

MAKING MODERN LIVING POSSIBLE



Datasheets

# Performer<sup>®</sup> scroll compressors **SM / SY / SZ / SH**



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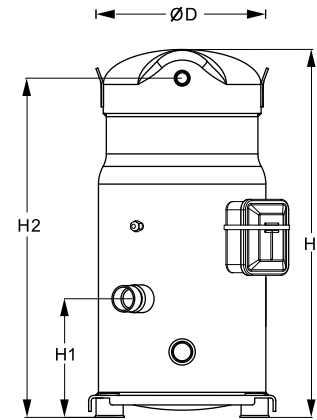
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**Performer<sup>®</sup>**  
Air Conditioning Scroll Compressors

**General Characteristics**

Model number (on compressor nameplate)		<b>SZ110S4VC</b>
Code number for Singlepack*		SZ110-4VI
Code number for Industrial pack**		SZ110-4VM
Drawing number		8552037b
Suction and discharge connections		Brazed
Suction connection		1-3/8" ODF
Discharge connection		7/8" ODF
Oil sight glass		Threaded
Oil equalization connection		3/8" flare SAE
Oil drain connection		None
LP gauge port		Schrader
IPR valve		None
Swept volume		8.8 in <sup>3</sup> /rev
Displacement @ Nominal speed		886 cfh @ 2900 rpm - 1069 cfh @ 3500 rpm
Net weight		161 lbs
Oil charge		110 oz, POE - 160SZ
Maximum system test pressure Low Side / High side		363 psi / 464 psi
Maximum differential test pressure		348 psi
Maximum number of starts per hour		12
Refrigerant charge limit		22 lbs
Approved refrigerants		R407C, R134a, R404A, R507A

**Dimensions**

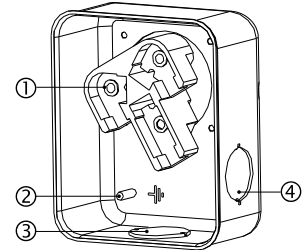


D=10 inch, H=22 inch,  
H1=7 inch, H2=20.3 inch

**Electrical Characteristics**

Nominal voltage	380-400V/3/50Hz - 460V/3/60Hz
Voltage range	340-440 V @ 50Hz - 414-506 V @ 60Hz
Winding resistance (between phases) +/- 7% at 77°F	1.05 Ω
Rated Load Amps (RLA)	15.7 A
Maximum Continuous Current (MCC)	22 A
Locked Rotor Amps (LRA)	130 A
Motor protection	Internal overload protector

**Terminal box**



IP54 (with cable gland)

- 1: Power connection, 3 x 4.8 mm (3/16")
- 2: Earth M4-12
- 3: Knock-out Ø 29 mm (1.14")
- 4: Knock-out Ø 25.5 mm (1.00")

**Recommended Installation torques**

Oil sight glass	37 ft.lbs
Power connections / Earth connection	2 ft.lbs / 1 ft.lbs
Mounting bolts	15 ft.lbs

**Parts shipped with compressor**

Mounting kit with grommets, bolts, nuts, sleeves and washers
Initial oil charge
Installation instructions

**Approvals** : CE certified, UL certified (file SA6873), -

\*Singlepack: Compressor in cardboard box

\*\*Industrial pack: 8 Unboxed compressors on pallet (order per multiples of 8)

<b>Rotolock accessories, suction side</b>	<b>Code no.</b>
Solder sleeve, P10 (1-3/4" Rotolock, 1-3/8" ODF)	8153003
Rotolock valve, V10 (1-3/4" Rotolock, 1-3/8" ODF)	8168022
Gasket, 1-3/4"	8156132

<b>Rotolock accessories, discharge side</b>	<b>Code no.</b>
Rotolock valve, V05 (1-1/4" Rotolock, 7/8" ODF)	8168030
Gasket, 1-3/4"	8156132

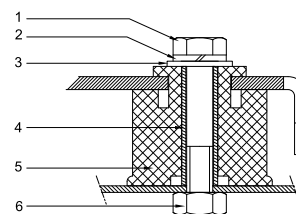
<b>Rotolock accessories, sets</b>	<b>Code no.</b>
Solder sleeve adapter set, 1-1/8" ODF & 7/8" ODF	120Z0405
Valve set, V10 (1-3/4"~1-3/8"), V05 (1-1/4"~7/8")	7703392
Gasket set, 1-1/4", 1-3/4", 2-1/4", OSG gaskets black & white	8156013

<b>Oil / lubricants</b>	<b>Code no.</b>
POE lubricant, 160SZ, 1 liter can	7754023
POE lubricant, 160SZ, 2 liter can	7754024

<b>Crankcase heaters</b>	<b>Code no.</b>
Surface sump heater + bottom insulation, 48 W, 24 V, CE mark, UL	120Z0361
Surface sump heater + bottom insulation, 48 W, 230 V, CE mark, UL	120Z0380
Surface sump heater + bottom insulation, 48 W, 400 V, CE mark, UL	120Z0381
Surface sump heater + bottom insulation, 48 W, 460 V, CE mark	120Z0382
Belt type crankcase heater, 65 W, 460 V, CE mark, UL	120Z0466
Belt type crankcase heater, 65 W, 230 V, CE mark, UL	7773107
Belt type crankcase heater, 65 W, 400 V, CE mark, UL	7773117
Belt type crankcase heater, 65 W, 400 V, CE mark, UL	120Z0039

<b>Miscellaneous accessories</b>	<b>Code no.</b>
Electronic soft start kit, MCI 15 C	7705006
Soft start kit with statoric resistors, prewired box, SCR03	7705001
Acoustic hood for scroll compressor S110-S120	7755010
Discharge thermostat kit	7750009

<b>Spare parts</b>	<b>Code no.</b>
Mounting kit for 1 scroll compressor including 4 grommets, 4 sleeves, 4 bolts, 4 washers	8156138
Oil sight glass with gaskets (black & white)	8156019
Gasket for oil sight glass (white teflon)	8156129
Service kit for terminal box 96 x 115 mm, including 1 cover, 1 clamp, 1 T block connector 52 x 57 mm, 1 cable gland	8156135
T block connector 2.1" x 2.3"	8173230

**Mounting kit**


- 1: Bolt (4x)
- 2: Lock washer (4x)
- 3: Flat washer (4x)
- 4: Sleeve (4x)
- 5: Grommet (4x)
- 6: Nut (4x)

**Performance data at 60 Hz, ARI rating conditions**
**R407C**

Cond. temp. in °F (tc)	Evaporating temperature in °F (to)								
	0	10	20	30	35	40	45	50	55

**Cooling capacity in Btu/h**

90	45 570	59 376	75 979	95 680	106 786	118 780	131 700	145 583	160 467
100	42 607	55 930	71 897	90 812	101 469	112 975	125 370	138 690	152 973
110	-	52 247	67 477	85 502	95 658	106 626	118 444	131 150	144 781
120	-	48 323	62 712	79 747	89 351	99 729	110 919	122 959	135 888
130	-	-	57 601	73 542	82 542	92 279	102 791	114 114	126 288
140	-	-	-	66 884	75 230	84 274	94 055	104 611	115 979
150	-	-	-	-	-	75 709	84 709	94 445	104 956

**Power input in W**

90	5 541	5 629	5 698	5 743	5 753	5 754	5 746	5 727	5 696
100	6 255	6 344	6 416	6 463	6 474	6 477	6 470	6 453	6 423
110	-	7 160	7 234	7 283	7 296	7 300	7 295	7 279	7 252
120	-	8 088	8 164	8 216	8 230	8 237	8 233	8 219	8 194
130	-	-	9 219	9 274	9 290	9 298	9 297	9 285	9 262
140	-	-	-	10 470	10 488	10 498	10 499	10 489	10 468
150	-	-	-	-	-	11 848	11 851	11 844	11 826

**Current consumption in A**

90	9.08	9.43	9.71	9.89	9.94	9.94	9.91	9.84	9.72
100	10.09	10.43	10.70	10.86	10.90	10.90	10.86	10.78	10.65
110	-	11.51	11.76	11.92	11.94	11.94	11.89	11.79	11.65
120	-	12.67	12.91	13.05	13.07	13.05	12.99	12.89	12.73
130	-	-	14.14	14.26	14.27	14.24	14.17	14.06	13.89
140	-	-	-	15.57	15.56	15.52	15.44	15.31	15.13
150	-	-	-	-	-	16.89	16.80	16.66	16.46

**Mass flow in lbs/h**

90	575	735	922	1 141	1 262	1 392	1 532	1 681	1 839
100	565	727	916	1 136	1 258	1 389	1 528	1 678	1 837
110	-	717	907	1 127	1 249	1 380	1 520	1 669	1 828
120	-	703	894	1 113	1 235	1 366	1 505	1 654	1 813
130	-	-	876	1 095	1 216	1 346	1 485	1 632	1 790
140	-	-	-	1 071	1 191	1 320	1 457	1 603	1 759
150	-	-	-	-	-	1 286	1 422	1 566	1 720

**Energy Efficiency Ratio (E.E.R.)**

90	8.22	10.55	13.33	16.66	18.56	20.64	22.92	25.42	28.17
100	6.81	8.82	11.21	14.05	15.67	17.44	19.38	21.49	23.82
110	-	7.30	9.33	11.74	13.11	14.61	16.24	18.02	19.96
120	-	5.97	7.68	9.71	10.86	12.11	13.47	14.96	16.58
130	-	-	6.25	7.93	8.88	9.92	11.06	12.29	13.64
140	-	-	-	6.39	7.17	8.03	8.96	9.97	11.08
150	-	-	-	-	-	6.39	7.15	7.97	8.88

**Nominal performance at to = 45 °F, tc = 130 °F**

Cooling capacity	102 791	Btu/h	Current consumption	14.17	A
Power input	9 297	W	Mass flow	1 485	lbs/h
E.E.R.	11.06				

**Pressure switch settings**

Maximum HP switch setting	428	psi(g)
Minimum LP switch setting	7	psi(g)
LP pump down setting	15	psi(g)

T 0 : Evaporating temperature at dew point

T C : Condensing temperature at dew point

Rating conditions : Superheat = 20 °F , Subcooling = 15 °F

All performance data +/- 5%

**Sound power data**

Sound power level	81	dB(A)
With acoustic hood	73	dB(A)

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**Performance data at 60 Hz, ARI rating conditions**
**R134a**

Cond. temp. in °F (tc)	Evaporating temperature in °F (to)							
	5	15	25	30	35	40	45	50

**Cooling capacity in Btu/h**

90	35 451	45 844	58 318	65 406	73 100	81 428	90 420	100 103	110 506
100	33 412	43 476	55 529	62 372	69 798	77 835	86 513	95 859	105 902
110	31 280	40 957	52 531	59 100	66 229	73 947	82 281	91 262	100 916
120	29 062	38 295	49 331	55 598	62 401	69 770	77 732	86 318	95 554
130	-	35 495	45 937	51 872	58 320	65 311	72 873	81 034	89 824
140	-	-	42 356	47 930	53 994	60 578	67 710	75 419	83 733
150	-	-	-	43 778	49 429	55 578	62 251	69 478	77 287

**Power input in W**

90	3 909	3 962	4 004	4 020	4 032	4 040	4 043	4 040	4 031
100	4 378	4 434	4 479	4 497	4 512	4 522	4 527	4 526	4 521
110	4 914	4 973	5 023	5 043	5 060	5 072	5 080	5 083	5 080
120	5 524	5 586	5 640	5 663	5 682	5 697	5 708	5 714	5 714
130	-	6 278	6 336	6 362	6 384	6 402	6 416	6 425	6 429
140	-	-	7 118	7 146	7 171	7 193	7 210	7 223	7 231
150	-	-	-	8 021	8 049	8 074	8 096	8 112	8 124

**Current consumption in A**

90	8.56	8.60	8.63	8.65	8.65	8.65	8.65	8.64	8.63
100	8.92	8.97	9.01	9.03	9.04	9.04	9.04	9.04	9.03
110	9.38	9.43	9.48	9.50	9.51	9.53	9.53	9.53	9.53
120	9.94	10.00	10.05	10.08	10.10	10.11	10.13	10.13	10.14
130	-	10.68	10.75	10.77	10.80	10.82	10.84	10.85	10.86
140	-	-	11.57	11.60	11.63	11.66	11.68	11.70	11.72
150	-	-	-	12.57	12.61	12.64	12.67	12.70	12.72

**Mass flow in lbs/h**

90	498	630	784	870	963	1 062	1 168	1 281	1 402
100	493	626	782	869	962	1 062	1 169	1 283	1 404
110	485	621	778	865	959	1 059	1 166	1 281	1 402
120	477	613	771	859	953	1 053	1 160	1 275	1 396
130	-	604	762	850	943	1 044	1 151	1 265	1 387
140	-	-	750	837	931	1 031	1 138	1 252	1 373
150	-	-	-	822	915	1 015	1 121	1 234	1 354

**Energy Efficiency Ratio (E.E.R.)**

90	9.07	11.57	14.56	16.27	18.13	20.16	22.37	24.78	27.41
100	7.63	9.81	12.40	13.87	15.47	17.21	19.11	21.18	23.43
110	6.36	8.24	10.46	11.72	13.09	14.58	16.20	17.96	19.87
120	5.26	6.86	8.75	9.82	10.98	12.25	13.62	15.11	16.72
130	-	5.65	7.25	8.15	9.14	10.20	11.36	12.61	13.97
140	-	-	5.95	6.71	7.53	8.42	9.39	10.44	11.58
150	-	-	-	5.46	6.14	6.88	7.69	8.56	9.51

**Nominal performance at to = 45 °F, tc = 130 °F**

Cooling capacity	72 873	Btu/h	Current consumption	10.84	A
Power input	6 416	W	Mass flow	1 151	lbs/h
E.E.R.	11.36				

**Pressure switch settings**

Maximum HP switch setting	297	psi(g)
Minimum LP switch setting	7	psi(g)
LP pump down setting	7	psi(g)

T 0 : Evaporating temperature at dew point

T C : Condensing temperature at dew point

Rating conditions : Superheat = 20 °F , Subcooling = 15 °F

All performance data +/- 5%

**Sound power data**

Sound power level	0	dB(A)
With acoustic hood	0	dB(A)

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