

# Air-cooled Condensing Units

*KHZ\* LVL Series with vapor injection technology*

*Low temperature refrigeration applications range from 7.5 To 15 HP*





## *Pioneering technologies for best-in-class products*

When it comes to new technologies that have set benchmarks for the industry, Copeland has led from the front. For more than 80 years, Copeland has ceaselessly introduced innovative technologies and solutions to the HVACR market. From the first Semi-Hermetic and Hermetic Compressors in the 1940s and 1950s, to the high efficiency Discus® Semi-Hermetic and Copeland

### ***KHZ\* LVL condensing units for low Temperature***

The KHZ\*LVL- 7.5 to 1 SHP CDU platform has been developed specifically for low temperature refrigeration applications. The condensing units are designed by integrating the highly efficient ZFI\*KQE Vapor Injection compressor which delivers 20% higher efficiency compared to single stage compressors. The units are equipped with CoreSense to control the discharge line temperature using Vapor Injection thereby ensuring reliability at low temperature operation.

These condensing units are offered with full scope of supply and are manufactured at our Cold Chain & Distribution Center, Atit, Satara

With this product range, we offer the widest range of Scroll Condensing Units from 2 to 1 SHP (ZXL, KHZ\* LVL) for low temperature refrigeration applications. With local manufacturing & stocking, our customers

will now be able to get the units with faster lead times and customized products according to their requirement. They feature excellent quality and are traditionally well known in the refrigeration industry.

Scroll compressors of the 1980s and 1990s, Copeland has been the pioneer of the industry. Today, Copeland continues to build upon that success with new products such as the Copeland scroll Fusion Semi-Hermetic Scroll and Stream® line-up of Semi-Hermetic Reciprocating Compressors, both equipped with compressor electronics module technology for optimal compressor protection and system diagnostics. Through this, Copeland has developed an unequalled range of solutions for the refrigeration, heating and air conditioning markets.





## ***About Copeland***

Copeland, a global provider of sustainable climate solutions, combines category-leading brands in compression, controls, software and monitoring for heating, cooling and refrigeration. With best-in-class engineering and design and the broadest portfolio of modulated solutions, we're not just setting the standard for compressor leadership; we're pioneering its evolution. Combining our technology with our smart energy management solutions, we can regulate, track and optimize conditions to help protect temperature-sensitive goods over land and sea, while delivering comfort in any space. Through energy-efficient products, regulation-ready solutions and expertise, we're revolutionizing the next generation of climate technology for the better.

## ***Core offerings***



### **Air Conditioning**

Technologies that deliver high-quality, reliable and energy efficient HVAC solutions for commercial & residential applications.



### **Cold Chain**

Copeland revolutionizes how food is kept cold and safe as it is transported from farm to fork.



### **Food Services**

Proven refrigeration solutions to protect and safeguard food and the environment



### **Sanitary Heating**

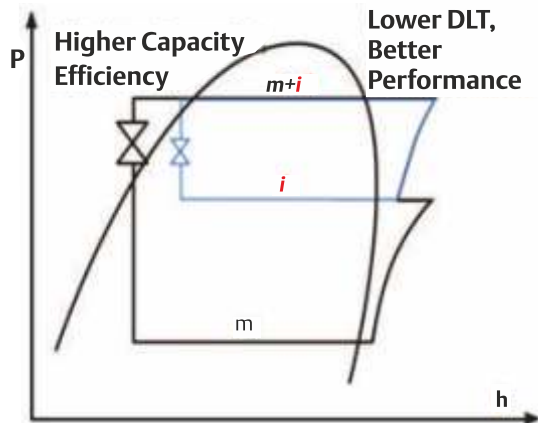
Copeland heat pumps provide high reliability and performance for delivering hot water solutions



## Key Features

### Vapor injection technology for 20% higher efficiency

- ° It allows ZFI \* KQE compressors to perform higher efficiency than single-stage compressors at low temperature operation
- ° Improves system capacity by 40% and efficiency by 20% on average
- ° Low temperature operation reliability due to vapor injection technology

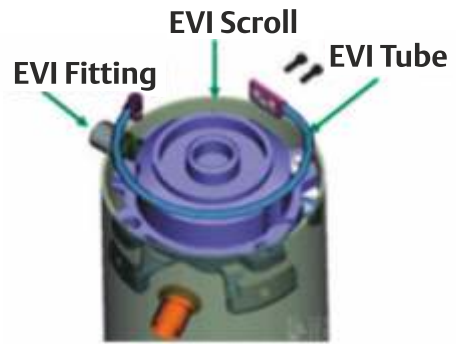


### Scroll Efficiency and Reliability

- ° COP improvement leads to annual electrical savings of 15-20% as compared with reciprocating systems
- ° 70% fewer moving parts than reciprocating

### Smooth Scroll Movement

- ° Low sound and vibration leading to reliable & peaceful operation
- ° No complex internal suction and discharge valves for quieter operation and higher reliability



### Compressor electronics module for Copeland scroll compressors

- Low temperature operation reliability due to vapor injection technology
- High discharge line temperature protection through onboard control for vapor injection
- Direct communication function by using LED inside compressor electronics module

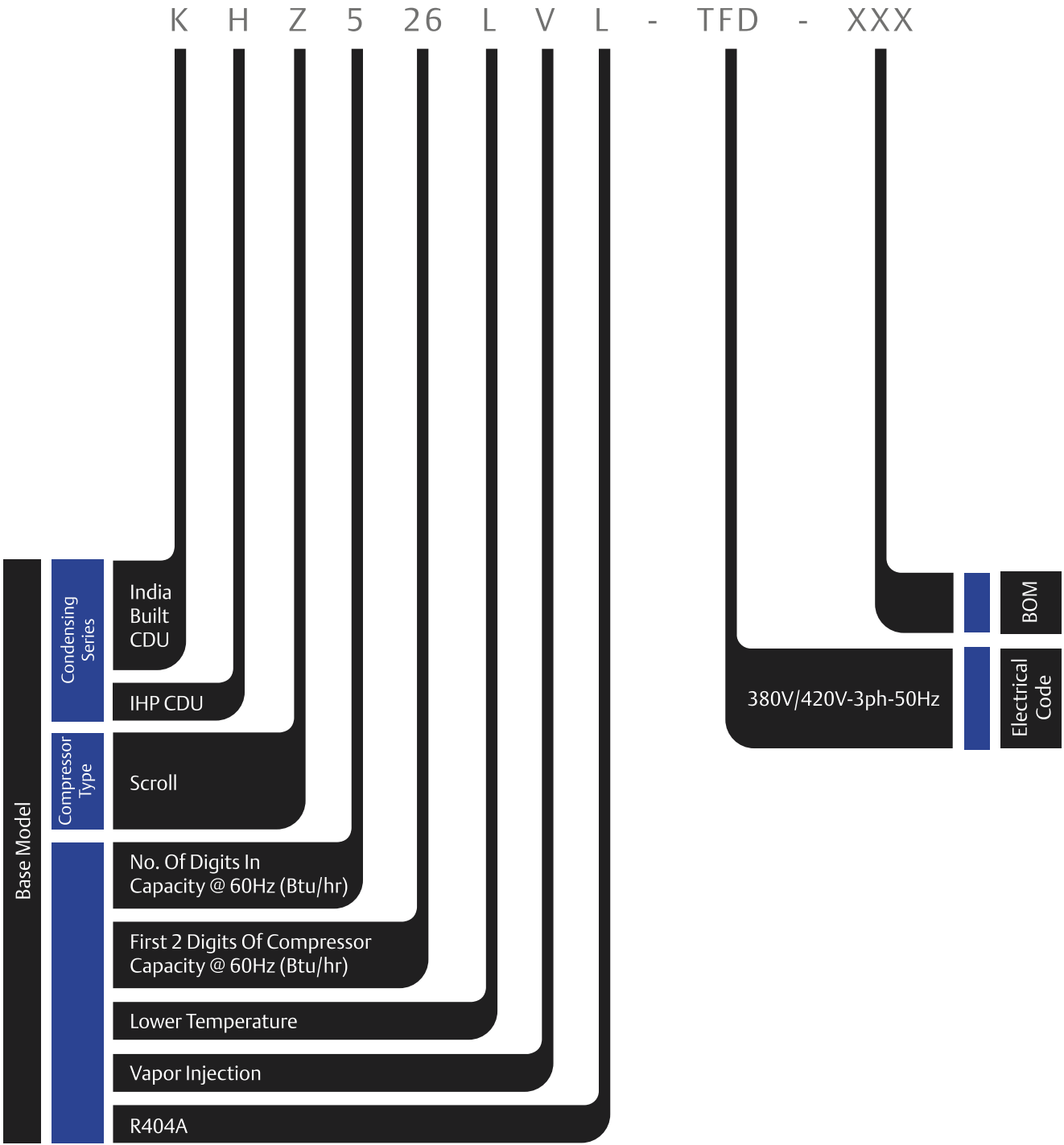
### Wide Range Operating Envelope

- ° Designed for low temp. operation; from -40°C to -4°C evaporating temperature
- ° Designed for tropical ambient operation at 46° C
- ° Low temperature operation reliability ensured by compressor electronics module

### Save on Applied Costs and Assembly Time

- ° KHZ\*LVL comes with full scope of supply (e.g. Filter Drier, Sight Glass and Moisture Indicator, Liquid Line Solenoid, Electrical Contactor) thus simplifying component sourcing
- ° Consistent quality achieved through factory built condensing unit

Nomenclature

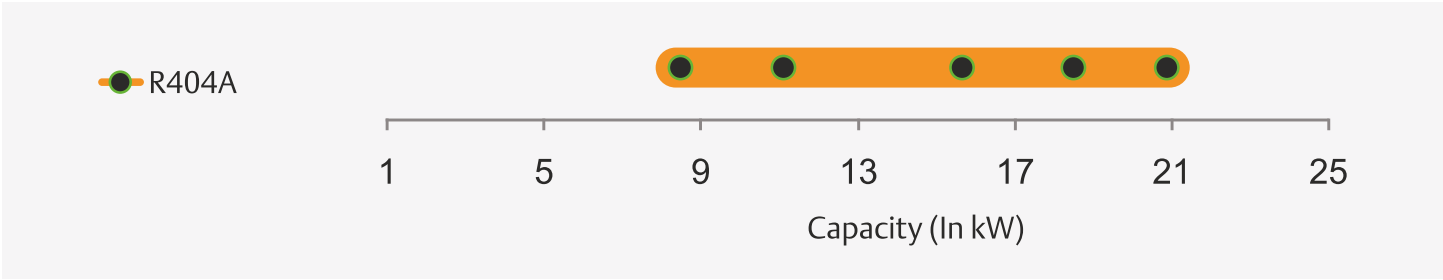


# Standard Bill of Materials

Standard BOM Content	300
Compressor - Rotalock Connection	✓
Economizer PHE Circuit	✓
Fan Motor	✓
Receiver	✓
Accumulator	✓
Sight Glass/Moisture Indicator	✓
Filter Drier	✓
Adjustable LP & Fixed HP	✓
Oil Separator	✓
Crankcase Heater*	✓
CoreSense™	✓
Compressor Contactor	✓
Electrical Box	✓

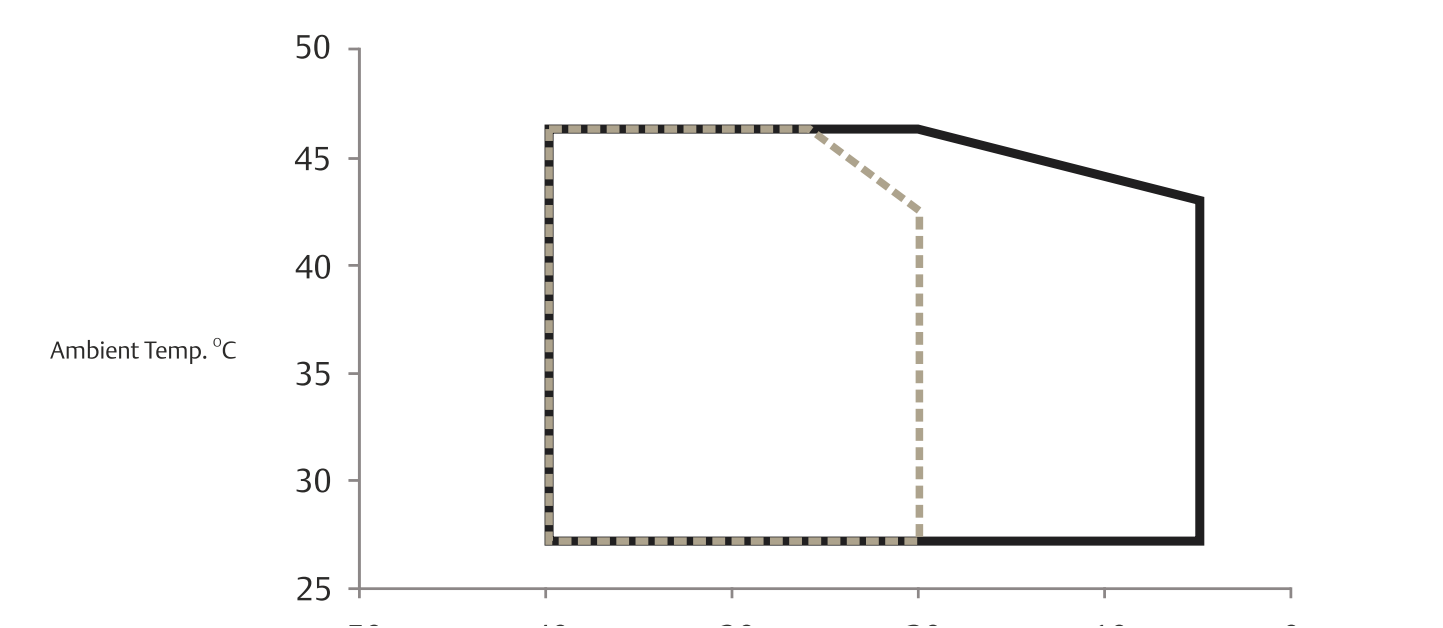
Note: Optional Accessories: Canopy. For BOM with Canopy, Please check with Emerson representative

## Product Range



Note: The above capacity data are at the following condition.  
Ambient Temp. + 38°C, Evaporating Temp. - 25°C, Return Gas Temp. + 18.3°C, Subcooling 2.8K

## R404A Operating Envelope



Standard Bill of Materials

R-404A / 3 phase				Evaporating Temperature (°C)										
Model	Nominal HP	Ambient Temp. (°C)		-40	-35	-30	-25	-20	-15	-10	-5	0	5	7
KHZ526LVL	7.5	Q	27	4.95	6.03	7.27	8.69	10.33	12.20	14.36	16.80	19.24	21.68	22.66
			32	4.92	5.94	7.11	8.48	10.05	11.88	13.97	16.37	18.77	21.17	22.13
			38	4.90	5.83	6.92	8.20	9.70	11.46	13.47	15.79	18.11	20.43	21.36
			43	4.89	5.74	6.75	7.96	9.38	11.06	13.01	15.27	17.53	19.79	20.69
			46	4.89	5.68	6.65	7.80	9.18	10.81	12.72	14.93	17.45	20.32	-
		P	27	3.87	4.07	4.27	4.47	4.69	4.91	5.14	5.39	5.64	5.89	5.99
			32	4.22	4.44	4.67	4.90	5.13	5.38	5.63	5.90	6.17	6.44	6.55
			38	4.72	4.98	5.24	5.50	5.76	6.04	6.31	6.61	6.91	7.21	7.33
			43	5.25	5.53	5.82	6.10	6.39	6.68	6.99	7.31	7.63	7.95	8.08
			46	5.62	5.92	6.22	6.52	6.82	7.14	7.46	7.80	8.15	8.54	-

KHZ536LVL	10	Q	27	6.41	7.82	9.49	11.34	13.34	15.44	17.62	19.85	-	-	-
			32	6.23	7.62	9.23	11.03	12.94	14.95	17.02	19.12	-	-	-
			38	6.00	7.34	8.90	10.60	12.41	14.30	16.23	18.18	-	-	-
			43	5.79	7.09	8.58	10.21	11.93	13.71	15.51	17.34	-	-	-
			46	6.08	7.44	9.01	10.75	12.60	14.52	16.50	18.50	-	-	-
		P	27	4.71	4.97	5.25	5.54	5.84	6.15	6.48	6.83	-	-	-
			32	5.10	5.39	5.71	6.04	6.38	6.73	7.11	7.50	-	-	-
			38	5.61	5.96	6.34	6.73	7.13	7.54	7.98	8.44	-	-	-
			43	6.08	6.49	6.92	7.37	7.83	8.31	8.80	9.33	-	-	-
			46	6.38	6.83	7.30	7.79	8.29	8.81	9.35	9.92	-	-	-

KHZ550LVL	15	Q	27	8.60	10.48	12.64	15.11	17.92	21.12	24.74	28.82	-	-	-
			32	8.40	10.24	12.33	14.70	17.40	20.46	23.92	27.83	-	-	-
			38	8.14	9.91	11.91	14.15	16.70	19.59	22.85	26.54	-	-	-
			43	7.89	9.60	11.51	13.64	16.06	18.79	21.89	25.39	-	-	-
			46	7.73	9.40	11.25	13.32	15.65	18.28	21.28	24.66	-	-	-
		P	27	6.05	6.45	6.83	7.21	7.59	7.98	8.40	8.85	-	-	-
			32	6.58	7.01	7.42	7.83	8.24	8.67	9.12	9.61	-	-	-
			38	7.32	7.78	8.23	8.67	9.12	9.58	10.07	10.60	-	-	-
			43	8.01	8.50	8.98	9.45	9.93	10.42	10.94	11.50	-	-	-
			46	8.47	8.98	9.47	9.96	10.45	10.96	11.50	12.08	-	-	-

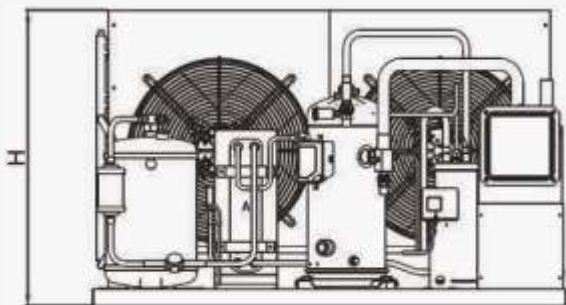
KHZ559LVL	18	Q	27	10.29	12.59	15.21	18.21	21.65	25.58	30.04	35.09	-	-	-
			32	10.02	12.26	14.81	17.71	21.03	24.81	29.11	33.98	-	-	-
			38	9.66	11.83	14.27	17.05	20.21	23.81	27.91	32.56	-	-	-
			43	9.34	11.44	13.79	16.44	19.46	22.91	26.83	31.29	-	-	-
			46	9.14	11.19	13.48	16.06	18.99	22.34	-	-	-	-	-
		P	27	7.27	7.78	8.28	8.77	9.27	9.79	10.36	11.00	-	-	-
			32	7.92	8.48	9.02	9.55	10.09	10.65	11.27	11.95	-	-	-
			38	8.83	9.43	10.02	10.60	11.18	11.80	12.47	13.20	-	-	-
			43	9.68	10.33	10.96	11.58	12.20	12.86	13.57	14.35	-	-	-
			46	10.25	10.92	11.57	12.21	12.86	13.55	-	-	-	-	-

KHZ568LVL	20	Q	27	11.56	14.12	17.08	20.47	24.34	-	-	-	-	-	-
			32	11.25	13.73	16.60	19.87	23.62	-	-	-	-	-	-
			38	10.83	13.22	15.96	19.09	22.67	-	-	-	-	-	-
			43	10.45	12.75	15.38	18.38	21.81	-	-	-	-	-	-
			46	10.21	12.45	15.01	17.93	21.27	-	-	-	-	-	-
		P	27	8.38	9.00	9.60	10.20	10.81	-	-	-	-	-	-
			32	9.15	9.82	10.47	11.12	11.78	-	-	-	-	-	-
			38	10.21	10.94	11.65	12.35	13.08	-	-	-	-	-	-
			43	11.21	12.00	12.75	13.51	14.28	-	-	-	-	-	-
			46	11.87	12.69	13.47	14.26	15.06	-	-	-	-	-	-

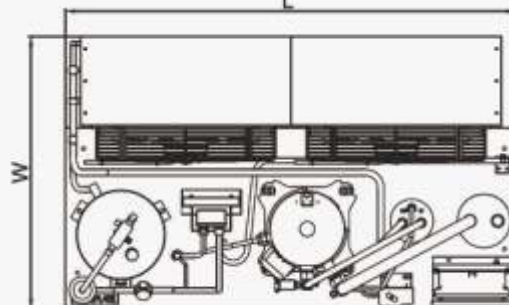
## Technical Data R404A

	KHZ526LVL	KHZ536LVL	KHZ550LVL	KHZ559LVL	KHZ568LVL
Electrical Code	TFD	TFD	TFD	TFD	TFD
Compressor Model	ZFI26KQE	ZFI36KQE	ZFI50KQE	ZFI59KQE	ZFI68KQE
Receiver (Lit)	12	18	21	21	21
Chassis Size (LxWxH) mm	1130 X 680 x 695	1330 X 820 x 822	1640 X 820 x 942	1640 X 820 x 942	1640 X 820 x 942
No. Of Fans/Fan Motor Power	2/470W	2/800W	2/800W	2/800W	2/800W
Air Flow In m3/hr	4111	6300	7500	7500	7500
Return Gas Line	1 1/8	1 3/8	1 5/8	1 5/8	1 5/8
<b>Liquid Line</b> Size (in)	1/2	1/2	5/8	5/8	5/8
Locked Rated Amperes	74	102	118	118	139
Rated Load Amperes	12.3	14.6	21.7	23.0	20.2
Maximum Operating Current	13.7	16.0	25	29	30
Net Weight (kg Including Oil)	126	141	247	247	250
Oil Type	POE	POE	POE	POE	POE

KHZ\* LVL Front View



KHZ\* LVL Top View



## Typical Liquid Line Temperature In °C

R404A	Ambient Temp. °C				
Evap Temp °C	27	32	38	43	46
-40	-14.4	-12	-8.7	-5.7	-3.9
-35	-6.3	-4	-1.1	1.4	3.1
-30	-1.2	1	3.8	6.3	7.8
-25	2.9	5.1	7.9	10.3	11.1
-20	6.8	9.1	12	14.5	14.4
-15	10.4	12.7	15.7	18.2	18.9
-10	14.7	17.1	20	22.5	22.9
-5	19	21.4	24.3	25.7	24.5
0	19.5	21.4	23.8	26	27.5
5	22.1	23.9	26.3	28.4	-



## 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 Copeland stating clearly the information required. Copeland 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 Copeland 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 Copeland representative.

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### ***About Copeland***

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