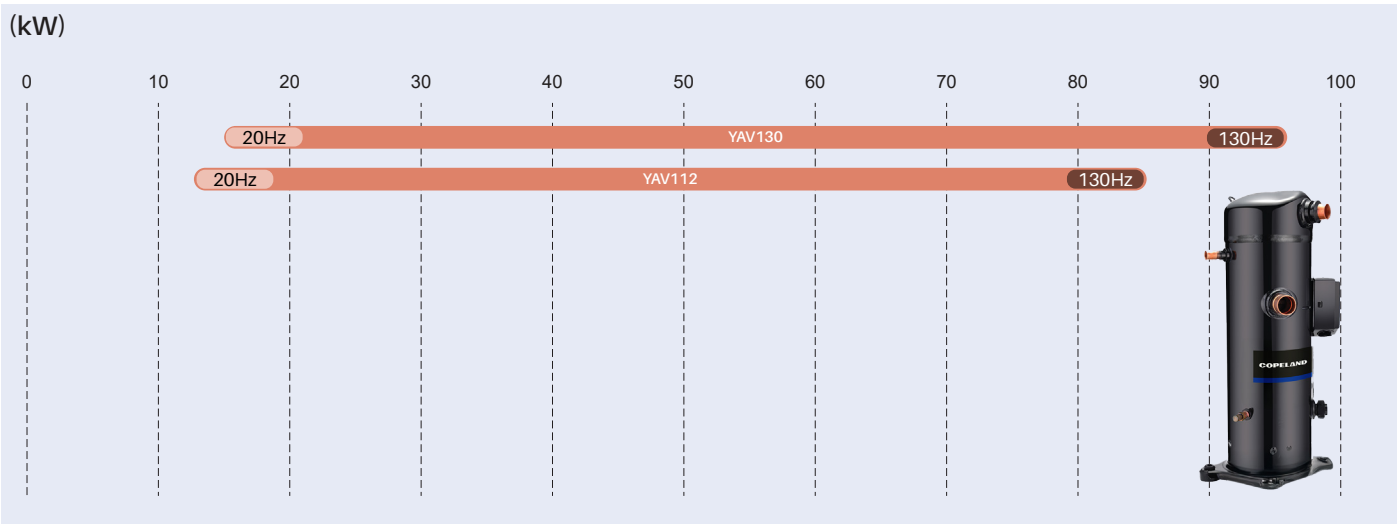
R-410A



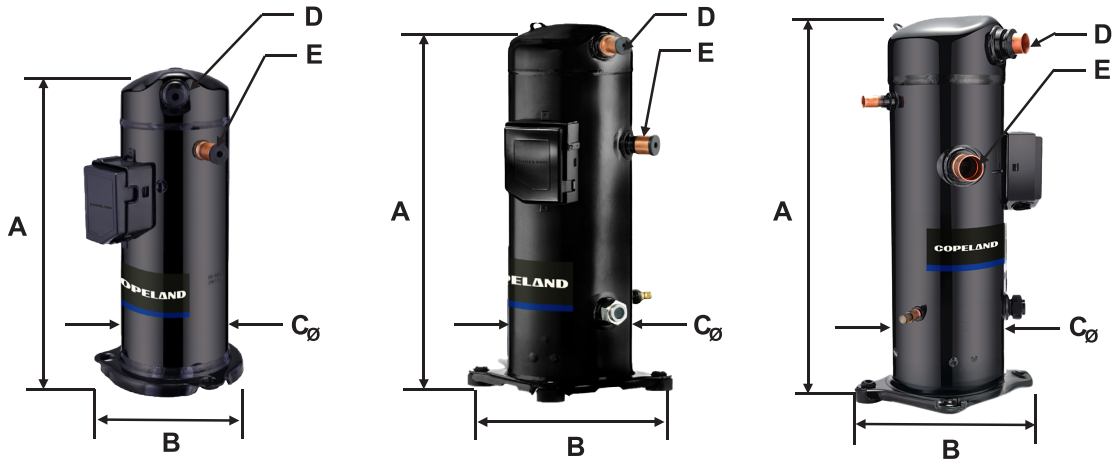
R-32



R-454B



Compressor dimensions



Additional displacement		30cc	38cc	46cc	68cc	66/80/96cc	110/130cc
A	Height (mm)	379	424	392	429	559	585
B	Width (mm)	194	198	194	246	246	246
C	Diameter (mm)	141			167	186	187
	EVI Ø	12 mm / 0.47 in.			n/a	16 mm / 0.63 in.	16 mm / 0.63 in.
D	Discharge (ST)	13 mm / 0.51 in.			16 mm / 0.87 in.	22 mm / 0.87 in.	29 mm / 1.14 in.
E	Suction (ST)	19 mm / 0.75 in.			22 mm / 0.62 in.	29 mm / 1.14 in.	35 mm / 1.38 in.

For 30cc EVI option, please refer to the 46cc dimensions  
For 38cc (R-32), please refer to Technical Data  
ST - Stub Tube  
No EVI option for 68 & 130cc



TECHNICAL DATA

Refrigerant	R-410A									R-32									R-454B	
Compressor Model	ZPV 030HE	ZPV 038DE	ZPV 046HE	ZPV 068AE	ZPV 0662E	ZPV 0802E	ZPV 0962E	ZPV 112AE	ZPV 130AE	YPV 030HT	YPV 038LT	YPV 046HT	YPV 068AT	YPV 0662T	YPV 0802T	YPV 0962T	YPV 112AT	YPV 130AT	YAV 112AE	YAV 130AE
Displacement (cm3/rev)	30	38	46	68	66	80	96	110	130	30	38	46	68	66	80	96	110	130	110	130
Speed Range (Hz)	20 -130	15 -120	20 -130	17 -120	17 -120	20 -120	20 -120	20 -130	20 -130	20 -130	15 -120	20 -130	17 -120	20 -120	20 -120	20 -120	20 -120	20 -120	20 -130	20 -130
Max Cooling Capacity (kW @ Max Hz)	21.4	25.3	34	45.5	44.1	54.1	65.9	82.6	95.4	23	27.8	37.9	49.3	47.3	58.9	70.7	83.3	95.1	78.6	90.0
Cooling Capacity* (kW)	12.2	16.1	19.3	32.1	27.5	34.2	41.1	47.6	55.7	13.1	17.1	20.9	33.9	29.6	36.7	44.1	51.7	61.9	45.4	52.8
COP* (without drive)	3.4	3.4	3.3	3.4	3.3	3.4	3.4	3.4	3.6	3.4	3.4	3.3	3.4	3.4	3.5	3.5	3.5	3.7	3.45	3.55
Power Input* (kW)	3.8	4.8	6.2	9.3	8.4	10.2	12.3	14.3	15.6	4	5	6.4	9.8	8.9	10.7	12.8	15.2	16.8	13.2	14.9
EVI Option	Yes	Yes	Yes	No	No	Yes	No	Yes	No	Yes	Yes	Yes	No	No	Yes	No	Yes	No	Yes	No
Electricals	3X9 4X9	3X9 4X9	4X9 5X9	4X9	4X9 5X9 7X9	4X9 5X9	4X9 5X9 7X9	4X9	4X9	3X9 4X9	3X9 4X9	4X9 5X9	4X9	4X9 5X9	4X9	4X9 5X9	4X9	4X9	4X9	4X9
Height (mm)	379**	424	392	426	559			585		379**	379	392	429	559			585		585	
Width (mm)	194**	198	194	246	246			246		194**	194	194	246	246			246		246	
Diameter (mm)	141**	141	141	165	186			187		141**	141	141	167	186			187		187	
Suction Dia. (ST)	19 mm / 0.75 in.			16 mm / 0.87 in.	29 mm / 1.14 in.			35mm /1.38 in.		19 mm / 0.75 in.			16 mm / 0.87 in.	29 mm / 1.14 in			35mm /1.38 in.		35mm /1.38 in.	
Discharge Dia. (ST)	13 mm / 0.51 in.			22 mm / 0.62 in.	22 mm / 0.87 in.			29mm /1.14 in.		13 mm / 0.51 in.			22 mm / 0.62 in.	22 mm / 0.87 in.			29mm /1.14 in.		29mm /1.14 in.	

Notes:  
\*ARI Condition @75Hz  
\*\*For 30cc EVI option, please refer to the 46cc dimensions  
ST - Stub Tube

Nomenclature

APPLICATION RANGE		
Code	Application	Refrigerant
A	AC/HP	R-454B / R-452B
P	AC/HP	R-410A / R-32

DISPLACEMENT SIZE	
(cm³)	

OPTIONAL	
E	POE Oil
T	POE R-32

BILL OF MATERIAL PRODUCT VARIATION	
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FAMILY SERIES	
Z	Scroll A1
Y	Scroll A2L/A3

MODULATION	
V	Variable Speed
W	Variable Speed EVI
OPTIONAL 2ND POSITION	
VT	Even tandem (Variable & fixed speed even)
VU	Uneven tandem (Variable & fixed speed uneven)
VY	Trio (Internal reference only)
VV	Even tandem (Both variable speed)
VH	Variable speed horizontal

MODEL	
1	
2	
A	
B	
C	
D	
S	
L	
H	

ELECTRICAL RATING CONFIGURATION	
3X9	200-240V / 1ph
4X9	380-420V / 3ph
5X9	200-240V / 3ph
7X9	460-575V / 3ph

Notes:  
Supply voltage for inverter drive

**Z P V 0 3 0 H E - 3 X 9 - X X X**

Bill of materials selection

Refrigerant	Models	519	522 /EBX*	550/EBR*	558/EBN*	571/EBK*	576
R-410A	ZPV030HE					X	
	ZPV038DE					X	
	ZPV046HE					X	
	ZPV0662E	X	X	X			
	ZPV068AE		X		X		
	ZPV0802E		X	X			
	ZPV0962E	X	X	X			
	ZPV112AE	X	X	X			X
	ZPV130AE		X	X			
R-32	YPV030HT					X	
	YPV038LT					X	
	YPV046HT					X	
	YPV0662T		X	X			
	YPV068AT		X		X		
	YPV0802T		X	X			
	YPV0962T		X	X			
	YPV112AT		X	X			
	YPV130AT		X	X			
R-454B	YAV112AE		X	X			
	YAV130AE		X	X			
Configuration	Stub Tube	X	X	X	X	X	X
	Terminal Block	X	X	X	X	X	X
	Grounding	X	X	X	X	X	X
	T-Box/Cover (IP21)		X	X	X	X	
	T-Box/Cover (IP54)	X					X
	Sight Glass	X		X	X		
	Schrader Valve	X		X			
	OEL Fitting	X		X	X		
	Mounting Parts	X	X	X	X	X	

Note: \*For R-32 & R-454B models

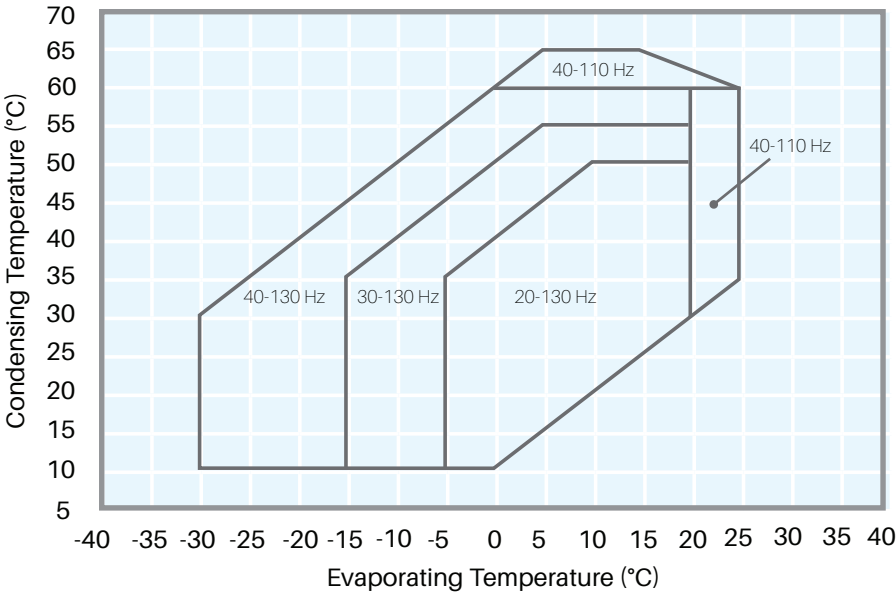
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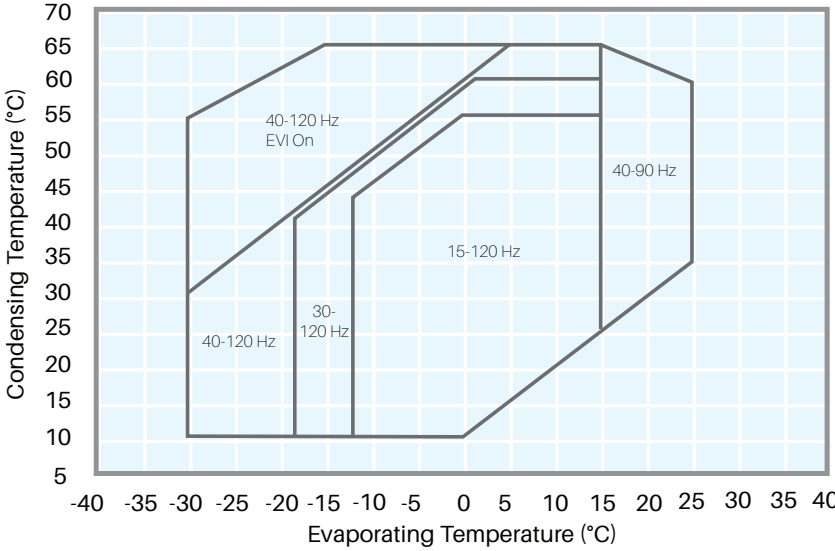


Operating envelops

30 & 46cc  
R-410A & R-32

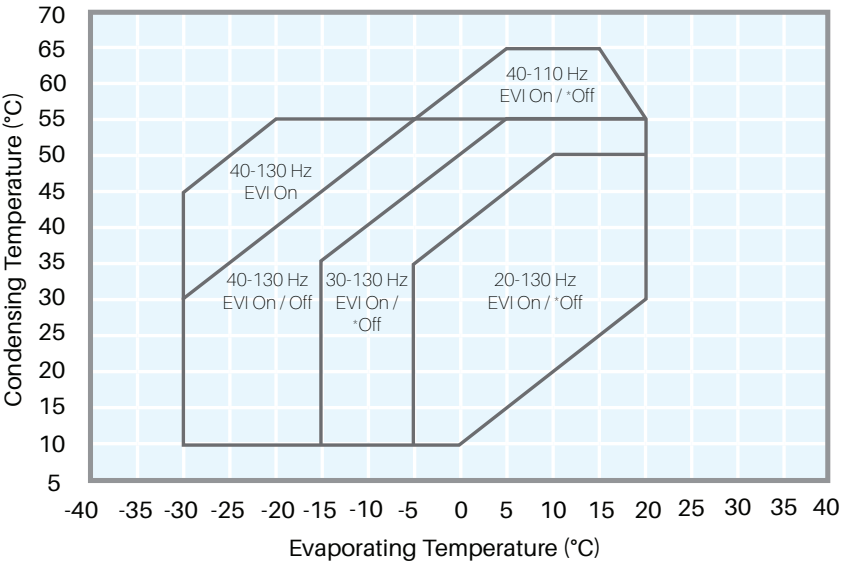


38cc w/ EVI  
R-410A



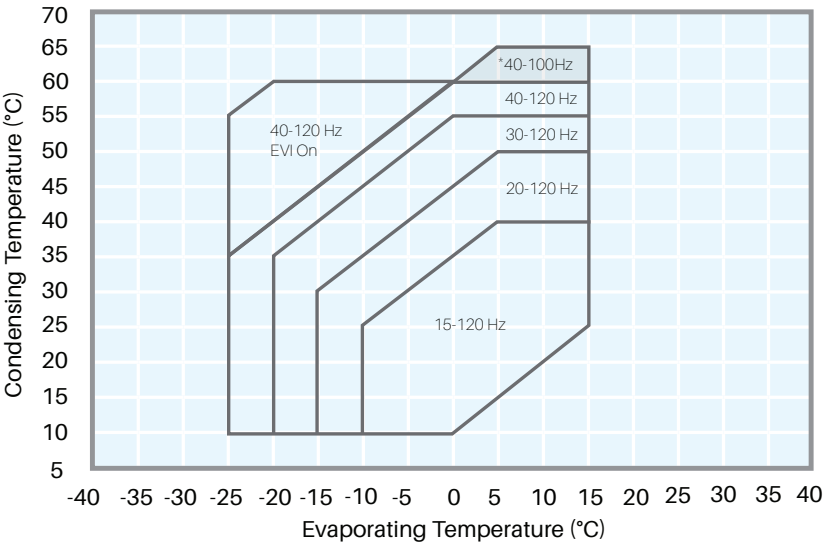
Notes: Minimum Speed for EVI ON = 40Hz (2400rpm)

30 & 46cc w/ EVI  
R-410A & R-32



Notes:  
- \*ET > 10°C, EVI must be OFF  
- Minimum Speed for EVI ON = 40Hz (2400rpm)

38cc w/ EVI  
R-32

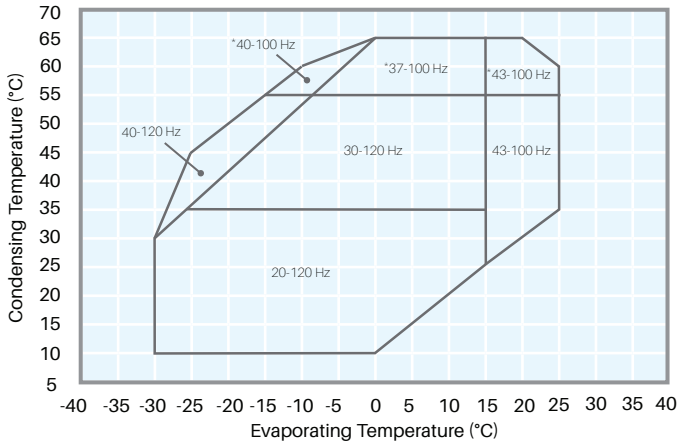


Notes:  
- \*Limited operation 800 hours  
- ET > 10°C, EVI must be OFF  
- Minimum Speed for EVI ON = 40Hz (2400rpm)



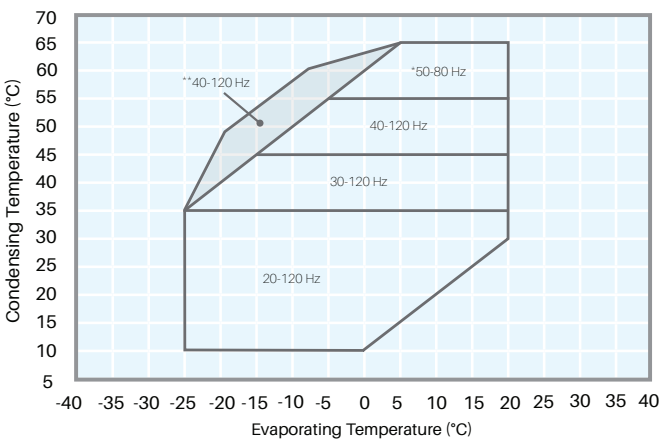
# Operating envelops

66 & 96cc  
R-410A



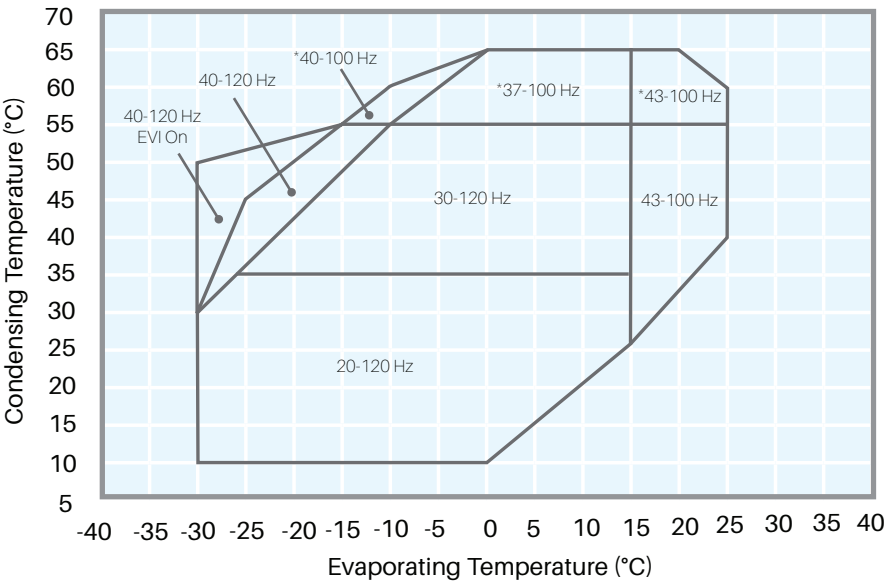
Note: \*Contact an applications engineer for operations beyond 250 hours / year

66 & 96cc  
R-32



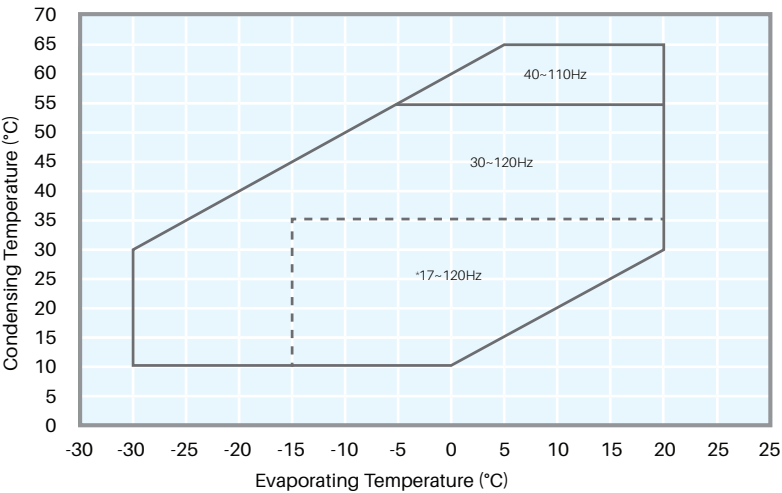
Note:  
- \*Maximum of 260 operating hours / year  
- \*Limited operations to 20 hours / year

80cc w/ EVI  
R-410A



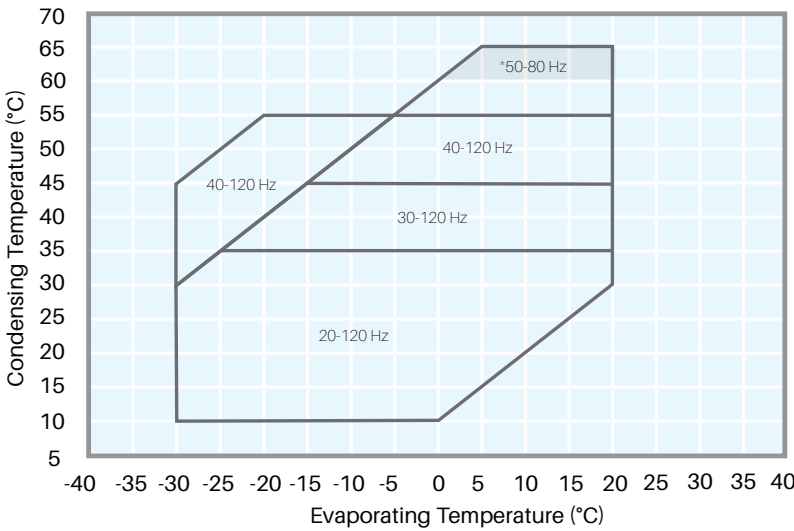
Notes: \*Contact an applications engineer for operations beyond 250 hours / year

68cc  
R-410A & R-32



Note:  
- \*Oil Boost Requirement - If after more than 2 hours of continuous operation at or below 30Hz, it is necessary to increase speed to 60Hz for 5 minutes.

80cc w/ EVI  
R-32

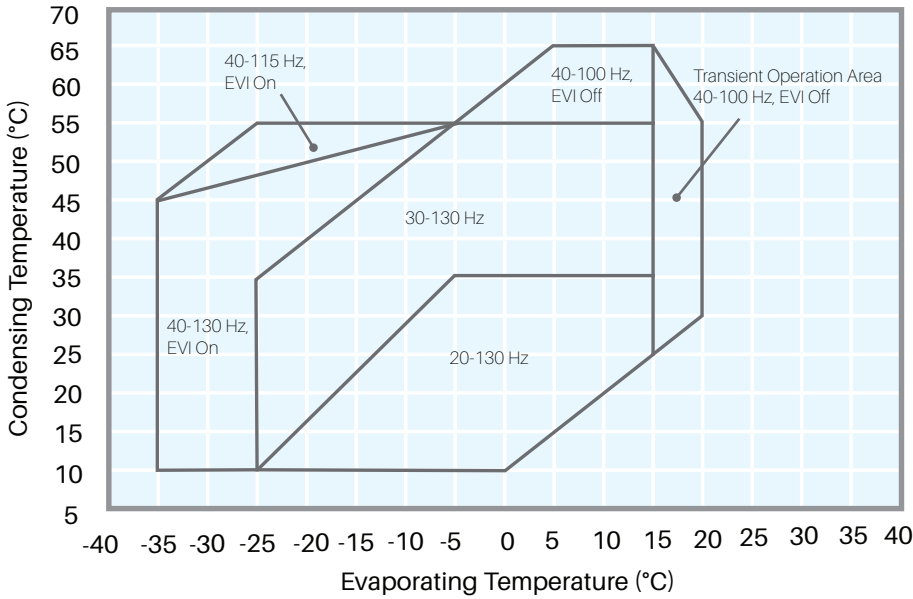


Notes:  
- \*Limited operation to 200hrs (grey area)  
- Minimum Speed for EVI ON = 40Hz (2400rpm)  
- EVI ON when ET < 0°C  
- EVI OFF when ET > 0°C & CT > 55°C



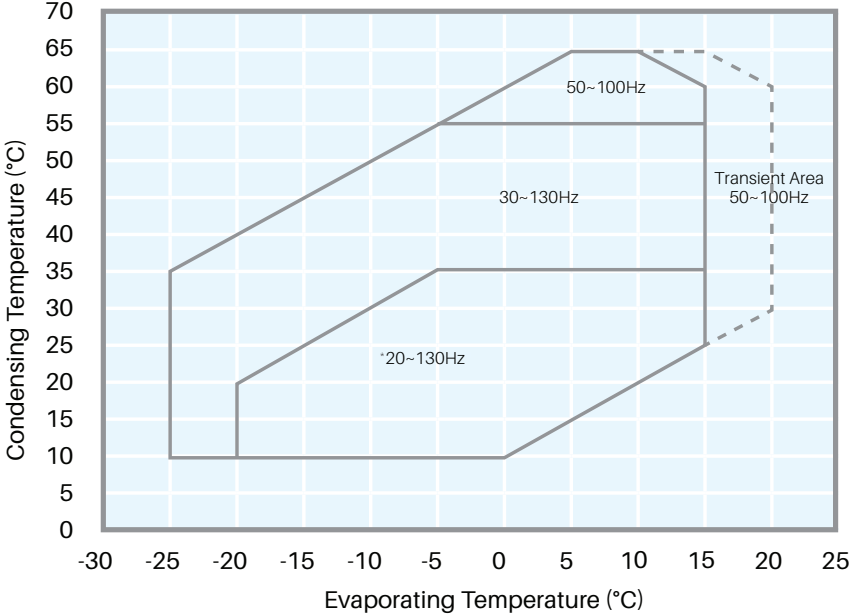
# Operating envelops

110cc w/ EVI  
R-410A



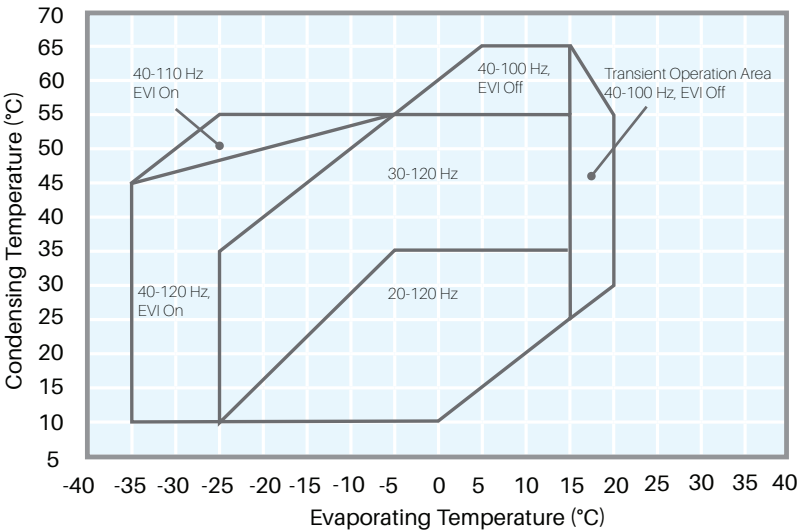
Note:  
- Transient operation area total running time is no more than 300 hours  
- Minimum Speed for EVI ON = 40Hz (2400rpm)

130cc  
R-410A & R-454B



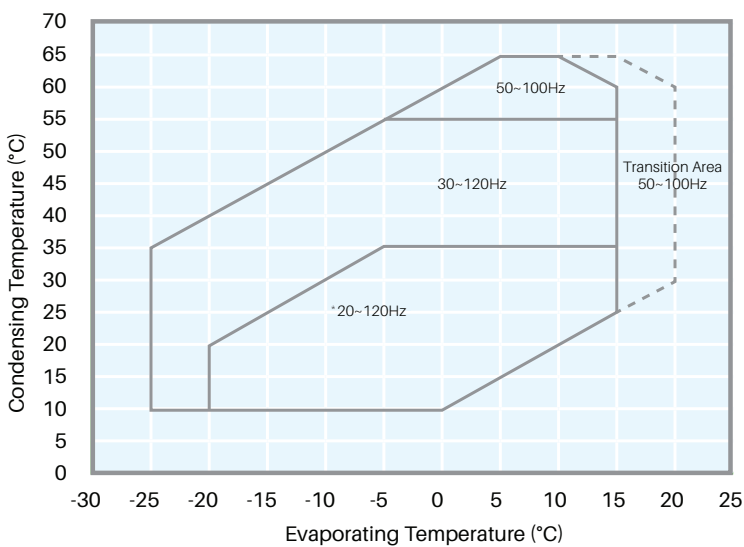
Note:  
- Transient operation area total running time is no more than 300 hours  
- \*Speed < 30Hz w/ oil boost

110cc w/ EVI  
R-32



Note:  
- Transient operation area total running time is no more than 300 hours  
- Minimum Speed for EVI ON = 40Hz (2400rpm)

130cc  
R-32



Note:  
- Transient operation area total running time is no more than 300 hours  
- \*Speed < 30Hz w/ oil boost







# Variable speed drives

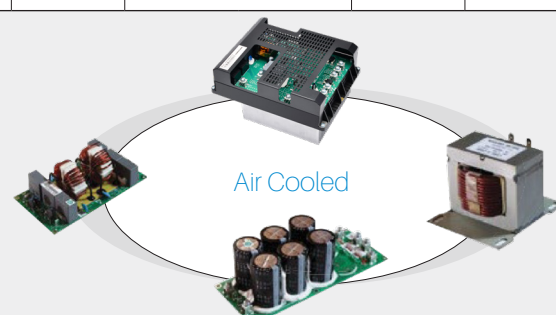
## EVD drive features and benefits

- Fully optimized drive and motor design
- Improved reliability through protection and control features
- Reduced system design time and effort
- Communication set up Baud rate 2400
- Full compressor compatibility, plug and play capability

## Copeland variable speed drive advantages

-  Full compatibility with Copeland variable speed compressors
-  Excellent drive board heat resistant
-  Specially designed EMC
-  Trusted reliability

## Drive section

System capacity (kW)	16 - 20	20 - 28	28 - 36	36 - 45	45 - 54	54 - 65
Compressor displacement (cc)	30/38	46	66 / 68	80	96	110 / 130
Drive input power (kW)	8	11	15		18	25
Drive platform						

Agency approvals:

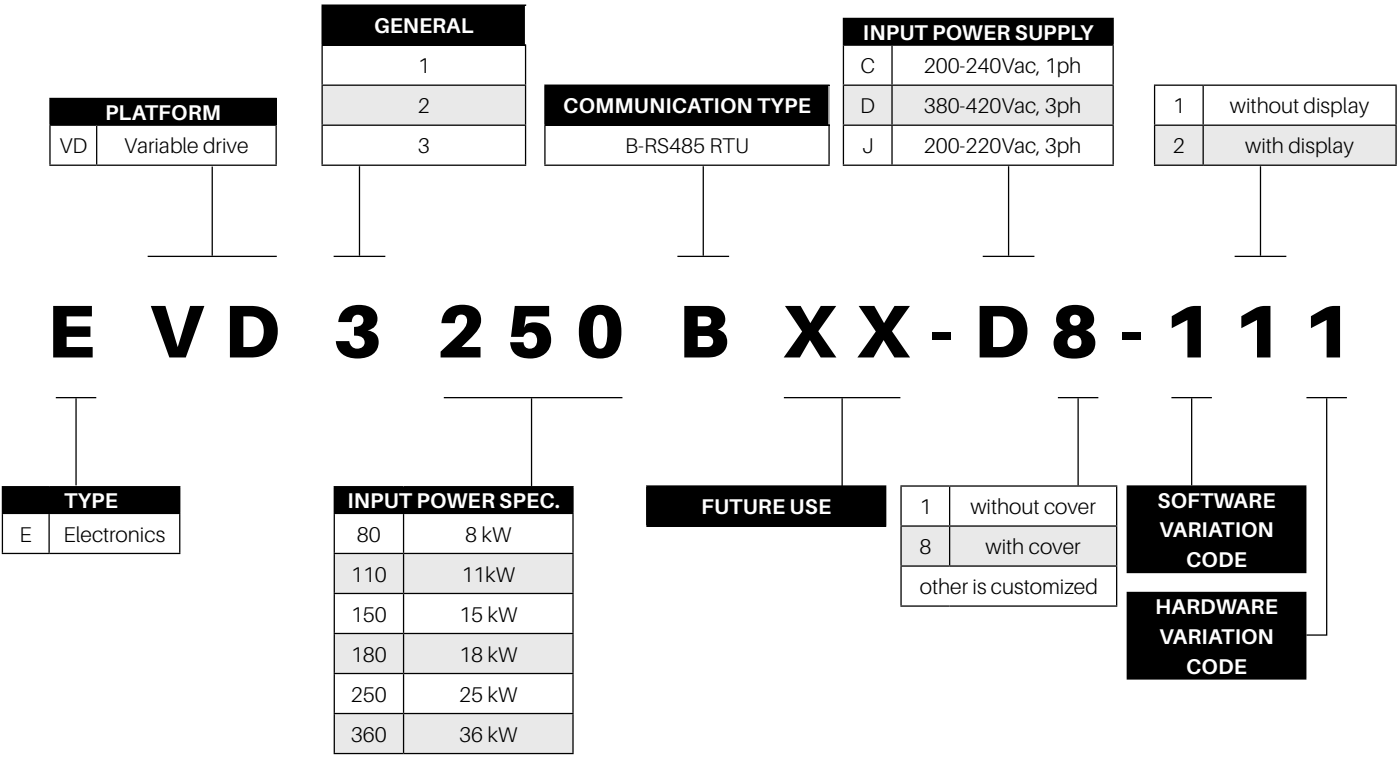


Please contact application engineering for drive selection and matching.

## Specification

Inverter Drive Model	Rating	Operational Input			Max. Input Current	Max. Output Current
	(kW)	(V)	(Hz)	(Φ)	(A)	(A)
EVD2080B-D1-11X	8	340~440	50/60	3	17	21
EVD2080B-C1-113		160~265		1	35	25
EVD3080B-CX-11X						
EVD2110B-DX-11X	11	340~440		3	21	21
EVD2150B-D8-111	15				27	27
EVD3150B-D8-12X						30
EVD2180B-DX-111	18				38	38
EVD3180B-D8-111						
EVD3250B-D8-111	25				40	48

## Nomenclature






# Variable speed drives

## Drive features and benefits

- Fully optimized drive and motor design
- Improved reliability through protection and control features
- Reduced system design time and effort
- Communication set up Baud rate 2400
- Full compressor compatibility, plug and play capability

## Drive section

System capacity (kW)	28 - 36	36 - 45	45 - 54
Compressor displacement (cc)	66 / 68	80	96
Drive input power (kW)	15		18
Drive platform	 Air cooled		

Agency approvals:

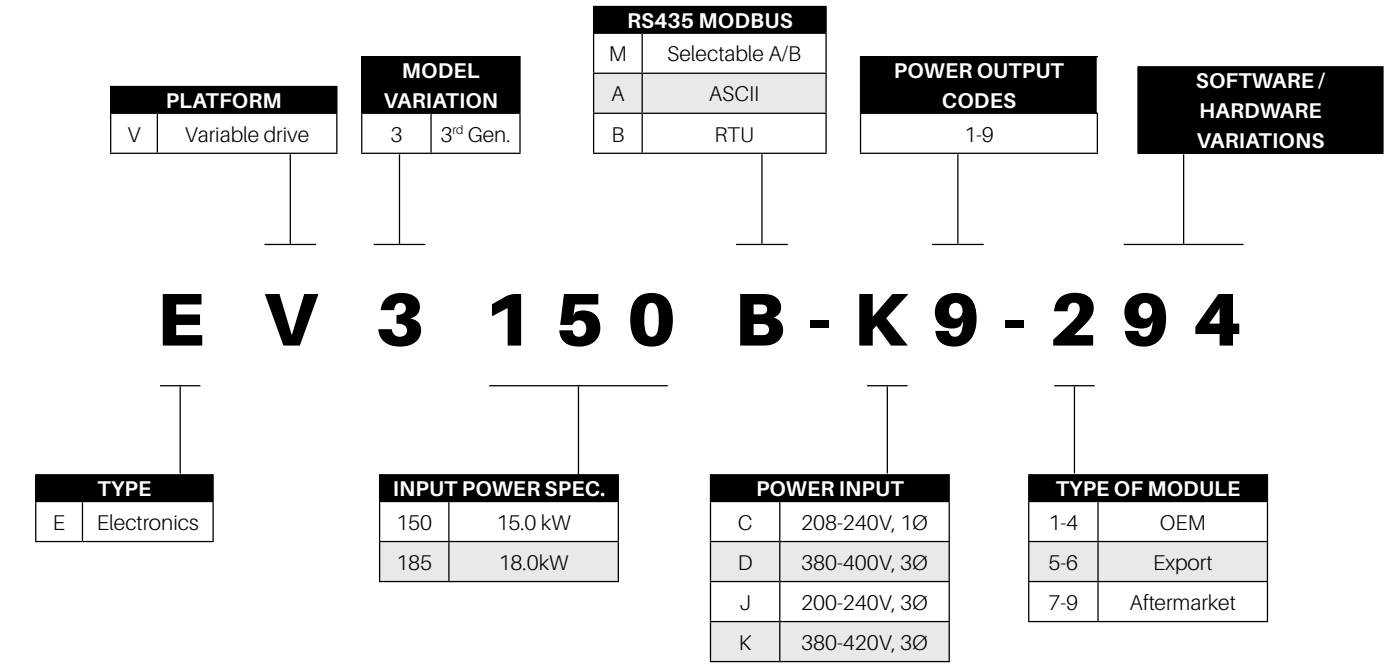


Please contact application engineering for drive selection and matching.

## Specification

Details		Operational input		Max. input	Max. output
Inverter drive model	Rating (kW)	Voltage / phase	Frequency (Hz)	Current (A)	Current (A)
EV3150B-K9-294	15	380V ~ 460V / 3ph	50/60	27	27
EV3185B-K9-294	18.5			38	38

## Nomenclature





## Integrated solutions

### Controller

- Modular design, flexible and scalable
- Various options for a host of different applications
- Parametric controller for standard application
- Programmable PLC controller for customized applications



### HMI module

- Standard HMI for residential applications
- 4.3"/7" touch HMI for customization applications
- Standard firmware for programmable HMI



Chiller

## Technical advantages of Copeland integrated solutions for commercial chillers

- Full range of core components designed and developed by Copeland engineers
- Equipped with a full range of Copeland variable speed, fixed speed scroll compressors and tandem configurations for effortless cooling capacity expansion.
- Dynamic controller hardware platform, rich expansion modules, programmable technology to meet various needs of customers.
- Optimized system control logic for maximum energy efficiency and reliability of IPLV systems.
- Highly skilled technical team with comprehensive lab testing facilities to support system development – saving time and effort.

### Electronic expansion valves

- DX1/DX3 series cover capacity range from 5 kW ~ 100 kW
- Highly reliable under extreme applications, qualified for over 100k full cycles
- Precise expansion process control helps maintain stable system super heat
- Bi-directional flow characteristics applicable for heat pump systems
- Optimum wide modulation range helps deliver higher integrated part load efficiency
- DX1: Compact and lightweight with hermetic valve body design
- DX3: Take-apart design, easy for field troubleshooting



- Linear flow control features, precise control from 10% to 90% opening range
- Two-way maximum working pressure difference up to 35 bar, ideal for low ambient temperature environments
- 250,000 times (full on and off) cycle, IP65/67 protection, high reliability and long product life span

### Compressors

- Optimized design of variable speed drive compressors are based on permanent magnet DC brushless motor
- 900 ~ 7800RPM wide speed range for improved partial load energy efficiency
- Tandem installation provides maximum flexibility for system design



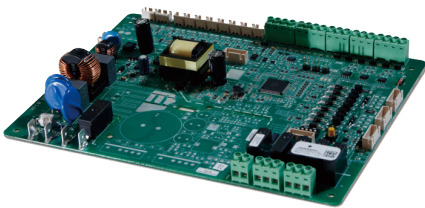


# Controllers



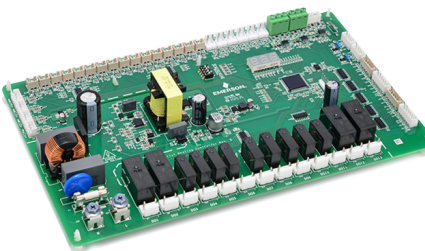
## IPG215D

Power supply	24V AC/DC
Analog input	10 channels available - NTC
Digital input	20 channels are availablew
Relay output	15*5A
Analog output	4 channels 0 ~ 10V signal 2 channels can be equipped with 0 ~ 10V/ 4 ~ 20mA signal
Other Output	Remote Display Control Panel (2*VGIPG) RS485 bus, RS485 slave (Modbus RTU) USB, Ethernet, CAN bus RS485 slave (Modbus RTU)
Other	RTC Real Time, Clock Internal Modem (optional analog cat) BACnet protocol (optional), LON protocol (optional)



## IPX206D

Power supply	24V AC/DC
Analog input	7 channels are available - NTC/PTC/0 ~ 1V/0 ~ 5V/0 ~ 10V/4 ~ 20mA/DI
Digital input	3 channels can be matched
Relay output	5*5A + 1*8A
Analog output	3 channels 0 ~ 10V signal
Other Output	CAN Bus
Other	DIP switch configuration address



## XEV20D

Power supply	24V AC/DC
Analog input	Total 4 channels
	2 channels are available for NTC/PTC/Pt1000
	2 channels are available for 4 ~ 20mA/0 ~ 5V/Pt1000
Support EEV	Bipolar or Unipolar
EEV Output	2 Ports
Power consumption	Max 40VA
Operating temperature:	-10 ~ 60 °C
Storage temperature:	-30 ~ 85 °C
Communication	CAN Bus
Other	DIP switch configuration address



## EO1AVNB-CJ (HPC)

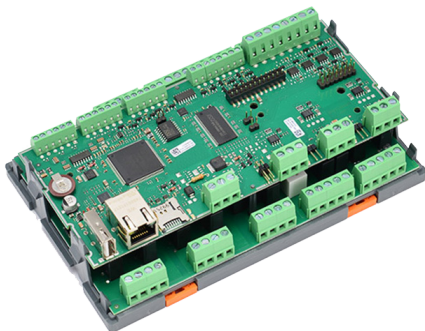
Power supply	220V AC
Analog input	10 channels available - NTC /0 ~ 5V/DI
Digital input	3 channels are available
Relay output	5*5A
Analog output	0 ~ 10V signal 1 channel PWM signal 2 channels
Other output	RS485 Master
	RS485 Slave *2
	EEV drive (Unipolars) 2
Insulation class	Double insulation
Storage temperature	-25 ~ 60°C
Operating temperature	-25 ~ 60°C
Index of protection	IP00
Category of resistance to heat and fire	Category D (UL94-V0)

## EO2AVNB-CJ (DHC)

Power supply	220V AC
Analog input	20 channels available - NTC /0 ~ 5V/DI
Digital input	6 channels are available
Relay output	9*5A, 4*16A
Other output	RS485 Master
	RS485 Slave *2
	EEV drive (Unipolars) *4
Insulation class	Double insulation
Storage temperature	-40 ~ 80°C
Operating temperature	-25 ~ 60°C
Index of protection	IP00
Category of resistance to heat and fire	Category D (UL94-V0)

## IPLT212K

Power supply	24V AC/DC
Analog input	20 channels available - NTC /0 ~ 5V/DI
Digital input	6 channels are available
Relay output	9*5A, 4*16A
Other output	RS485 Master
	RS485 Slave *2
	EEV drive (Unipolars) *4
Insulation class	Double insulation
Storage temperature	-40 ~ 80°C
Operating temperature	-25 ~ 60°C
Index of protection	IP00
Category of resistance to heat and fire	Category D (UL94-V0)





# Controls, valves and sensors



## HMI module

Part number	543-0303-00
Power supply	12Vdc
Communication	RS485
Index of protection	IP20
Power consumption	<2w
Function:	Temperature Setting/Display Mode Selection System Status Monitory Timer Alarm Code Display Fan Speed Selection
Dimensions	86 x 86 mm



## HMI 4.3" RS485

Part number	543-0339-00
Power supply	4.5 ~ 30Vdc
TFT	4.3"
Resolution	480 x 272px
Touch:	Resistive
Index of protection	Rear IP20; Front IP65
Power consumption	<2w
Colors	65k, 16 bits
Operating temperature:	-20 ~ 70 °C
Storage temperature:	-30 ~ 80 °C
Communication	RS485
Dimensions	139 x 87 mm (130 x 78.1 hole size)

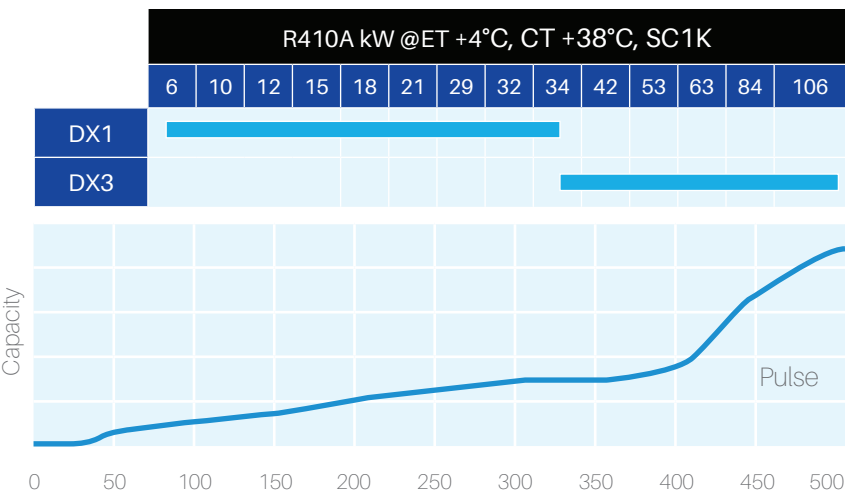


## HMI 7" display ethernet port

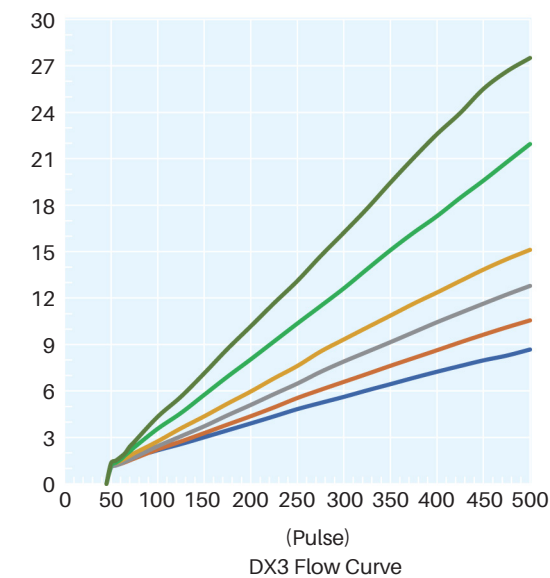
Part number	543-0326-00
Power supply	12 ~ 28Vdc
TFT	7"
Resolution	800 x 480 px
Touch:	Resistive
Index of protection	Front IP65
Power consumption	<8w
Colors	16000k, 24bits
Operating temperature:	-10 ~ 60 °C
Storage temperature:	-20 ~ 70 °C
Communication	RS485/Enthernet
Dimensions	272 x 192 mm (260 x 179 hole size)

## DX1

- Compact and lightweight with hermetic valve body design
- Precise expansion process control helps maintain stable system super heat
- Bi-directional flow characteristics applicable for heat pump systems
- Optimum wide modulation range enables higher integrated part load efficiency
- Optimum wide modulation range helps deliver higher integrated part load efficiency







## DX3



- **Two-way application design**
  - Two-way MOPD of 35 bar, stable control at low opening
  - Low internal leakage rate, support for pump down, reduces refrigerant migration, no solenoid valve required
  - Minimal forward and reverse flow backlash to avoid malignant out-of-step
- **Simple control**
  - Fully linear flow for easy implementation of multiple control objectives
  - Qualified for a wide variety of control solutions
  - Single pole motor, compatible with mainstream controllers
- **High reliability design for harsh environments**
  - Operating temperature: -50°C ~ +70°C
  - Long lifespan, high reliability: 250k cycles' reliability test
  - Take-apart valve body


## Sensors


Temperature sensor		Temperature range	Standard resistance (25°C)	Cable type	Temperature sensing component packaging material	Protection grade
	Low temperature sensor TS-110	-40 ~ 110°C	10KΩ ±1%	24AWG black	Stainless steel	IP67
	High temperature sensor TS-150	Sensor TS-150 -50 ~ 150°C	50KΩ ±1%	22AWG blue		


Pressure sensor		Measuring pressure range	Operating voltage	Output signal	Suitable refrigerant	Full error band	Protection grade
	Low pressure sensor PRS-30	0 ~ 30barG	5.0 ± 0.5 VDC	0.5 ~ 4.5 VDC	R-410a, R-134a, R-404a, R-407C, R-507	±2.5% FS	IP67
	High pressure sensor PRS-46	0 ~ 46barG					




# Sample solution packages

Ducted split system (10 kW)	Item	Model / Part number
	Compressor	YPV030HT-3X9-EBK
	Drive board (low ambient)	EVD3080B-C8-111
	Filter board	143-0097-00
	Choke	037-0096-00
	Outdoor controller	EO1AVNB-CJ-999
	Indoor controller	EI1AVNB-AJ-102
	Electronic expansion valve body	098373
	Electronic expansion valve coil	098379
	High pressure sensor	099304
	Low pressure sensor	099303
	DLT sensor	099302
	Temperature sensor	099301
	HMI module	543-0303-00

Precision cooling (35 kW)	Item	Model / Part number
	Compressor	ZPV0662E-4X9-522
	Drive board	EVD2150B-D1-111
	Capacitor board	143-0091-00
	Filter board	143-0092-00
	Choke	037-0093-00
	Controller	IPLT212K
	HMI	543-0326-00
	Electronic expansion valve	98302
	Electronic expansion valve coil	98315
	High pressure transducer	99304
	Low pressure transducer	99303
	High temperature sensor	99302
	Low temperature sensor	99301

Package AC (24 kW)	Item	Model / Part number
	Compressor	YPV046HT-4X9-EBK
	Drive board (low ambient)	EVD2110B-D1-111
	Filter board	143-0091-00
	Capacitor board	143-0094-00
	Choke	037-0094-00
	Outdoor controller	EO1AVNB-CJ-999
	Electronic expansion valve body	098375
	Electronic expansion valve coil	098379
	High pressure sensor	099304
	Low pressure sensor	099303
	DLT sensor	099302
	Temperature sensor	099301
	HMI module	543-0303-00

Chiller (130 kW)	Item	Model / Part number
	Compressor	ZPV112AE-4X9-522
	Drive board	EVD3250B-D8-111
	Filter Board	143-0124-00
	Choke	037-0124-00
	Controller	EO2AVNB-CJ-999
	HMI	543-0339-00
	Electronic expansion valve	098306
	Electronic expansion valve coil	098315
	High pressure transducer	099304
	Low pressure transducer	099303
	High temperature sensor	099302
	Low temperature sensor	099301

Note: Solution Packages are application sample recommendations only.

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