

Emerson Multi-Compressor Packs



COPELAND™


EMERSON™

Emerson Multi-Compressor Packs Overview

For more than 80 years, Emerson has been introducing pioneering technologies for the refrigeration market such as Copeland Compliant Scroll™, High Efficiency Discus™ Valve Technology, Stream Technology, Digital Continuous capacity modulation, CoreSense™ Diagnostics for advanced protection, enhanced Vapor Injection which give the right tools to reduce the carbon footprint of installations, optimize system design, efficiency, sound and reliability while ensuring long equipment life time and minimizing capital and operating cost for food retail, food processing, cold storages and large scale refrigeration applications.

The Emerson Multi-Compressor Pack (EMP) Refrigeration Systems are one such innovation. These are specially designed and robustly engineered at the Cold Chain Center in Pune, India to match your specific refrigeration needs. The units are engineered to perform under extremely demanding conditions and come equipped with factory installed components that include HP/LP Switches, Oil Management Systems, and Controls to ensure safe operation of your system. In addition, the laying out of components, tubing and electrical connections is such, so as to facilitate easy serviceability.

Emerson Multi-Compressor Pack Refrigeration Systems are available in 2, 3 and 4 compressor combinations and come assembled with your choice of compressor technology. These feature best-in-class Copeland Scroll™ & Semi-Hermetic Compressors which have gained acclaim in the industry for their energy efficiency and are superior to any

reciprocating compressor technology offered by other manufacturers.

Whatever the requirement or application, Emerson offers a Multi Compressor solution that delivers outstanding performance. In addition with countrywide Service & Dealer network, Emerson offers professional assistance during the commissioning and operation of your project.

- High Efficiency, Robustly Designed For High Reliability
- Customized To Suit Your Refrigeration Needs
- Comprehensive Range From 20-300 HP For Low, Medium And High Temperature Applications
- Choice Of Technology: Scroll Or Semi-Hermetic Pack
- Designed For Multi-refrigerants
- Local Availability





Multi-Compressor Pack: Choice Of Technology - Semi-Hermetic & Scroll

Semi-Hermetic Packs

For years Emerson's Semi-Hermetic compressors have been the leading choice for efficiency in refrigeration. Discuss™ compressors deliver up to 10% more efficiency than any reed reciprocating compressor technology.

The Stream series is Emerson's new line of Semi-Hermetic reciprocating compressors. This brand new line of four and six cylinder compressors are best-in-class performers for today's HFC, natural and low GWP refrigerants. They are specially designed for low and medium temperature refrigeration applications.



Overview

- Range: 20 – 300 HP (SH)
- High/Medium & Low Temp. Applications
- Multi Refrigerant: R22/R404A/R134A/R407C
- No. of Compressors: 2 – 4*
- Type: Single, 2 Stage

All Stream compressor models feature CoreSense™ Diagnostics, an electronic module that provides advanced compressor protection and diagnostics benefits for improved system reliability, reduced service costs and increased equipment uptime. The range is also available for inverter applications of four and six cylinder digital models for continuous capacity modulation.

Emerson also offers Copeland™ brand standard Semi-Hermetic compressors ranging from 2-50 HP for industrial processes and refrigeration applications. Copeland Semi-Hermetic compressors include the L series, S series and 6T two-stage series which are widely used in supermarkets, cold rooms and equipment manufacturing areas.



Standard Semi-Hermetic
2-50HP



Stream Semi-Hermetic
13-50HP

Key Benefits

- Compressor repairability
- Perfect for large central refrigeration
- Integrated electronics for advanced protection and diagnostics

*For Compressor Pack requirement above 4 compressors, please get in touch with Emerson sales and application engineering representative



Scroll Packs

The fact that Emerson has installed millions of scroll compressors world-wide across various applications is a testimony to the compressor's popularity and superior technology.

Copeland Scroll™ compressors, owing to their unmatched reliability, are being used more and more in commercial refrigeration as contractors and original equipment manufacturers (OEMs) seek new ways to utilize the technology in supermarket, food service and healthcare applications.

Copeland's Compliant Scroll™ design provides both axial and radial compliance between scroll members; providing

protection against liquid damage increasing compressor life and unmatched reliability. Technological advancements such as Copeland Scroll Digital™ offer very simple and highly reliable continuous modulation capability. Scrolls with Enhanced Vapor injection enables efficient two-stage intercooler compression cycle to provide the highest reliability, thereby maximizing efficiency.

Emerson currently offers a wide range of refrigeration products from 2-15HP range. These are powered by Copeland Scroll™ Digital ZB compressors that are designed for high medium temperature refrigeration applications, while Copeland Scroll ZF compressors are designed for low temperature applications of up to -40°C.



Overview

- Range: 20 – 60 HP (Scroll)
- High/Medium & Low Temp. Applications
- Multi-Refrigerant: R22/R404A/R134A/R407C
- No. of Compressors: 2 – 4*
- Type: Liquid Injection & Vapor Injection, Fixed Capacity Scrolls & Digital Scrolls



ZB Medium Temp. Scrolls
2-15HP



ZF Low Temp. Scrolls
2-15HP

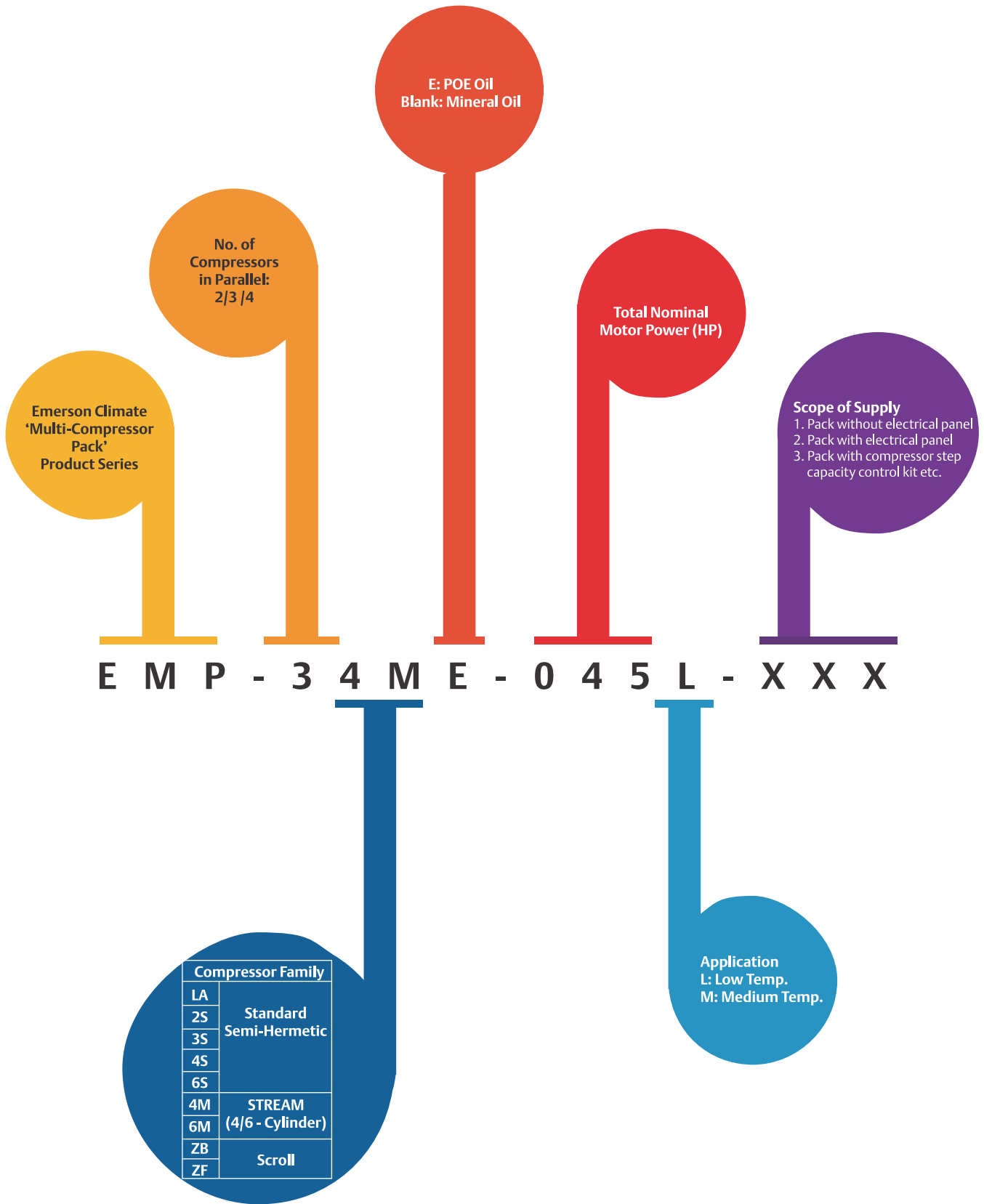


ZB Digital Scrolls
4-7HP

Key Benefits

- High seasonal efficiency with vapor injection
- Low vibration & sound
- Light & compact Racks

Model Nomenclature





Multi-Compressor Pack: Scope Of Supply

Standard Offering

a) High Efficiency Copeland Semi-Hermetic Or Scroll Compressor; 2 To 4 Compressors

- Suction & Discharge Service Valves
- Crankcase Heater

b) Adequately Sized Suction Header For Smooth Distribution

- Suction Filters
- Multiple Suction Stubs fitted with Ball Valves

c) Heavy Gauged Discharge Header: Adequately Sized To Avoid Oil Traps

- Vibration Eliminators

d) Mechanical Oil Management System

- Oil Level Regulator & Sight Glass fitted on each Compressor
- Oil Reservoir & Oil Separator
- Oil Sight Glasses & Filter in Oil Management System

e) Safety

- Oil Pressure Switch (not applicable for Stream compressors)
- High Pressure /Low Pressure Adjustable Switches

f) Liquid Line

- Sight Glass
- Ball Valve
- Liquid Line Filter Drier

g) Liquid Receiver

- Inlet & Outlet Valves for isolation
- Sight Glass
- Pressure Relief Valve

h) Sturdy & Robust Mounting Frame

- Lesser Noise & Vibration
- Easy access to components

Optional Offerings:

- Step Capacity Control Kit
- Stepless Control with Digital Kit/VFD
- Head Cooling Fan
- Electronic Oil Level control
- Racks with more than 4 compressors available on special request
- Condenser Sub Board

Adequately sized & ventilated electrical panel

- Equipped with Circuit Breakers & Thermal Overload Protection for individual compressors
- Includes phase failure & voltage protection
- Electronic Rack Controller with display & complete wiring for Compressor Pack Control & Management
- Electronic Controller can be provided with multiple flexible options (alarms, additional i/o relays for safety & control, communication etc...)





Multi-Compressor Pack Salient Features



Oil Level Regulator With Sight Glass

- Robust Design
- Controls Oil Level
- Active Oil Management With Safety Alarm (Electronic Only)
- Electronic Oil Control Optional



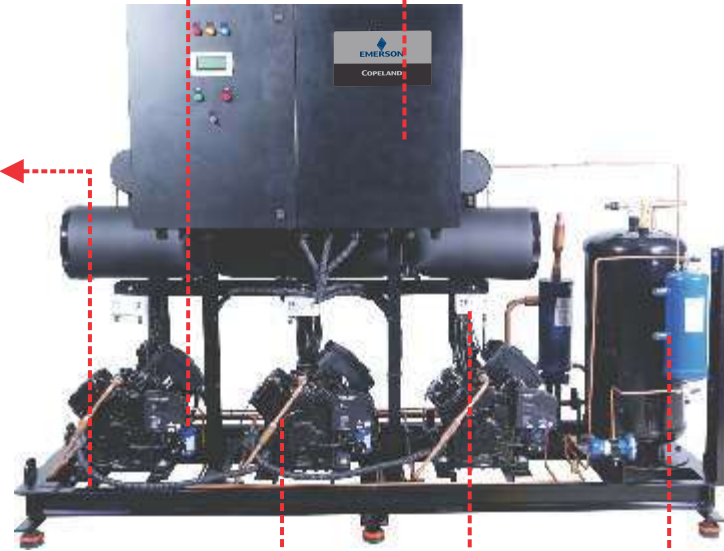
Electrical Panel With Dixell Electronics

- Optimized Algorithms For Efficient Compressor Rack Control
- Easy To Configure & Flexible
- Easy To Read Display



Mounting Frame

- Robust & Sturdy MS Frame To Reduce Noise & Vibration
- Easy Serviceability
- Spring Mounted To Reduce Vibration



Standard/Stream Semi-Hermetic Compressor

- High Performance & High Reliability
- Coresense™ With Advanced Diagnostics
- Quiet Operation



Oil Reservoir, Oil Separator & Oil Filter

- Effective Oil Management
- Maintains Oil Level
- Removes Impurities
- Oil Sight Glass



Scroll Compressor

- Compact & Light Racks
- Smooth Compression; Quiet In Operation
- High seasonal efficiency with Vapor Injection



Dual Pressure Switches

- Compressor Protection Against Abnormal Pressures
- Adjustable Pressures And Differentials

Multi-Compressor Pack

Salient Features



Suction Stubs With Ball Valves

- Suction Stubs With Easily Accessible Ball Valves For Isolation During Service & Breakdown



Suction Header

- Smooth & Optimized Distribution Of Refrigerant
- Adequately Sized & Insulated
- Work As Suction Accumulator
- Replaceable Core Suction Filters



Large Volume Liquid Receiver

- Pressure Relief Safety Valve
- Sight Glass
- Service Valves



Suction Line Filter Drier

- Replaceable Core; Easy For Servicing



Liquid Line Filter Drier

- Replaceable Core; Easy For Servicing



Vibration Eliminators

- Dampening Vibration



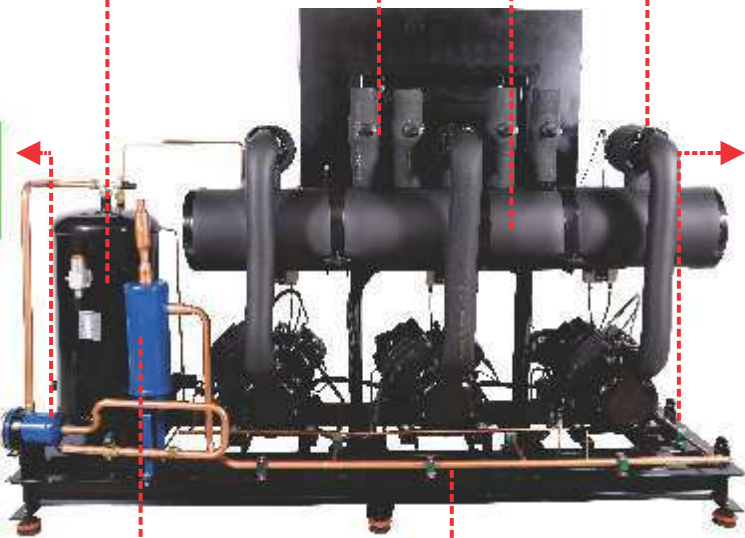
Oil Separator

- Flanged Type Design; Easier For Servicing Of Float
- Serviceable Oil Separator With High Degree Of Oil Separation Efficiency



Common Discharge Header

- Adequately Sized To Avoid Oil Traps
- Heavy Gauged Discharge Piping
- Adequately Protected Within Rack Frame



Our Manufacturing Known For Design & Engineering Excellence

Manufacturing Capabilities

Copeland™ products from Emerson have been all about high performance and value, for years. The company is committed to continuous technical development, while maintaining the traditional values of Copeland for refrigeration.

Emerson's full fledged manufacturing facility at the Cold Chain & Distribution Center, Chakan, Pune is a sterling example of the company's commitment to excellence and

the betterment of the Indian cold chain industry. The Centre's assembly line is capable of handling larger refrigeration systems like Semi-Hermetic, Scroll & Reciprocating Condensing Units & Multi-Compressor Pack. With local manufacturing, Emerson customers will now be able to get customized products according to their requirement, with faster lead times.

Supermarket
Low Temperature
Compressor Rack

Operating Temperature : -22°C
Condensing Temperature : 47°C
Return Gas Temperature : 38°C

1/2" Coasting : 60
Water Separator : 60
Refrigerant : R-404A
Refrigerated Capacity : 20 ton

The Emerson Compressor Features

- Integrated economizer for sub-zero operation and high condensing temperature.
- Stroke efficiency (due to wide temperature) design helps you maximize the working hours of your cold chain.
- Good compressor - multiple applications in best efficiency.

EM Number : P01-10-12-18
Country : Philippines

Part of Emerson
EMERSON

Bananas, Mangoes
Cold Room Compressor Rack

Storage Area : 10,000 kg (20,000 lbs)
Refrigerant : R-134a
Refrigerated Capacity : 10.2 ton (22,460 lbs)

Refrigerant : R-134a (R134a)
Storage : 10,000 kg (22,460 lbs)
Daily loading : 1,000 kg (2,200 lbs)
Storage Temperature : 12°C
Storage RH : 85%

The Emerson Compressor Features

- The scroll design makes a compact scroll position and better overall cooling, eliminating the need for any clearance during start-up.
- Variable speed operation system provides great flexibility and increased operational range in wide application range.
- High efficiency scroll design lower operating costs.

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Design Expertise

Emerson's extensive engineering and manufacturing experience has been the key factor in the winning design of these products, manufactured in one of the most advanced facilities in India. The Multi-Compressor Pack Units deliver a powerful performance owing to the use of Advanced CAE Technologies. Also, the components are sourced internationally and have been subjected to stringent Emerson's Qualification Standards.

All Emerson Design Engineers are highly specialized in the area of refrigerated facility design and have decades of experience in this field. They are trained at the highest level in the area of refrigeration systems & design. Emerson

leverages its vast global network of R&D and best-In-Industry experience to ensure it delivers on the commitment of efficiency & quality.

Multi-Compressor Pack - Cold Chain Applications

- Food Processing
- Frozen Foods
- Logistics
- Food Retail
- Multipurpose & Warehouse Type Cold Storages
- Process Chilling



Emerson Cold Chain & Distribution Center



Emerson Cold Chain & Distribution Centre is a state-of-the-art, 25,000-square-meter facility situated in Chakan (Pune), showcasing the wide range of technology and service developed for the cold chain industry. This includes custom built products like an assembly line for condensing units & large capacity Multi-Compressor Packs suited for Indian conditions. It features project design services for assisting contractors, dealers and end-users to ensure that their cold chain project is optimally designed and the right cooling equipment is selected to meet all customer expectations.

The Center provides training to contractors on product selection and technology options appropriate for various refrigeration applications. In addition to this, the facility features a state-of-the-art Semi-Hermetic compressor repair & overhauling center equipped with best-in-class tools & equipment for servicing & testing.

Design Services- Customized Refrigeration Solutions For Your Project

Optimally Designed Comprehensive Solutions. For the refrigeration industry, the equipment selection, project design and construction as well as after-sales services play a crucial role in the implementation of a project. From heat load calculation to equipment selection, Emerson works with you every step of the way providing customized refrigeration solutions that help to ensure your refrigeration project is optimally designed.

Our Design Team -Qualified & Committed To Deliver

Emerson design engineers bring to the table a world of experience culled from Emerson facilities the world over. They are highly specialized in the area of refrigerated facility design (with each having over 10 years of field experience). They are trained at the highest level in the area of refrigeration systems & design and leverage an experience borne from a global network of R&D. Emerson engineers are truly equipped and committed to provide you efficient & quality solutions for your cooling needs.





Educational Services- Developing Industry Awareness and Instilling Best Practices

Emerson's Educational Services group delivers comprehensive training programs that not only cover essential service skills, they also keep you up-to-date on emerging technologies. Whether it's learning new techniques in refrigeration system maintenance or designing a cold room or implementing a comprehensive energy management program for supermarkets, Emerson gives you the knowledge to succeed.

Emerson Instructors- Recognized Industry Leaders

Every Emerson course is led by a certified instructor. They are a fine blend of exceptional knowledge and an in-depth understanding of refrigeration principles, technology and the industry as a whole. The instructors have extensive hands-on experience; an innate understanding of the contractor's business needs and concerns, and a proven ability to hold the attention of the participants to provide the best learning experience possible.



Cold Chain Solutions That Span Across The Nation



- 3 Sales Offices
- 10 Warehouses
- 2 Cold Chain Centres

-  Head Office
-  Sales Office
-  Cold Chain Centre
-  Factory
-  Warehouse

You are never too far from an Emerson solution with its extensive service network, spread across the country. The service engineers are comprehensively trained, committed and well-equipped to deliver quality solutions to meet your cooling needs.

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. Our products are designed and adapted for fixed locations. For mobile applications, failures may occur. The suitability for this has to be assured from the plant manufacturer, which may include making appropriate tests.

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.

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