

SCROLL CONDENSING UNIT



POWERED BY
COPELAND



ZB CONDENSING UNIT

High - Medium Temperature



1. Copeland ZB Compressor
2. Air Cooled Condenser
3. Receiver Tank with Valve
4. Pressure Switch
5. Filter Drier
6. Sight Glass
7. Panel Box (Electrical Box)

Nomenclature



Keys & Features

Robust and Reliable

Copeland scroll compressors have 70% fewer moving parts and a scroll compliance mechanism, making them highly durable even in harsh conditions like liquid slugging.

Scroll Wear-In

Copeland scroll compressors wear in, not out, ensuring consistent performance over time without degradation.

Low Sound and Vibration

The smooth, continuous scroll compression reduces noise, vibration, and pulsation, often eliminating the need for extra dampening components. ZB scrolls also deliver a cleaner, more pleasant sound.

Unloaded Start

Scroll sets disengage at shutdown, allowing pressure to equalize and enabling smooth, easy startup—often without the need for a start assist kit, even on single-phase models.

DU Bearings

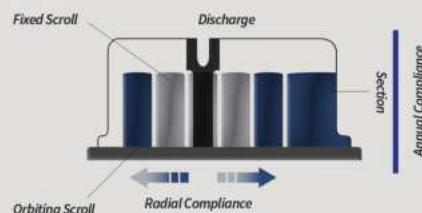
Made from low-friction PTFE-bronze, DU bearings ensure smooth operation and can withstand short periods of low lubrication, offering extra protection during flooded starts or post-defrost cycles.

Compact Design

Copeland Scroll compressors are lightweight and space-saving, ideal for condensing units and compact refrigeration systems.

Year-Round Efficiency

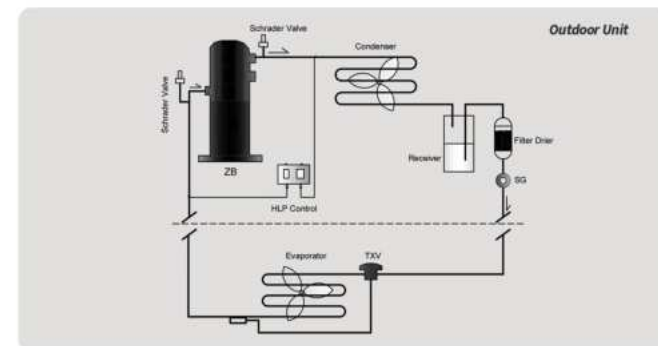
Copeland ZB Scroll is optimized for medium-high temperature applications, delivering high seasonal efficiency and lower life cycle costs.



Condensers and Compact Casing for Reliable Performance

We use high-quality condensers in our scroll units to ensure robust and efficient operation. The heat exchangers are optimized with small-diameter, internally grooved copper tubes—an established technology for enhanced heat transfer efficiency.

The compact casing for the scroll condensing unit is made of galvanized steel with a durable powder-coated finish, providing excellent corrosion resistance and long-term protection for outdoor applications.



Performance Data Scroll Copeland ZB Condensing Unit

R404A | 50 Hz | ZB Series

Model CDU	Horse Power HP	Condensing Temperature °C	Capacity kW	Evaporating Temperature °C						
				-20	-15	-10	-5	0	5	10
SC-020-ZB15	2	50	Q	1.84	2.32	2.89	3.56	4.34	5.24	6.28
			P	1.80	1.80	1.81	1.81	1.81	1.80	1.80
SC-030-ZB21	3	50	Q	2.72	3.43	4.27	5.26	6.43	7.80	9.39
			P	2.92	2.92	2.91	2.90	2.88	2.85	2.82
SC-050-ZB38	5	50	Q	4.56	5.75	7.16	8.82	10.80	13.05	15.75
			P	4.74	4.74	4.72	4.70	4.67	4.63	4.58
SC-070-ZB48	7	50	Q	5.87	7.40	9.22	11.35	13.90	16.85	20.30
			P	5.90	5.90	5.88	5.85	5.82	5.77	5.70

Notes : Suct. Superheat 10 K ; Subcooling 0 K

*cooling capacity based on design condition followed Copeland compressor capacity

Technical Data

Model CDU		SC-020-ZB15	SC-030-ZB21	SC-050-ZB38	SC-070-ZB48
Horse Power	HP	2	3	5	7
Voltage	V/Ph/Hz	220-240/1Ph/50Hz	220-240/1Ph/50Hz	380-420/3Ph/50Hz	380-420/3Ph/50Hz
Number of Fan	Pcs	1	1	2	2
Total Fan Power Input	kW	2.4	3.1	3.9	4.3
Max. Operating Current	A	12.8	16.4	12.8	14
Locked Rotor Ampere	A	58	82	65.5	101
Oil Type		POE			
Receiver Capacity	Litre	2	3	6	8
Dimensions (L x W x H)	mm	784 x 492 x 525	784 x 492 x 525	1085 x 526 x 580	1161 x 556 x 702
Suction Line	inch	3/4	3/4	7/8	7/8
Liquid Line	inch	3/8	3/8	1/2	1/2
Weight	Kg	75	80	116	135

*All information is subject to change without notice

ZSI CONDENSING UNIT

Medium - Low Temperature



1. Copeland ZSI Compressor
2. Air Cooled Condenser
3. Oil Separator
4. Receiver Tank with Valve
5. Pressure Switch
6. Filter Drier
7. Sight Glass
8. Panel Box:
 - CoreSense™
 - Terminal Box

Nomenclature



Keys & Features

Save on Applied Costs and Assembly Time

- ZSI comes with accessories (eg. filter drier, sight glass, and moisture indicator, electrical contractor) thus simplifying component sourcing.
- Consistent quality achieved through factory built Condensing Unit.

Wide Range Operating Envelope

- COP improvement leads to annual electrical savings of 10% - 30% as compared with reciprocating systems.
- 70% fewer moving parts than reciprocating.
- Superior liquid handling.

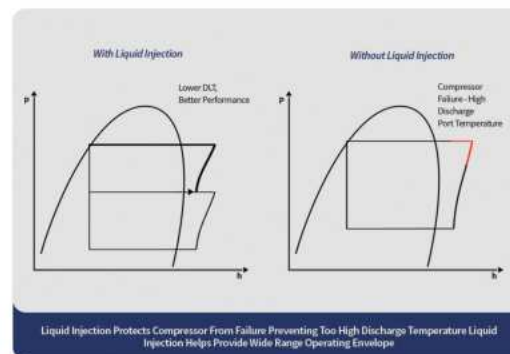
CoreSense™ for Copeland Scroll Compressors

- Low temperature to medium temperature -300°C to 50°C evaporating temperature.
- Low temperature operation reliability by CoreSense™.
- Reduced inventory levels due to wide range application.

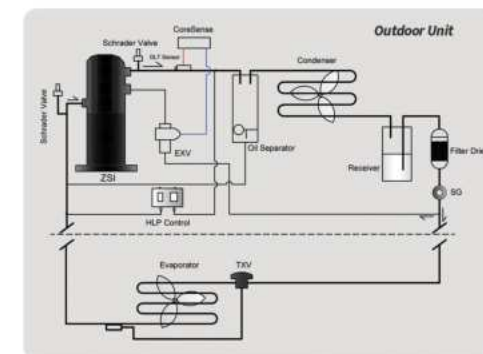
Liquid Injection Technology for Efficient Operation

ZSI indoor condensing unit powered by Copeland Scroll™ comes with Liquid Injection technology for improved performance and reliability. High discharged temperature is often a cause of compressor failure. To prevent this, refrigerant is injected mid-pocket of the scroll. The compressor then works similarly as a two-stage compressor thereby lowering discharge line temperature and improving performance.

Liquid Injection Technology for Efficient Operation



Schematic Diagram



Performance Data Scroll Copeland ZSI Condensing Unit

R404A | 50 Hz | ZSI Series

Model CDU	Horse Power HP	Condensing Temperature °C	Capacity kW	Evaporating Temperature °C						
				-30	-25	-20	-15	-10	-5	0
SC-020-ZSI06	2	50	Q	1.22	1.55	1.96	2.45	3.05	3.75	4.57
			P	1.84	1.88	1.92	1.96	1.98	1.99	1.98
SC-030-ZSI09	3	50	Q	1.47	1.96	2.52	3.17	3.93	4.82	5.88
			P	2.39	2.46	2.50	2.51	2.53	2.56	2.63
SC-050-ZSI15	5	50	Q	2.93	3.85	4.84	5.97	7.31	8.94	10.95
			P	3.68	3.82	3.98	4.14	4.28	4.37	4.37
SC-060-ZSI18	6	50	Q	3.64	4.63	5.80	7.21	8.88	10.85	13.2
			P	4.61	4.71	4.86	5.03	5.19	5.32	5.40

Notes : Suct. Superheat 10 K ; Subcooling 0 K

*cooling capacity based on design condition followed Copeland compressor capacity

Technical Data

Model CDU		SC-020-ZSI06	SC-030-ZSI09	SC-050-ZSI15	SC-060-ZSI18
Horse Power	HP	2	3	5	6
Voltage	V/Ph/Hz	220-240/1Ph/50Hz	380-420/3Ph/50Hz	380-420/3Ph/50Hz	380-420/3Ph/50Hz
Number of Fan	Pcs	1	1	2	2
Total Fan Power Input	kW	2.5	2.1	3.7	4.2
Max. Operating Current	A	13.6	6.7	11.9	13.7
Locked Rotor Ampere	A	56.6	39.2	51.5	74
Oil Type		POE			
Oil Recharge Volume	ml	562	562	1242	1774
Receiver Capacity	Litre	2	3	6	8
Dimensions (L x W x H)	mm	784 x 492 x 525	784 x 492 x 525	1085 x 526 x 580	1161 x 556 x 702
Suction Line	inch	5/8	5/8	7/8	7/8
Liquid Line	inch	3/8	3/8	1/2	1/2
Weight	Kg	80	85	100	135

*All information is subject to change without notice

ZFI CONDENSING UNIT

Low Temperature



1. Copeland ZFI Compressor
2. Air Cooled Condenser
3. Receiver Tank
4. Accumulator
5. Oil Separator
6. PHE/Economizer
7. Sight Glass
8. Filter Drier
9. Pressure Switch
10. Pressure Gauge
11. EXV
12. Panel Box:
- CoreSense™
- Electrical Box

Keys & Features Nomenclature



Vapor injection technology for higher efficiency

- Vapor injection allows ZFI* KQE compressors to perform at higher efficiencies than single-stage compressors at low temperature operation.
- Vapor injection improves system capacity and efficiency.
- COP improvement reduces energy consumption.
- Better liquid handling.

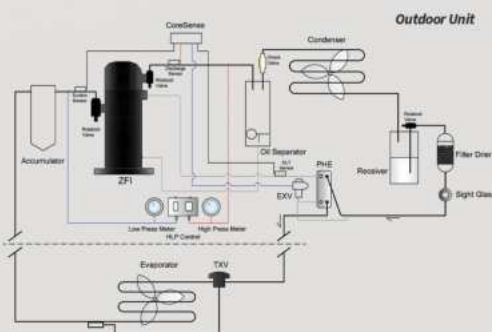
Smooth scroll movement

- Low sound and vibration leading to reliable & peaceful operation.
- No complex internal suction and discharge.

Save on applied costs and assembly time

- ZFI condensing units come fully assembled with full scope of supply (e.g. filter drier, sight glass, electrical contactor).
- Copeland quality built condensing unit.
- High discharge line temperature protection through onboard control for vapor injection.

Schematic Diagram



Performance Data Scroll Copeland ZFI Condensing Unit

R404A | 50 Hz | ZFI Series

Model CDU	Horse Power	Condensing Temperature	Capacity	Evaporating Temperature °C											
	HP	°C	kW	-40	-35	-30	-25	-20	-15	-10	-5	0	5		
SC-060-ZFI26	6	45	Q	4.93	5.83	6.92	8.22	9.77	11.60	13.75	16.25	19.10	22.40		
			P	4.52	4.73	4.92	5.10	5.27	5.43	5.57	5.70	5.83	5.94		
		50	Q	4.92	5.74	6.75	7.98	9.46	11.25	13.30	15.75	18.55	21.80		
			P	5.07	5.30	5.50	5.70	5.88	6.04	6.19	6.32	6.44	6.55		
SC-080-ZFI36	8	45	Q	6.05	7.27	8.70	10.35	12.20	14.30	16.55	19.20	-	-		
			P	5.03	5.47	5.84	6.16	6.44	6.68	6.88	7.07	-	-		
		50	Q	6.05	7.14	8.46	10.00	11.75	13.75	16.00	18.45	-	-		
			P	5.49	6.00	6.44	6.82	7.13	7.41	7.64	7.83	-	-		
SC-120-ZFI50	12	45	Q	8.09	9.57	11.55	13.95	16.70	19.70	23.00	26.40	-	-		
			P	7.05	7.41	7.80	8.18	8.52	8.87	9.23	9.61	-	-		
		50	Q	7.70	9.18	11.15	13.45	16.10	19.05	22.20	25.50	-	-		
			P	7.75	8.15	8.57	8.96	9.34	9.71	10.10	10.50	-	-		
SC-150-ZFI59	15	45	Q	9.83	11.65	14.05	16.95	20.30	24.00	27.90	32.20	-	-		
			P	8.58	9.02	9.49	9.94	10.40	10.80	11.25	11.70	-	-		
		50	Q	9.36	11.15	13.50	16.35	19.60	23.10	27.00	31.00	-	-		
			P	9.42	9.91	10.40	10.90	11.40	11.80	12.30	12.80	-	-		
SC-180-ZFI68	18	45	Q	11.05	13.10	15.85	19.15	22.90	-	-	-	-	-		
			P	9.93	10.45	11.00	11.55	12.05	-	-	-	-	-		
		50	Q	10.55	12.55	15.25	18.45	22.30	-	-	-	-	-		
			P	10.90	11.50	12.10	12.65	13.20	-	-	-	-	-		

Notes : Suct. Superheat 10 K ; Subcooling 0 K

*cooling capacity based on design condition followed Copeland compressor capacity

Technical Data

Model CDU		SC-060-ZFI26	SC-080-ZFI36	SC-120-ZFI50	SC-150-ZFI59	SC-180-ZFI68
Horse Power	HP	6	8	12	15	18
Voltage	V/Ph/Hz	380-420/3Ph/50Hz	380-420/3Ph/50Hz	380-420/3Ph/50Hz	380-420/3Ph/50Hz	380-420/3Ph/50Hz
Number of Fan	Pcs	2	2	2	2	2
Total Fan Power Input	kW	4.2	4.7	7.6	9	9.3
Max. Operating Current	A	13.7	16	25	29	30
Locked Rotor Ampere	A	74	102	100	118	139
Oil Type		POE				
Receiver Capacity	Litre	12	18	20	20	20
Dimension (L x W x H)	mm	1174 x 600 x 700	1174 x 600 x 700	1640 x 767 x 945	1640 x 767 x 945	1640 x 767 x 945
Suction Line	Inch	1 1/8	1 1/8	1 3/8	1 3/8	1 3/8
Liquid Line	Inch	1/2	1/2	5/8	5/8	5/8
Weight	Kg	127	132	217	217	220

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