Copeland Scroll™

IZSI condensing unit for refrigeration applications

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, pump down solenoid, 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 R22, R404A, R134a*, R407*

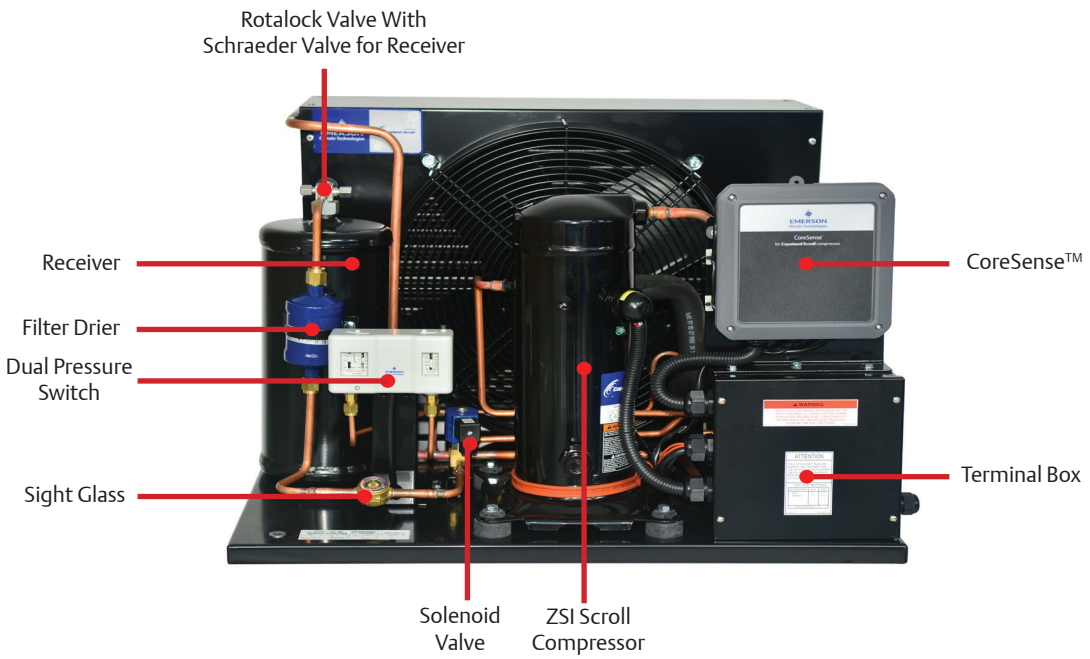
- Multi refrigerant capability

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



* R134a and R407 for future release

Nomenclature

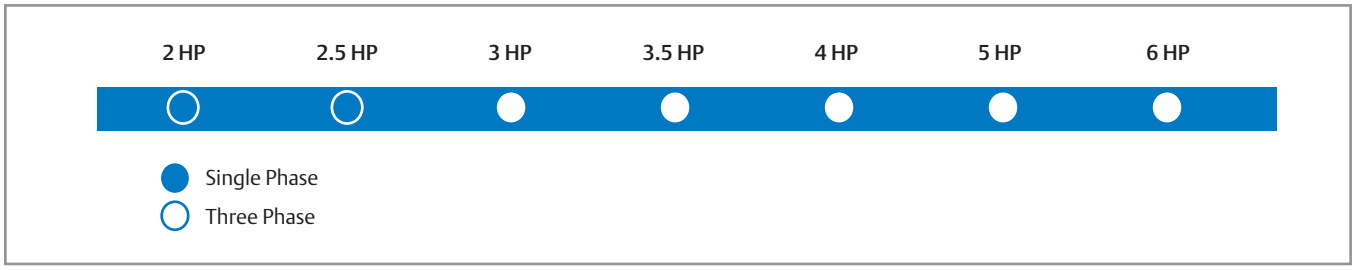
I	Z	S	I	0	6	A	E	-	P	F	Z	-	3	0	0
I = Indoor Type CDU	Z = Scroll C = CR S = S/H K = FHP	S = Wide Operating Range	I = Liquid Injection V = Vapor D = Digital N = None	Compressor Nominal Capacity (Btu/hr) at 60Hz Rating Condition		Chassis Type	Blank = Mineral Oil E = POE Oil		PFZ = 220–240 V 1 Ph–50 Hz TFM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

Bill of Material

Standard BOM Content	BOM				
	300	301*	302*	303*	304*
CoreSense™	✓	✓	✓	✓	✓
Electrical Box	✓	✓	✓	✓	✓
Crank Case Heater	✓	✓	✓	✓	✓
Solenoid Valve	✓	✓	✓	✓	✓
Filter Drier – Flare Connection	✓	✓	✓	✓	✓
Moisture Indicator / Sight Glass	✓	✓	✓	✓	✓
Dual Pressure Switch	✓	✓	✓	✓	✓
Receiver with Valve	✓	✓	✓	✓	✓
Accumulator			✓	✓	
Oil Separator			✓		✓
Fan Motor	✓	✓	✓	✓	✓
Heat Exchanger	✓	✓	✓	✓	✓
Compressor with Stub Tube	✓		✓	✓	✓
Canopy Enclosure			✓		
Compressor with Rotalock Connections		✓			

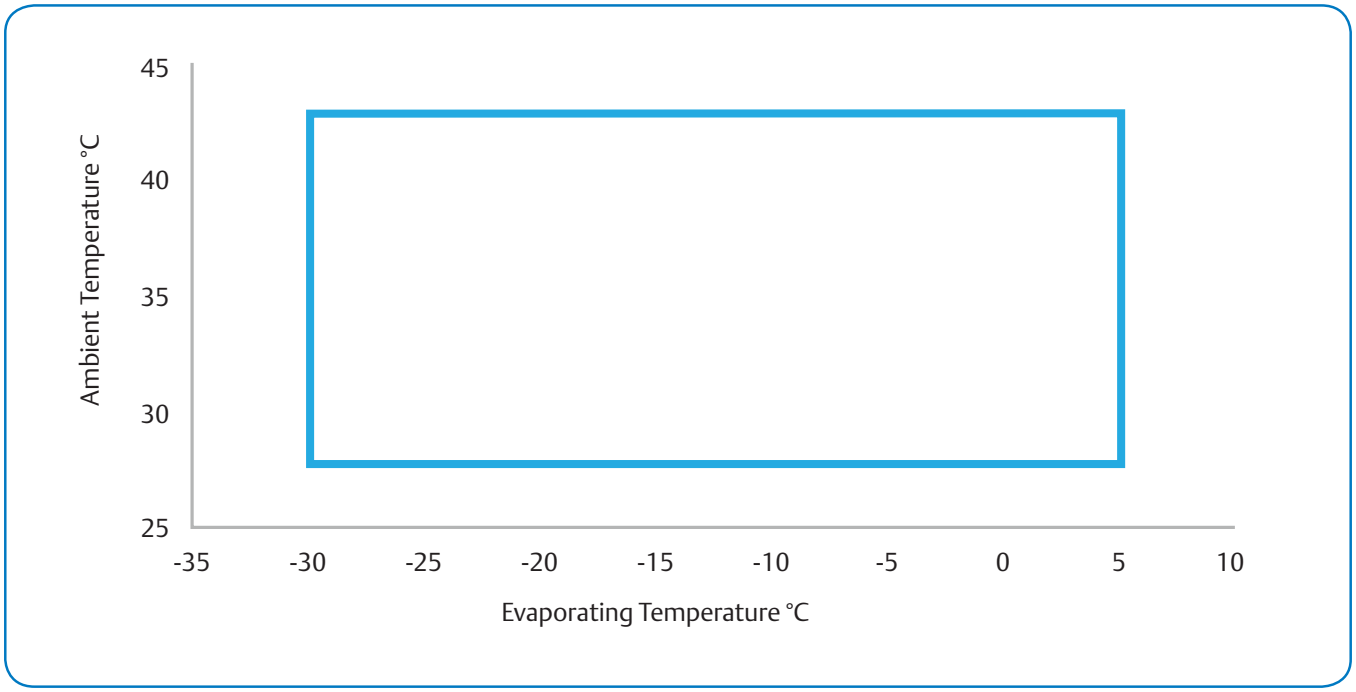
*To be released in the future

IZSI Product Range



Operating Envelope

R22/R404A



Performance Data

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

R22

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
IZSI06A	27	1.65	2.09	2.56	3.08	3.68	4.39	5.24	6.23	1.43	1.48	1.52	1.57	1.62	1.67	1.72	1.78
	32	1.60	2.04	2.49	2.99	3.56	4.23	5.04	5.98	1.59	1.64	1.70	1.75	1.81	1.86	1.92	1.97
	38	1.56	1.98	2.41	2.87	3.40	4.03	4.77	5.64	1.79	1.86	1.93	1.99	2.05	2.11	2.17	2.22
	43	1.50	1.91	2.31	2.74	3.23	3.79	4.46	5.25	1.96	2.04	2.12	2.20	2.27	2.34	2.41	2.47
IZSI08A	27	2.04	2.48	3.02	3.66	4.37	5.14	5.94	6.77	1.87	1.90	1.96	2.04	2.12	2.19	2.23	2.23
	32	1.94	2.35	2.86	3.47	4.15	4.89	5.67	6.48	2.00	2.03	2.09	2.17	2.26	2.33	2.38	2.39
	38	1.80	2.18	2.66	3.24	3.89	4.60	5.35	6.12	2.18	2.21	2.28	2.37	2.47	2.56	2.64	2.67
	43	1.68	2.03	2.49	3.03	3.65	4.33	5.05	5.80	2.35	2.39	2.47	2.59	2.72	2.85	2.96	3.05
IZSI09B	27	2.10	2.67	3.32	4.07	4.93	5.91	7.03	8.29	1.79	1.84	1.90	1.97	2.05	2.12	2.17	2.21
	32	2.01	2.55	3.17	3.88	4.70	5.63	6.70	7.92	1.98	2.03	2.10	2.17	2.25	2.32	2.39	2.43
	38	1.90	2.41	2.98	3.65	4.41	5.29	6.30	7.45	2.22	2.28	2.35	2.43	2.52	2.60	2.67	2.73
	43	1.82	2.29	2.83	3.45	4.17	4.98	5.91	6.97	2.40	2.47	2.56	2.66	2.77	2.87	2.98	3.07
IZSI11B	27	2.88	3.56	4.30	5.14	6.13	7.29	8.65	10.24	2.22	2.33	2.43	2.52	2.63	2.77	2.94	3.18
	32	2.72	3.36	4.06	4.86	5.81	6.92	8.24	9.78	2.38	2.49	2.59	2.68	2.79	2.93	3.11	3.35
	38	2.53	3.13	3.79	4.54	5.43	6.49	7.74	9.22	2.62	2.74	2.83	2.93	3.05	3.20	3.39	3.66
	43	2.39	2.96	3.58	4.29	5.12	6.11	7.28	8.67	2.90	3.03	3.14	3.26	3.40	3.58	3.83	4.17
IZSI14C	27	3.47	4.40	5.39	6.50	7.75	9.18	10.83	12.73	2.56	2.65	2.79	2.96	3.14	3.31	3.43	3.51
	32	3.29	4.18	5.13	6.17	7.36	8.72	10.30	12.12	2.83	2.95	3.11	3.29	3.48	3.66	3.79	3.87
	38	3.07	3.92	4.81	5.79	6.90	8.18	9.67	11.39	3.21	3.36	3.55	3.75	3.96	4.14	4.29	4.37
	43	2.91	3.72	4.57	5.49	6.53	7.72	9.11	10.72	3.55	3.74	3.96	4.20	4.44	4.65	4.83	4.94
IZSI15C	27	4.15	5.11	6.15	7.31	8.64	10.18	11.95	13.98	2.95	3.07	3.24	3.45	3.67	3.89	4.09	4.24
	32	3.90	4.81	5.79	6.88	8.14	9.59	11.27	13.22	3.22	3.37	3.56	3.79	4.02	4.25	4.46	4.63
	38	3.61	4.46	5.37	6.39	7.55	8.91	10.49	12.34	3.61	3.79	4.01	4.26	4.52	4.77	5.00	5.18
	43	3.44	4.25	5.09	6.03	7.11	8.36	9.84	11.57	3.97	4.20	4.46	4.75	5.05	5.35	5.62	5.86
IZSI18D	27	5.09	6.22	7.54	9.07	10.83	12.80	15.00	17.43	3.43	3.55	3.71	3.90	4.13	4.39	4.66	4.96
	32	4.88	5.97	7.24	8.70	10.37	12.25	14.35	16.66	3.84	4.01	4.20	4.42	4.66	4.93	5.21	5.49
	38	4.61	5.65	6.84	8.22	9.78	11.55	13.52	15.71	4.47	4.67	4.89	5.12	5.37	5.63	5.90	6.16
	43	4.36	5.35	6.49	7.79	9.27	10.94	12.81	14.89	5.02	5.25	5.48	5.73	5.97	6.22	6.45	6.68

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

Performance Data

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

R404A

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
IZSI06AE	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
IZSI08AE	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
IZSI09BE	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
IZSI11BE	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
IZSI14CE	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
IZSI15CE	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
IZSI18DE	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 are rated at return gas temperature: 18.33 °C and subcooling: 2.77 °C
2. Units are in Kilowatts (kW) for Capacity and Power

Technical Data

R22

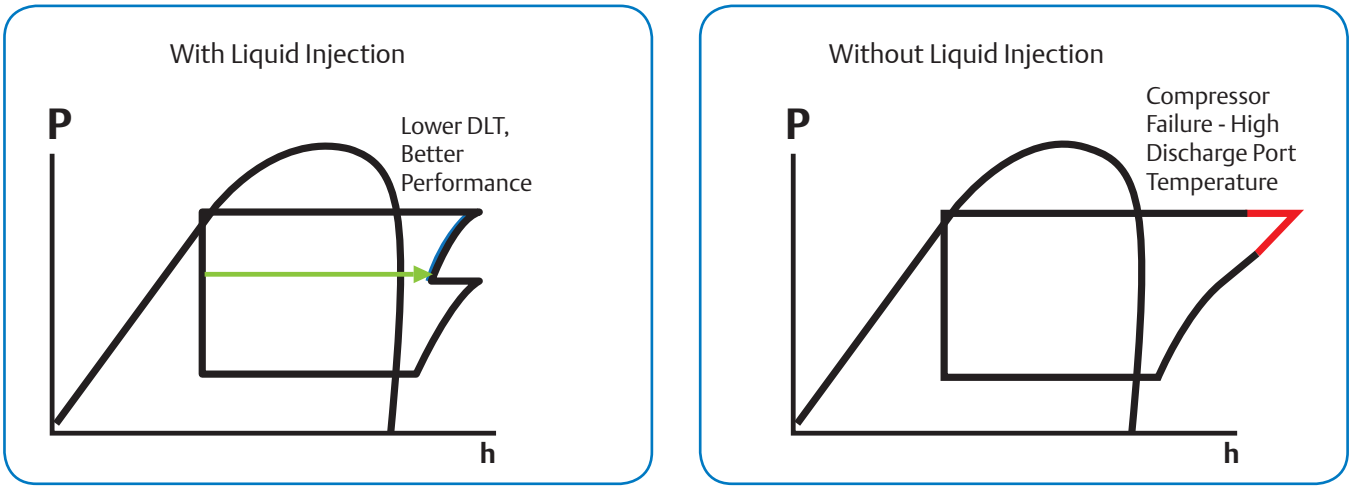
Family				IZSI						
Nominal Rating	Horsepower		HP	2.0	2.5	3.0	3.5	4.0	5.0	6.0
Model Name				IZSI06A	IZSI08A	IZSI09B	IZSI11B	IZSI14C	IZSI15C	IZSI18D
Compressor	Model Name	R22		ZSI06KQ	ZSI08KQ	ZSI09KQ	ZSI11KQ	ZSI14KQ	ZSI15KQ	ZSI18KQ
	Rated Load Ampere	R22	Amp	11	12	5	7.1	7.8	8.4	9.5
	Locked Rotor Ampere	R22	Amp	57	72	40	52	52	52	74
	Oil Type	R22		Mineral	Mineral	Mineral	Mineral	Mineral	Mineral	Mineral
	Oil Recharge Volume	R22	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	R22	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

R404A

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	0.56	0.56	0.56	1.24	1.24	1.24	1.77
	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

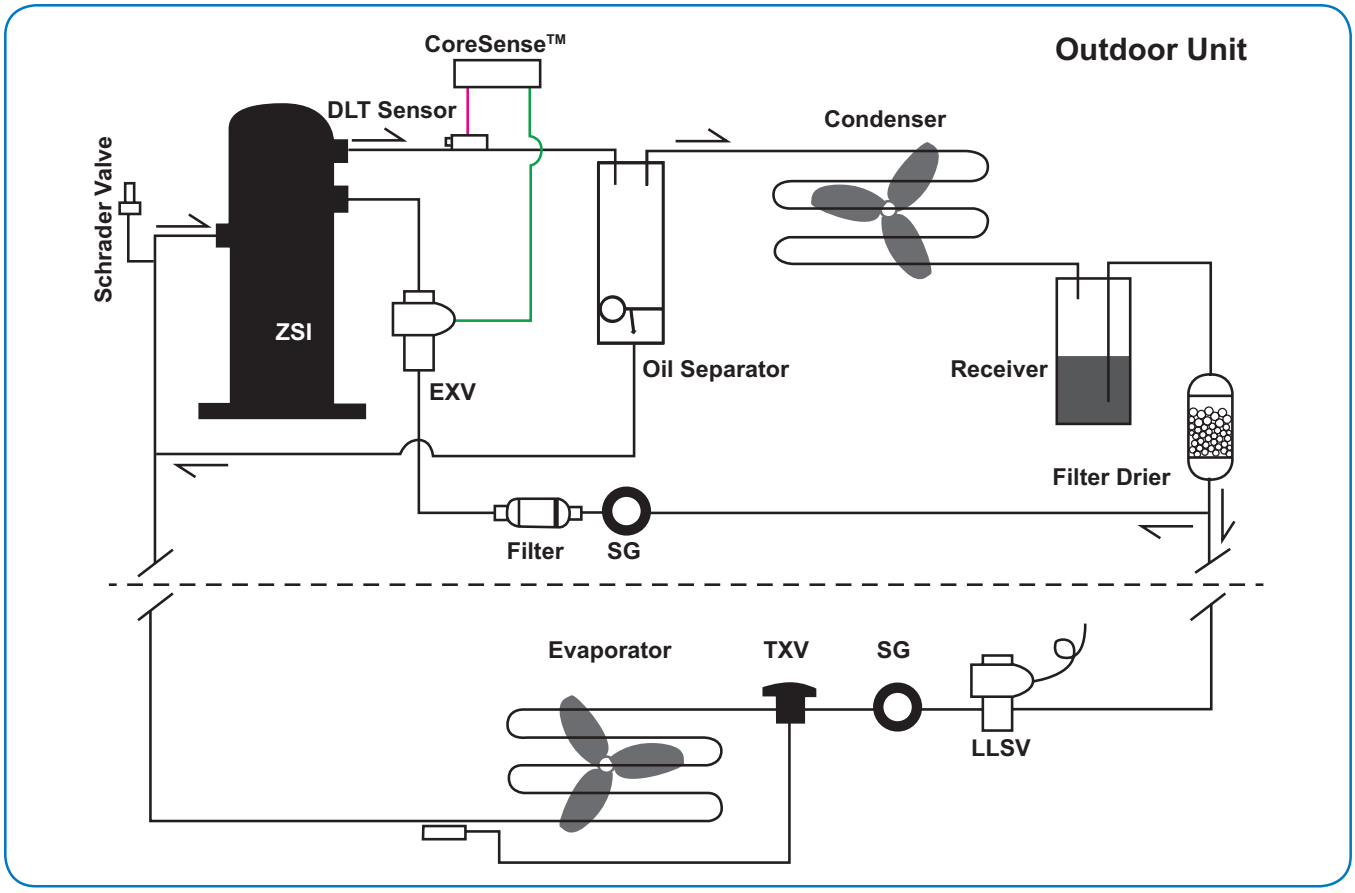
Liquid Injection Technology for Efficient Operation

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

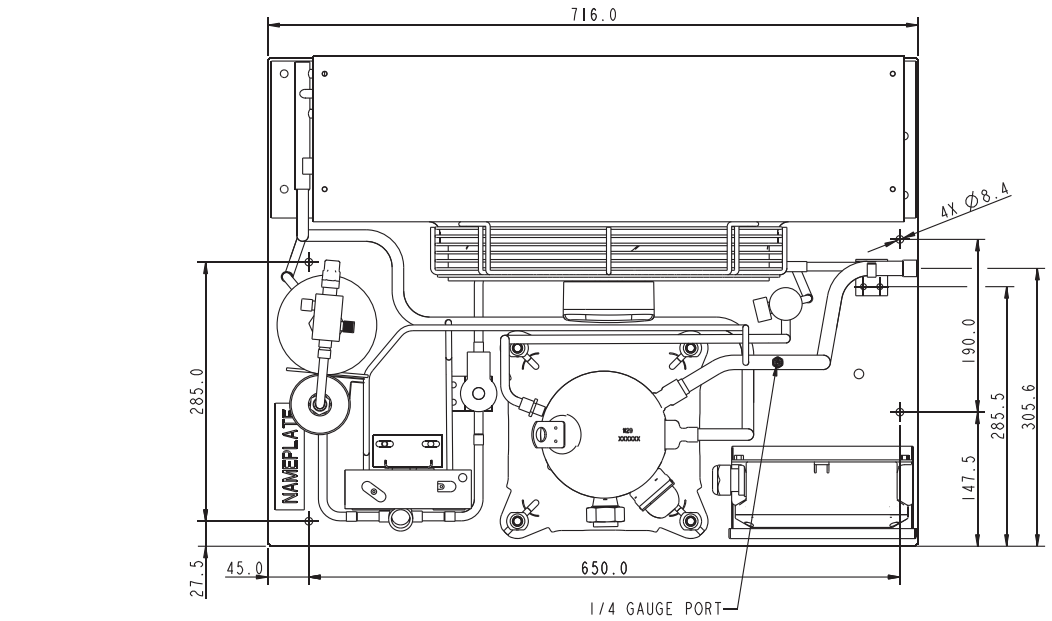
Schematic Diagram

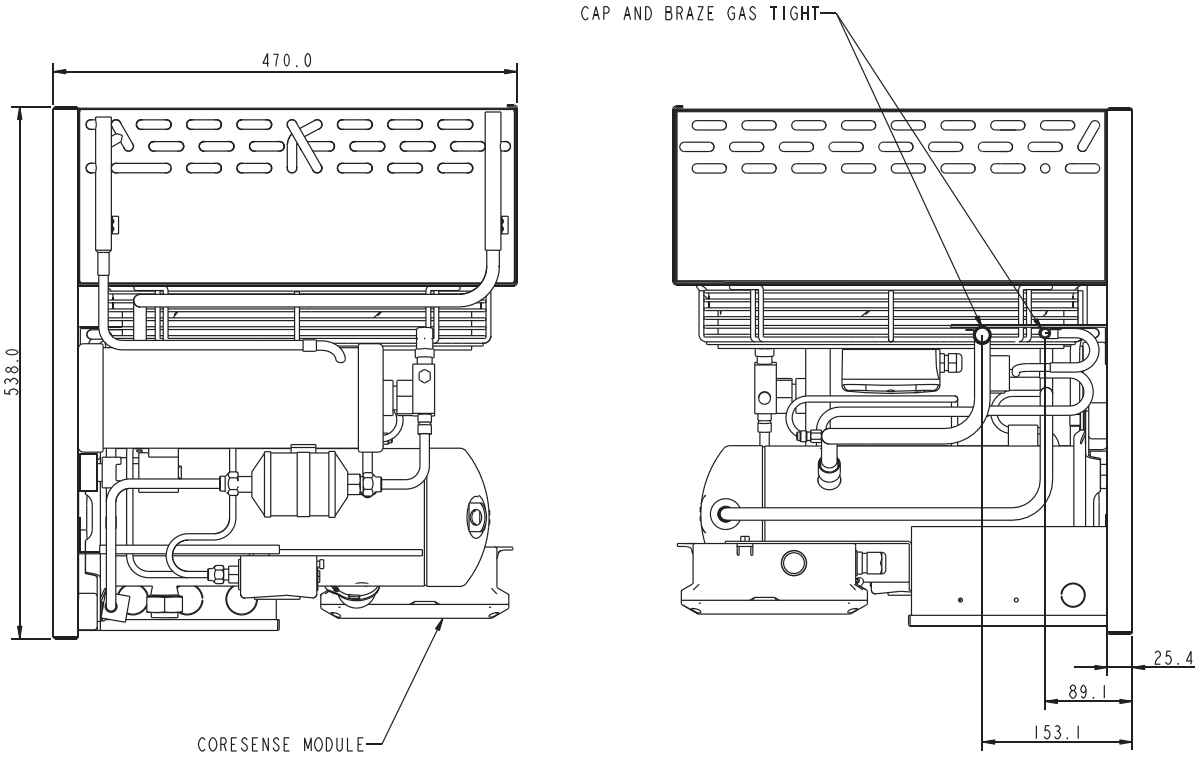


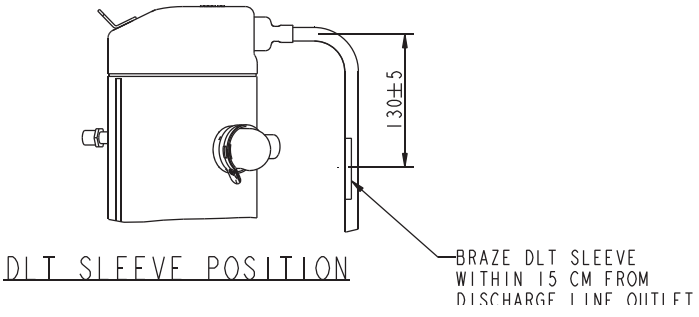
- Similar to a 2-stage Cycle but Accomplished with Single Scroll Compressor
- Liquid Injection Controlled by CoreSense™ Module
- DLT Sensor Signals EXV to Control the Flow Depending on Discharge Line Temperature

Dimensional Drawings

IZSI06A, IZSI08A, IZSI06AE, IZSI08AE

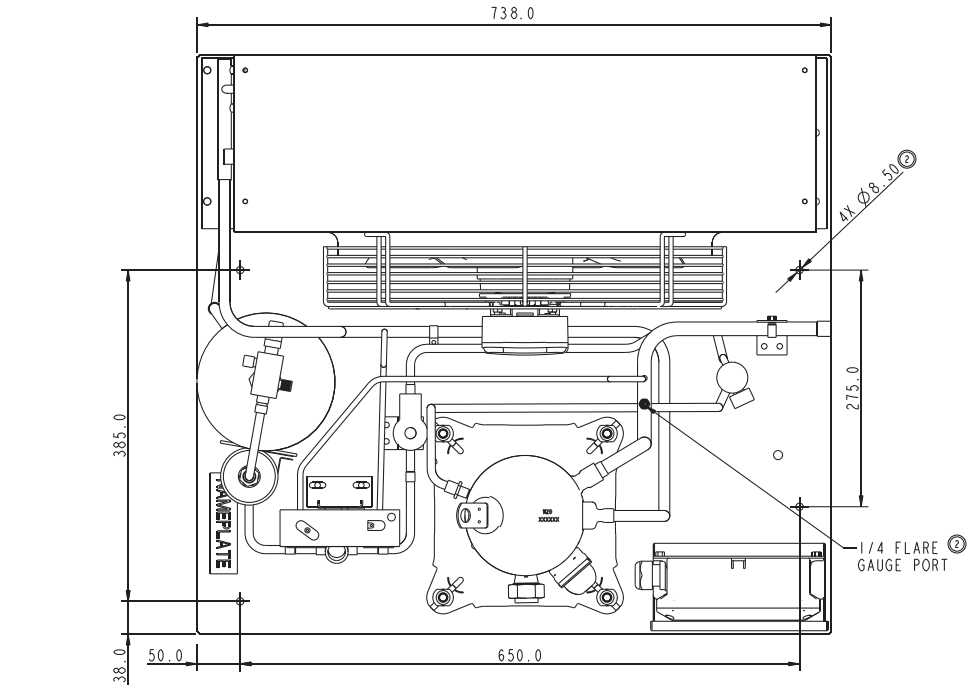


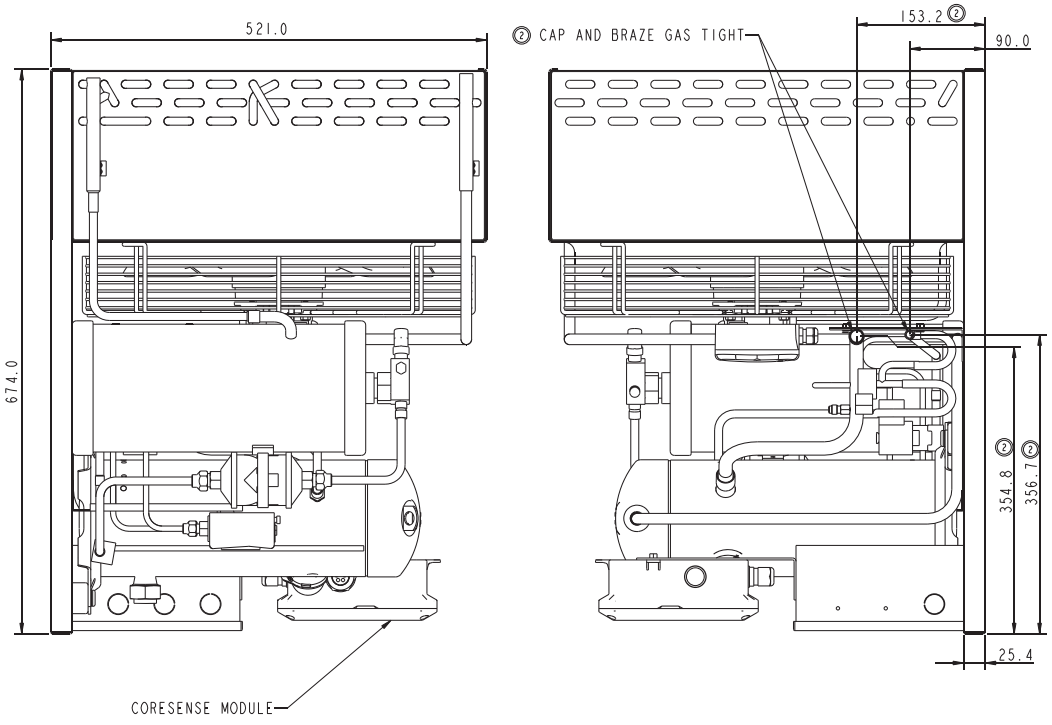


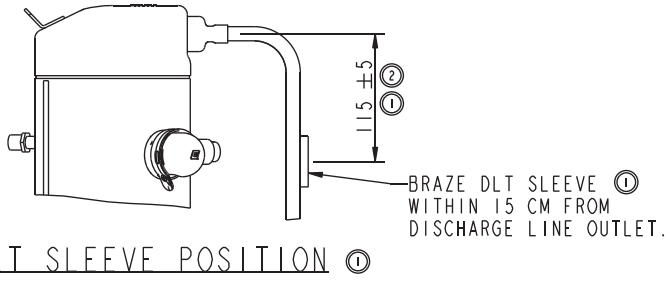


Dimensional Drawings

IZSI09B, IZSI09BE



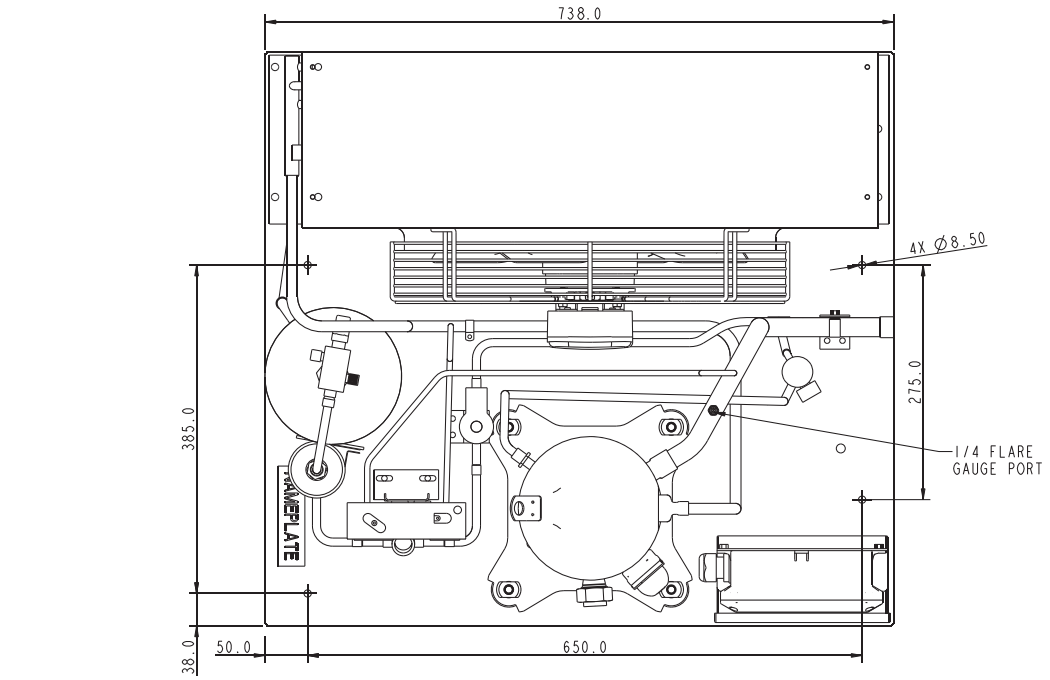


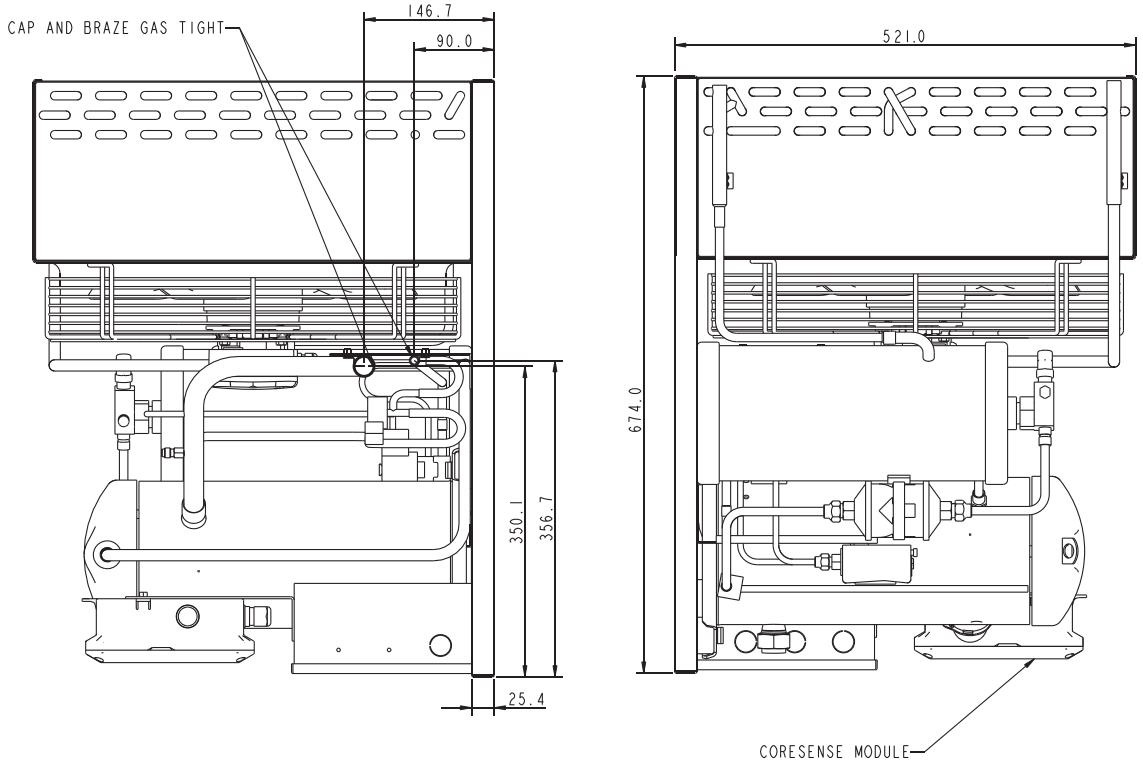


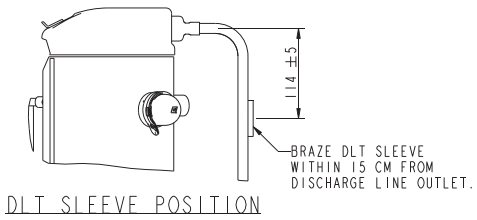
DLT SLEEVE POSITION ①

Dimensional Drawings

IZSI11B, IZSI11BE



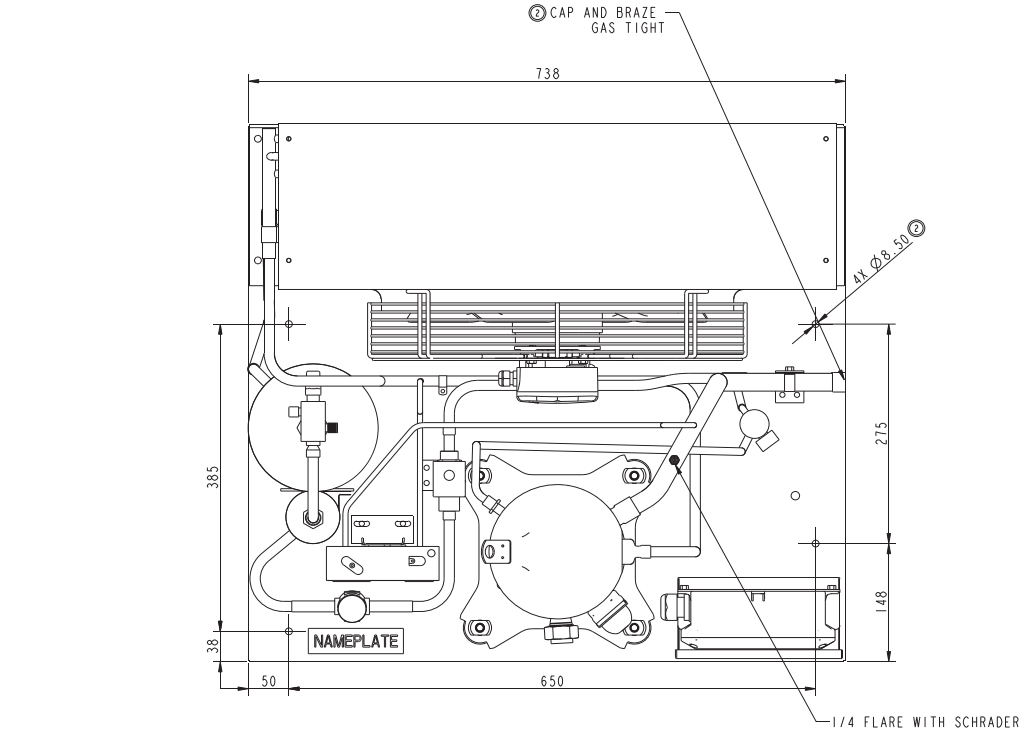


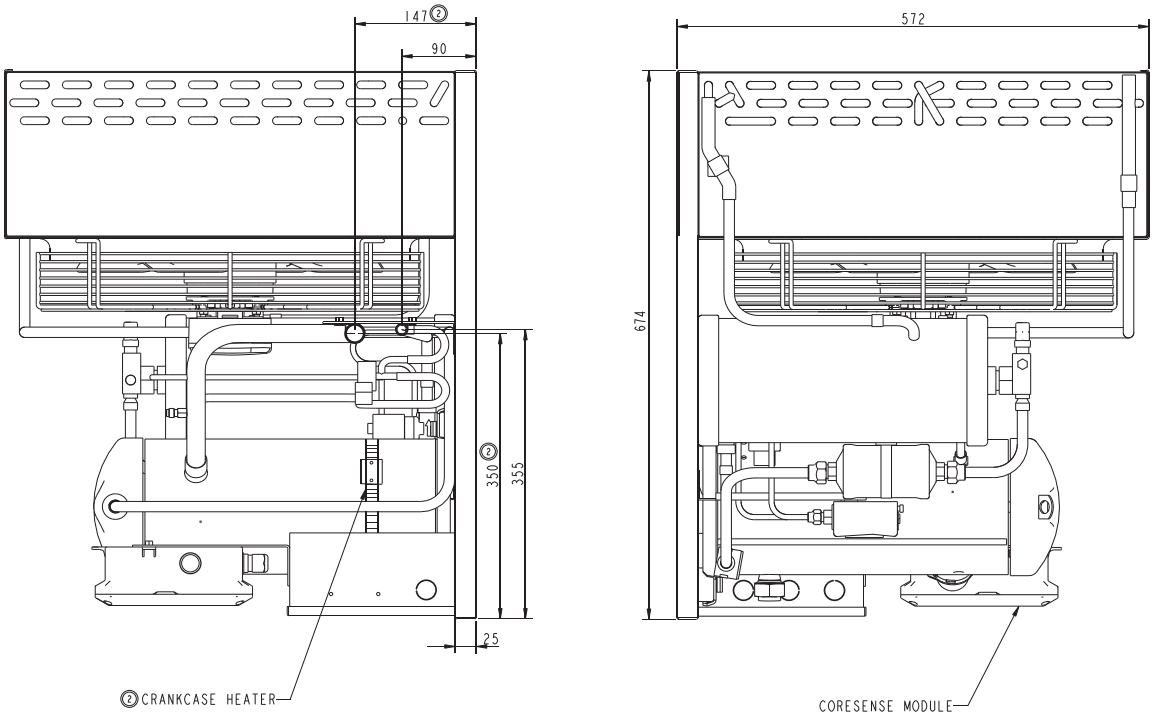


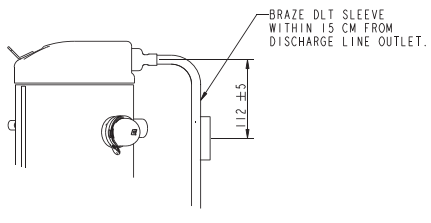
DLT SLEEVE POSITION

Dimensional Drawings

IZSI14C, IZSI15C, IZSI14CE, IZSI15CE



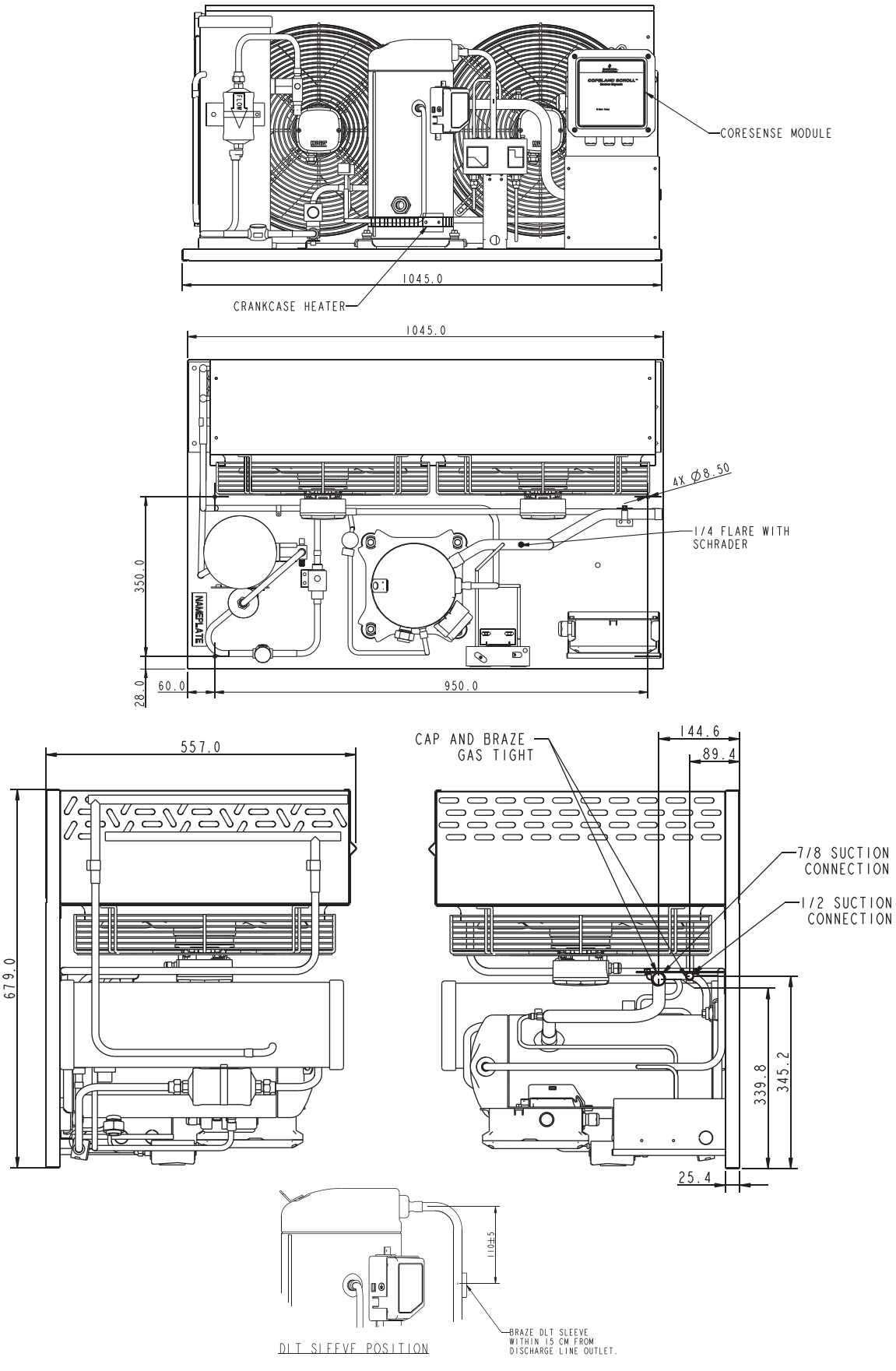




DLT SLEEVE POSITION

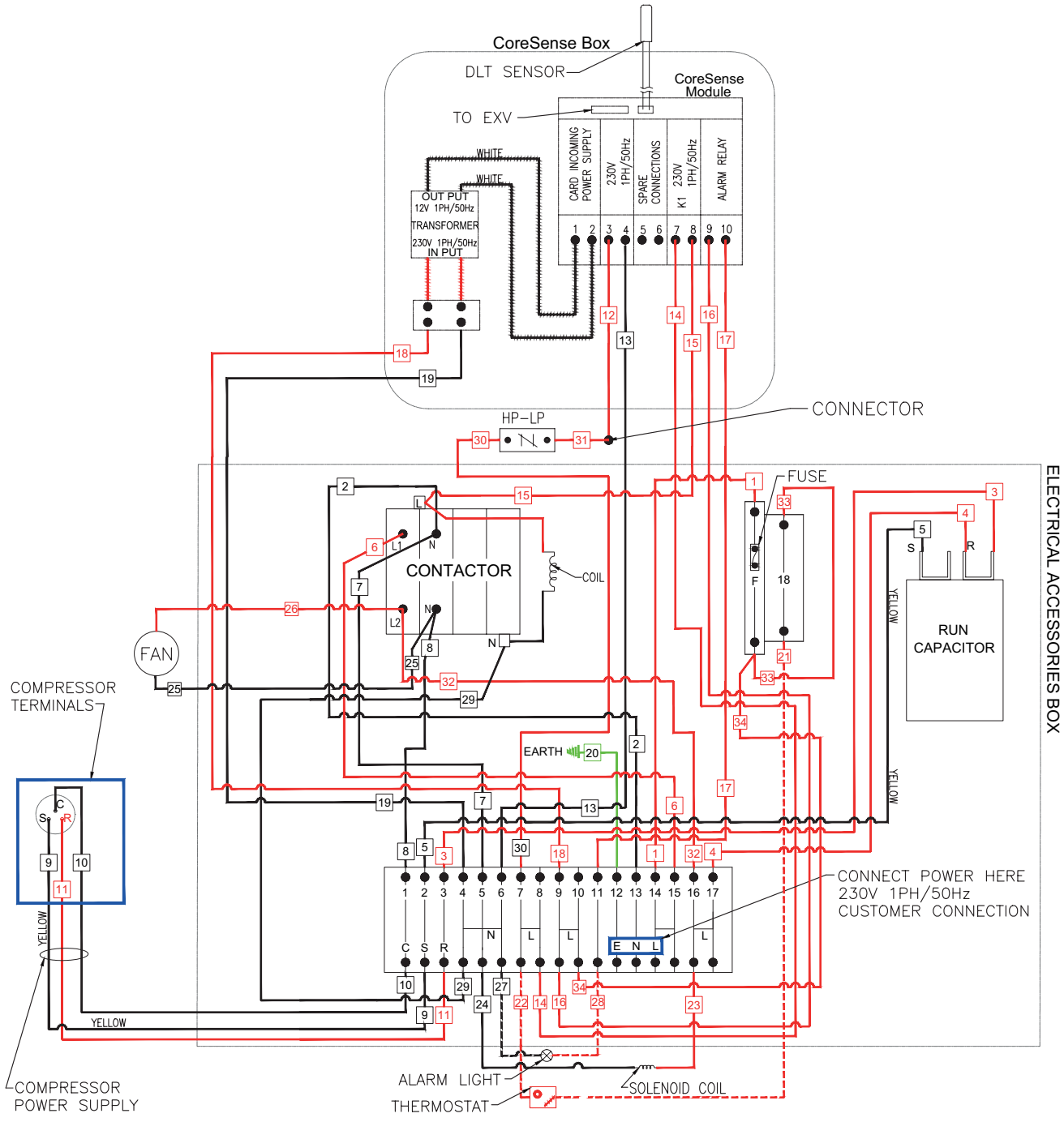
Dimensional Drawings

IZSI18D, IZSI18DE



Wiring Diagram

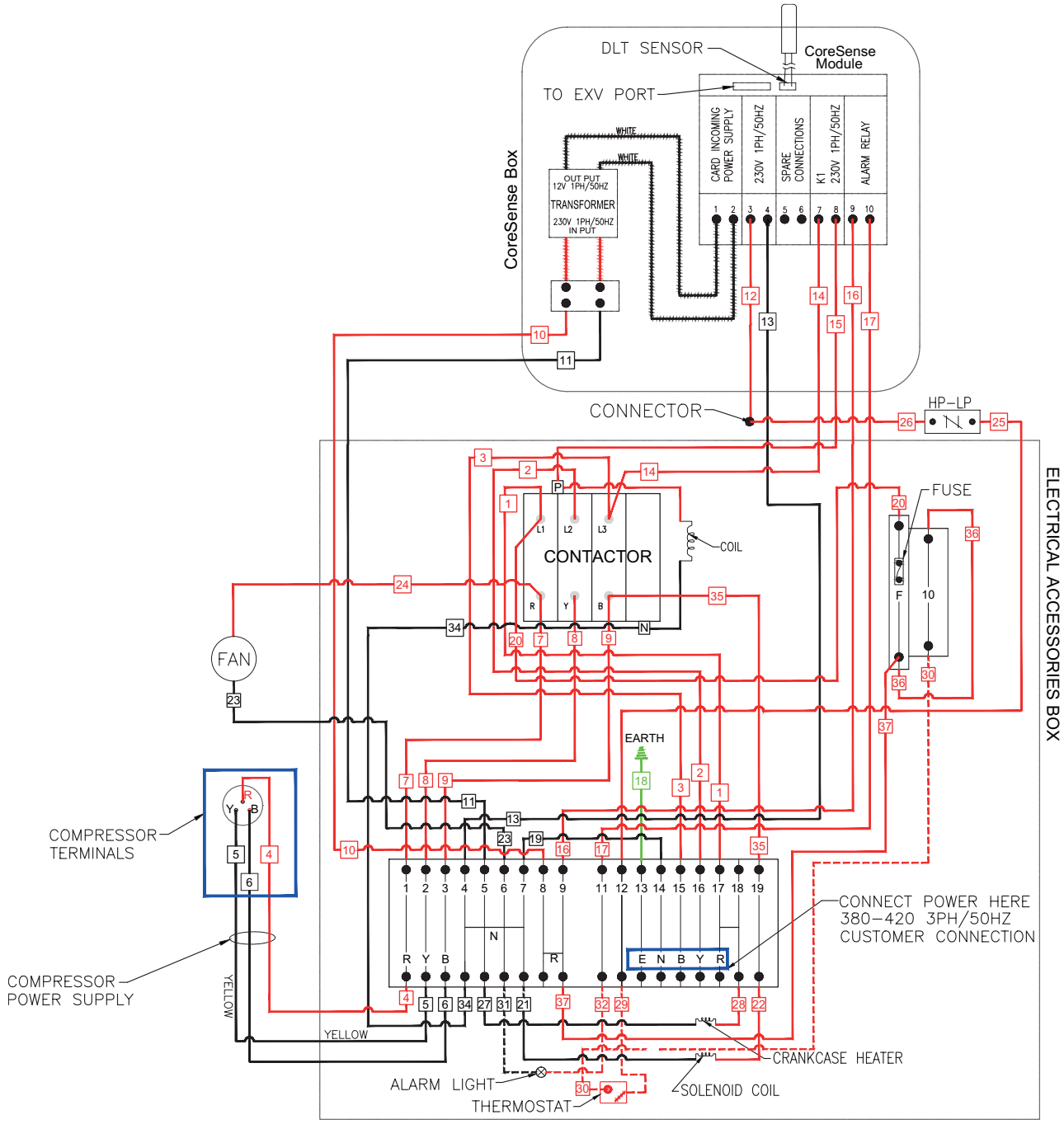
IZSI06A, IZSI08A, IZSI06AE, IZSI08AE



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

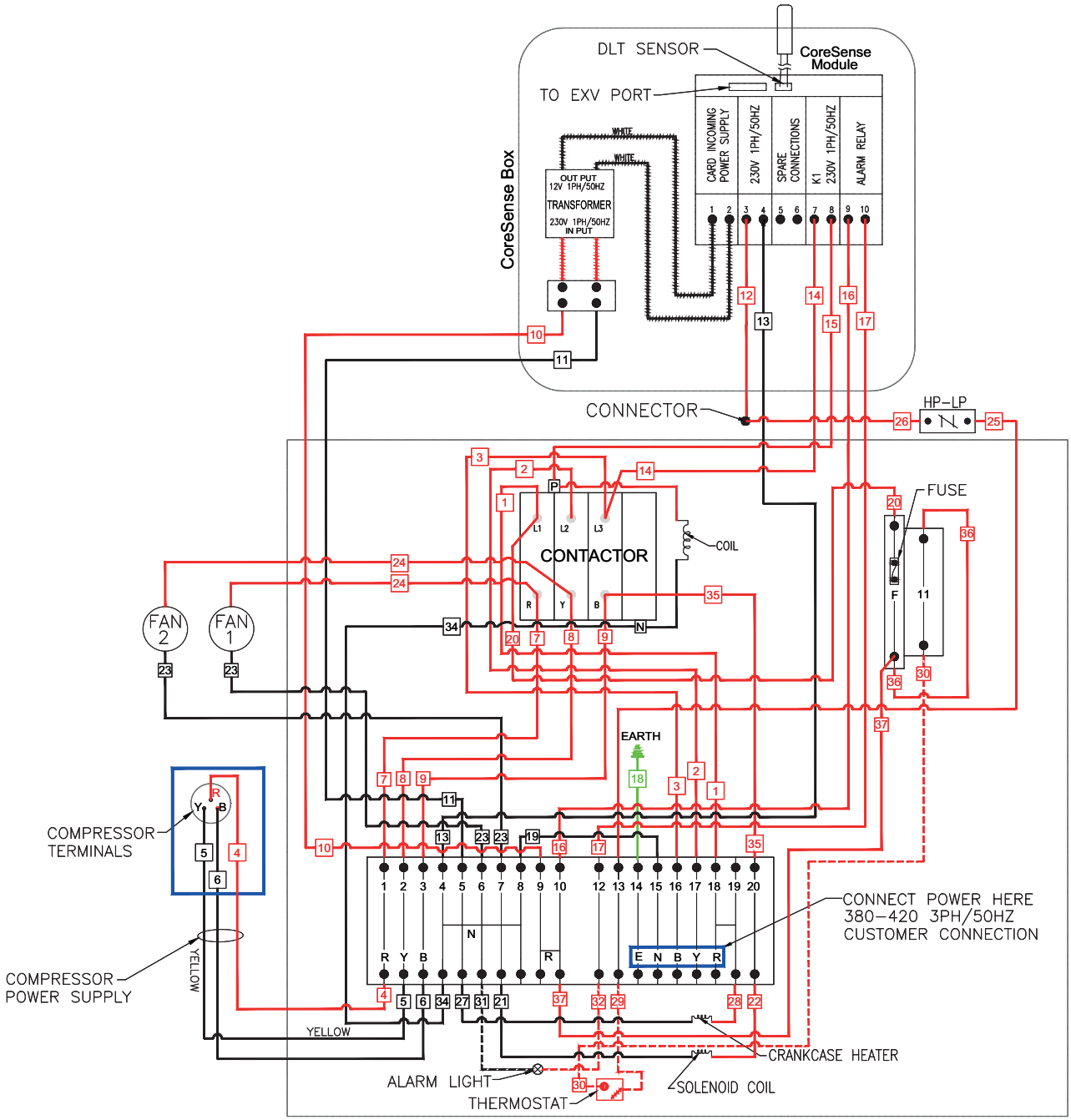
IZSI06A, IZSI08A, IZSI09B, IZSI11B, IZSI14C, IZSI15C, IZSI06AE, IZSI08AE IZSI09BE, IZSI11BE, IZSI14CE, IZSI15CE



CONNECTIONS CHART	
FERRULES No. ON WIRES	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

IZSI18D, IZSI18DE



CONNECTIONS CHART	
FERRULES No. ON WIRES	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

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.

The information given herein is based on data and tests which Emerson Climate Technologies 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 Climate Technologies cannot be held responsible for any damage caused by using these substances.

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