

**SIERRA03-0982Z1
R404A
24/48 V DC
VARIABLE SPEED**



Brushless DC Variable Speed Compressor Technical Data Sheet

General Information

Compressor Part Number	SIERRA00192	1/2" ID Suction - 5/16" ID Discharge
Compressor Drawing	DCMX33-002	#10-32 Threaded Terminal Connections
Compressor Part Number with Fittings	SIERRA00222	M24 MIO Suction - M22 MIO Discharge
Compressor Drawing with Fittings	DCMX35-002	M5 Threaded Terminal Connections
Voltage Range:	19-59.9 V DC	
Controller Options (24/48V)	025F0149, 025F0349, 025F0129, 025F0350	
Controller Options (48V)	025F0158, 025F0152	
Wiring Diagram Drawing	DEMXX0010	

Application Information

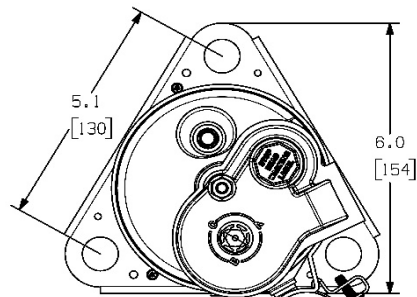
Application	LBP, Freezer
Refrigerant	R404A
Evaporator Temperature Range	-40° C to -12.2° C (-40° F to 10° F)
Condenser Temperature Range	26.7° C to 60° C (80° F to 140° F)
Maximum Discharge Temperature	126.7° C (260 °F) (D2I) providing maximum motor temperature is not exceeded
Maximum Compression Ratio	16.7:1
Minimum Airflow Over Compressor	425 cfm @ 6" from Outside Diameter of Housing

Design

Displacement	16.1 cm ³ (0.982 in ³)
Oil Quantity	290 cc
Oil Type	PVE 68cSt
Weight	6.4 kg / 14.1 lb
Weight with Fittings	6.6 kg / 14.5 lb



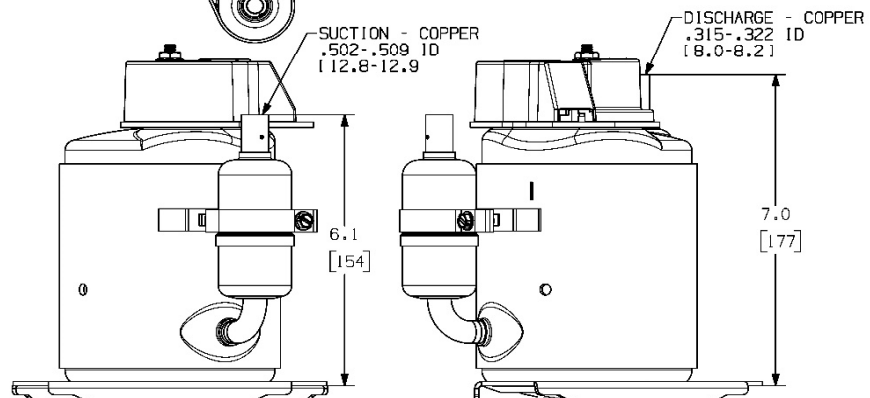
Compressor Dimensions



Packaging Options

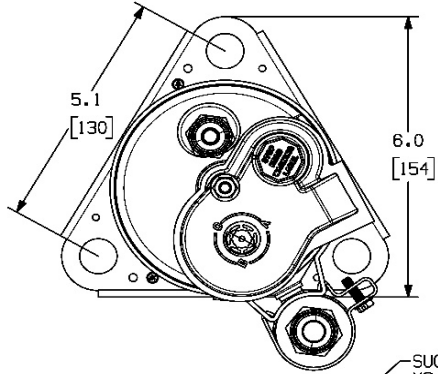
- Single Pack (add -SP suffix to part number when ordering)
- Pallet Pack (25 piece multiples)

SIERRA00192

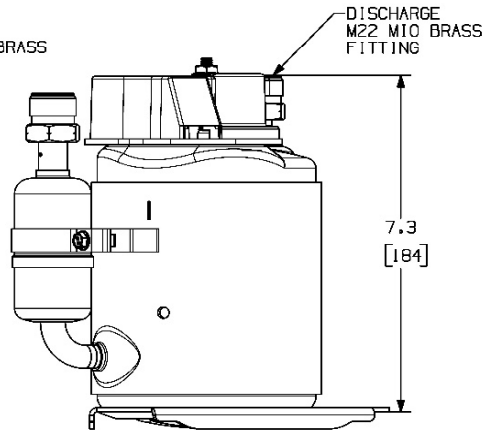
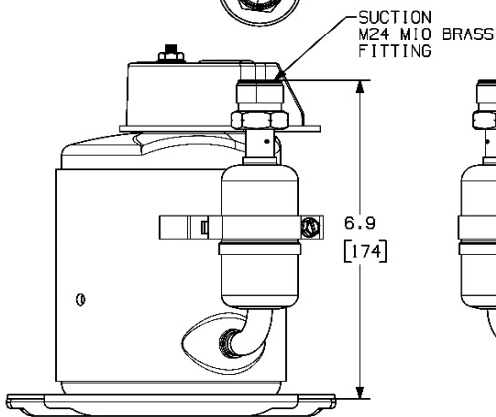


the Sierra

Compressor Dimensions with Fittings

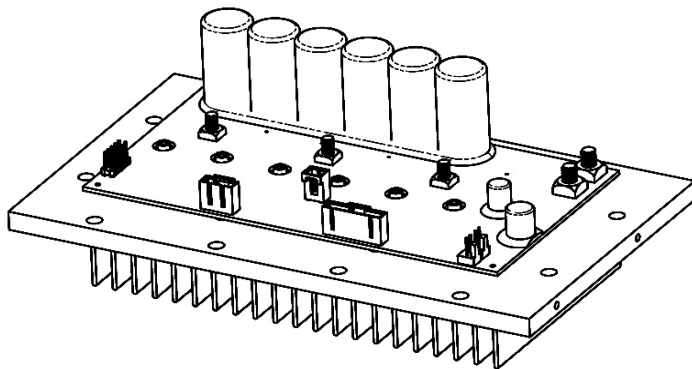


SIERRA00222

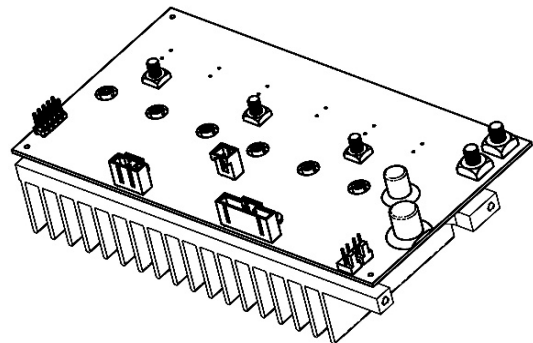


Controller Configurations

Custom controllers and configurations available



025F0149,
025F0349, &
025F0158



025F0129,
025F0350, &
025F0152

24V

rpm	Evaporator Temperature (° C)									
	-40.0	-34.4	-31.7	-28.9	-26.1	-23.3	-20.6	-17.8	-15.0	-12.2
Capacity (49° C Condenser)										
	watt									
1800	238	288	327	375	431	494	562	637	716	799
2300	304	367	418	479	550	631	719	814	915	1021
2800	370	447	509	583	670	768	875	991	1114	1242
3200	423	511	581	666	766	878	1000	1133	1273	1420
Power Consumption (49° C Condenser)										
	watt									
1800	442	496	523	549	574	600	625	649	673	697
2300	565	634	668	701	734	766	798	829	860	890
2800	688	772	813	853	893	933	972	1010	1047	1084
3200	786	882	929	975	1021	1066	1110	1154	1197	1239
Current (49° C Condenser)										
	amp									
1800	18.42	20.67	21.79	22.88	23.92	25.00	26.04	27.04	28.04	29.04
2300	23.54	26.42	27.83	29.21	30.58	31.92	33.25	34.54	35.83	37.08
2800	28.67	32.17	33.88	35.54	37.21	38.88	40.50	42.08	43.63	45.17
3200	32.75	36.75	38.71	40.63	42.54	44.42	46.25	48.08	49.88	51.63
COP (49° C Condenser)										
	watt/watt									
1800	0.54	0.58	0.62	0.68	0.75	0.82	0.90	0.98	1.06	1.15
2300	0.54	0.58	0.63	0.68	0.75	0.82	0.90	0.98	1.06	1.15
2800	0.54	0.58	0.63	0.68	0.75	0.82	0.90	0.98	1.06	1.15
3200	0.54	0.58	0.63	0.68	0.75	0.82	0.90	0.98	1.06	1.15
Mass Flow (49° C Condenser)										
	kg/hr									
1800	8.07	10.02	11.48	13.20	15.24	17.51	20.05	22.82	25.81	28.98
2300	10.34	12.84	14.65	16.87	19.46	22.36	25.63	29.12	32.98	37.06
2800	12.56	15.60	17.87	20.55	23.68	27.22	31.16	35.47	40.14	45.09
3200	14.38	17.83	20.41	23.50	27.08	31.12	35.61	40.55	45.86	51.53

48V

Capacity (49° C Condenser)										
	watt									
3700	489	591	672	771	885	1015	1156	1309	1472	1643
4500	595	719	817	937	1077	1234	1406	1593	1790	1997
5000	661	798	908	1041	1196	1371	1563	1769	1989	2219
5500	727	878	999	1145	1316	1508	1719	1946	2188	2441
Power Consumption (49° C Condenser)										
	watt									
3700	909	1020	1074	1128	1181	1233	1284	1334	1384	1432
4500	1105	1240	1306	1372	1436	1499	1562	1623	1683	1742
5000	1228	1378	1452	1524	1595	1666	1735	1803	1870	1936
5500	1351	1316	1597	1677	1755	1832	1909	1983	2057	2129
Current (49° C Condenser)										
	amp									
3700	18.94	21.25	22.38	23.50	24.60	25.69	26.75	27.79	28.83	29.83
4500	23.02	25.83	27.21	28.58	29.92	31.23	32.54	33.81	35.06	36.29
5000	25.58	28.71	30.25	31.75	33.23	34.71	36.15	37.56	38.96	40.33
5500	28.15	27.42	33.27	34.94	36.56	38.17	39.77	41.31	42.85	44.35
COP (49° C Condenser)										
	watt/watt									
3700	0.54	0.58	0.63	0.68	0.75	0.82	0.90	0.98	1.06	1.15
4500	0.54	0.58	0.63	0.68	0.75	0.82	0.90	0.98	1.06	1.15
5000	0.54	0.58	0.63	0.68	0.75	0.82	0.90	0.98	1.06	1.15
5500	0.54	0.67	0.63	0.68	0.75	0.82	0.90	0.98	1.06	1.15
Mass Flow (49° C Condenser)										
	kg/hr									
3700	16.65	20.64	23.59	27.17	31.30	35.97	41.19	46.90	53.02	59.60
4500	20.23	25.08	28.67	33.02	38.06	43.77	50.08	57.02	64.50	72.48
5000	22.45	27.85	31.89	36.70	42.27	48.63	55.66	63.37	71.67	80.56
5500	24.72	30.66	35.06	40.37	46.54	53.48	61.23	69.67	78.83	88.59

* all data points are with 4.4° C return gas, 0° C subcooling, and 35° C ambient

24V

rpm	Evaporator Temperature (° F)										
	-40.0	-30.0	-25.0	-20.0	-15.0	-10.0	-5.0	0.0	5.0	10.0	
Capacity (120° F Condenser)											
											BTU/hr
1800	812	982	1116	1280	1471	1686	1921	2175	2445	2728	
2300	1038	1255	1426	1636	1880	2154	2455	2780	3124	3486	
2800	1264	1527	1737	1992	2288	2622	2989	3384	3804	4243	
3200	1444	1746	1985	2276	2615	2997	3416	3868	4347	4850	
Power Consumption (120° F Condenser)											
											watt
1800	442	496	523	549	574	600	625	649	673	697	
2300	565	634	668	701	734	766	798	829	860	890	
2800	688	772	813	853	893	933	972	1010	1047	1084	
3200	786	882	929	975	1021	1066	1110	1154	1197	1239	
Current (120° F Condenser)											
											amp
1800	18.42	20.67	21.79	22.88	23.92	25.00	26.04	27.04	28.04	29.04	
2300	23.54	26.42	27.83	29.21	30.58	31.92	33.25	34.54	35.83	37.08	
2800	28.67	32.17	33.88	35.54	37.21	38.88	40.50	42.08	43.63	45.17	
3200	32.75	36.75	38.71	40.63	42.54	44.42	46.25	48.08	49.88	51.63	
EER (120° F Condenser)											
											BTU/h/watt
1800	1.84	1.98	2.13	2.33	2.56	2.81	3.07	3.35	3.63	3.91	
2300	1.84	1.98	2.13	2.33	2.56	2.81	3.08	3.35	3.63	3.92	
2800	1.84	1.98	2.14	2.34	2.56	2.81	3.08	3.35	3.63	3.91	
3200	1.84	1.98	2.14	2.33	2.56	2.81	3.08	3.35	3.63	3.91	
Mass Flow (120° F Condenser)											
											lb/hr
1800	17.80	22.10	25.30	29.10	33.60	38.60	44.20	50.30	56.90	63.90	
2300	22.80	28.30	32.30	37.20	42.90	49.30	56.50	64.20	72.70	81.70	
2800	27.70	34.40	39.40	45.30	52.20	60.00	68.70	78.20	88.50	99.40	
3200	31.70	39.30	45.00	51.80	59.70	68.60	78.50	89.40	101.10	113.60	

48V

rpm	Evaporator Temperature (° F)										
	-40.0	-30.0	-25.0	-20.0	-15.0	-10.0	-5.0	0.0	5.0	10.0	
Capacity (120° F Condenser)											
											BTU/hr
3700	1670	2018	2295	2632	3024	3465	3949	4472	5026	5608	
4500	2031	2455	2791	3201	3677	4214	4803	5439	6113	6820	
5000	2257	2727	3101	3556	4086	4682	5337	6043	6792	7577	
5500	2482	3000	3411	3912	4495	5150	5871	6647	7472	8338	
Power Consumption (120° F Condenser)											
											watt
3700	909	1020	1074	1128	1181	1233	1284	1334	1384	1432	
4500	1105	1240	1306	1372	1436	1499	1562	1623	1683	1742	
5000	1228	1378	1452	1524	1595	1666	1735	1803	1870	1936	
5500	1351	1316	1597	1677	1755	1832	1909	1983	2057	2129	
Current (120° F Condenser)											
											amp
3700	18.94	21.25	22.38	23.50	24.60	25.69	26.75	27.79	28.83	29.83	
4500	23.02	25.83	27.21	28.58	29.92	31.23	32.54	33.81	35.06	36.29	
5000	25.58	28.71	30.25	31.75	33.23	34.71	36.15	37.56	38.96	40.33	
5500	28.15	27.42	33.27	34.94	36.56	38.17	39.77	41.31	42.85	44.35	
EER (120° F Condenser)											
											BTU/h/watt
3700	1.84	1.98	2.14	2.33	2.56	2.81	3.08	3.35	3.63	3.92	
4500	1.84	1.98	2.14	2.33	2.56	2.81	3.07	3.35	3.63	3.92	
5000	1.84	1.98	2.14	2.33	2.56	2.81	3.08	3.35	3.63	3.91	
5500	1.84	2.28	2.14	2.33	2.56	2.81	3.08	3.35	3.63	3.92	
Mass Flow (120° F Condenser)											
											lb/hr
3700	36.70	45.50	52.00	59.90	69.00	79.30	90.80	103.40	116.90	131.40	
4500	44.60	55.30	63.20	72.80	83.90	96.50	110.40	125.70	142.20	159.80	
5000	49.50	61.40	70.30	80.90	93.20	107.20	122.70	139.70	158.00	177.60	
5500	54.50	67.60	77.30	89.00	102.60	117.90	135.00	153.60	173.80	195.30	

* all data points are with 40° F return gas, 0° F subcooling, and 95° F ambient