Commercial Chiller Solutions





COPELAND[®]



Technical advantages of Emerson commercial chiller integrated solutions

- Provides a full range of core components developed by Emerson peace of mind.
- easy cooling capacity expansion.
- meet the various needs of customers.
- Optimized system control logic for optimal energy efficiency and reliability of IPLV systems.
- time savings.



Controllers

- Modular design, flexible and scalable
- Ethernet interface connects to the Internet via LAN
- RS485 serial port can access XWEB monitoring system or third-party applications
- Uses VISOGRAPH graphic display with TGIPG touch display to instantly view system parameters



Wired controllers

- Large LCD display
- Full touch buttons

Electronic expansion valves

Compressors





• Equipped with Emerson's full range of variable speed, fixed speed compressors and tandem for

• Powerful controller hardware platform, rich expansion modules, programmable technology to

• Powerful technical team and laboratory support to secure system development - effort and

• Slim design

• Linear flow control features, precise control from 10% to 90% opening range

• Two-way maximum working pressure difference up to 35 bar, perfect for low ambient temperature environments

• 250,000 times (full on and off) cycle, IP65/67 protection, high reliability and long product life span

• Optimized design of variable speed drive compressors are based on permanent magnet DC brushless motor

• 1000~7200RPM wide speed range for improved partial load energy efficiency

• Tandem installation provides maximum flexibility for system design



Proven Copeland Scroll[™] platform

- Enhanced and optimized for variable speed
- Optimized scroll elements for variable speed performance
- Low oil circulation compressor plus scroll oil injection for low speed performance and reliability
- High efficiency concentrated volume permanent magnet DC brushless motor
- Sound reduction technology for heat pump defrost conditions





The unparalleled energy efficiency of the Copeland Scroll variable speed compressor maximizes system efficiency



Breakthrough efficiency

Emerson's Copeland Scroll variable speed compressors are designed to deliver maximum cooling and heating efficiency when you need it most. Our latest variable speed compressor technology allows system manufacturers and building owners to achieve superior performance, including:

- Expansive 1000 to 7200 RPM speed range for enhanced light load efficiency and dehumidification
- Highest part load efficiency in its class • enabling significant energy savings and standards compliance
- Capability to 'parallel' for maximum flexibility . in system design

Operating envelope



Test conditions are based on 11.1K superheat, 8.3K subcooling, 35.0°C ambient temperature (solid line area) Please refer to the application guide for the specific operating range and operating speed.

Technical parameters

Compressor model	ZPV066	ZPV080/ZPW080	ZPV096	ZPV** (25HP)
Displacement (cc/rev)	66	80	96	100+
Speed range (rpm)	1000~7200	1200~7200	1200~7200	1800~8400
Rated capacity (kW) @ 75 Hz	28.8	38	43	71.5
Input power (kW) @ 75 Hz	8.72	11.5	13	22.3
COP with drive	3.3	3.3	3.3	3.2
Noise (dBA) @ARI 75 Hz	77	80	80	90
Oil charge (L)	2.51	2.51	2.51	2.51
Net weight (kg)	40	42	44.7	Under development
Lubricating oil	POE	POE	POE	POE
Single/Tandem	Tandem	Tandem	Tandem	Tandem
Refrigerant	R410A	R410A	R410A	R410A
Input current (A)	A) 27 27		38	Under development
Output current (A)	27	27	38	Under development
Drive model (Three-phase, 380V~400V, 50 Hz/60 Hz)	EVD1150B-D1-113 (Drive board) 143-0032-00 (Filter board) 143-0058-00 (Capacitor board) 037-0064-00 (Choke)	EVD1180B-D1-113 (Drive board) 143-0032-00 (Filter board) 143-0058-00 (Capacitor board) 037-0064-00 (Choke)	EVD1180B-D1-113 (Drive board) 143-0032-00 (Filter board) 143-0058-00 (Capacitor board) 037-0064-00 (Choke)	Under development

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

The latest in technology and value

Inverter features and benefits:

- Optimized inverter and motor parameters design
- Excellent air duct design and heat resistance of the drive board
- Full reliability verification
- Sine wave vector control
- Fully optimized control scheme to maximize compressor performance and noise
- Current specification

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



Variable speed 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

Inverter component



Variable speed drive nomenclature



Variable speed compressor nomenclature



Emerson variable speed drive advantage





Full compatibility with Emerson variable speed compressors Trusted reliability



Excellent drive board heat resistance



Specially designed EMC

Accessories





Digital input	20 channels are available
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 bus
Other	RTC Real Time, Clock Internal Modem (optional analog cat) BACnet protocol (optional), LON protocol (optional)

10 channels available - NTC

PTC/0~1V/0~5V/0~10V/4~20mA/DI

24V AC/DC

IPX206D

IPG215D

Power supply

Analog input

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

- Supports all unipolar/bipolar stepper electronic expansion valves
- Improves system energy efficiency
- Single or dual circuit
- Temperature analog input (NTC, PTC, PT1000)
- Pressure analog input (0~5V, 4~20mA)
- 4-digit DIP switch for setting the address
- LAN output
- CANBUS network connected to IPRO series controller (XEV)

Electronic expansion valve

EXM/L

- Suitable for variable speed, variable load systems;
- Controller with "self-learning" capabilities;
- Compressor Envelope control;
- Electronic expansion valves are optimized for low temperature heat pumps;
- Supports third-party controllers



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	(triples shall	IP 67
High temperature sensor TS-150	-50~150°C	50KΩ±1%	22AWG blue	- Stainiess steel	



R410a Cooling capacity kW EXM/L 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;
- Emerson offers a 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 testTake-apart valve body

Output	Suitable	Full error	Protection
signal	refrigerant	band	grade
0.5~4.5VDC	R410a, R134a, R404a,R407c, R507	±2.5%FS	

Contact lists

Asia Pacific Headquarters

Suite No. 2503-10A, 25/F, Exchange Tower, 33 Wang Chiu Road, Kowloon Bay, Kowloon, Hong Kong Tel: (852) 2866 3108 Fax: (852) 2520 6227

Australia

356 Chisholm Road Auburn NSW 2144, Australia Tel: (612) 9795 2800 Fax: (612) 9738 1699

China - Beijing

Room 1203-1205, North Wing Junefield Plaza Central Tower, No. 10 Xuan Wu Men Wai Street, XiCheng District, Beijing, PRC Tel: (8610) 5095 2188

China - Guangzhou

Guangzhou Office Unit 2202B, 22/F, Leatop Plaza, 32 Zhujiang East Road, Tianhe Dist., Guangzhou 510623, PRC Tel: (8620) 8595 5188

China - Shanghai

Shanghai Sales Office 7F, Emerson Building, 1582 Gumei Rd, Shanghai, PRC Tel: (8621) 3338 7333

India - Mumbai

Delphi B-Wing, 601-602, 6th Floor Central Avenue, Hiranandani Business Park, Powai, Mumbai 400076, India Tel: (9122) 6786 0793 Fax: (9122) 6662 0500

India - Pune

Plot No. 23, Rajiv Gandhi Infotech Park, Phase - II, Hinjewadi, Pune 411 057, Maharashtra, India Tel: (9120) 4200 2000 Fax: (9120) 4200 2099

Indonesia

BSD Taman Tekno 8 Jl. Tekno Widya Blok H10 No 2 & 3 Tangerang Selatan 15314 Indonesia Tel: (6221) 2966 6242 Fax: (6221) 2966 6245

Japan

Shin-yokohama Tosho Building No. 3-9-5 Shin-Yokohama, Kohoku-ku Yokohama 222-0033 Japan Tel: (8145) 475 6371 Fax: (8145) 475 3565

Malaysia

Level M2, Blk A, Menara PKNS-PJ Jalan Yong Shook Lin 46050 Petaling Jaya, Selangor, Malaysia Tel: (603) 7949 9222 Fax: (603) 7949 9333

Middle East & Africa

PO Box 26382 Jebel Ali Free Zone - South Dubai, UAE Tel: (9714) 811 8100 Fax: (9714) 886 5465

Philippines

10/F SM Cyber West Avenue, EDSA cor. West Avenue, Barangay Bungad, Diliman, Quezon City 1105 Philippines Tel: (632) 689 7200

Saudi Arabia

PO Box 34332 - 3620 Building 7874 Unit 1, 67th street 2nd Industrial City Dammam, Saudi Arabia Toll Free: 800 844 3426 Tel: +966 3 8147560 Fax: +966 3 8147570

South Korea

3F, The Pinnacle Gangnam 343, Hakdong-ro, Gangnam-gu, Seoul 06060, Republic of Korea Tel: (822) 3483 1500 Fax: (822) 592 7883

Taiwan

3F No. 122 Lane 235, Pao Chiau Rd., XinDianv Dist., New Taipei City 23145, Taiwan (R.O.C.) Tel: (8862) 8912 1360 Fax: (8862) 8912 1890

Thailand

34th Floor, Interlink Tower, 1858/133, Bangna Trad, Bangkok 10260, Thailand Tel: (662) 716 4700 Fax: (662) 751 4241

United Arab Emirates

Jebel Ali Free Zone PO Box 26382 Dubai UAE Toll Free: 800 441 3428 Tel: +971 4 811 8100 Fax: +971 4 886 5465

Vietnam

Level 6, Melinh Point Tower, 2 Ngo Due Ke, District 1, Ho Chi Minh City Vietnam Tel: (84) 908 009 189

Technical Support is available 24 hours a day, 7 days a week. We're with you every step of the way.



@EmersonComResAP

Scan to visit:

Emerson.com

Asia 01 00 Issued 8/2019 Emerson is a trademark of Emerson Electric Co. or one of its affiliated companies. ©2019 Emerson Electric Co. All rights reserved.



f | | 🎔

EMERSON. CONSIDER IT SOLVED