

Copeland Scroll™

IZSI condensing unit for refrigeration applications

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HVAC&R ENGINEERING SPECIALISTS, SPARES & EQUIPMENT



Product Catalogue

Copeland Scroll™



EMERSON™
Climate Technologies

Pioneering Technologies For Best-In-Class Products

Emerson Climate Technologies is the world's leading provider of heating, ventilation, air-conditioning and refrigeration solutions for residential, commercial, and industrial applications. Leveraging a vast global network of sales, engineering, and manufacturing, Emerson™ has positioned itself to continue delivering the HVACR industry with advanced technologies and solutions along with superior technical support and training services.

For more than 80 years, Emerson has been introducing 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 Scroll™ compressors of the 1980s and 1990s, Emerson has been the pioneer of the industry. Today, Emerson 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 CoreSense™ technology for optimal compressor protection and system diagnostics. Through this, Emerson has developed an unequalled range of solutions for the refrigeration, heating, and air conditioning markets.

Our Vision:

Emerson Climate Technologies, With Our Partners,
Will Provide Global Solutions To Improve Human Comfort,
Safeguard Food And Protect The Environment.



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IZSI Indoor Scroll Condensing Unit Key Product Advantages

Save on Applied Costs and Assembly Time

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

CoreSense™ for Copeland Scroll Compressors

- Low temperature operation reliability due to Liquid Injection Technology
- Onboard control for Liquid Injection by sensing Discharge Line Temperature (DLT)
- Direct communication function by using LED inside CoreSense™

Wide Range Operating Envelope

- LT to MT from -30°C to 5°C evaporating temperature
- Low temperature operation reliability by CoreSense™
- Reduced inventory levels due to wide range application

Qualified for R404A, R134a*, R407*

- Multi refrigerants capability

Scroll Efficiency and Reliability

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

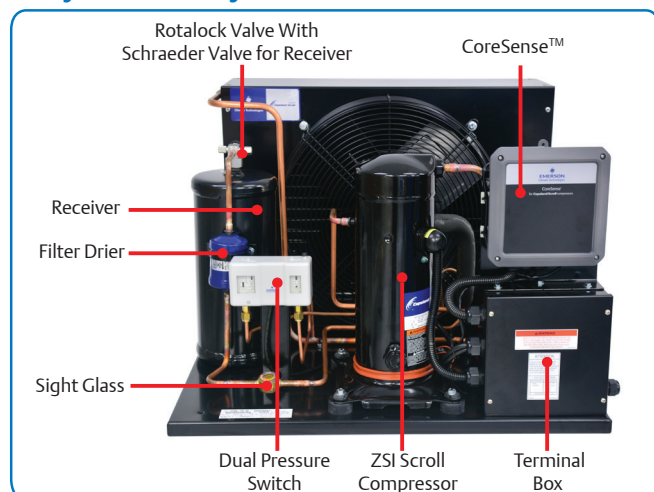
Smooth Scroll Movement

- Low sound and vibration leading to computable operation

Nomenclature

I	Z	S	I	0	6	A	E	-	P	F	Z	-	5	0	0	
I = Indoor Type CDU	Z = Scroll C = CR S = S/H K = FHP	S = Wide Operating Range	I = Liquid Injection V = Vapor D = Digital N = None	Compressor Nominal Capacity (Btu/hr) at 60Hz Rating Condition		Chassis Type	Blank = Mineral Oil E = POE Oil		PFZ = 220–240 V 1 Ph–50 Hz TFM = 380–420 V 3 Ph–50 Hz				Bill of Material			
Condensing Series	Compressor Type	Operating Range		Nominal Capacity (Btu/hr)			Oil Charged									
Base Model											Electrical Code	BOM				

Physical Layout of the Unit



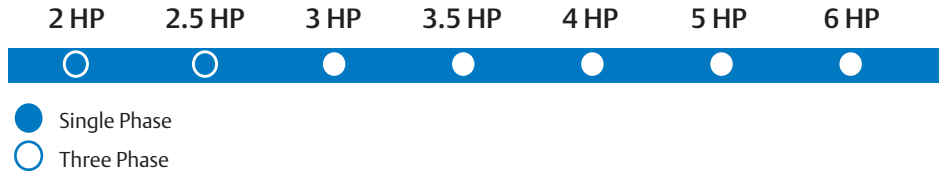
* R134a and R407 for future release

Bill of Material

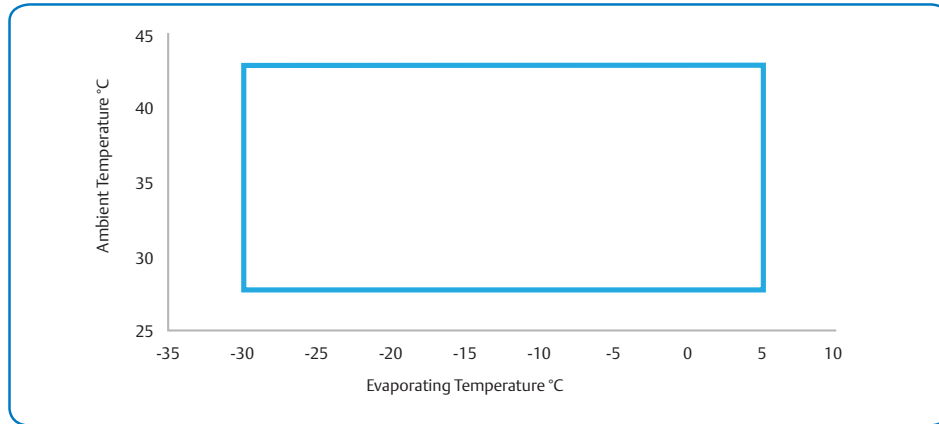
Standard BOM Content	BOM	
	500	501*
CoreSense™	✓	✓
Electrical Box	✓	✓
Crank Case Heater	✓	✓
Filter Drier - Soldered Connection	✓	
Moisture Indicator / Sight Glass	✓	✓
Dual Pressure Switch	✓	✓
Receiver with Valve	✓	✓
Fan Motor	✓	✓
Heat Exchanger	✓	✓
Compressor with Stub Tube	✓	
Compressor with Rotalock Connections		✓

*To be released in the future

IZSI Product Range



Operating Envelope R404A



Performance Data

R404A

Capacity and Power (kW), 50Hz - PFZ/TFM

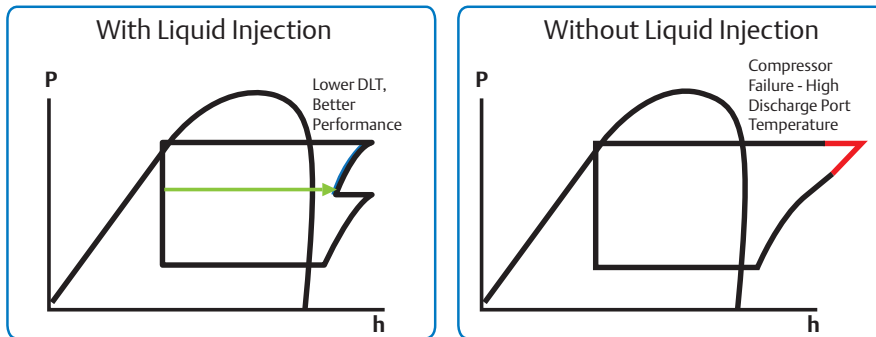
Model	Ambient Temperature °C	Capacity Evaporating Temperature								Power Evaporating Temperature							
		-30	-25	-20	-15	-10	-5	0	5	-30	-25	-20	-15	-10	-5	0	5
IZS106AE	27	1.98	2.42	2.93	3.51	4.16	4.88	5.67	6.53	1.64	1.71	1.77	1.82	1.88	1.93	1.97	2.01
	32	1.85	2.25	2.72	3.26	3.86	4.53	5.27	6.07	1.77	1.82	1.88	1.94	1.99	2.05	2.09	2.14
	38	1.67	2.04	2.46	2.95	3.50	4.11	4.78	5.52	1.94	1.99	2.05	2.11	2.16	2.22	2.27	2.33
	43	1.52	1.86	2.25	2.70	3.20	3.77	4.39	5.07	2.13	2.18	2.24	2.29	2.35	2.41	2.47	2.53
IZS108AE	27	2.26	2.78	3.36	4.02	4.76	5.57	6.46	7.43	2.03	2.08	2.14	2.22	2.30	2.37	2.42	2.44
	32	2.11	2.59	3.13	3.75	4.43	5.18	6.01	6.92	2.16	2.20	2.27	2.34	2.42	2.49	2.55	2.58
	38	1.91	2.35	2.85	3.40	4.03	4.71	5.47	6.30	2.34	2.38	2.45	2.53	2.61	2.68	2.75	2.78
	43	1.74	2.15	2.61	3.12	3.70	4.33	5.03	5.80	2.55	2.59	2.65	2.73	2.82	2.90	2.97	3.01
IZS109BE	27	2.71	3.32	4.00	4.76	5.60	6.53	7.55	8.64	1.90	2.04	2.14	2.20	2.27	2.36	2.49	2.68
	32	2.48	3.05	3.69	4.39	5.17	6.03	6.97	7.98	2.09	2.23	2.33	2.39	2.46	2.55	2.68	2.88
	38	2.16	2.69	3.27	3.92	4.63	5.42	6.28	7.22	2.37	2.50	2.59	2.66	2.72	2.81	2.94	3.13
	43	1.89	2.40	2.95	3.55	4.22	4.95	5.76	6.64	2.66	2.78	2.86	2.92	2.97	3.05	3.17	3.36
IZS111BE	27	3.09	3.89	4.74	5.68	6.72	7.89	9.20	10.65	2.08	2.29	2.43	2.53	2.63	2.77	2.99	3.31
	32	2.91	3.66	4.46	5.32	6.29	7.37	8.59	9.94	2.36	2.58	2.73	2.83	2.93	3.07	3.28	3.58
	38	2.69	3.38	4.10	4.88	5.75	6.72	7.83	9.06	2.80	3.02	3.15	3.24	3.33	3.44	3.62	3.90
	43	2.49	3.13	3.79	4.49	5.28	6.16	7.16	8.28	3.24	3.44	3.55	3.61	3.67	3.76	3.90	4.14
IZS114CE	27	3.99	4.92	5.98	7.17	8.49	9.94	11.51	13.21	2.88	2.98	3.15	3.35	3.55	3.73	3.87	3.93
	32	3.73	4.59	5.57	6.68	7.90	9.24	10.71	12.29	3.11	3.21	3.37	3.57	3.77	3.96	4.11	4.19
	38	3.40	4.19	5.08	6.07	7.18	8.39	9.71	11.15	3.45	3.54	3.70	3.90	4.12	4.33	4.50	4.61
	43	3.13	3.85	4.66	5.57	6.57	7.68	8.89	10.20	3.83	3.91	4.07	4.28	4.51	4.74	4.93	5.07
IZS115CE	27	4.31	5.42	6.58	7.84	9.24	10.79	12.51	14.42	3.18	3.23	3.37	3.59	3.87	4.19	4.54	4.89
	32	4.09	5.15	6.23	7.40	8.67	10.08	11.65	13.39	3.52	3.61	3.78	4.00	4.28	4.58	4.90	5.21
	38	3.83	4.80	5.78	6.81	7.92	9.15	10.52	12.06	3.83	4.80	5.78	6.81	7.92	9.15	10.52	12.06
	43	3.57	4.46	5.33	6.22	7.18	8.25	9.44	10.77	4.32	4.51	4.74	4.98	5.25	5.51	5.76	5.97
IZS118DE	27	5.78	7.03	8.46	10.05	11.81	13.74	15.83	18.07	3.85	4.05	4.30	4.59	4.89	5.18	5.44	5.64
	32	5.46	6.63	7.96	9.43	11.07	12.86	14.80	16.89	4.18	4.37	4.62	4.91	5.22	5.51	5.77	5.98
	38	5.02	6.10	7.31	8.65	10.13	11.75	13.51	15.42	4.65	4.84	5.09	5.38	5.69	5.99	6.26	6.47
	43	4.59	5.59	6.70	7.94	9.31	10.82	12.47	14.27	5.21	5.38	5.61	5.89	6.18	6.47	6.73	6.94

Notes: 1. All values rated at return gas temperature: 18.33°C and subcooling: 2.77°C
2. Units are in Kilowatts (kW) for Capacity and Power

Family				IZSI						
Nominal Rating	Horsepower	HP	2.0	2.5	3.0	3.5	4.0	5.0	6.0	
Model Name			IZSI06AE	IZSI08AE	IZSI09BE	IZSI11BE	IZSI14CE	IZSI15CE	IZSI18DE	
Compressor	Model Name	R404A	ZSI06KQE	ZSI08KQE	ZSI09KQE	ZSI11KQE	ZSI14KQE	ZSI15KQE	ZSI18KQE	
	Rated Load Ampere	R404A	Amp	13	13	6	8	9	10	11
	Locked Rotor Ampere	R404A	Amp	57	72	40	52	52	52	74
	Oil Type	R404A		POE	POE	POE	POE	POE	POE	POE
	Oil Recharge Volume	R404A	mL	562	562	562	1242	1242	1242	1774
Others	Oil Separator	Volume	Liters	0.6	0.6	0.6	1.2	1.2	1.2	1.8
	Receiver Volume	R404A	Liters	2.5	2.5	5.0	5.0	5.0	5.0	7.0
	Dimension	WxDxH	mm	716 x 538 x 470	716 x 538 x 470	738 x 674 x 521	738 x 674 x 521	738 x 674 x 572	738 x 674 x 572	1045 x 679 x 557
	Weight	Net	kg	65	65	70	78	80	80	85

Liquid Injection Technology for Efficient Operation

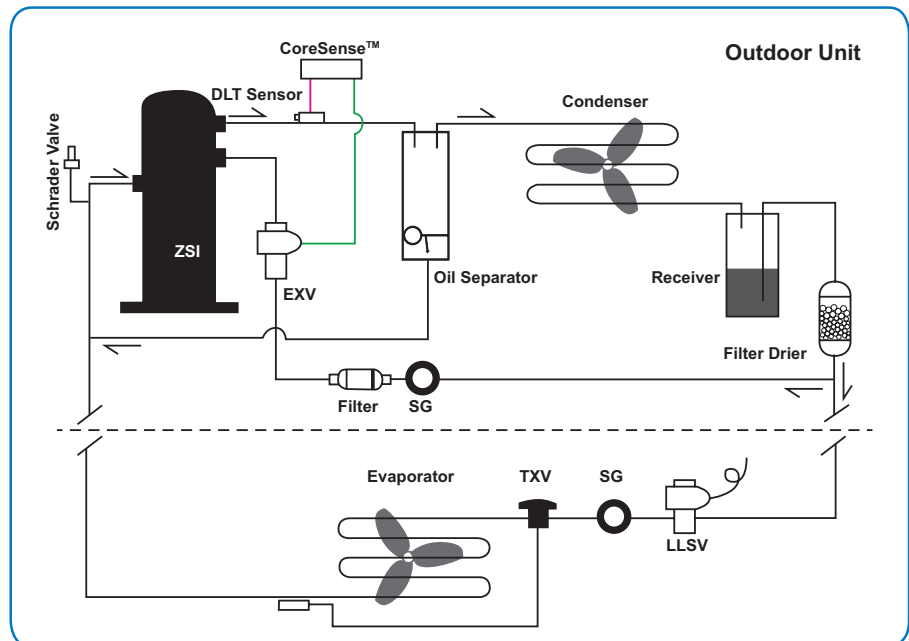
IZSI indoor condensing unit powered by Copeland Scroll™ comes with Liquid Injection technology for improved performance and reliability. High discharge temperature is often a cause of compressor failure. To prevent this, refrigerant is injected mid-pocket of the scroll. The compressor then works similarly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



Liquid Injection Protects Compressor From Failure by Preventing Too High Discharge Temperature
Liquid Injection Helps Provide Wide Range Operating Envelope

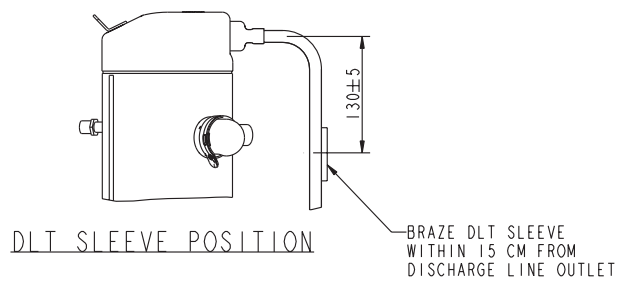
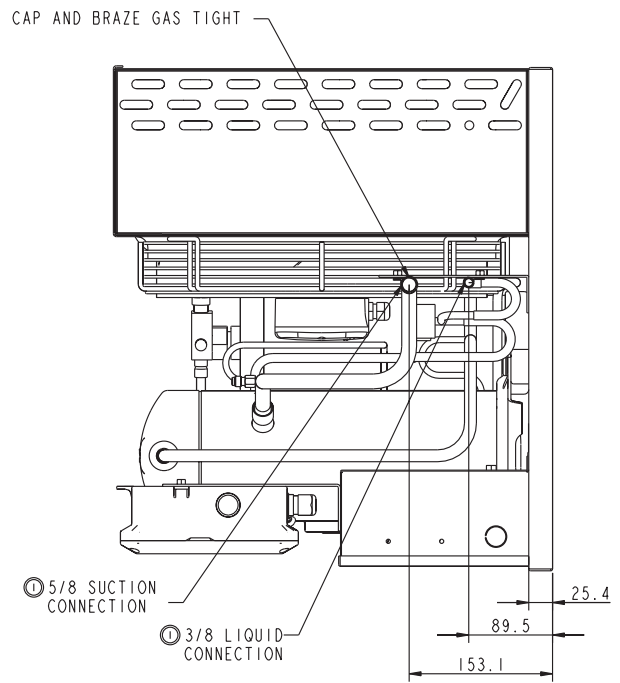
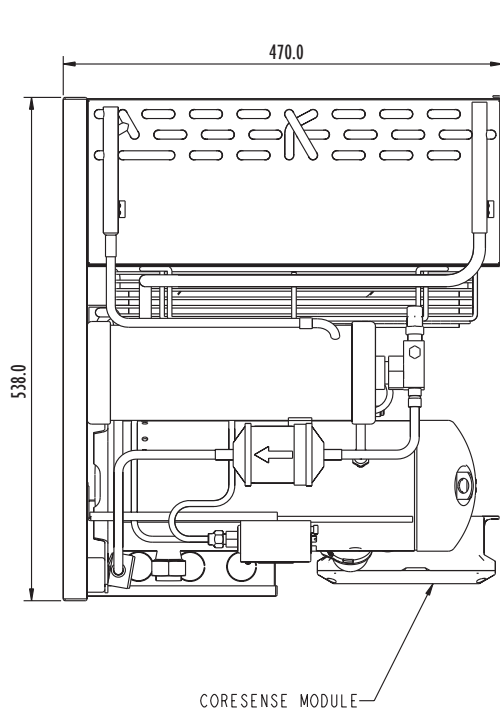
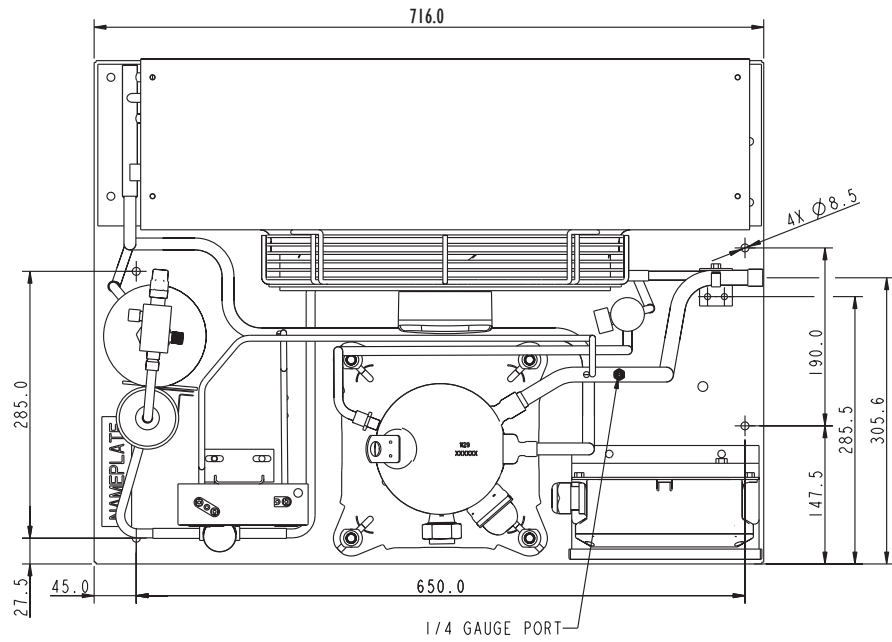
Schematic Diagram

- Similar to a 2-stage Cycle but Accomplished with Single Scroll Compressor
- Liquid Injection Controlled by CoreSense™ Module
- DLT Sensor Signals EXV to Control the Flow Depending on Discharge Line Temperature



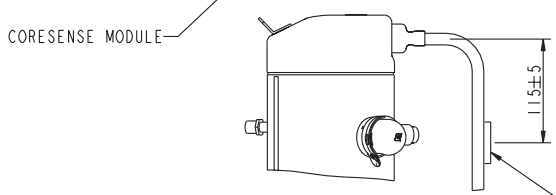
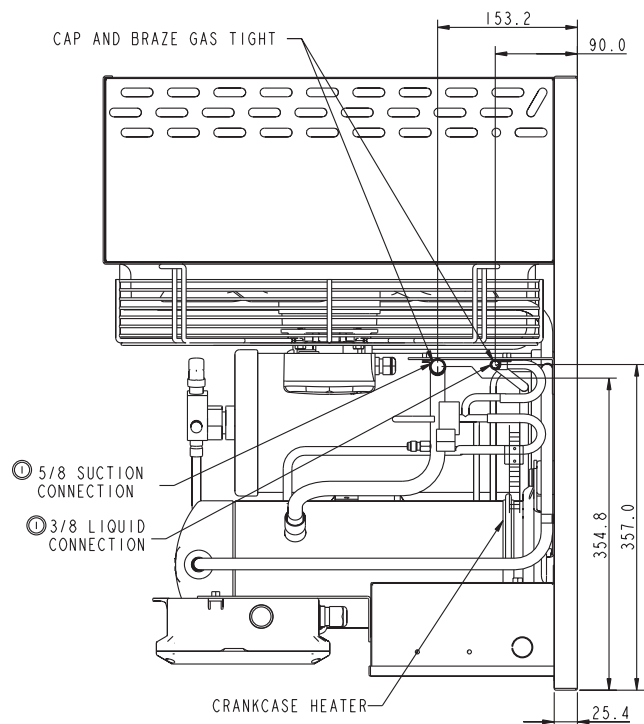
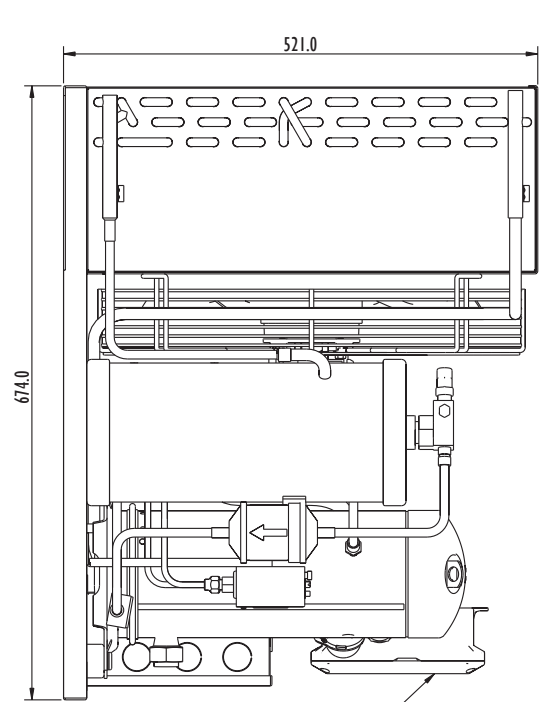
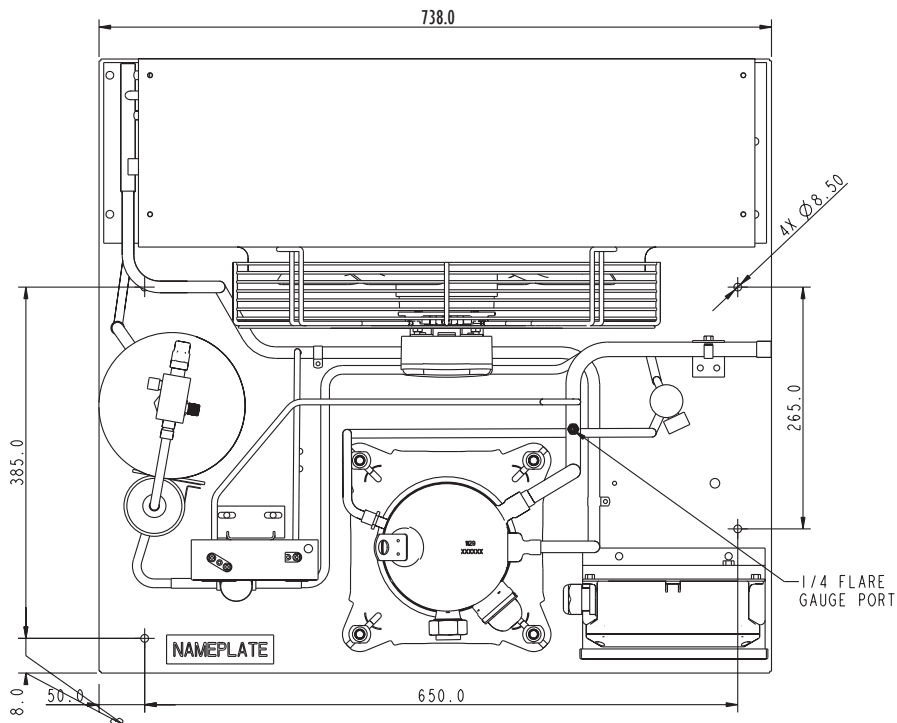
Dimensional Drawings

IZSI06AE , IZSI08AE



Dimensional Drawings

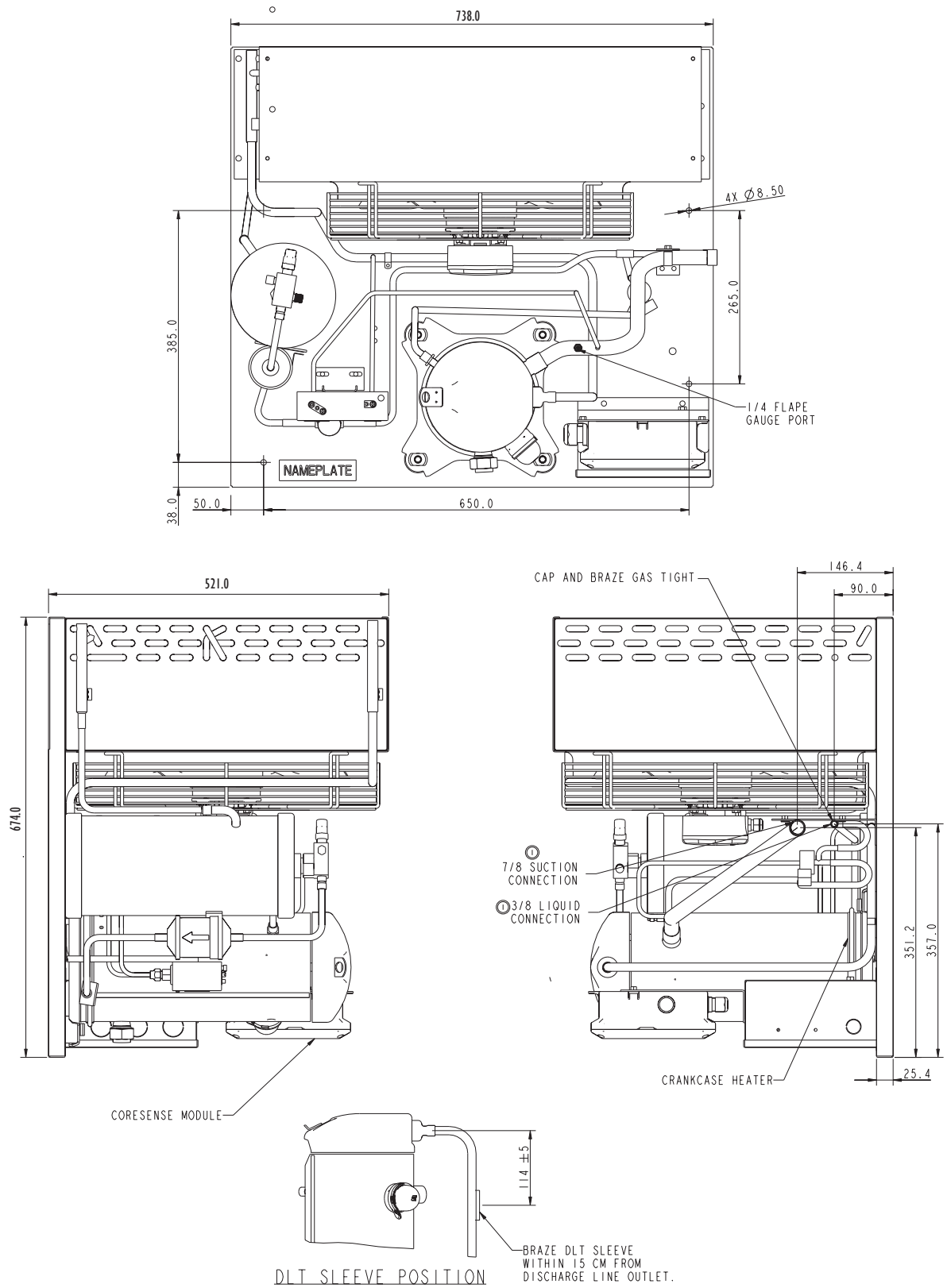
IZSI09BE



DLT SLEEVE POSITION
BRAZE DLT SLEEVE WITHIN 15 CM FROM DISCHARGE LINE OUTLET.

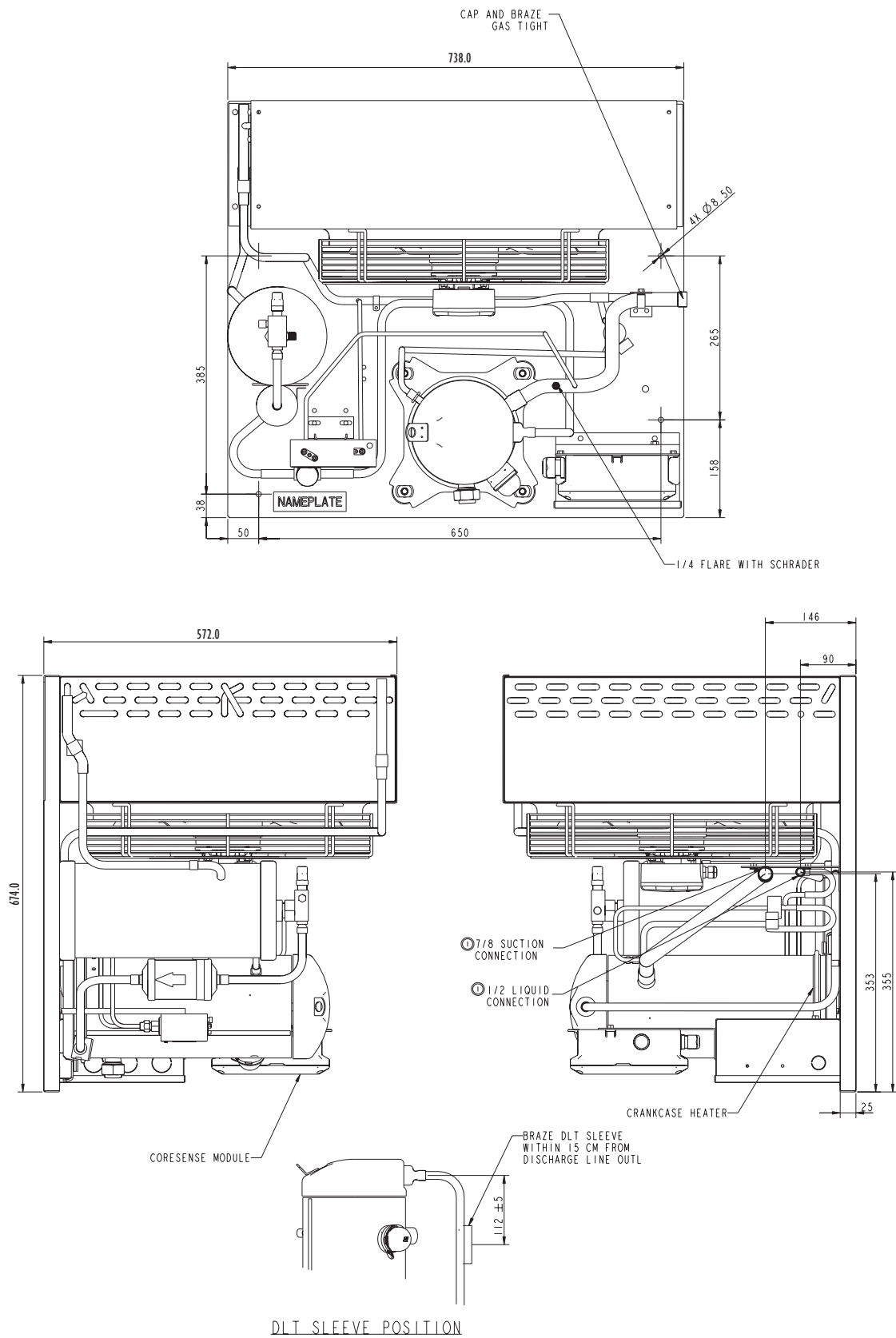
Dimensional Drawings

IZSI11BE



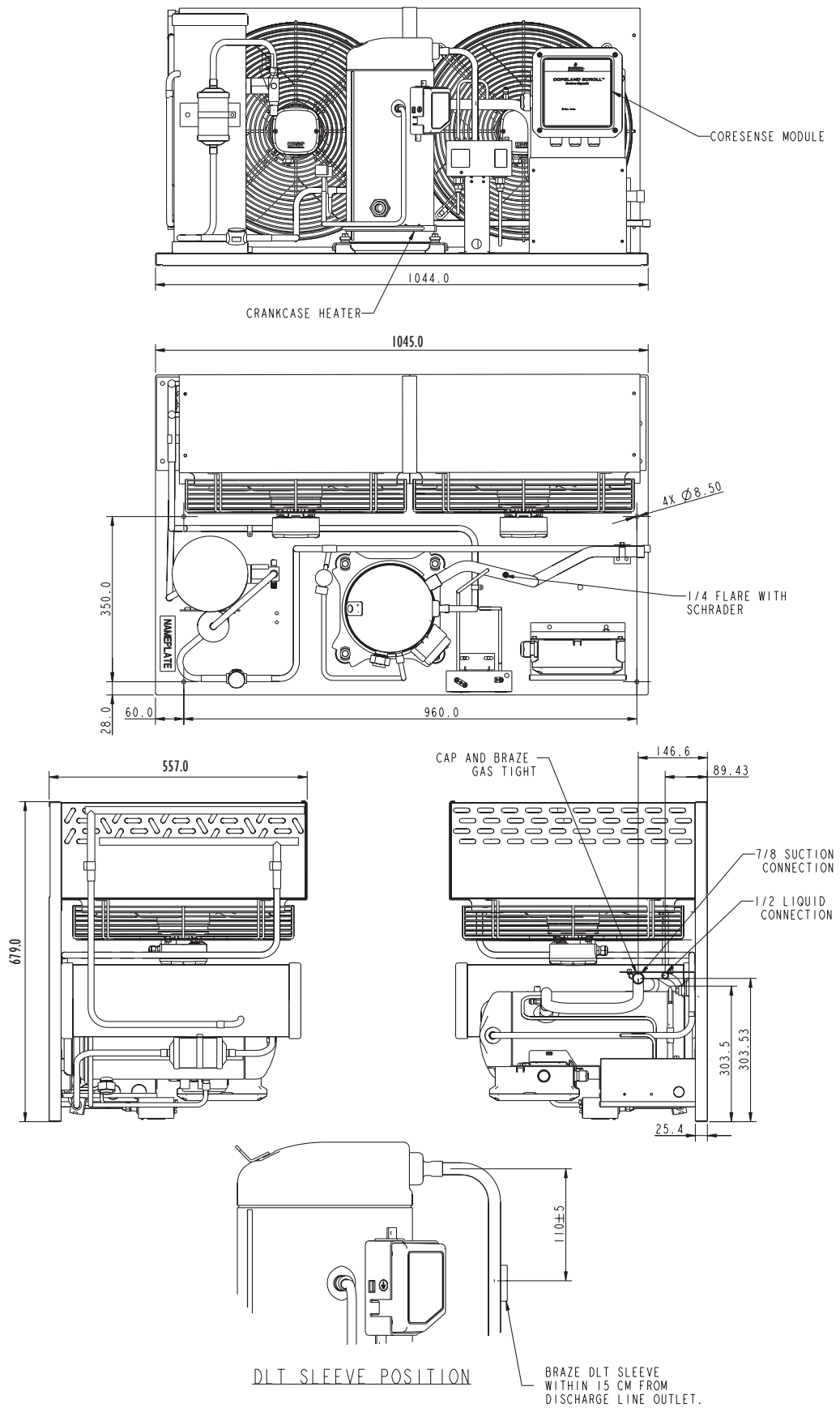
Dimensional Drawings

IZSI14CE, IZSI15CE



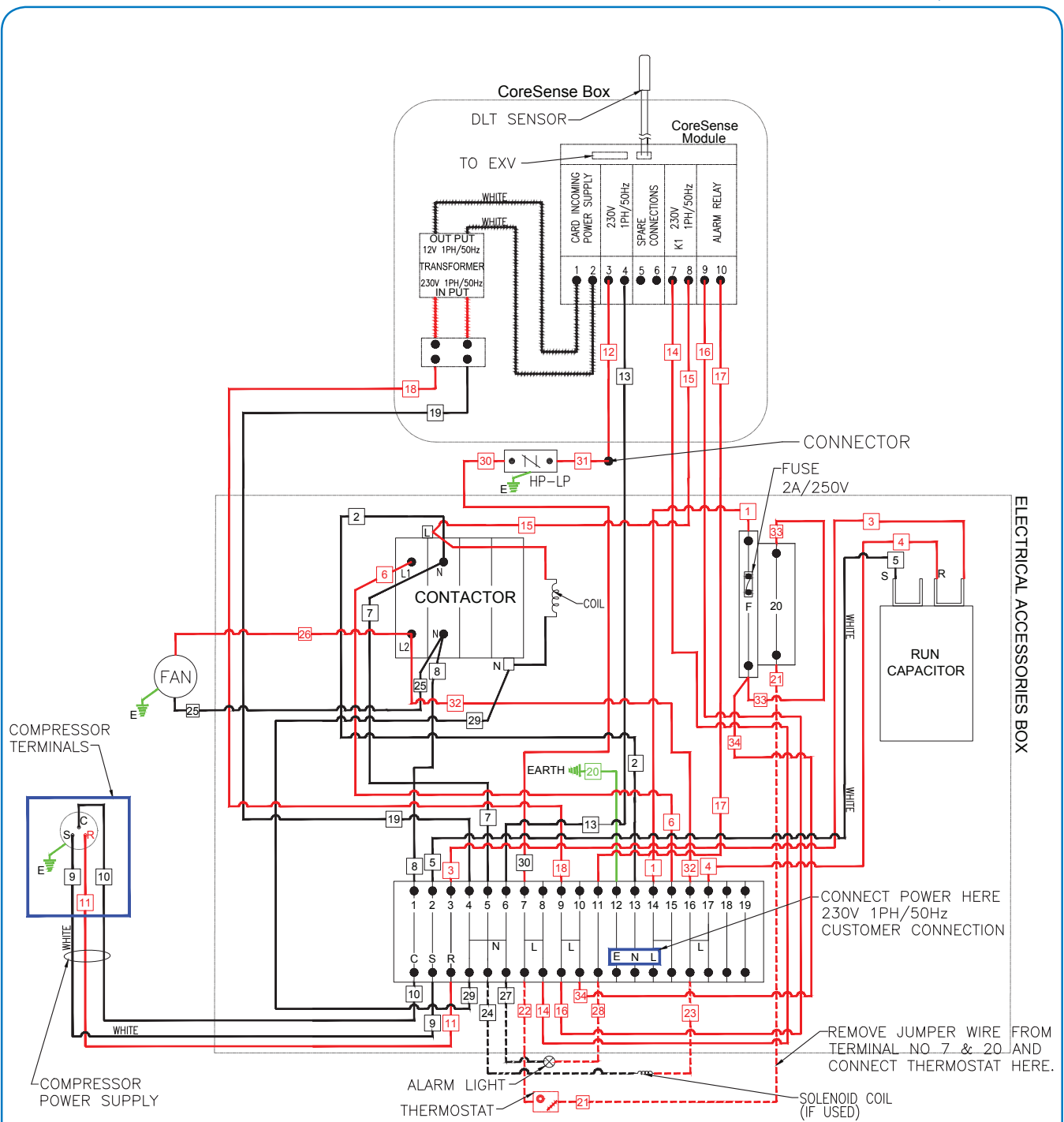
Dimensional Drawings

IZSI18DE



Wiring Diagram

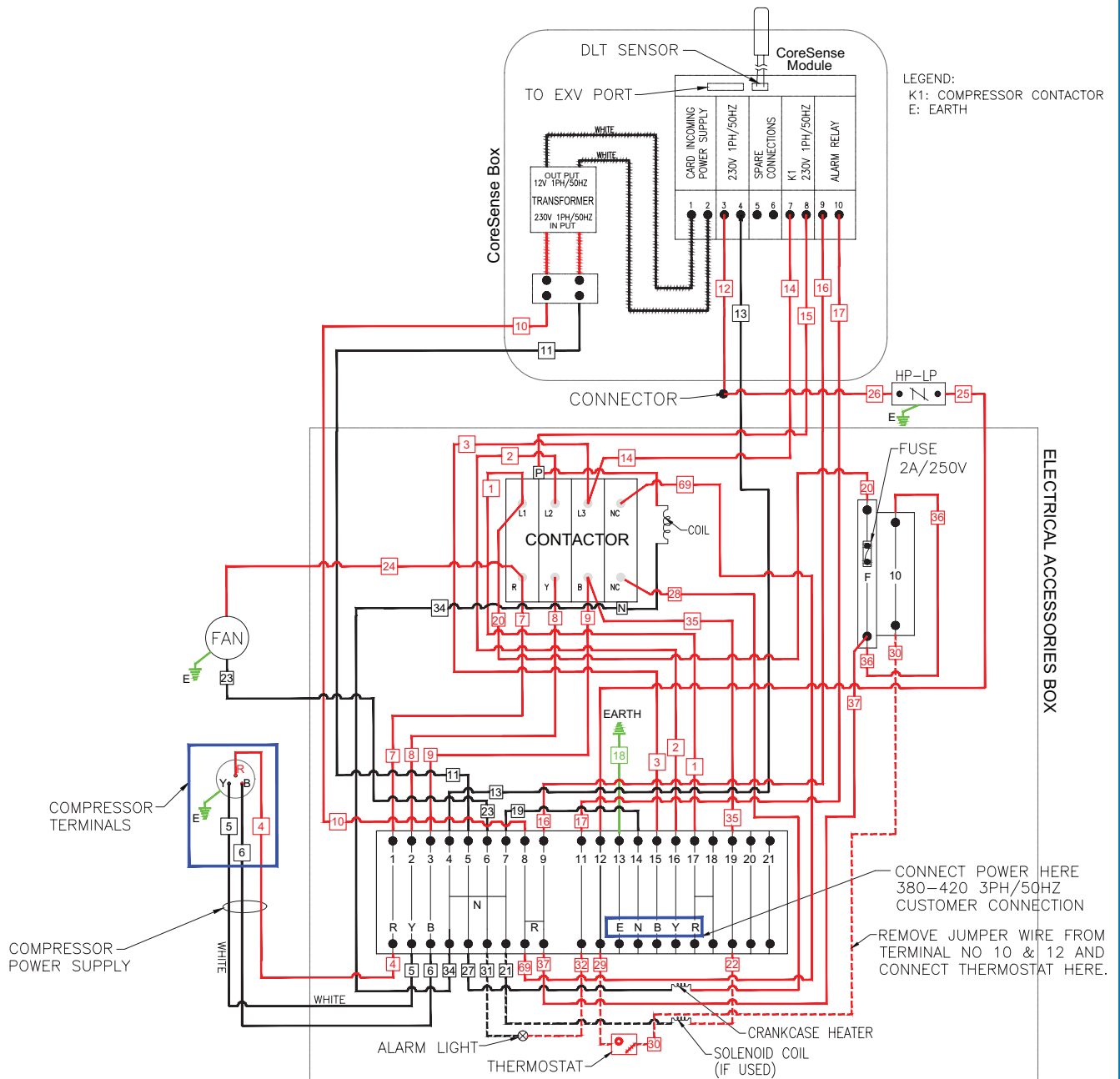
IZSI06AE, IZSI08AE



CONNECTIONS CHART	
FERRULE No. ON WIRES	USED FOR CONNECTING
23 24	TO SOLENOID COIL 230V 1PH/50Hz
21 22	TO THERMOSTAT
25 26	TO FAN
27 28	TO ALARM LIGHT
30 31	TO HP/LP
9 10 11	TO COMPRESSOR

Wiring Diagram

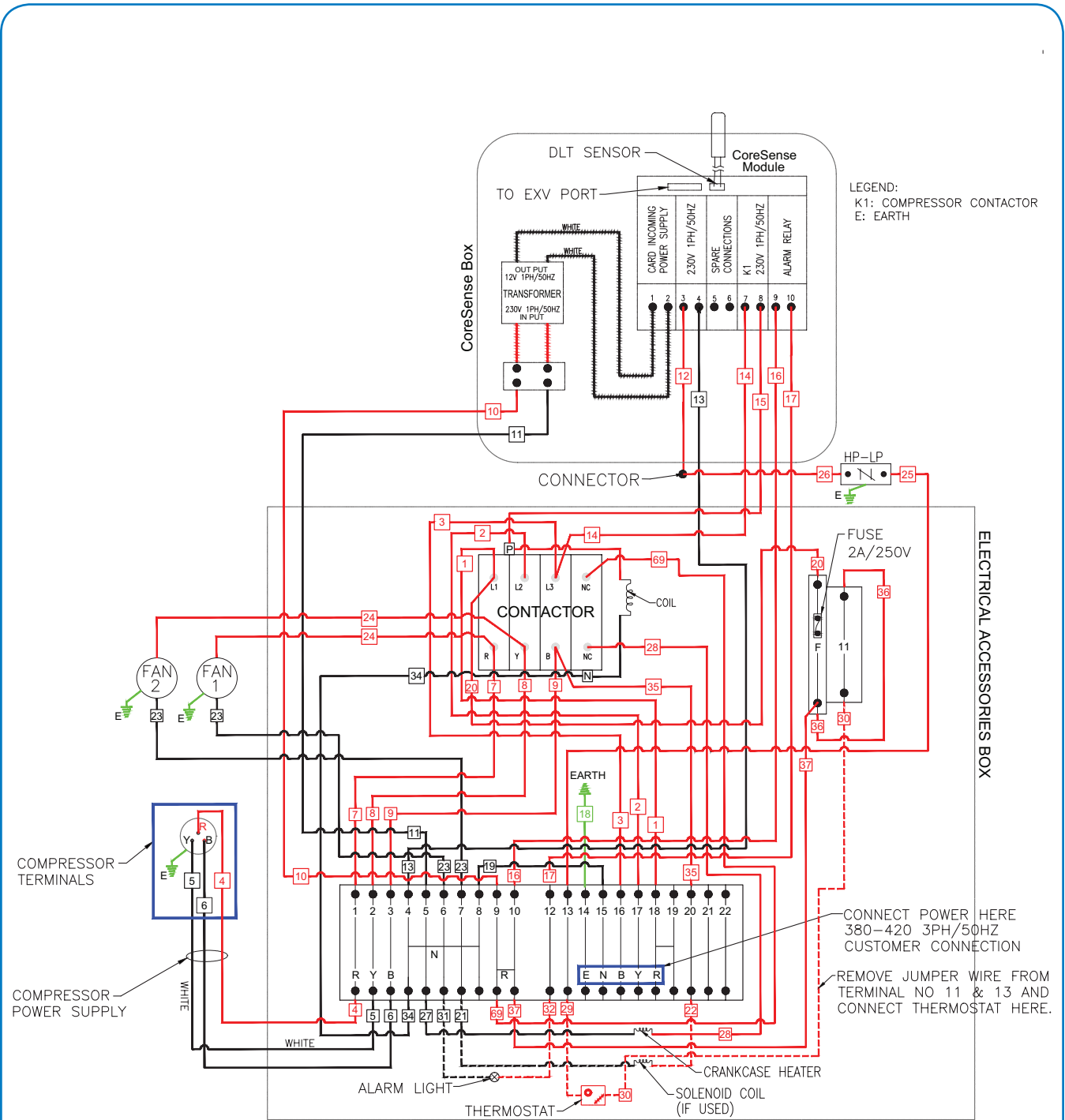
IZSI09BE, IZSI11BE, IZSI14CE, IZSI15CE



CONNECTIONS CHART	
FERRULES No. ON WIRES	USED FOR CONNECTING
21 22	TO SOLENOID COIL 230V 1PH/50Hz
29 30	TO THERMOSTAT
23 24	TO FAN
31 32	TO ALARM LIGHT
25 26	TO HP/LP
4 5 6	TO COMPRESSOR
27 28	CRANKCASE HEATER

Wiring Diagram

IZSI18DE



CONNECTIONS CHART	
FERRULES No. ON WIRES	USED FOR CONNECTING
21 22	TO SOLENOID COIL 230V 1PH/50Hz
29 30	TO THERMOSTAT
23 24	TO FAN
31 32	TO ALARM LIGHT
25 26	TO HP/LP
4 5 6	TO COMPRESSOR
27 28	CRANKSPACE HEATER

General Information

Technical data are correct at the time of printing. Updates may occur, and should you need confirmation of a specific value, please contact Emerson Climate Technologies stating clearly the information required.

Emerson Climate Technologies 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.

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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 Climate Technologies cannot be held responsible for any damage caused by using these substances.

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Asia 01 A01 03 – R00 Issued 04/2014 – GSCAA042
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