

**SIERRA03-0434Z1
R404A
24/48 V DC
VARIABLE SPEED**



Brushless DC Variable Speed Compressor Technical Data Sheet

General Information

Compressor Part Number	SIERRA00173	3/8" ID Suction - 5/16" ID Discharge
Compressor Drawing	DCMX33-001	#10-32 Threaded Terminal Connections
Voltage Range:	19-59.9V DC	
Controller Options (24/48V)	025F0149, 025F0349, 025F0129, 025F0350	
Controller Options (48V)	025F0158, 025F0152	
Wiring Diagram Drawing	DEM0010	

Application Information

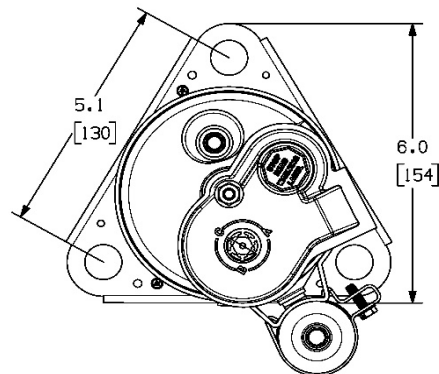
Application	LBP, Freezer
Refrigerant	R404A
Evaporator Temperature Range	-40° C to -12.2° C (-40° F to 10° F)
Condenser Temperature Range	26.7° C to 60° C (80° F to 140° F)
Maximum Discharge Temperature	126.7° C (260 °F) (D2I) providing maximum motor temperature is not exceeded
Maximum Compression Ratio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

Design

Displacement	7.1 cm ³ (0.434 in ³)
Oil Quantity	290 cc
Oil Type	PVE 68cSt
Weight	4.8 kg / 10.5 lb

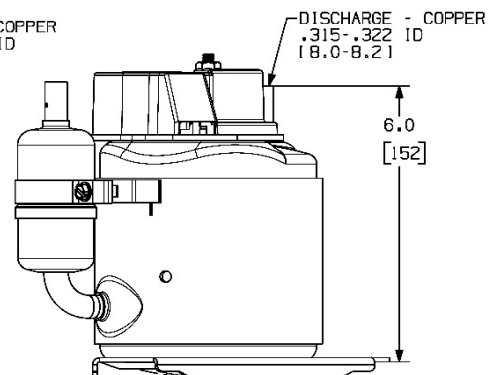
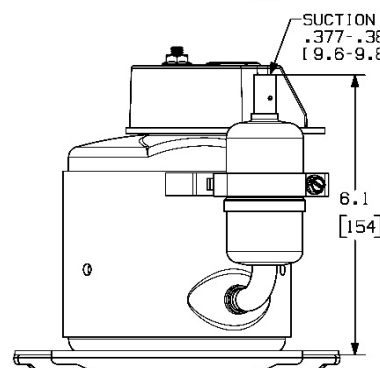


Compressor Dimensions



Packaging Options

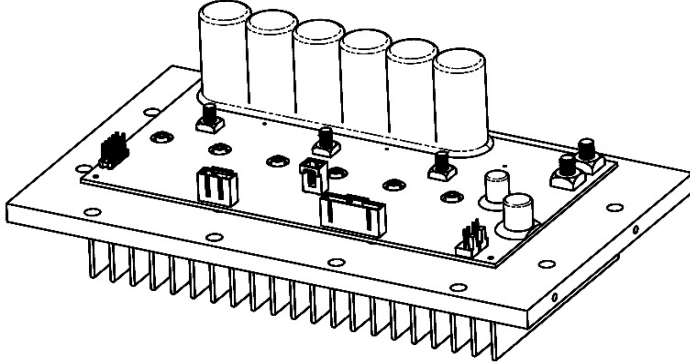
- Single Pack (add -SP suffix to part number when ordering)
- Pallet Pack (25 piece multiples)



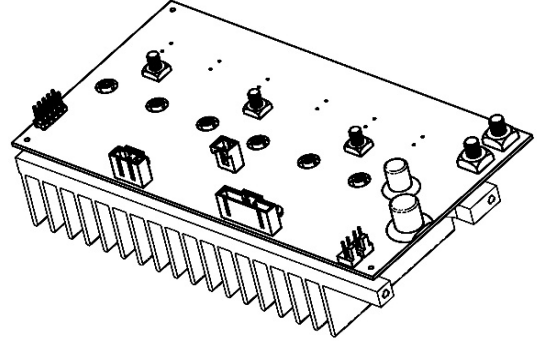
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Controller Configurations

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	111	134	152	174	200	230	262	296	333	372	
2300	141	171	194	223	256	293	334	379	426	475	
2800	172	208	237	271	312	357	407	461	518	578	
3200	197	238	270	310	356	408	465	527	592	661	
	Power Consumption (49° C Condenser)										watt
1800	206	231	243	255	267	279	291	302	313	324	
2300	263	295	311	326	341	356	371	386	400	414	
2800	320	359	378	397	415	434	452	470	487	504	
3200	366	410	432	454	475	496	516	537	557	576	
	Current (49° C Condenser)										amp
1800	8.57	9.61	10.14	10.64	11.13	11.63	12.12	12.58	13.05	13.51	
2300	10.95	12.29	12.95	13.59	14.22	14.85	15.47	16.07	16.67	17.25	
2800	13.33	14.97	15.76	16.53	17.31	18.09	18.84	19.58	20.29	21.01	
3200	15.24	17.09	18.00	18.90	19.79	20.66	21.51	22.37	23.20	24.01	
	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	3.76	4.67	5.34	6.15	7.08	8.14	9.32	10.61	12.00	13.49	
2300	4.81	5.96	6.82	7.85	9.05	10.41	11.91	13.56	15.34	17.24	
2800	5.85	7.26	8.30	9.56	11.02	12.67	14.50	16.51	18.67	20.98	
3200	6.69	8.30	9.49	10.93	12.59	14.48	16.57	18.86	21.34	23.98	

48V

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
3700	227	275	313	359	412	472	538	609	685	764	
4500	277	334	380	436	501	574	654	741	833	929	
5300	326	394	448	514	590	676	771	873	981	1094	
6100	375	453	515	591	679	778	887	1004	1129	1259	
	Power Consumption (49° C Condenser)										watt
3700	423	475	500	525	549	574	597	621	644	669	
4500	514	577	608	638	668	697	727	755	783	810	
5300	605	680	716	752	787	822	856	889	922	955	
6100	697	679	824	865	905	945	985	1023	1061	1098	
	Current (49° C Condenser)										amp
3700	8.81	9.89	10.41	10.93	11.45	11.95	12.45	12.93	13.41	13.93	
4500	10.71	12.02	12.66	13.30	13.92	14.53	15.14	15.73	16.31	16.88	
5300	12.61	14.16	14.92	15.66	16.39	17.12	17.82	18.52	19.21	19.89	
6100	14.52	14.15	17.17	18.03	18.86	19.69	20.52	21.32	22.11	22.88	
	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	1.14	
4500	0.54	0.58	0.63	0.68	0.75	0.82	0.90	0.98	1.06	1.15	
5300	0.54	0.58	0.63	0.68	0.75	0.82	0.90	0.98	1.06	1.15	
6100	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	7.74	9.60	10.97	12.63	14.56	16.74	19.16	21.81	24.67	27.73	
4500	9.41	11.67	13.35	15.37	17.71	20.36	23.31	26.53	30.00	33.73	
5300	11.08	13.74	15.72	18.10	20.86	23.98	27.45	31.24	35.34	39.72	
6100	12.75	15.82	18.09	20.83	24.01	27.60	31.59	35.96	40.67	45.72	

* all data points are with 11.1° C superheat and 8.3° C subcooling

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	378	457	519	596	684	784	894	1012	1138	1269	
2300	483	584	664	761	874	1002	1142	1293	1454	1622	
2800	588	711	808	927	1065	1220	1390	1574	1770	1974	
3200	672	812	923	1059	1217	1394	1589	1799	2022	2256	
Power Consumption (120° F Condenser)											
											watt
1800	206	231	243	255	267	279	291	302	313	324	
2300	263	295	311	326	341	356	371	386	400	414	
2800	320	359	378	397	415	434	452	470	487	504	
3200	366	410	432	454	475	496	516	537	557	576	
Current (120° F Condenser)											
											amp
1800	8.57	9.61	10.14	10.64	11.13	11.63	12.12	12.58	13.05	13.51	
2300	10.95	12.29	12.95	13.59	14.22	14.85	15.47	16.07	16.67	17.25	
2800	13.33	14.97	15.76	16.53	17.31	18.09	18.84	19.58	20.29	21.01	
3200	15.24	17.09	18.00	18.90	19.79	20.66	21.51	22.37	23.20	24.01	
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	8.30	10.29	11.77	13.55	15.62	17.96	20.55	23.39	26.46	29.74	
2300	10.60	13.15	15.04	17.31	19.96	22.94	26.26	29.89	33.81	38.00	
2800	12.91	16.01	18.31	21.08	24.29	27.93	31.97	36.39	41.16	46.26	
3200	14.75	18.30	20.92	24.09	27.76	31.92	36.54	41.59	47.04	52.87	

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	777	939	1068	1224	1407	1612	1837	2080	2338	2609	
4500	945	1142	1298	1489	1711	1960	2235	2530	2844	3173	
5300	1113	1345	1529	1754	2015	2309	2632	2980	3350	3737	
6100	1281	1548	1760	2019	2319	2657	3029	3430	3855	4301	
Power Consumption (120° F Condenser)											
											watt
3700	423	475	500	525	549	574	597	621	644	669	
4500	514	577	608	638	668	697	727	755	783	810	
5300	605	680	716	752	787	822	856	889	922	955	
6100	697	679	824	865	905	945	985	1023	1061	1098	
Current (120° F Condenser)											
											amp
3700	8.81	9.89	10.41	10.93	11.45	11.95	12.45	12.93	13.41	13.93	
4500	10.71	12.02	12.66	13.30	13.92	14.53	15.14	15.73	16.31	16.88	
5300	12.61	14.16	14.92	15.66	16.39	17.12	17.82	18.52	19.21	19.89	
6100	14.52	14.15	17.17	18.03	18.86	19.69	20.52	21.32	22.11	22.88	
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	3.90	
4500	1.84	1.98	2.14	2.33	2.56	2.81	3.07	3.35	3.63	3.92	
5300	1.84	1.98	2.14	2.33	2.56	2.81	3.08	3.35	3.63	3.91	
6100	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	17.05	21.15	24.19	27.85	32.10	36.91	42.25	48.08	54.39	61.13	
4500	20.74	25.73	29.42	33.88	39.04	44.89	51.38	58.48	66.15	74.35	
5300	24.43	30.30	34.66	39.90	45.98	52.87	60.52	68.88	77.91	87.57	
6100	28.12	34.88	39.89	45.92	52.92	60.85	69.65	79.27	89.67	100.79	

* all data points are with 20° F superheat and 15° F subcooling