



MASTERFLUX

SIERRA04-0982Y3 Brushless DC Variable Speed Compressor Technical Data Sheet

General Information

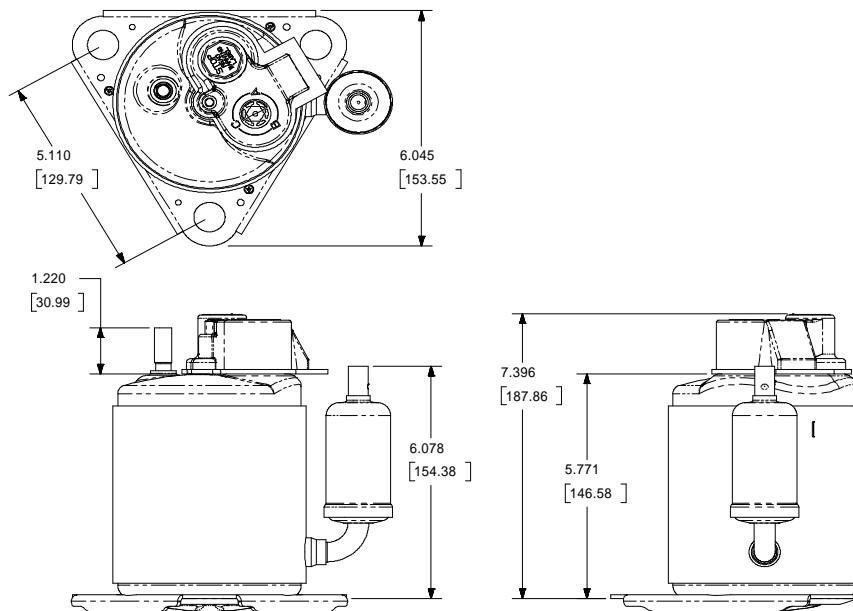
Compressor Part Number - Accumulator (81.6 cc)
Sales Compressor Drawing
Sales Controller Drawing
Wiring Diagram

SIERRA00011
DCMX01-004
DGMX002
DEMEX04

Application Information

Application	HBP, A/C
Refrigerant	R134a
Voltage	48V DC
Evaporator Temperature Range	-23.3° C to 12.8° C (-10° F to 55° F)
Condenser Temperature Range	26.7° C to 65.6° C (80° F to 150° F)
Maximum Discharge Temperature	130° C (265° F)
Maximum Compression Ratio	8:1

Compressor Dimensions



the Sierra



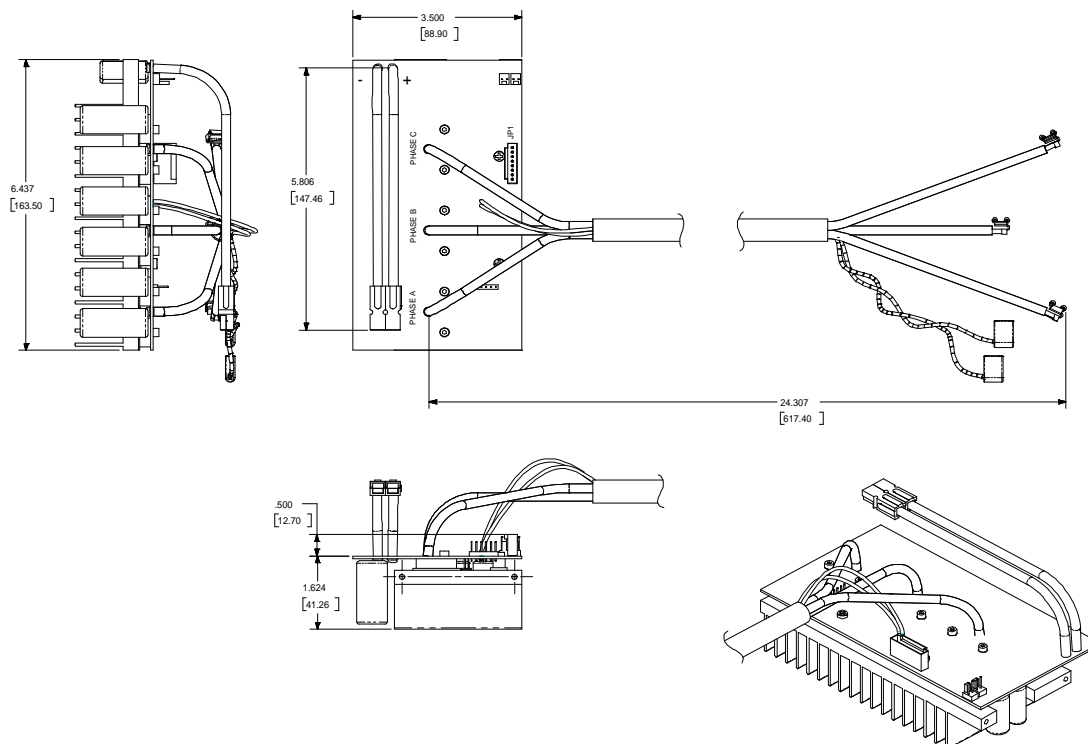
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Controller Features

- Over/under voltage protection
- Compressor thermal monitoring
- Controller thermal monitoring
- Locked rotor protection

Controller Dimensions



the Sierra

Capacity (54.4° C Condenser) watt										
	Evaporator Temperature (° C)									
rpm	-12.0	-9.4	-6.7	-3.9	-1.1	1.7	4.4	7.2	10.0	12.8
2000	496	580	672	768	882	1014	1126	1246	1404	1561
2300	621	701	807	931	1046	1190	1338	1486	1681	1881
2800	829	902	1009	1131	1273	1437	1622	1828	2054	2273
3200	977	1040	1162	1353	1450	1714	1842	2155	2337	2601
3800	1199	1256	1391	1537	1716	1928	2173	2511	2762	3093

Power Consumption (54.4° C Condenser) watt										
	Evaporator Temperature (° C)									
rpm	-12.0	-9.4	-6.7	-3.9	-1.1	1.7	4.4	7.2	10.0	12.8
2000	367	388	407	422	439	456	464	470	482	490
2300	436	461	475	492	509	533	538	552	563	571
2800	523	552	576	600	617	634	648	659	668	667
3200	616	648	674	696	719	734	749	763	766	768
3800	710	730	752	773	792	820	828	830	860	880

Current (54.4° C Condenser) amp										
	Evaporator Temperature (° C)									
rpm	-12.0	-9.4	-6.7	-3.9	-1.1	1.7	4.4	7.2	10.0	12.8
2000	7.64	8.08	8.47	8.80	9.14	9.50	9.67	9.80	10.04	10.20
2300	9.08	9.60	9.89	10.26	10.60	11.10	11.21	11.50	11.72	11.90
2800	10.89	11.50	11.99	12.50	12.86	13.21	13.50	13.74	13.91	13.90
3200	12.83	13.50	14.04	14.50	14.97	15.30	15.61	15.90	15.96	16.00
3800	14.79	15.20	15.67	16.10	16.49	17.08	17.24	17.30	17.92	18.33

COP (54.4° C Condenser) watt/watt										
	Evaporator Temperature (° C)									
rpm	-12.0	-9.4	-6.7	-3.9	-1.1	1.7	4.4	7.2	10.0	12.8
2000	1.35	1.50	1.65	1.82	2.01	2.22	2.43	2.65	2.91	3.19
2300	1.42	1.52	1.70	1.89	2.06	2.23	2.49	2.69	2.99	3.29
2800	1.58	1.63	1.75	1.88	2.06	2.27	2.50	2.77	3.08	3.41
3200	1.59	1.60	1.72	1.94	2.02	2.33	2.46	2.82	3.05	3.39
3800	1.69	1.72	1.85	1.99	2.17	2.35	2.63	3.02	3.21	3.52

Mass Flow (54.4° C Condenser) kg/hr										
	Evaporator Temperature (° C)									
rpm	-12.0	-9.4	-6.7	-3.9	-1.1	1.7	4.4	7.2	10.0	12.8
2000	13.07	15.17	17.41	19.68	22.34	25.36	27.84	30.44	33.93	37.27
2300	16.45	18.44	20.98	23.85	26.52	29.76	33.06	36.29	40.61	44.90
2800	21.96	23.71	26.22	30.25	32.24	35.90	40.01	44.55	49.52	54.25
3200	25.85	27.34	31.02	34.68	38.37	42.86	47.50	52.63	58.41	64.53
3800	31.70	33.03	36.18	39.48	43.50	48.22	53.66	61.33	66.65	73.84

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

Capacity (130° F Condenser)										BTU/hr
rpm	Evaporator Temperature (° F)									
	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0
2000	1694	1980	2294	2622	3011	3463	3845	4257	4796	5332
2300	2120	2395	2757	3178	3573	4064	4568	5075	5742	6423
2800	2830	3079	3446	3861	4349	4908	5539	6241	7016	7761
3200	3336	3551	3968	4621	4953	5853	6291	7359	7982	8883
3800	4096	4289	4751	5249	5859	6583	7419	8577	9432	10565

Power Consumption (130° F Condenser)										watt
rpm	Evaporator Temperature (° F)									
	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0
2000	367	388	407	422	439	456	464	470	482	490
2300	436	461	475	492	509	533	538	552	563	571
2800	523	552	576	600	617	634	648	659	668	667
3200	616	648	674	696	719	734	749	763	766	768
3800	710	730	752	773	792	820	828	830	860	880

Current (130° F Condenser)										amp
rpm	Evaporator Temperature (° F)									
	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0
2000	7.64	8.08	8.47	8.80	9.14	9.50	9.67	9.80	10.04	10.20
2300	9.08	9.60	9.89	10.26	10.60	11.10	11.21	11.50	11.72	11.90
2800	10.89	11.50	11.99	12.50	12.86	13.21	13.50	13.74	13.91	13.90
3200	12.83	13.50	14.04	14.50	14.97	15.30	15.61	15.90	15.96	16.00
3800	14.79	15.20	15.67	16.10	16.49	17.08	17.24	17.30	17.92	18.33

EER (130° F Condenser)										BTU/h/watt
rpm	Evaporator Temperature (° F)									
	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0
2000	4.62	5.11	5.64	6.21	6.86	7.59	8.28	9.05	9.95	10.89
2300	4.86	5.20	5.81	6.45	7.02	7.63	8.49	9.19	10.21	11.24
2800	5.41	5.58	5.99	6.44	7.04	7.74	8.55	9.47	10.51	11.63
3200	5.42	5.48	5.89	6.64	6.89	7.97	8.40	9.64	10.42	11.57
3800	5.77	5.88	6.32	6.79	7.40	8.03	8.97	10.33	10.97	12.01

Mass Flow (130° F Condenser)										lb/hr
rpm	Evaporator Temperature (° F)									
	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0
2000	28.81	33.44	38.39	43.38	49.24	55.90	61.38	67.10	74.80	82.17
2300	36.26	40.66	46.25	52.59	58.46	65.60	72.89	80.00	89.54	98.98
2800	48.41	52.27	57.81	66.70	71.07	79.15	88.20	98.21	109.18	119.60
3200	57.00	60.27	68.38	76.46	84.59	94.48	104.72	116.02	128.76	142.26
3800	69.88	72.81	79.76	87.04	95.90	106.31	118.29	135.21	146.95	162.80

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