

Copeland Scroll™ Horizontal Compressors For Transport Application The perfect solution for Indian Rail Air-Conditioning



Maximizing Passenger Comfort

COPELAND™


EMERSON™

Copeland Scroll™ Horizontal

The Perfect solution for
Indian Rail AC

Copeland Scroll™ Horizontal The Answer to Transport Air-Conditioning

A proven performer has achieved major savings for the Indian Railways & OEMs.

Benefits include:

- Reduced height of the coach
- Lesser weight of the roof top mount HVAC Unit
- No change in tunnels/coach layout/overhead electricity lines required due to low height of compressor
- Better reliability & optimization for transport applications

Indian Railways, Mumbai Suburban Project, opts for the Horizontal Scroll

Transport is one of the most critical aspects for a growing economy. The need for Innovation & Technology here cannot be overemphasized.

Emerson commercial and residential solutions is the world's leading compressor manufacturer, delivering comprehensive solutions to numerous climate technology applications. The Horizontal ZRH compressor range addresses the specific needs of transport air conditioning.

Maximization of passenger space is a critical challenge. The streamlining of high speed trains translates into limitations on height & weight of HVAC units. The low profile design and modulation



capabilities of the ZRH compressor range are the ideal response to these market needs.

Compactness

Compactness and low weight are design inherent strengths of the Copeland Scroll™ technology. The horizontal arrangement of ZRH compressors bundles these advantages onto the height sensitive railway applications. With less than 250 mm height it is the perfect fit to top mounted air conditioning units, as found in Indian railway vehicles.



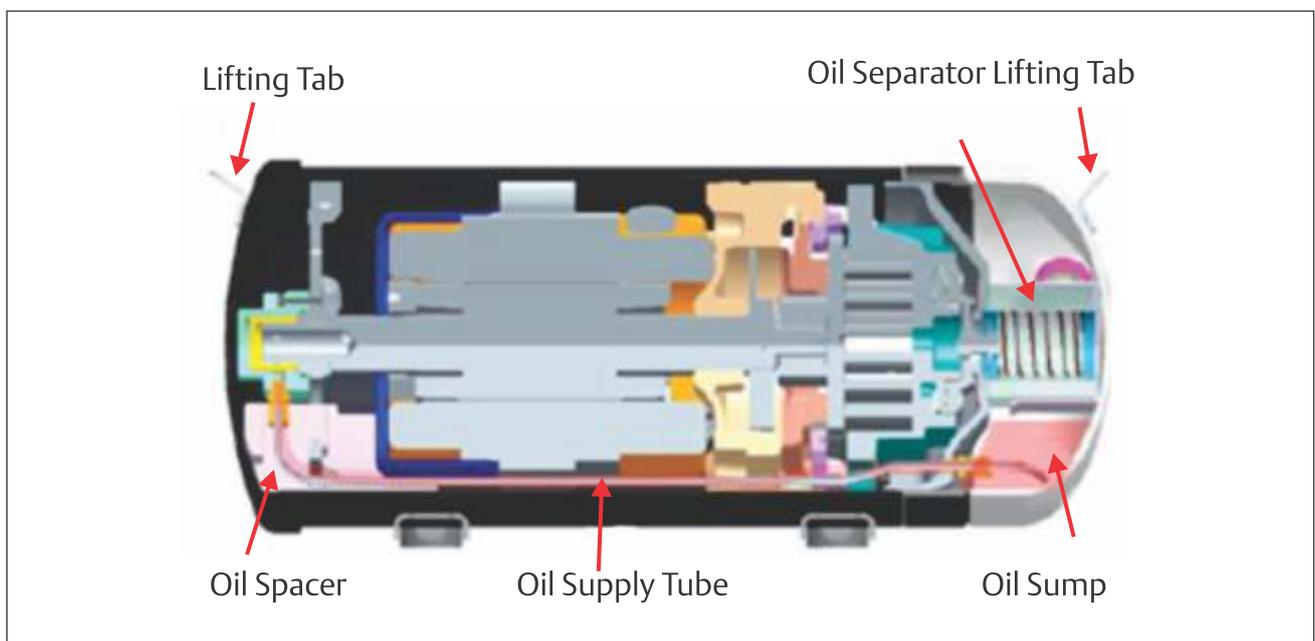


Design & Reliability

ZRH compressors are based on the unique Copeland Scroll™ design and provide for the same reliability as a standard Copeland Scroll™. The addition of an oil pump caters to the specific needs of transport air conditioning and the horizontal compressor arrangement. Being an all hermetic design, horizontal scroll compressors eliminate the potential risk of refrigerant leakage through the drive shaft sealing ensuring system reliability as well as environmental friendliness.

Capacity Modulation

The compressors come equipped with an integral motor, which makes it independent from the main vehicle's drive engine speed. This ensures sufficient air conditioning in the passenger compartment at all times. In addition, ZRHV compressors offer modulation from 70% to 150% of its rated capacity. In applications such as commuter trains, with permanently changing loads, this ensures a perfect capacity match and optimum energy efficiency.

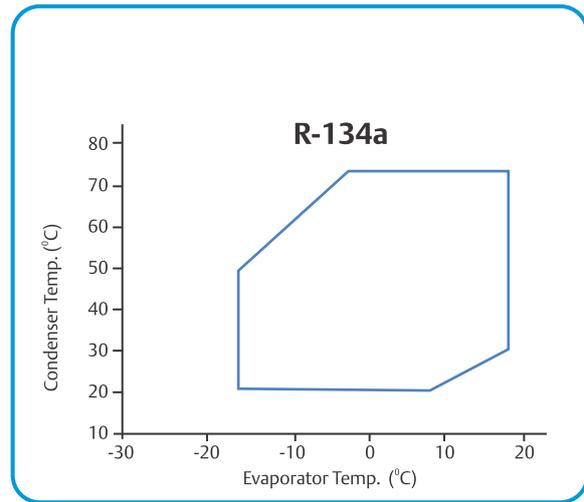
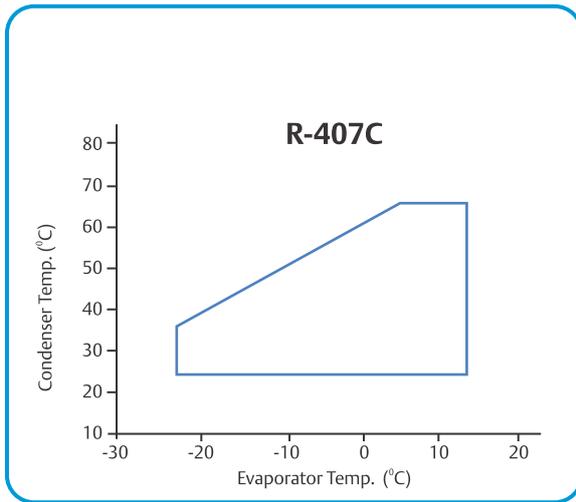


Model Overview

Fixed Speed Range

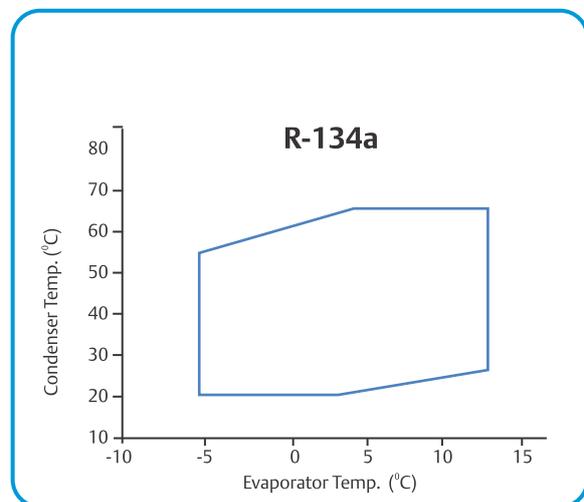
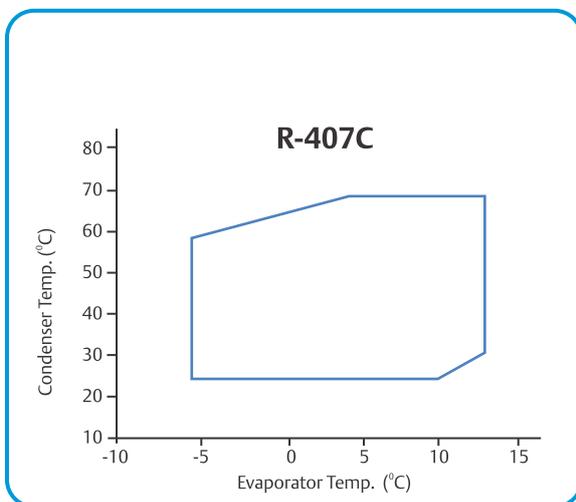
Model	Nominal Horse Power (HP)	Cooling Capacity				Displacement (cc/rev)	Motor Version (TFD)
		R134a (kW)	COP	R407C (kW)	COP		
ZRH49KJE	4	7	3.0	10	2.9	67.13	380~420/3/50
ZRH61KJE	5	9	3.1	12	2.9	82.61	380~420/3/50
ZRH72KJE	6	10	3.2	15	2.9	98.06	380~420/3/50

Rating conditions R407C Dew Point, R134a at EN 12900 conditions, Evaporating 5°C, Condensing 50°C, Suction Superheat 10 K, Subcooling 0 K



Model	Nominal Horse Power (HP)	Cooling Capacity				Displacement (cc/rev)	Motor Version (TFD)
		R134a (kW)	COP	R407C (kW)	COP		
ZRH78KTE	7	13	2.95	18	2.98	113.60	380~420/3/50
ZRH87KTE	8	15	3.04	21	3.10	127.15	380~420/3/50
ZRH100KTE	9	17	3.13	24	3.19	142.94	380~420/3/50
ZRH116KTE	10	19	3.03	28	3.07	167.15	380~420/3/50

Rating conditions R407C Dew Point, R134a at EN 12900 conditions, Evaporating 5°C Condensing 50°C, Suction Superheat 10 K, Sub cooling 0 K

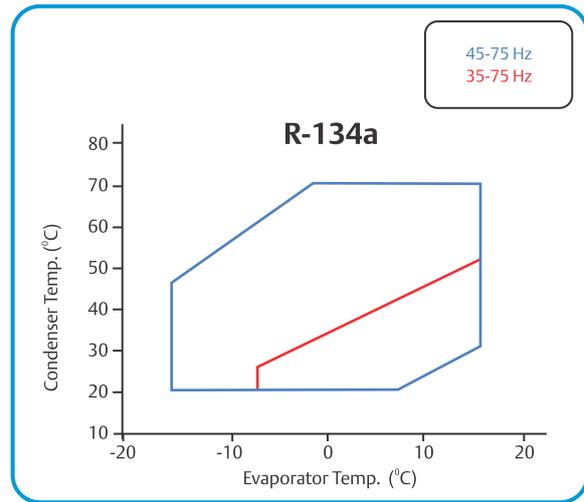
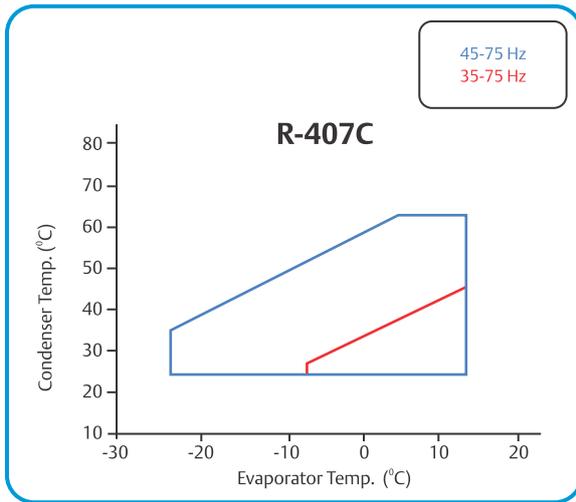


Model Overview

Variable Speed Range

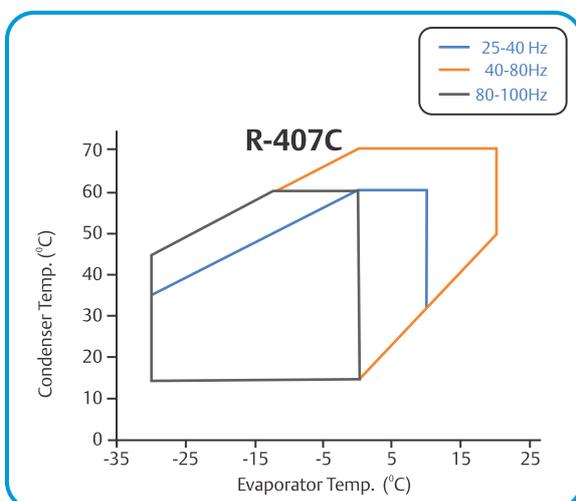
Variable Speed Model	Nominal Horse Power (HP)	R134a (kW)	COP	R407C (kW)	COP	Displacement (cc/rev)
ZRHSV72KJE	6.5	7~15 (35~75 Hz)	2.9 (60 Hz)	10~22 (35~75 Hz)	3.10 (60 Hz)	98.06

Rating conditions R407C Dew Point, R134a at EN 12900 conditions, Evaporating 5°C, Condensing 50°C, Suction Superheat 10 K, Subcooling 0 K



Variable Speed Model	Nominal Horse Power (HP)	R134a (kW)	COP	R407C (kW)	COP	Displacement (cc/rev)
ZRHSV81KTE	7	6~21 (30~100 Hz)	3.5 (60 Hz)	5~42 (25~100 Hz)	3.5 (60 Hz)	108

Rating conditions R407C Dew Point, R134a at EN 12900 conditions, Evaporating 5°C, Condensing 50°C, Suction Superheat 10 K, Subcooling 0 K

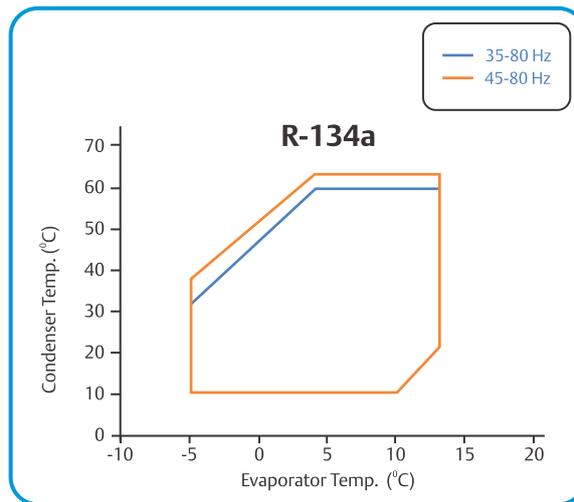
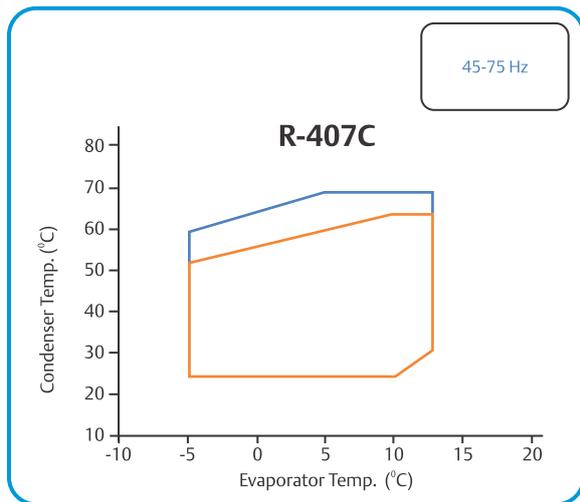


Model Overview

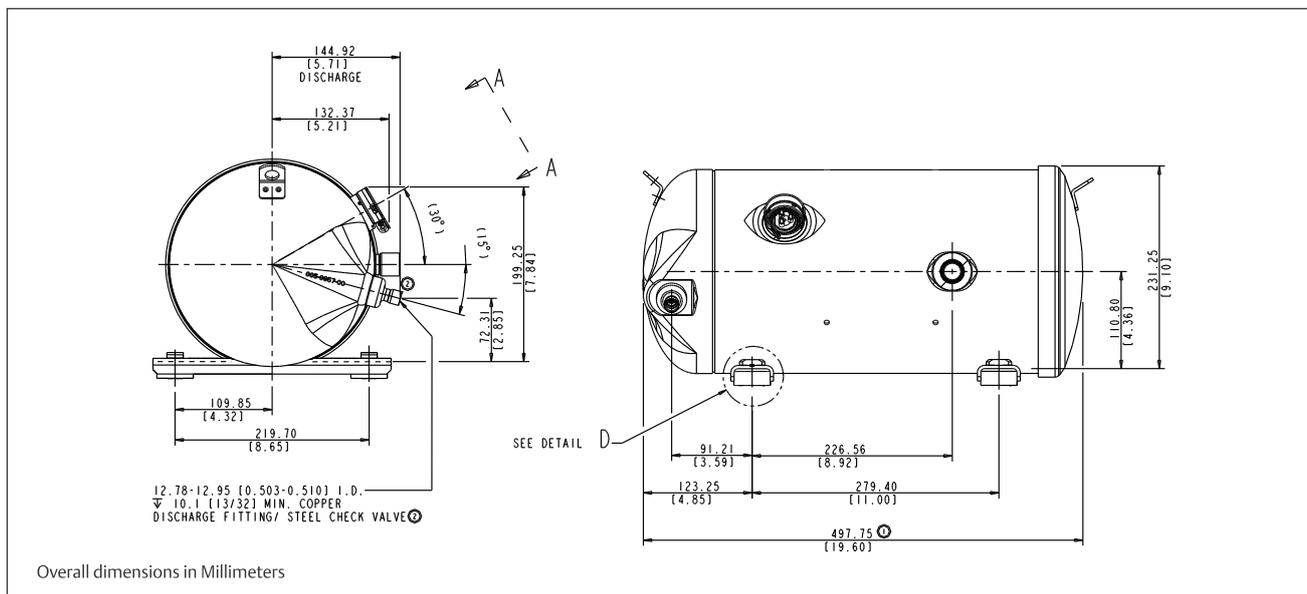
Variable Speed Range

Variable Speed Model	Nominal Horse Power (HP)	R134a (kW)	COP	R407C (kW)	COP	Displacement (cc/rev)
ZRHV94KTE	9.6	6~37 (35~80 Hz)	3.1 (60 Hz)	9~51 (35~80 Hz)	3.2 (60 Hz)	127.15

Rating conditions R407C Dew Point, R134a at EN 12900 conditions, Evaporating 5°C, Condensing 50°C, Suction Superheat 10 K, Subcooling 0 K

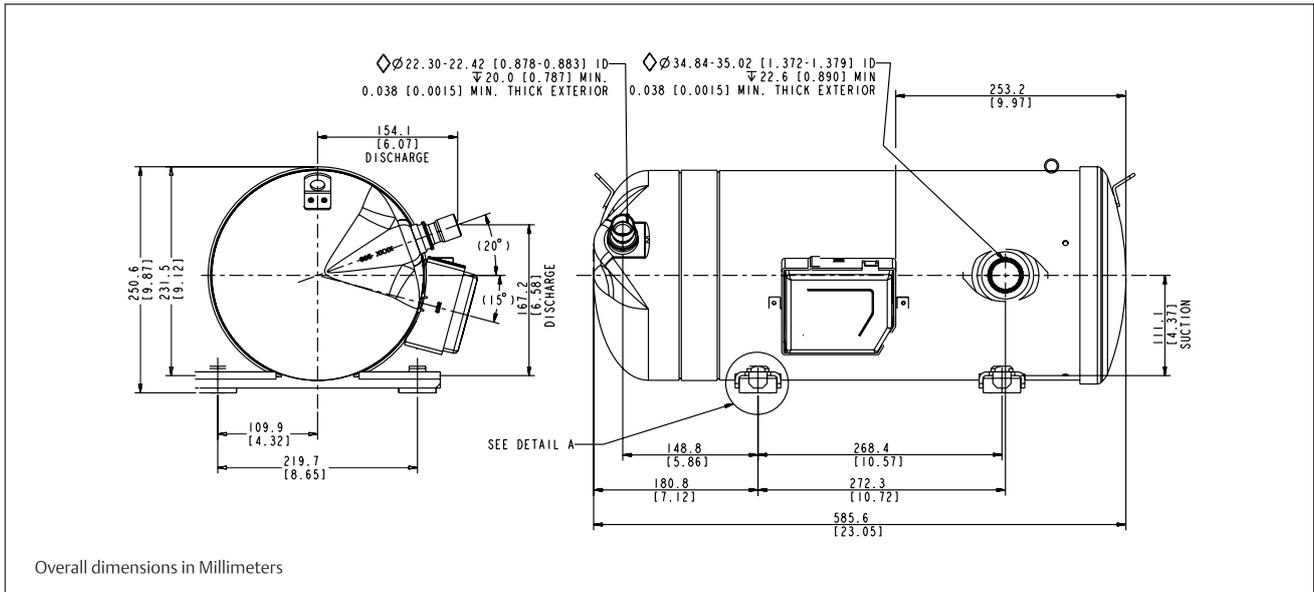


Quest Horizontal Dimensions



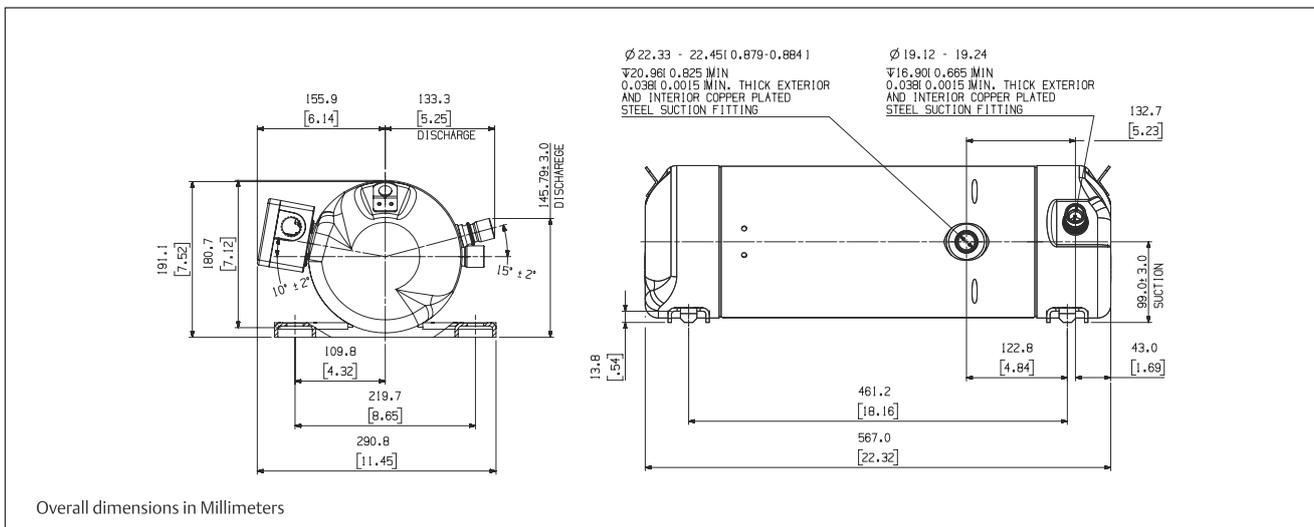
Model	L (mm)	W (mm)	H (mm)	Nett Weight (kg)
ZRH49KJE	488	294	250	52
ZRH61KJE	488	294	250	53
ZRH72KJE	488	294	250	54
ZRHV72KJE	488	294	250	54

Summit Horizontal Dimensions



Model	L (mm)	W (mm)	H (mm)	Nett Weight (kg)
ZRH78KTE	543	294	250	60
ZRH87KTE	543	294	250	60
ZRH100KTE	584	294	250	63
ZRH116KTE	584	294	250	64
ZRHV94KTE	584	294	250	60

NG Horizontal Dimensions



Model	L (mm)	W (mm)	H (mm)	Nett Weight (kg)
ZRHV81KTE	567	289	192	49

International Railway Industry Standard Certification:



Disclaimer

Technical data given was correct at the time of printing. Updates may occur, and should you need confirmation of a specific value, please contact Emerson stating clearly the information required. Emerson cannot be held responsible for errors in capacities, dimensions, etc., stated herein. Products, specifications and data in this literature are subject to change without notice. The information given herein is based on data and tests which Emerson believes to be reliable and which are in accordance with today's technical knowledge. It is intended for use by persons having the appropriate technical knowledge and skill, at their own discretion and risk. The products given here are designed and adapted for stationary applications only. For transport applications, Please consult with your Emerson representative.

Note

The components listed in this catalogue are not released for use with caustic, poisonous or flammable substances. Emerson cannot be held responsible for any damage caused by using these substances.

SALES OFFICES:

Gurgaon

Emerson Climate Technologies (India) Private Ltd.
18th Floor, Tower B, Building No. 5,
Epitome, DLF Cyber City,
Phase - III, Gurgaon 120 002
Tel: (91-124) 489 4500

Mumbai

Emerson Climate Technologies (India) Pvt. Ltd.
Delphi B-Wing, 601-602,
6th Floor, Central Avenue,
Hiranandani Business Park, Powai,
Mumbai- 400076
Tel: (91-22) 6662 0566

Secunderabad

Emerson Climate Technologies (India) Pvt. Ltd.
C/o Maruthi Corporate Point,
Swapnalok Complex 2nd Floor, Block -B ,
Sarojinidevi Road, Secunderabad-500003
Tel: (91-40) 3315 4018

COLD CHAIN & DISTRIBUTION CENTER

Chakan

Emerson Climate Technologies (India) Pvt. Ltd.
Plot No. G-8/3, Block M.I.D.C.
Chakan Industrial Area, Phase - III,
Taluka : Khed. Dist : Pune - 410 501
Tel: (91- 2135) 625300

Delhi

Emerson Climate Technologies (India) Pvt. Ltd.
Plot No. 127,
Udyog Vihar, Phase IV,
Gurgaon - 122 015, Haryana
Tel: (91 124) 2866600

PLANT

Atit Pali Road, Atit - 415 519, Maharashtra.
Tel: (91-2162) 224200, Fax: (91-2162) 262069

REGISTERED HEAD OFFICE

Emerson Climate Technologies (India) Pvt. Ltd.
Plot No. 23, Rajiv Gandhi Infotech Park, Phase - II, Hinjewadi, Pune-411 057
Tel: (91-20) 4200 2000, Fax: (91-20) 4200 2099

www.EmersonClimate.com/India

☎ 1800 209 1700 ✉ ClimateIndia@Emerson.com

Emerson is a trademark of Emerson Electric Co. ©2018 Emerson Electric Co. All rights reserved.

Scan to download
the soft copy



@EmersonComResAP