

Residential & light commercial

Packaged air conditioning solutions



COPELAND

Copeland is committed to provide innovative solutions for its customers

Copeland commercial & residential solutions is the world's leading provider of heating, air conditioning and refrigeration solutions for residential, commercial and industrial applications, supporting the industry with advanced solutions, technical support and training services.

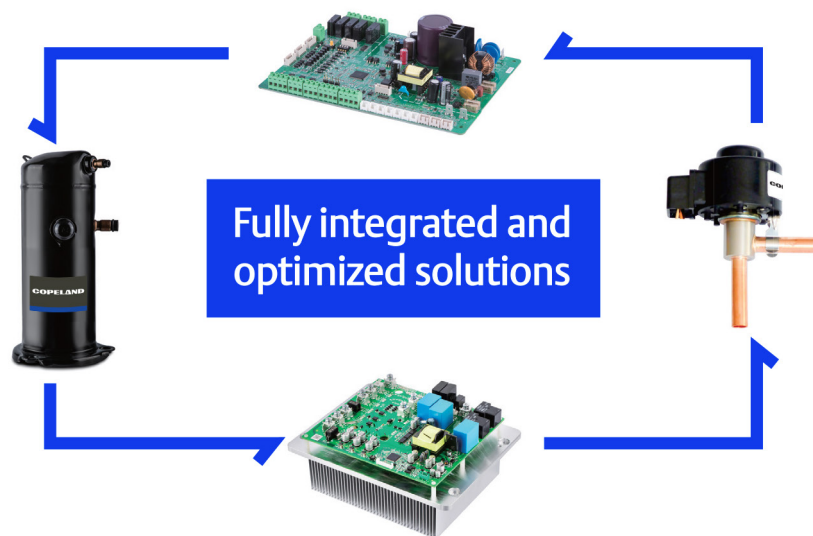
| Customer pain points | Copeland solutions |
|---|--|
| Need to coordinate with various compressor and electronics suppliers for system development | One-stop shop Capability to supply all core components in variable speed systems including compressors, drives, controllers, temperature sensors, valves etc. |
| Lack of adequate technical support | Dedicated integrated solutions team Providing customers with 24/7 end to end technical support. |
| Long development cycle and uncertain reliability | Smart control, reliable performance High Copeland design standards verify all solutions. Control logic, system protection, parameter optimization, full integration. |
| Difficult to meet rapidly changing energy efficiency regulations | The compressor and drive are perfectly matched to maximize energy efficiency Specially developed for the Asia market and optimized according to IPLV/IEER/APF standards. |



Compressor, drive, controller, electronic expansion valve, temperature sensor

Copeland strives to be the leader in integrated solutions for air conditioning, heating and refrigeration industries

Through continuous investment in core technologies of core components of the system, Copeland helps customers achieve market-leading system performance and respond quickly to market demands, as well as enhancing the trust of end users through Copeland brand influence. Copeland has established a team of system integration solutions in the Asia Pacific region to fully integrate internal resources to provide customers with high quality technical services to better meet the needs of the Asia market.



Our service offerings:

- Provides customers with full technical support services
- Coordinates with internal resources and Copeland laboratories to fully validate solutions
- Delivers safe and reliable product solutions for the market
- Continues to expand system simulations and system lab capabilities

Value for customers:



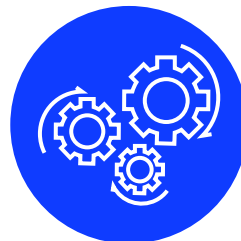
Market-leading system performance



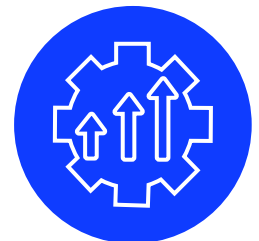
Enhance the trust of end users through Copeland brand influence



Help customers respond quickly to market demands

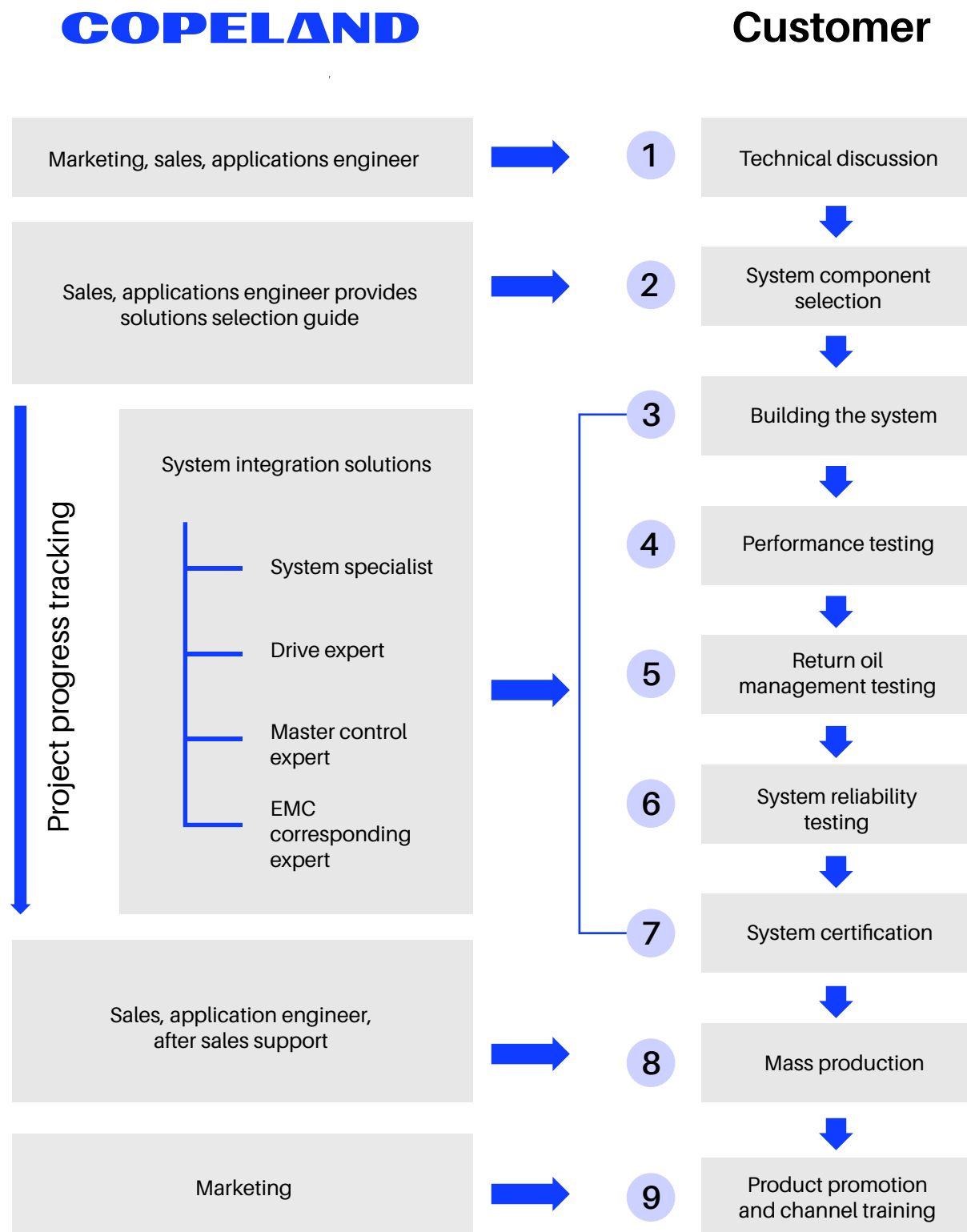


Higher unit reliability



Provide on-site monitoring and reporting continuously improving performance

Throughout the project development cycle, Copeland provides its customers with a strong technical team and system lab support, and customers using Copeland solutions can enjoy VIP-level benefits.



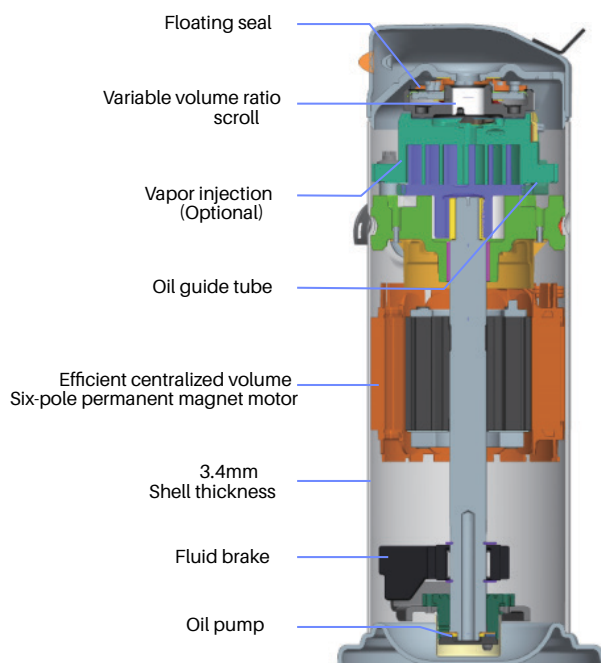
Copeland scroll 4-7HP variable speed compressor lineup

| System capacity | 7.2 kW | 10 kW | 12 kW | 14 kW | 16 kW | 18 kW | 20 kW | 22 kW | 25 kW |
|-----------------|--------|-------------|--|-------------|--|-------|---------------|---|-------|
| | | ● | ● | ● | ● | ● | ● | ● | ● |
| | | | | | | | 6-8hp 50cc | 15-120 Hz 20-25 kW Optimized efficiency 1 phase 220V/3 phase 380V | |
| | | | | 5hp 38cc | 15-120 Hz 14/16/18 kW Optimized efficiency 1 phase 220V/3 phase 380V | | | | |
| | | 4hp 30cc | 15-120 Hz 10/12/14 kW Optimized efficiency 1 phase 220V/3 phase 380V | | | | | | |

- Multiple displacements to suit different system requirements
- EVI is available for all variable speed models

Copeland scroll variable speed advantages:

- Excellent performance and low noise operation
- Outstanding reliability
- Copeland permanent magnet motor for efficient energy saving
- Suzhou R&D Center develops systems designed for the Asia Pacific market
- 900-7200 rpm wide operating envelope for flexible system design
- Variable volume ratio (VVR) significantly improves energy efficiency at low scroll speeds
- Widely used in applications like variable speed VRF, cabinet air conditioner, floor heating etc.



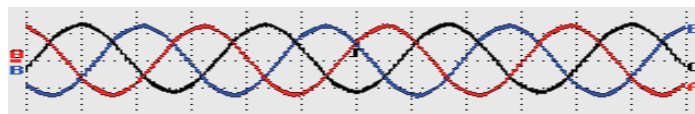
Product performance parameters:

| System capability | 4HP | 5HP | 6-8HP |
|--------------------------------|-----------|-----------|----------|
| Compressor model | ZPV030DE | ZPV038DE | ZPV050DE |
| Displacement (cc/rev) | 30 | 38 | 50 |
| Speed range (RPM) | 900-7200 | 900-7200 | 900-7200 |
| Rated capacity (kW) @ARI 60 Hz | 9.7 | 12.6 | 16.6 |
| Input power (kW) | 2.98 | 3.80 | 5.03 |
| COP (W/W) | 3.25 | 3.3 | 3.3 |
| Noise (dBA) @ARI 60 Hz | 70 | 71 | 72 |
| Voltage | 220V/380V | 220V/380V | 380V |
| Refrigerant | R410A | R410A | R410A |
| Oil charge (L) | 1.18 | 1.18 | 1.18 |

Conditions: ET =7.2°C, CT=54.4°C, SC=8.3K, SH=11.1K, Ambient temperature= 35°C

Features and benefits

- Fully optimized drive and motor design
- Excellent air duct design and drive board heat resistance
- Full reliability verification
- Sine wave vector control
- Fully optimized control scheme to maximize compressor performance and noise

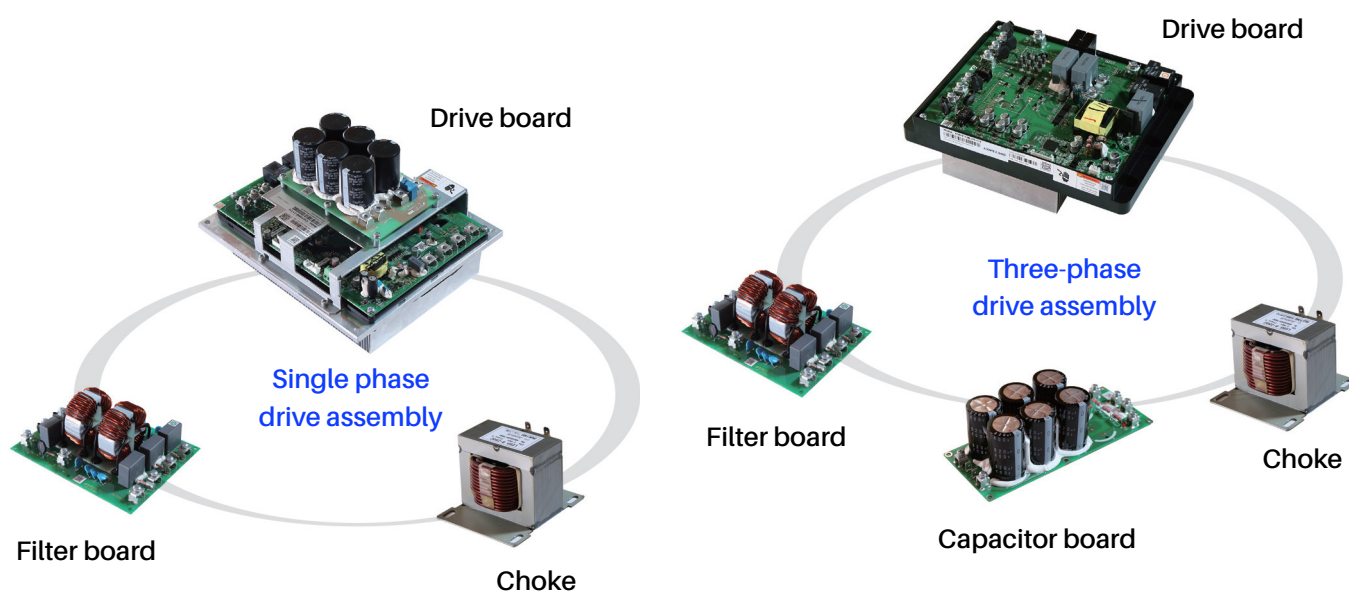


- Communication set up
- Baud rate 2400
- Full compressor compatibility, plug and play capability
- Built-in compressor protection for added reliability

Current specification

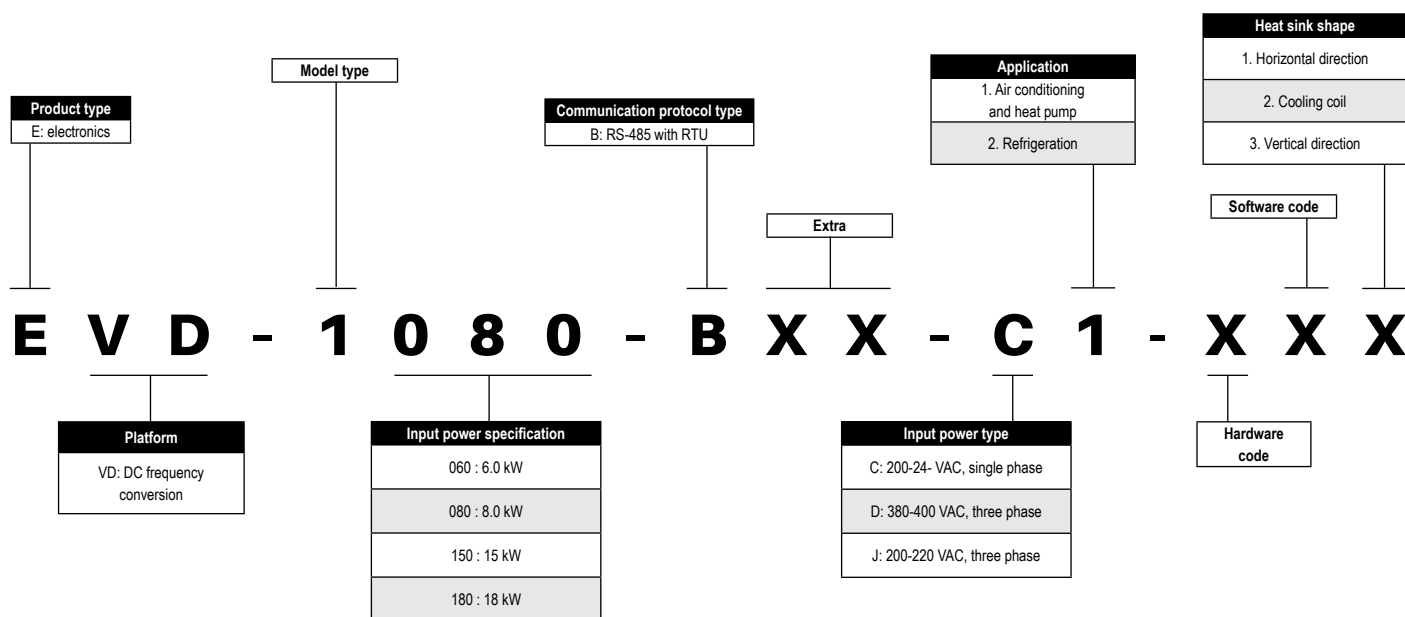
| Drive model | Input voltage | Maximum input current | Maximum output current |
|-----------------|-----------------------------|-----------------------|------------------------|
| EVD1180B-D1-111 | 3PH, 340V-440V, 50 Hz/60 Hz | 38A | 38A |
| EVD1150B-D1-111 | 3PH, 340V-440V, 50 Hz/60 Hz | 27A | 27A |
| EVD1110B-D1-111 | 3PH, 340V-440V, 50 Hz/60 Hz | 21A | 21A |
| EVD1080B-D1-113 | 3PH, 340V-440V, 50 Hz/60 Hz | 17A | 17A |
| EVD2080B-C1-113 | 1PH, 160V-265V, 50 Hz/60 Hz | 35A | 25A |

Drive components



Nomenclature

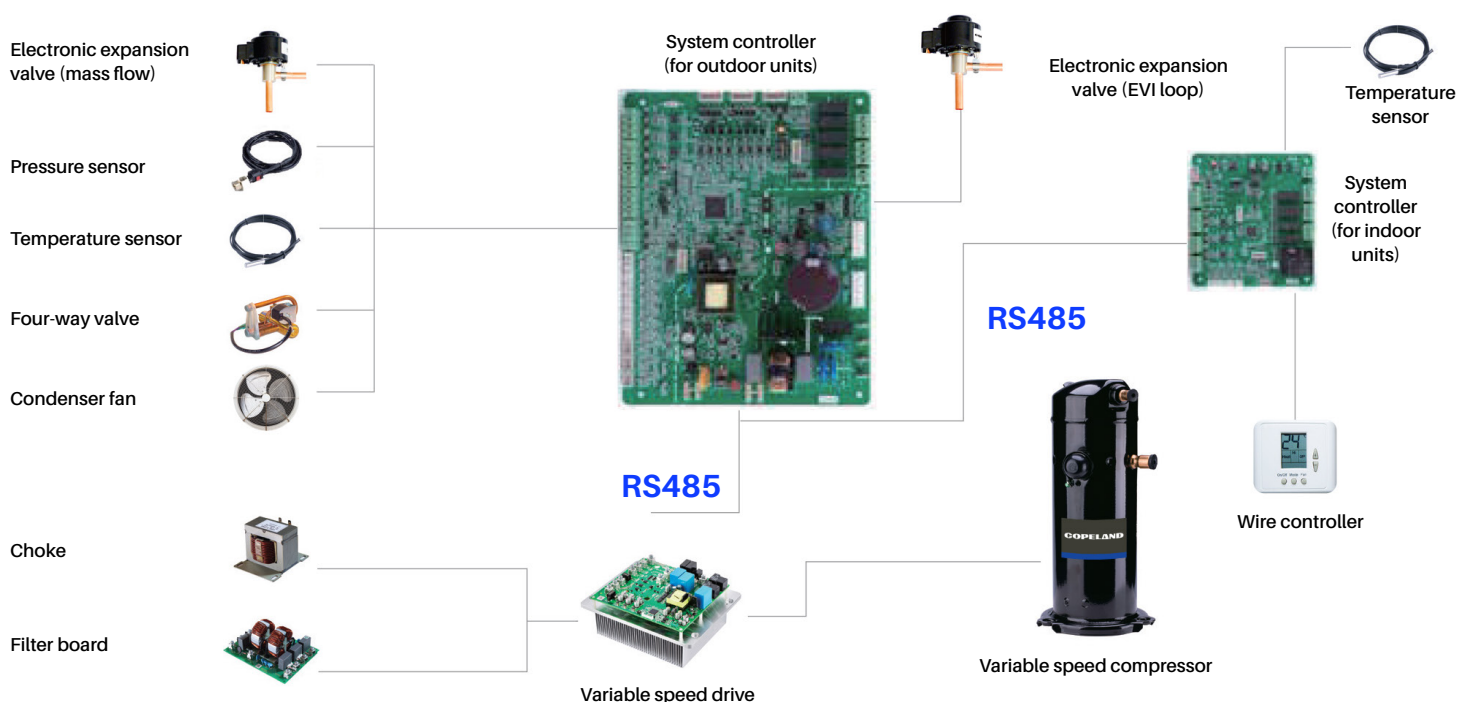
Variable speed drive



System controller

Technical characteristics

- Compressor operating range protection
- Compressor speed control
- Electronic expansion valve for main and auxiliary paths
- Superheat control
- Defrost control
- Compressor oil return management



Product model selection

| Cooling capacity | 4HP | | 5HP | | 7HP | |
|------------------------------|-------------------------|------|-------------------------|------|-------------------------|------|
| Compressor | ZPV030DE-4X9 | 1Pcs | ZPV038DE-4X9 | 1Pcs | ZPV050DE-4X9 | 1Pcs |
| Variable speed drive | EVD1080B-D1-113 | 1Pcs | EVD1080B-D1-113 | 1Pcs | EVD1110B-D1-113 | 1Pcs |
| | 143-0066-00 (Capacitor) | 1Pcs | 143-0066-00 (Capacitor) | 1Pcs | 143-0066-00 (Capacitor) | 1Pcs |
| | 143-0065-00 (Filter) | 1Pcs | 143-0065-00 (Filter) | 1Pcs | 143-0065-00 (Filter) | 1Pcs |
| | 037-0068-00 (Choke) | 1Pcs | 037-0068-00 (Choke) | 1Pcs | 037-0068-00 (Choke) | 1Pcs |
| Indoor unit master control | EI1AVNB-AJ-XXX | 1Pcs | EI1AVNB-AJ-XXX | 1Pcs | EI1AVNB-AJ-XXX | 1Pcs |
| Outdoor unit master control | EO1AVNB-CJ-XXX | 1Pcs | EO1AVNB-CJ-XXX | 1Pcs | EO1AVNB-CJ-XXX | 1Pcs |
| Temperature sensor (exhaust) | 099302 | 1Pcs | 099302 | 1Pcs | 099302 | 1Pcs |
| Temperature sensor (suction) | 099301 | 6Pcs | 099301 | 6Pcs | 099301 | 6Pcs |
| High pressure sensor | 099304 | 1Pcs | 099304 | 1Pcs | 099304 | 1Pcs |
| Low pressure sensor | 099303 | 1Pcs | 099303 | 1Pcs | 099303 | 1Pcs |
| Electronic expansion valve | EXM-B0D | 1Pcs | EXM-B0E | 1Pcs | EXL-B1G | 1Pcs |

Notes

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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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